

Viet Nam 2045: Development Issues and Challenges

Commemorating 50 years
of Viet Nam–Japan
Diplomatic Relations

Edited by
Fukunari Kimura
and the Viet Nam 2045 team

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Diplomatic Relations

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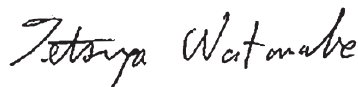
Foreword

In early 2021, the 13th Communist Party Congress of Viet Nam adopted a resolution with the goal of achieving developed country status by 2045. The resolution specifies steps to achieve this long-term goal, starting with graduation from lower middle-income country status by 2025 – the 50th anniversary of the liberation of the South and national reunification. By 2030, when the Communist Party celebrates its 100th anniversary, Viet Nam hopes to be an upper middle-income country. Finally, by the 100th anniversary of the establishment of the Democratic Republic of Viet Nam, now the Socialist Republic of Viet Nam, in 2045, it plans to be a developed, industrialised nation. It is observed to be the first time the Party has published such a long-term roadmap in detail and Viet Nam is likely to be confident in its development pathway.

Viet Nam and Japan established diplomatic relations on 21 September 1973, 2 years prior to the liberation of the South. Accordingly, both countries celebrated the 50th anniversary of diplomatic relations in 2023. To mark this milestone, and following the advice of His Excellency Yamada Takio, the Ambassador of Japan to Viet Nam, the Economic Research Institute for ASEAN and East Asia (ERIA) embarked on a comprehensive study aimed at charting the path towards 2045, with policy recommendations to help achieve the national goal.

The study is organised into three themes: (i) a historical view and development model, (ii) industrial development as the driving force for economic growth, and (iii) sustainability and social issues. Based on 21 studies on these three themes, the report provides policy recommendations for the country's development strategy.

The resolution of the 13th Communist Party Congress was approved amid the ever-evolving global landscape, with growing anti-globalisation sentiment and geopolitical tensions, as well as fast-changing technological advances. Any development strategy will have to navigate these challenges and optimise the opportunities they may bring. In this light, I hope this publication contributes to Viet Nam in paving the way towards 2045, as well as future Viet Nam–Japan cooperation in the years to come.



Professor Tetsuya Watanabe
President of ERIA

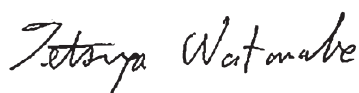
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I would also like to express my deep appreciation to the Viet Nam 2045 team of this publication, led by our Chief Economist, Prof. Fukunari Kimura, and the team members: Mr Nguyen Anh Duong from the Central Institute of Economic Management (CIEM) of Viet Nam; Mr Shozo Sakata from the Institute of Developing Economies (IDE-JETRO) in Japan; Mr Fusanori Iwasaki, Director for Policy Research; Dr Keita Oikawa, Economist; Mr Yasuhiro Yamada, Special Assistant to the President on CLMV Affairs from ERIA.

Furthermore, I wish to acknowledge Mr Izumi Matsumoto of the Embassy of Japan in Viet Nam; Prof. Tran Thi Tuu Thuy of Foreign Trade University in Viet Nam; and Ms Rumiko Sakuma, a researcher on the modern history of Viet Nam, for their invaluable contributions to finalising our publication.

Special thanks also go to Mr Stefan Wesiak and his dedicated team, as well as Ms Yuanita Suhud, Research Associate from ERIA, for their exceptional efforts in coordinating the finalisation of this publication.

A handwritten signature in black ink that reads "Tetsuya Watanabe". The signature is written in a cursive, flowing style.

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Table of Contents

Foreword	iii
Acknowledgements	iv
List of Project Members	v
Executive Summary	xxv
Part I	
Historical View and Development Model	
<hr/>	
Chapter 1: 2045 in the Course of an Independent Viet Nam Motoo Furuta	01
Chapter 2: Viet Nam's Foreign Policy and Japan-Viet Nam Relations since the Start of Doi Moi Masaya Shiraishi	21
Chapter 3: The Role of Japanese Official Development Assistance in Viet Nam's Socio-economic Development Motonori Tsuno	53
Chapter 4: Viet Nam: Transition to a Socialist-Oriented Market Economy Vo Tri Thanh	99
Chapter 5: Foreign Direct Investment and the Industrialisation of Viet Nam Ryo Ikebe	123
Chapter 6: Viet Nam's Conditions for Sustained Growth: How to Escape from the Middle-Income Trap? Tran Van Tho	153
Chapter 7: Economic Integration in East Asia and Viet Nam Nguyen Anh Duong and Ha Thi Thanh Doan	189

Part II

Industries as the Driving Force for Growth

Chapter 8: New Wave of Digital Transformation, Industry 4.0 and Innovation Nguyen Anh Duong and Fukunari Kimura	223
Chapter 9: Viet Nam 2045: Automobile Industry Seio Nakajima, Hideo Kobayashi, and Yasushi Ueki	253
Chapter 10: Electronics as a Driving Force for Viet Nam's Economic Development Nguyen Thi Xuan Thuy	283
Chapter 11: Digital Transformation-related Businesses Nguyen Anh Duong	315
Chapter 12: Viet Nam's Textile and Garment Industry in the Global Value Chain Kenta Goto	337
Chapter 13: Consolidation of the Supporting Industries under International Economic Integration Mai Fujita	361
Chapter 14: New Aspects of Agricultural Development in Viet Nam Shozo Sakata	393

Part III

Sustainability and Social Issues

Chapter 15: Sustainable Energy Supply Shigeru Kimura, Alloysius Joko Purwanto, and Han Phoumin	415
Chapter 16: Advancing Climate Change Adaptation, Disaster Risk Reduction and Resilient Growth Venkatachalam Anbumozhi and Lai Van Manh	449
Chapter 17: Circular Economy in Viet Nam Lai Van Manh and Pham Anh Huyen	499
Chapter 18: Challenges for Inclusive Growth Emi Kojin	555
Chapter 19: Social Issues in Viet Nam's Ageing Society Yuka Minagawa, Nguyen Cong Vu, Yoichi Hiruma, and Yasuhiko Saito	577

Part IV

Conclusion and Policy Recommendations

Chapter 20 Developing a New Approach to Japan–Viet Nam Industrial Cooperation Fusanori Iwasaki, Keita Oikawa, and Yasuhiro Yamada	605
Chapter 21 Conclusion: Policy Recommendations for Achieving High-Income Status by 2045 Keita Oikawa	621

List of Tables

Table 3.1. Japan's ODA to Viet Nam in recent years (¥ billion)	66
Table 3.2. Trends in the Amount of Yen Loans (¥billion)	68
Table 5.1. Overview of FDI on a Year-end Balance Base in Viet Nam (%)	138
Table 5.2. Changes in the Ratio of FDI to Viet Nam's Major Economic Indicators (%)	140
Table 5.3. FDI/Industrial Production and the Growth Rate of Capital Equipment Ratio (%)	142
Table 5.4. Changes in Viet Nam's Trade Structure	144
Table 5.5. Changes in the Trade Specialisation Coefficient (%)	144
Table 6.1. Manufacturing Value Added per Capita in ASEAN and China (US\$)	164
Table 6.2. The Estimated Informal Sector in Viet Nam (2019)	170
Table 6.3. Number of Firms in Viet Nam's Supporting Industries (2018)	174
Table 7.1. Share and Growth Rate of Viet Nam's Exports by Country and FTA Partner, 2010–2020	194
Table 7.2. Share and Growth Rate of Viet Nam's Imports by Country and FTA partner, 2010–2020	195
Table 7.3. Export Similarity Index of Viet Nam Compared to Selected Partners, 2001–2020	197
Table 7.4. Viet Nam's Trade Complementarity Index with Selected Partners, 2001–2020	199
Table 7.5. Trade Complementarity Index of Selected Partners with Viet Nam, 2001–2020	201
Table 7.6. Viet Nam's Trade Intensity Index with Selected Partners, 2001–2020	203

Table 7.7. Trade Intensity Index of Selected Partners with Viet Nam, 2001–2020	205
Table 8.1. Innovation Sub-Index of Viet Nam in the Global Competitiveness Index, 2010–2018	233
Table 8.2. Adaptability of Legal Frameworks and Innovation Growth	243
Table 9.1. Vehicle Assembly Capacity in Viet Nam	256
Table 9.2. Viet Nam’s Policy Targets for 2025 and 2030	260
Table 9.3. Criteria for Classification as Tier 1, Tier 2, and Tier 3	265
Table 9.4. Breakdown of Local, Foreign-affiliated, and Japan-affiliated Enterprises into Tier 1, Tier 2, and Tier 3	266
Table 9.5. Breakdown of Suppliers (Motorcycle and/or Automotive)	267
Table 9.6. Sales and Production in 2019 and Estimated Annual Production Capacity (Units)	268
Table 9.7. Auto Parts and Components Export in 2020 (US\$ million)	269
Table 10.1. Scope of the Electronics and ICT Sector Defined by ISIC Rev. 4	285
Table 10.2. HS codes for Electronic Commodities	286
Table 10.3. Electronics Industry in Viet Nam by Subsector, 2020	299
Table 10.4. Rules of Origin for Electronic Products Exported from Viet Nam to Major Markets	304
Table 11.1. Viet Nam’s B2C E-commerce, 2015–2022	321
Table 12.1. Overview Statistics of Viet Nam’s Textile and Garment Industry	341
Table 12.2. Overview of Viet Nam’s Textile and Garment Trade (US\$ million)	342

Table 12.3. Size Distribution of Firms (number of workers)	344
Table 12.4. Size Distribution of Firms (size of capital in D billion)	344
Table 13.1. Overview of Supporting Industries in Viet Nam (as of July 2022)	374
Table 13.2. Basic Profile of Supporting Industry Firms	376
Table 13.3. Basic Profile of Supporting Industry Firms	377
Table 13.4. Main Customers of Supporting Industry Firms	379
Table 13.5. Exports by Supporting Industry Firms by Region	381
Table 13.6. Exports by Supporting Industry Firms by Domestic Industries Supplied	382
Table 13.7. Sharing of Supporting Industry Firms across Industries	383
Table 14.1. Top Ten Exporting Countries by Commodity, 2020 (unit 1,000 US dollars; Year 2020)	397
Table 14.2. Number of Production Units	403
Table 14.3. Distribution of Households by Land Size (%)	404
Table 14.4. VietGAP Acquisition as of 2016	405
Table 15.1. Selected Low-Carbon Technologies in the Model	441
Table 16.1. Change in Average Temperature from 1958 to 2018 Across Climate Zones (°C)	451

Table 16.2. Change in Average Rainfall from 1958 to 2018 Across Climate Zones (mm)	452
Table 16.3. Types and Forms of the Impact of Extreme Weather Events on Viet Nam Economy	454
Table 16.4. Climate Risk Index for 2000–2019 in the ASEAN Region	460
Table 16.5. Index for Risk Management in Viet Nam and other ASEAN countries and Japan	462
Table 17.1. Value Motivations of a Circular Economy and Benefits for Consumers	502
Table 17.2. Application of Digital Technology in Business and Waste Management	503
Table 17.3. Orientations and Policies on the Circular Economy in Viet Nam	505
Table 17.4. Models Embedding the Principles of the Circular Economy in Viet Nam	518
Table 17.5. Overview of Legislation and Policy on the Circular Economy in Japan	524
Table 17.6. Viet Nam and Other Countries in Promoting Implementation of a Circular Economy	534
Table 17.7. Criteria and Indicators for the Implementation of a Circular Economy in Viet Nam	535
Table 17.8. Proposed Plan for Priority Products, Sectors, and Fields in the Circular Economy Road Map for Viet Nam	544
Table 18.1. Multidimensional Poverty Index by Region	558

Table 18.2. Communes with Non-Agricultural Employment Opportunities (%)	550
Table 18.3. Commune-Level Economic and Social Infrastructure, 2020 (% of communes possessing)	560
Table 18.4. Gini Coefficients, Viet Nam	561
Table 18.5. Main Economic Activities, Aged 15 Years and Over (%)	563
Table 18.6. Educational Attainment Rate in the Population over Age 25 Years (%)	566
Table 18.7. Informal Employment by Economic Activity (%)	568
Table 19.1. Number of Years for the Proportion of Older Persons to Increase from 7% to 14% of the Total Population, Selected Countries	579
Table 19.2. Mental Health Care Workers, Selected Countries, 2020 (per 100,000 persons)	585

List of Figures

Figure 2.1. Multi-layered Concentric Circles Surrounding Japan and Viet Nam	34
Figure 5.1. How FDI Affects a Host Country	126
Figure 5.2. Progress in Industrialisation and the Relationship Between FDI and Local Companies	128
Figure 5.3. Viet Nam's FDI (Flow) Trends in Four Periods (US\$ million)	131
Figure 6.1. Pattern of International Competitiveness of a Sustained Growing Economy	158
Figure 6.2. Ratio of Manufacturing Value Added/GDP in the Period of Demographic Dividend (% in vertical axis)	163
Figure 6.3. Viet Nam's Participation in GVCs	166
Figure 6.4. Structure of Value Added in Viet Nam's Manufactured Exports (2018)	167
Figure 6.5. Viet Nam's Productivity by Ownership (D million per worker at constant 2010 prices)	172
Figure 6.6. Changes in the Structure of International Competitiveness and Scenario for the Future Path	182
Figure 7.1. Viet Nam's FTAs as of December 2022	191
Figure 7.2. Viet Nam's Imports and Exports, 2010–2022	193
Figure 7.3. Exports of Foreign-invested Enterprises, 2010–2022 (%)	196
Figure 7.4. Foreign Direct Investment Inflows to Viet Nam, 2010–2021	206

Figure 7.5. Foreign Direct Investment Inflows by Partner, by End of 2022	207
Figure 7.6. Share of Domestic Value-added in Total Exports of Viet Nam (%)	208
Figure 7.7. Progress of Implementing the AEC 2025	210
Figure 8.1. Viet Nam's Tariff on Manufacturing Products, 2002–2020	227
Figure 8.2. Prevalence Score of Imports in Viet Nam, 2015 and 2018	231
Figure 8.3. Performance of Manufacturing Sector, 2005–2022 (%)	232
Figure 8.4. Digital Riser Index	242
Figure 10.1. Top 10 Exporters and Importers of Electronics Products	288
Figure 10.2. Top Ten Traded Electronics Products	290
Figure 10.3. Trade in Services	291
Figure 10.4. Number of Enterprises and Employees in the Electronics Industry in Viet Nam	292
Figure 10.5. Value Added and the Export Value of the Electronics Industry in Viet Nam	294
Figure 10.6. Viet Nam's Trade in ICT Services	296
Figure 10.7. Supply Chain of the Electronics Industry	298
Figure 10.8. Trade Value of Viet Nam's Electronics Products by Supply Chain Segment Figure	300
Figure 10.9. GVC Participation of Viet Nam's Electronics Industry	301

Figure 10.10. Export Markets for Viet Nam's Electronics, 2020	303
Figure 10.11. Potential Risks on Labor and Environment in the Electronics Industry	310
Figure 10.12. Risk Assessment of Human Rights in the Electronics Industry	311
Figure 11.1. Revenues of Tourism-related Activities	324
Figure 11.2. Number of International Tourists (millions)	324
Figure 12.1. Production and Distribution Flow of the Textile and Apparel Value Chain	338
Figure 12.2. The Production Flow and Value Added in the Apparel Industry	347
Figure 12.3. The Apparel Smiling Curve: Functional Hierarchy in Garment Production-Distribution	350
Figure 13.1. Scope of Supporting Industries	364
Figure 13.2. Net Export Ratios of Key Machinery Products	370
Figure 13.3. Production of Main Machinery Products (million units)	372
Figure 14.2. Fertilizer Use (tonnes)	399
Figure 14.3. Labour and Land Productivity (1990–2010)	400
Figure 14.4. Production Volumes of Non-Rice Crops (1,000 tonnes, 2000–2010)	401
Figure 15.1. Historical Final Energy Consumption by Fuel (ktoe)	417

Figure 15.2. Historical Final Energy Consumption by Fuel Share	418
Figure 15.3. Historical Final Energy Consumption by Sector (ktoe)	419
Figure 15.4. Historical Final Energy Consumption by Sector Share (%)	420
Figure 15.5. Historical Power Generation by Sources (GWh)	421
Figure 15.6. Historical Power Generation by Fuel Share (%)	421
Figure 15.7. Historical Primary Energy Supply (ktoe)	422
Figure 15.8. Historical Primary Energy Supply by Fuel Share (%)	423
Figure 15.9. Historical Indigenous Product by Fuel (ktoe)	424
Figure 15.10. Historical Energy Import by Fuel (ktoe)	424
Figure 15.11. Historical CO ₂ Emissions by Sector (kt-C)	425
Figure 15.12. Historical CO ₂ Emissions by Fuel Share (%)	426
Figure 15.13. Historical Trend of Energy and CO ₂ Intensities (2000=100)	427
Figure 15.14. Historical Import Dependency by Fuel (%)	428
Figure 15.15. Forecasted TFEC of BAU and APS by 2050 by Fuel (ktoe)	429

Figure 15.16. Forecasted TFEC of BAU and APS by 2050 by Sector (ktoe)	430
Figure 15.17. Forecasted Power Generation by 2050 by Fuel (GWh)	431
Figure 15.18. Forecasted TPES of BAU and APS by 2050 by Fuel (ktoe)	432
Figure 15.19. Forecasted CO ₂ Emissions of BAU and APS by 2050 (kt-C)	433
Figure 15.20. Forecasted Energy Indicators by 2050 (1990=100)	434
Figure 15.21. Final Energy Consumption in 2050 amongst BAU, APS and LCET-CN (ktoe)	442
Figure 15.22. Power Generation Mix in 2050 amongst BAU, APS, and LCET-CN (GWh)	443
Figure 15.23. CO ₂ Emissions in 2050 amongst BAU, APS, and LCET-CN (Mt-C)	444
Figure 16.1. Viet Nam's Path to High-Income Status by 2045	450
Figure 16.2. Change in Average Rainfall from 1958 to 2018 Across Climate Zones (mm)	456
Figure 16.3. Number of Houses Damaged or Impacted Caused by Natural Disasters in Viet Nam, 2011–2021	457
Figure 16.4. Damage to Rice and Crop Areas Caused by Natural Disasters in Viet Nam, 2011–2021	458
Figure 16.5. Total Economic Losses Annually Due to Natural Disasters in Viet Nam, 2011–2021 (Billion D)	459

Figure 16.6. Climate Change and Food Security Risks in Viet Nam, 2020–2050	461
Figure 16.7. Organisational System in Response to Climate Change in Viet Nam	464
Figure 16.8. Current Framework of Viet Nam's Climate Change Policies and Actions	466
Figure 16.9. Summary of the National Strategy for Climate Change Adaptation to 2050	468
Figure 16.10. Development of Total Green Credit in the Period 2021-2022 (unit: Billions D).	474
Figure 16.11. Viet Nam's Green Credit Balance from 2017 to 2021	474
Figure 16.12. Climate and Disaster Risk Technology Risk Financing Cooperation Mechanisms	488
Figure 17.1. Policy and Legal Framework for the Development of the Circular Economy in Viet Nam	505
Figure 17.2. Framework for a Circular Economy for the ASEAN Economic Community	522
Figure 18.1. Monthly per Capita Income by Region, 2008–2020 (D'000)	558
Figure 18.2. Labour Force Shift from Agriculture due to Urbanisation	564
Figure 18.3. Gross School Enrolment Rate by Sex, 2002–2020 (%)	565
Figure 18.4. Employment Status by Sex, 2002–2021 (%)	566
Figure 18.5. Socio-Economic Structure around Those Left behind	569

Figure 19.1. Expected Changes in the Number of Those Ages 60 Years and Older with Depressive Symptoms, 2020–2045	586
Figure 19.2. Expected Changes in the Number of Those Ages 60 Years and Older with Cognitive Impairments, 2020–2045	587
Figure 19.3. Expected Changes in the Number of Those Ages 60 Years and Older with Long-Term Care Needs, 2020–2045	590



Executive Summary

by Fusanori Iwasaki, Yasuhiro Yamada, and Fukunari Kimura

During the 13th National Party Congress, held from January to February 2021, a resolution was adopted outlining Viet Nam's ambitious goals. By 2025, marking the 50th anniversary of the liberation of the South and national reunification, Viet Nam aspires to leave the ranks of lower-middle-income countries. By 2030, coinciding with the 100th anniversary of the Party's founding, the aim is to become a developing nation with a modern industrial base amongst the upper-middle-income countries. Ultimately, by 2045, commemorating the 100th anniversary of Viet Nam's independence, the goal is to achieve the status of a developed, industrialised nation with a high income. This marks the first time Viet Nam has presented such a detailed medium-to-long-term roadmap, reflecting the nation's growing confidence in its development trajectory.

This research project, conducted in commemoration of the 50th anniversary of diplomatic relations between Japan and Viet Nam, examines Viet Nam's journey to date, emphasising the advantages gained throughout this process. It offers pragmatic policy recommendations to realise Viet Nam's ambitious aspirations. Additionally, it explores avenues for collaboration between Japan and Viet Nam as they work towards the year 2045. Digital transformation is recognised as a key factor in achieving further economic development, escaping the 'middle-income trap,' and addressing pressing socio-economic issues, including the challenges posed by an ageing society, inclusive growth, and the transition to a circular economy.

The publication comprises 21 chapters organised into four distinct parts, which are as follows: 1) Historical Analysis and Viet Nam's development model (Chapters 1–7); 2) Viet Nam's Growth-Driving Industries Towards 2045 (Chapters 8–14); 3) Sustainability and Social Challenges (Chapters 15–19); and 4) Conclusions and Policy Recommendations (Chapters 20 and 21). The subsequent sections provide concise summaries of each chapter.

Chapter 1 (by Motoo Furuta) reviews what the year 2045 means for Viet Nam from a historical perspective. Following its hard-fought struggle for independence, Viet Nam found itself embroiled in a prolonged period of conflict, a turbulent chapter that endured for 46 years. It was not until 1991 that the nation could finally cast off the shackles of war and envision a brighter future. Viet Nam patiently waited until 2037 for the scales to tip, when the era of peace and prosperity would surpass the era of turmoil that had gripped the country since independence. The year 2045 emerges as a poignant milestone, marking the moment when, after decades of strife, peace and progress would ascend as the guiding forces in the journey of independent Viet Nam. Moreover, the unification of Viet Nam held profound implications, extending beyond its borders to the Southeast Asian region. This unification played a pivotal role in hastening the dissolution of the Cold War structure in the area. It paved the way for Viet Nam's accession to ASEAN in 1995, an event of paramount importance in achieving the realisation of the 10 ASEAN Member States. This achievement was only made possible

following Viet Nam's triumph in the Viet Nam War,¹ bringing about the reunification of the North and the South. The protracted era of war cast long shadows, leaving lasting impacts on Viet Nam, not least the tremendous sacrifices borne by the Vietnamese people. In times of conflict, when the uncertainty of tomorrow looms, people's perspectives often narrow. Nevertheless, it is crucial to underscore that the foundation for Viet Nam's remarkable post-1991 development, which has allowed the nation to nurture the 'big dream' of becoming a developed country by 2045, was laid during those tumultuous years of war.

Chapter 2 (by Masaya Shiraishi) discusses Viet Nam's foreign policy after the Doi Moi reform. In late 1991, two pivotal events dramatically changed the East Asian regional landscape surrounding Viet Nam: the Cambodian peace agreement and the Sino-Viet Nam rapprochement. Concurrently, the forces of globalisation and regionalisation gained momentum on a global scale. In response to these shifting dynamics, Viet Nam adopted a comprehensive foreign policy approach. Throughout the 1990s, Viet Nam experienced a period of relatively stable economic growth, buoyed by several favourable external conditions. The turning point arrived in July 2000 with the signing of the US-Viet Nam Trade Agreement, which promptly elevated the United States to the forefront as Viet Nam's primary export destination. Viet Nam's accession to the WTO in January 2007 provided an opportunity to further expand its foreign trade and to increasingly diversify foreign investment in Viet Nam. It also provided an opportunity to readjust Viet Nam's various domestic institutions and legislation. As a result of these reforms, Viet Nam sustained its socio-economic development, achieving significant milestones in its economic growth. GDP per capita exceeded US\$1,000 in 2008 and soared past US\$2,000 in 2014, effectively propelling the nation out of its low-income status classification. Nonetheless, Viet Nam now encounters a fresh challenge: navigating the middle-income trap and charting a course towards higher economic development. There exist numerous avenues through which Japan can make meaningful contributions to assist Viet Nam in this endeavour. Japan's Official Development Assistance (ODA) to Viet Nam has reached its 30th anniversary, making Japan the largest ODA donor to Viet Nam. The total amount offered by Japan as ODA to Viet Nam exceeds 3 trillion yen, including yen loans, grant aid, and technical cooperation.

Chapter 3 (by Motonori Tsuno) offers a comprehensive assessment of Japan's ODA and its pivotal role in Viet Nam's growth trajectory. This chapter explores how Japan's ODA has laid the foundation for friendly relations and a strategic partnership between the two countries. It reflects on the specific accomplishments and challenges, shedding light on the path forward for Japan-Viet Nam cooperation in this new era. Japan's ODA to Viet Nam is lauded for its exemplary approach, characterised by several key attributes. These include fostering extensive partnerships encompassing Japanese corporations, local authorities, universities, and non-governmental organisations (NGOs). Additionally, it embraces a holistic approach, seamlessly integrating both tangible and intangible elements of support. Japan's assistance encompasses strategic development planning and the execution of individual projects. Furthermore, it thrives on cooperation that is driven by local initiatives, fostering a sense of ownership and participation within the Vietnamese community. Through the infrastructure development, human resource development and legislation, Japan's ODA played a crucial role in strengthening relations between the two countries and addressing issues such as poverty reduction and economic growth. The future of Japan-Viet Nam cooperation

¹ The meaning of the term 'Viet Nam War' used in related chapters of this study follows this interpretation.

includes enhancing quality infrastructure, triangular cooperation, and human resources development, making Viet Nam a strategic partner in the Free and Open Indo-Pacific.

Chapter 4 (by Vo Tri Thanh) reflects on Viet Nam's transition from a planned economy to a socialist-oriented market economy, highlighting important reforms since the Doi Moi policy. The second section addresses two fundamental questions: firstly, it explores the valuable lessons that can be gleaned from the Doi Moi process. Secondly, it delves into the question of whether a distinct 'Viet Nam model' truly exists. The concluding section examines the evolving circumstances that Viet Nam now confronts and the hurdles it must surmount to advance further. Several necessary policies are also recommended. Despite remarkable achievements such as transitioning from a poor to a middle-income country and becoming one of the most open economies globally, there are still challenges. The risk of falling into the 'middle-income trap' remains high, and the country has faced environmental consequences due to its growth. To ensure success, lessons must be learned from past experiences, emphasising political will, administrative reforms, and international integration. The chapter also explores the concept of the Vietnamese Model of a socialist-oriented market economy, recognising healthy competition and the central role of the state economy. Looking ahead, Viet Nam aims to become a high middle-income economy by 2030 and a developed country by 2045. Key policy actions include strengthening public capacity, improving the legal framework, accelerating structural reforms, enhancing human resources development, and strengthening the National Innovation System to overcome the 'middle-income trap' and achieve its development goals. Basically, Viet Nam is required to continue Doi Moi.

Chapter 5 (by Ryo Ikebe) provides an in-depth examination of the evolution of foreign direct investment (FDI) in Viet Nam, tracing its trajectory since the 1980s. Viet Nam proactively sought to attract FDI to bridge its capital and technology gaps, yielding tangible benefits such as job creation and the expansion of exports. FDI led to the transformation of outdated economic structures, particularly in state-owned enterprises. The expansion of FDI was driven by Viet Nam's diplomacy and free trade agreements, including WTO membership in 2007 and participation in various FTAs. By the end of 2020, Viet Nam had attracted US\$176.9 billion in FDI, positioning it as an attractive investment destination in Southeast Asia. The chapter highlights how different phases of FDI development have shaped Viet Nam's economy, creating job opportunities and bolstering its export-driven industrialisation. It underscores the need to further transition to technology- and capital-intensive industries and strengthen supporting industries to ensure sustainable growth.

Chapter 6 (by Tran Van Tho) discusses the concept of the middle-income trap (MIT) and its implications for Viet Nam. The MIT refers to countries that reach a certain level of per capita income but struggle to progress further. Viet Nam



entered the lower-middle-income category in 2008, with a GNI per capita of US\$3,560 in 2021. The discussion highlights the importance of transitioning from input-driven growth to total factor productivity (TFP)-led growth and the role of institutional reforms in sustaining growth. The Lewis turning point is also mentioned, emphasising the need for increased productivity to match higher wages. To escape the MIT and achieve long-term growth, Viet Nam must focus on policies that promote industrialisation, support SMEs, improve factor markets, enhance education and training, and invest in research and development (R&D).

Chapter 7 (by Nguyen Anh Duong and Ha Thi Thanh Doan) discusses potential pathways for economic integration in East Asia until 2045 and the importance of such integration for Viet Nam. The chapter reviews Viet Nam's economic integration milestones, which include joining ASEAN, signing a bilateral trade agreement with the United States, joining the WTO, and implementing the CPTPP and EVFTA. Viet Nam's focus on ASEAN is emphasised, as it has contributed to supply-chain-led investments from countries like Japan and the Republic of Korea, and from the European Union. The chapter highlights the importance of deepening structural reforms, aligning trade and investment policies, promoting ASEAN centrality, and supporting multilateralism as key policy recommendations for Viet Nam to navigate East Asian economic integration until 2045.

Chapter 8 (by Fukunari Kimura and Nguyen Anh Duong) provides an overview of Viet Nam's industrial development. Since 2016, Viet Nam's long-term economic growth has been slowing, due primarily to the depletion of conventional growth drivers. The traditional growth model, which heavily leaned on the expansion of production factors like land, labour, and capital, had virtually reached its limits. To propel economic growth, Viet Nam has placed a strong emphasis on innovation and digital transformation. The development of the digital economy is anticipated to drive income growth, with the ultimate goal of achieving high-income status by 2045. Viet Nam's industrialisation policy shifted toward the manufacturing sector in the early 2000s, with an emphasis on protection strategies for various industries. However, the country's industrial policy faced challenges in adapting to changes in the Fourth Industrial Revolution (4IR) and digitalisation trends. As the drivers of growth towards 2045, digital transformation, Industry 4.0, and innovation are emerging trends. Artificial intelligence (AI) and the Internet of Things (IoT) are playing a crucial role in upgrading the manufacturing sector. The IoT market in Viet Nam is growing, and the adoption of AI and automation can enhance manufacturing efficiency. The government's Resolution on 4IR in 2019 sets a vision for Viet Nam to become a leader in smart manufacturing and innovation in Asia by 2045. To achieve a digital economy, Viet Nam must address various challenges, including improving coordination amongst government agencies, revising technical standards, enacting fundamental laws to support digital transformation, and fostering digital-savvy human resources.

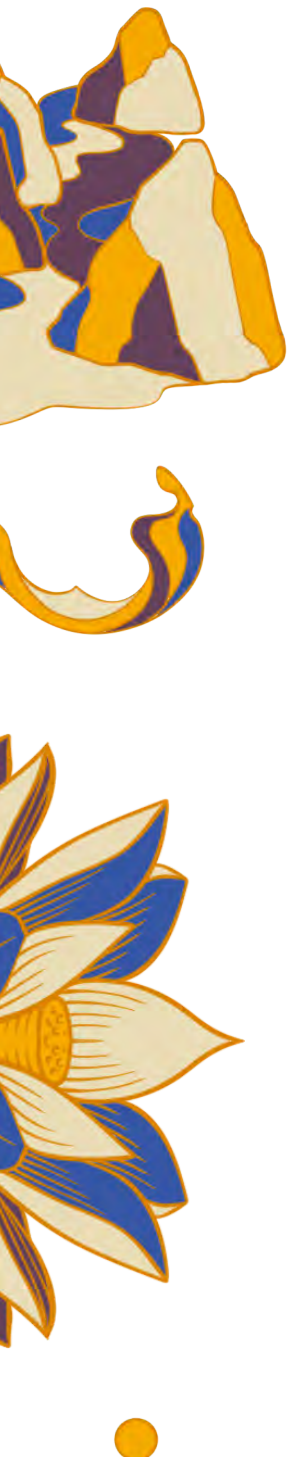
Chapter 9 (by Seio Nakajima, Hideo Kobayashi and Yasushi Ueki) discusses the automobile industry in Viet Nam. In the first nine months of 2022, Viet Nam's automobile sales reached 296,403, a 56.9% increase compared to the same period in 2021. This short-term trend indicates a resurgence of the Vietnamese automobile industry. However, long-term challenges exist, such as the relatively small domestic market. The country's automobile industry has a history dating back to the early 1990s, with numerous joint ventures between Vietnamese and international companies. The industry has grown rapidly, with multiple manufacturers and significant capacity. The government's policies aim to promote automobile production, but they also include protectionist measures. The key to fostering the industry is the development of the domestic auto parts sector, with a focus on improving

technological capabilities, expanding markets, utilising the two-wheel parts industry, and advancing the parts supply system for electric vehicles. Viet Nam's role in the ASEAN automobile and auto parts industries is growing, particularly in wire harness production. Two development approaches are considered: increasing finished vehicle production and promoting auto parts exports. Viet Nam should focus on vehicle electrification, open trade, digitalisation, and capability building for local suppliers. Recommendations are made for cooperation between Viet Nam and Japan in various aspects of automobile industry development, including human resource development, supply chain collaboration, and infrastructure development for sustainable mobility systems.

Chapter 10 (by Nguyen Thi Xuan Thuy) illustrates the development of the electronics industry. The electronics industry has grown substantially in Viet Nam, becoming a crucial sector in the country's economy, and it remains resilient despite the challenges posed by the COVID-19 pandemic. Over the last 3 decades, the industry has rapidly developed, making Viet Nam one of the world's top electronics exporters. The fourth industrial revolution has been a major driver of change in this sector, combining manufacturing with technologies like IoT, big data, AI, and more. Key trends include IoT for predictive maintenance and smart manufacturing, big data-driven technology, AI software and platforms, advanced materials, and restructured supply chains. While the electronics industry depends largely on foreign-invested enterprises (FDIs), it has made significant contributions to employment, GDP, and exports in Viet Nam. This sector is a priority in the country's industrial development strategies and benefits from investment incentives. An ecosystem conducive to fostering such investment projects comprises essential elements. These include the presence of a skilled and qualified workforce, a network of capable domestic suppliers who can replace current ones, an efficient logistics and financial infrastructure, access to technology partners, and more. These factors are presently not in favour of Viet Nam, constituting hurdles that the nation must address in its quest to catch up with others and attain high-income status.

Chapter 11 (by Nguyen Anh Duong) discusses the digital transformation in Viet Nam. Viet Nam is actively seeking new drivers for future growth to achieve its goal of becoming a high-income country by 2045, with the digital economy being a prominent emerging driver. The government has taken significant measures to bolster digital transformation, strengthen digital institutions, and facilitate the growth of various digital sectors, such as sharing and platform economies, e-commerce, e-tourism, and the gig economy. The e-commerce market in Viet Nam has experienced substantial growth, with an increasing number of online buyers and a rising share of e-commerce in total retail sales. However, there are challenges, including the need for an improved legal framework, enhanced coordination amongst government agencies, and a focus on human resource development for digital transformation.

The textile and garment industry in Viet Nam has a broad economic scope encompassing various sub-sectors. Chapter 12 (by Kenta Goto) focuses on assessing Viet Nam's position in the global textile and garment value chain. The industry experienced significant growth since the early 1990s, with a pivotal moment being the Bilateral Trade Agreement with the United States (US) in 2001, leading to a remarkable export boom. The US remains the largest export destination for Vietnamese garments. However, the textile sector lags behind garments, mainly importing yarns and fabrics. Viet Nam's garment value chain closely resembles that of other garment-exporting countries, such as Bangladesh or Cambodia. It predominantly centres around the assembly process, encompassing cutting, making, and trimming (CMT) functions. For Japanese companies managing production for



their markets, the imperative lies in enhancing competitiveness and advancing the CMT process, with technology transfer already underway. Yet, the critical dimensions of branding and design fall within the purview of Vietnamese firms. At present, Viet Nam's textile and garment industry stands at a pivotal juncture. The sector, which has long been a driving force behind industrialisation in Viet Nam, confronts challenges where competitiveness can no longer rely solely on low labour costs. The foremost challenge entails propelling further upgrades in both processes and products, akin to what has been achieved in Global Value Chains. The industry includes a range of companies, from large firms with modern machinery to smaller, local-market-focused enterprises. Viet Nam's garment sector primarily focuses on the assembly process, necessitating competitiveness improvements. Sustainability and compliance with global standards are vital for sustainable growth in the industry. The future growth potential depends on embracing good social and environmental practices to maintain competitiveness.

Chapter 13 (by Mai Fujita) discusses the supporting industries. Supporting industries in Viet Nam are those that supply inputs required for final product manufacturing, and their development is vital for industrialisation through foreign investment. Viet Nam has introduced several policies to promote supporting industries, beginning in 2007. These policies defined the scope of supporting industries and set targets for their development. The government's emphasis on supporting industries grew in the 2010s, with a focus on boosting the effectiveness of foreign direct investment (FDI). However, the local procurement ratio of Japanese companies in Viet Nam is still lower than in some other countries. Many supporting industry enterprises are engaged in exporting, with diversified customer portfolios. These firms often serve multiple industries, including those with different technological characteristics. The development of supporting industries is expected to continue and grow in the coming years, given recent developments like the US–China tensions and supply chain restructuring during the COVID-19 pandemic.

Chapter 14 (by Shozo Sakata) examines the progress achieved in Viet Nam's agricultural sector since the initiation of Doi Moi. It also explores potential areas for collaboration through Japanese ODA and private companies in Viet Nam. Initially, policies were implemented to liberalise the production and sale of agricultural products, resulting in increased land productivity. A significant transformation occurred in the 2000s, when Viet Nam shifted from subsistence farming to commercial agricultural production. Coupled with favourable global market conditions, this transition led to rapid increases in the production of crops such as coffee, tea, rubber, pepper, and cashew nuts. Since the issuance of Resolution 26 by the Party Central Committee in 2008, the expansion of land plots, private sector engagement, the promotion of 'high-tech' agricultural models, and

the modernisation of food value chains have emerged as cornerstones of agricultural policy in Viet Nam. Safety and quality standards improved, contributing to an increase in the production of high value-added agricultural products, and exports also increased. Future challenges include meeting stringent hygiene and quality requirements of export markets, adopting modern and efficient agricultural practices, addressing labour shortages due to the ageing population, and focusing on environmental protection in agriculture.

Chapter 15 (by Shigeru Kimura, Alloysius Joko Purwanto, Han Phoumin) discusses Viet Nam's energy policy. To achieve its goal of becoming a high-income country by 2045 and attaining full carbon neutrality by 2050 or 2060, Viet Nam recognises the importance of sustainable energy sources, including renewables and innovative technologies such as hydrogen and carbon capture utilisation and storage (CCUS). This chapter projects the Total Final Energy Consumption (TFEC) to increase significantly, driven by a 5.2% annual GDP growth. Notably, the energy intensity per GDP is expected to improve, indicating a more efficient energy consumption pattern. Emphasis is placed on reducing energy import dependency through energy efficiency and conservation (EEC), increasing the use of renewable energy, and transitioning from coal to natural gas for power generation. The promotion of renewables, grid interconnections, hydrogen production from coal with CCUS, and CO₂ storage are also recommended strategies for Viet Nam's sustainable energy development.

Chapter 16 (by Venkatachalam Anbumozhi, Lai Van Manh, Nguyen Tuan Anh, and Phan Mai Linh) provides an insightful exploration of climate change and disaster risk reduction in Viet Nam. Viet Nam is experiencing the impacts of climate change, with rising temperatures and altered rainfall patterns affecting agriculture, water resources, and more. Vulnerable coastal and delta regions face threats from sea-level rises. The country has incurred significant economic losses due to climate change, impacting sectors like agriculture, transport, and fisheries, while also disrupting global supply chains and raising costs for businesses. To address these challenges, Viet Nam has pledged to achieve net-zero greenhouse gas emissions by 2050, halt deforestation by 2030, and reduce methane emissions. However, challenges remain, including the need for stronger climate adaptation policies, private sector investments, state-owned enterprise reform, and financial sector resilience. Cooperation with Japan, which has experience in climate adaptation, is suggested. The development of sectoral roadmaps for climate resilience is recommended, covering areas like agriculture, infrastructure, industry, coastal regions, and smart cities.

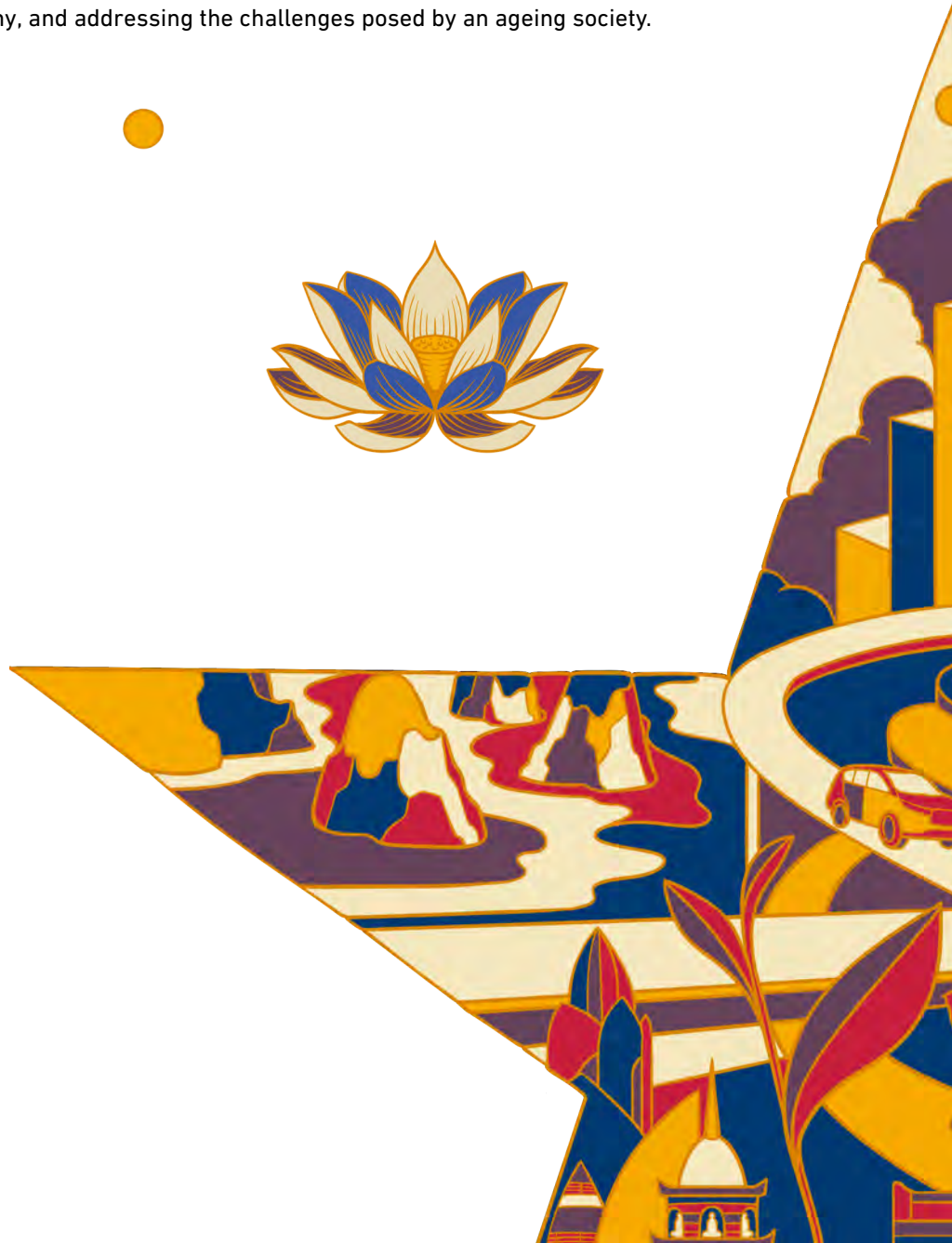
Chapter 17 (by Lai Van Manh, Nguyen, and Pham Anh Huyen) discusses the circular economy in Viet Nam. Viet Nam's Law on Environmental Protection 2020 defines a circular economy as a model aimed at reducing raw materials, extending product life, reducing waste generation, and minimising environmental impacts. To implement a circular economy, measures include refusing harmful products, repair, reuse, remanufacture, and reducing resource consumption. The public sector and stakeholders across industries play vital roles in creating a circular ecosystem. Digital technologies like mobile tech, big data analytics, and 3D printing can promote circular economy practices. Viet Nam's policies and legal framework for the circular economy consist of government policies, strategies, and legal provisions. Several initiatives and models exist, but some face sustainability challenges. Recommendations for promoting the circular economy in Viet Nam include establishing a comprehensive legal system, creating a national action plan involving businesses and all stakeholders, and fostering collaboration with Japan for sharing experiences and best practices.

Chapter 18 (by Emi Kojin) delves into the concept of inclusive growth within the context of Viet Nam. As Viet Nam aspires to attain high-income status with social stability by 2045, inclusive growth is key to achieving this ambition. It has already been substantiated that equitable income distribution is a fundamental prerequisite for sustainable economic advancement. Examining the Gini coefficient at the national level, Viet Nam's economic growth thus far might seem to reflect growth without an exacerbation of inequality. However, the truth lies in the fact that various forms of inequality exist beyond the purview of the Gini coefficient, and these disparities appear to be on the rise in Viet Nam. Regional disparities are evident, particularly in rural and ethnic minority areas. The reduction in rural–urban inequality has underscored the growing disparities within rural regions. Access to non-agricultural income and agricultural land play a significant role in intra-rural inequality. Ethnic minorities, migrant workers, women, people with disabilities, and smallholder farmers are particularly vulnerable and face economic hardships. This chapter takes a dual perspective on Viet Nam's economic growth, scrutinising it both at the regional and individual/household levels, to unveil disparities within each context. Subsequently, socio-economic structural issues are discussed that underpin these inequalities at each level.

Chapter 19 (by Yuka Minagawa, Nguyen Cong Vu, Yoichi Hiruma, and Yasuhiko Saito) discusses the ageing society. Viet Nam's population has grown rapidly, from 27.4 million in 1954 to 97.3 million in 2020. High fertility rates contributed to this growth, but fertility control policies have reduced the total fertility rate. As a result, the rate of population growth slows down and Viet Nam's population is projected to reach about 109.0 million by 2045. The country has also experienced increased life expectancy, with a shift from infectious to non-infectious diseases as leading causes of death. These demographic changes have led to an ageing population. The proportion of the working-age population in the total population peaked at 70.5% in 2013, and had fallen to 68.9% by 2020. In contrast, the older population, defined as individuals aged 65 years and above, expanded from 4.9% of the population in 1975 to 7.9% in 2020. Projections indicate that this older demographic is anticipated to comprise 18.3% of the population by 2045. Furthermore, the share of the older population is poised to surge from 7% to 14% within a relatively short span of 18 years, from 2016 to 2034. This growth rate surpasses the corresponding time frames in countries like Japan (24 years, 1970–1994), China (23 years, 2002–2025), and Thailand (20 years, 2002–2022). Viet Nam has revised retirement ages to accommodate improved longevity. Mental health care and care needs are becoming significant issues. Recommendations include health sector reforms, addressing mental health challenges, considering long-term care insurance, and strengthening international cooperation.

Chapter 20 (by Fusanori Iwasaki, Keita Oikawa, and Yasuhiro Yamada) discusses the future of Japan–Viet Nam industrial cooperation. Japan–Viet Nam relations have seen substantial progress, particularly in summit diplomacy. High-level visits and joint statements have outlined cooperation in various areas including post-COVID-19 economic revival, supply chain resilience, digital transformation, diversification of production bases, and supporting industries. In the digital era, the industrial cooperation direction includes dramatic technological innovation through digital technologies, resilient supply chains, and the development of new industrial human resources. The focus extends to establishing infrastructure for a digital society, free movement of data, and addressing sustainability and human rights considerations in supply chains. The automobile and supporting industries will be a core theme of cooperation, with potential for further growth and economic development in Viet Nam.

Chapter 21 (by Keita Oikawa) provides the policy recommendations. Viet Nam has sustained high economic growth rates since the early 1990s, driven by economic reforms and external openness. Annual per capita real GNI growth has consistently been around 5.0% from 1995 to 2019, significantly outpacing advanced economies. To achieve high-income status by 2045, annual growth must rise to 5.4%, requiring productivity increases and industrial upgrading. The economy needs to transition from input-driven growth to innovation-driven growth, emphasising human capital, labour and capital market efficiency, competition, and technology adoption. Digital technologies play a pivotal role in this transition. Key industries like electronics, advanced agriculture, textiles, DX-related sectors, automobiles, healthcare, and energy are expected to contribute to economic growth and a circular economy. Engaging in collaboration with Japan, especially in the realm of Digital Transformation (DX), offers significant potential for advancing towards the goal of achieving high-income country status by 2045. Additionally, it is advisable to pursue cooperative initiatives in various sectors, including the automotive industry, advanced agriculture, climate change mitigation, the circular economy, and addressing the challenges posed by an ageing society.



Part I:
**Historical View and
Advantages of Viet Nam**







Chapter 1

2045 in the Course of an Independent Viet Nam

Motoo Furuta



Viet Nam aims to become a developed country by 2045, the 100th anniversary of its independence. After independence, Viet Nam was in a period of war for a long time. The Doi Moi proposal in 1986 was to put an end to the era of war, but it was only in 1991 that Viet Nam was finally released from the actual war. After independence, the era of war continued for 46 years. Independent Viet Nam must wait until 2037 for the era of peace and development to be longer than the era of war. 2045 will be the time when peace and development finally become dominant in the course of an independent Viet Nam.

So what did the long war era mean? When many people in the world thought that the basic task of the modern history of Asia, including Viet Nam, or the Third World was to resist imperialist aggression and win national autonomy and independence, the era of war, the Indochina War against the French, and the Viet Nam War against the United States (US) could be evaluated as typical examples of national liberation movements. However, now, with the economic development of Asian countries, many people have begun to think that the basic problem of modern history is economic development. From this point of view, modern Viet Nam, which was developed under the Doi Moi reforms, deserves attention, but the Viet Nam War is a side stream that has deviated from the main stream of historical development. I think this kind of summary of history is extremely one-sided. I believe that Viet Nam's achievement of North-South unification through the era of war had great significance for Viet Nam to achieve rapid development in the subsequent era of peace and development. The unification of Viet Nam helped not only Viet Nam itself but the entire Southeast Asian region to break out of the Cold War structure early. The realisation of Viet Nam's accession to the Association of Southeast Asian Nations (ASEAN) and the realisation of ASEAN10 were events that were realised because of the existence of a unified Viet Nam.

From this perspective, in this chapter, after surveying the era of war in Viet Nam briefly (Furuta, 1991, 1996, 2002, 2018; War Review Steering Committee, 2002), I would like to explore the relationship between the Viet Nam War and the economic development of Southeast Asia, and the significance of the existence of a unified Viet Nam in the era of economic development (Furuta, 2012).

1. The Era of War

1.1. The Indochina War

When the Democratic Republic of Viet Nam declared its independence in September 1945, France, the former colonial power, was not yet ready to recognise it. After World War II, when France began to return to its colonial rule, wars broke out between the independent forces of the Democratic Republic of Viet Nam, Cambodia, and Laos. This was the Indochina War, known in Viet Nam as the Anti-French Resistance War. Amongst the wars of independence that took place in Southeast Asia after the end of World War II, the Indochina War had the same characteristics as the Indonesian War of Independence. However, after the establishment of the People's Republic of China (hereafter, China), the Indochina War was incorporated into the confrontational structure of the Cold War. Whilst the US supported France from an anti-communist angle, the Democratic Republic of Viet Nam began to receive support from China and the Soviet Union. The Indochina War was prolonged, and only after the Cold War tensions between the East and West eased in 1954 was a ceasefire finally reached through the Geneva Accords. The Battle of Dien Bien Phu in 1954 was a battle fought over which side would take the initiative in this ceasefire, and the surrender of the French army to the army of the Democratic Republic of Viet Nam here marked the end of French colonial rule. On the battlefield, the Democratic Republic of Viet Nam had the upper hand, but at the Geneva Conference, which was a major power-led peace conference, although Viet Nam, Cambodia, and Laos were recognised for their independence, China and the Soviet Union did not want the war to be prolonged or the US to intervene. Under pressure from the Soviet Union and China, the 17th parallel, which roughly bisects Viet Nam into north and south, was defined as the Military Demarcation Line. Despite the promise of unification elections two years later, Viet Nam was temporarily divided into North and South.

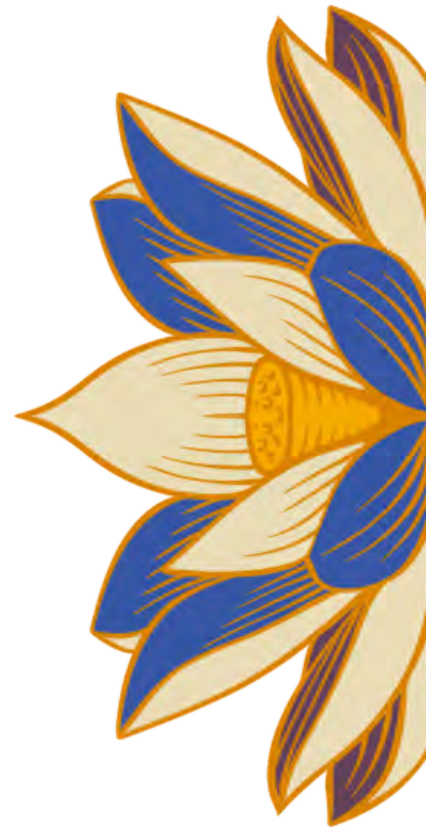


1.2. The Viet Nam War

The US, which had supported France since the end of the Indochina War, regarded the Viet Nam Military Demarcation Line as a line that demarcated the 'territorial boundaries' of the East and West sides that confronted each other in the Cold War. The unification of Viet Nam under communist-led northern leadership was unacceptable to the United States as it would mean the loss of part of its 'free world'. The leaders of the United States at the time only saw Viet Nam in the context of the Cold War. If China's influence were to be prevented from spreading into Southeast Asia, the presence of a unified and powerful Viet Nam would have been the most effective bulwark. Such a calm geopolitical judgment was not possible for the US leaders at the time.

The Viet Nam War was a war fought between two sides: one was the United States and the anti-communist pro-American regime in the South (initially the State of Viet Nam, then the Republic of Viet Nam after 1955), and the other side was the Democratic Republic of Viet Nam (North) and the Southern forces that tried to overthrow the pro-American regime and achieve North-South unification.

In the early stage, the war was basically fought between the South Viet Nam National Liberation Front (NLF) with the support of the North, and the Ngo Dinh Diem government that ruled South Viet Nam with the support of the US. The Diem government, which skilfully eliminated pro-French factions, seemed to have achieved stable rule for a time. The Viet Nam Workers Party (VWP, the ruling party in the North, which also had a party organisation in the South), which expected the implementation of the unified North-South elections promised in the Geneva Accords, was refraining from launching an armed struggle in the South. In 1959, the VWP, which faced the threat of the collapse of the party organisation in the South due to the suppression of the Diem government, allowed the resumption of the armed struggle in the South. This played a role in spurting a backlash against the Diem regime, and a series of uprisings against the regime spread in the rural areas. In the midst of these movements, the NLF was formed in December 1960 under the leadership of the VWP, which launched an armed struggle in the South, and also wanted to avoid full-scale intervention by the US military. According to the VWP, during the Korean War, North Korean troops openly crossed the Military Demarcation line at the 38th Parallel and entered the South, leading to US military intervention. The VWP, therefore, sought to hunt down the Diem government within the South as much as possible, rather than openly sending the North's regular forces southwards.



What was formed there was the NLF, which emphasised that it was a southern organisation. After the birth of the NLF, the weakness of the Diem administration gradually became apparent, and the Kennedy administration in the US dispatched a large number of military advisors. However, the Diem government became more and more authoritarian, and in 1963 there was a large-scale anti-government movement amongst Buddhists in the cities. The military in the southern government, feeling a sense of crisis about the situation, staged a coup d'état in November 1963 to overthrow the Diem government. In response, within the VPW, hardliners led by the First Secretary of the Party, Le Duan, emerged, saying that this opportunity should be used to corner the South's regime. At the Central Committee meeting held in December 1963, it was decided that the strategy up to that point would be changed and that the combat units of the People's Army of North Viet Nam would be sent to the southern battlefields.

Faced with such a situation, the Johnson administration of the US decided that in order to maintain the anti-communist regime in South Viet Nam, the United States had no choice but to put the US forces at the forefront, and that the North, which was supporting the rebellion in the South, had to be defeated. After the Gulf of Tonkin Incident in 1964, regular bombing of North Viet Nam began in February 1965, and in March of the same year, the US ground combat troops were dispatched to South Viet Nam. In response, the North also sent a large number of its People's Army combat units to the battlefields of the South, and the Viet Nam War became the largest limited war during the Cold War. The limited war in which the US military directly participated lasted from 1965 to 1973. At its peak, more than 500,000 US troops were dispatched, resulting in heavy casualties for North Viet Nam and the South's NLF, with 1.2 million killed in action and 3 million casualties in North Viet Nam and South Viet Nam, including civilians.

However, this did not mean that the war had unfolded as the United States hoped. During the Korean War, the US ground forces crossed the Military Demarcation Line and advanced northwards, inviting the



intervention of the Chinese military, which caused many casualties. In the case of the Viet Nam War, instead of taking the option of invading North Viet Nam with land forces, the US limited the grand ground battle to the south. The US military was good at battles in which their superiority in firepower and mobility was used to push the front line facing the enemy towards the enemy's line, but because the ground battle was limited to the South, such a battle was not possible. Instead, they were forced to fight guerrillas without a frontline. Here, the US military adopted an 'attrition strategy' that inflicted casualties on the enemy in excess of its manpower supply capacity. However, the North sent troops from the North to the South to make up for the heavy casualties, and the US military strategy did not work effectively.

The mass attack on cities in South Viet Nam by the People's Army of the North and the NLF during the Lunar New Year in 1968 (the Tet Offensive) strongly impressed the US public with the feeling that the war was not progressing well. The number of US casualties in the Viet Nam War was just over 58,000, which was far less than the casualties on the Vietnamese side. Considering that it was a limited war in which only a limited amount of national power was invested, it was an 'unbearable sacrifice' for US society. The Tet Offensive sparked anti-war movements domestically and abroad, and the Nixon administration, which came into power in 1969, was forced to reduce the involvement of the country's military in the war. Taking advantage of the large casualties in the North and the NLF in the adventurous city attack known as the Tet Offensive, the Nixon administration expanded the war to neighbouring Cambodia in order to maintain the South's anti-communist and pro-American regime.

However, this expansion of the war into Cambodia did not produce the results the United States hoped. Conversely, in Cambodia, where pro-American forces had a weak foundation, anti-American forces expanded into areas controlled by them, and this had an impact on the battlefields of South Viet Nam. The Spring Offensive of 1972 allowed the North Viet Nam People's Army and the NLF to reverse the post-1968 deficit. As the war situation in South Viet Nam reached a stalemate, the Paris Peace Accords were signed in January 1973, and the US combat units were withdrawn from Viet Nam.

Fighting continued in South Viet Nam. From 1971, the US tried to keep North Viet Nam in check and maintain the anti-communist regime in South Viet Nam by improving relations with China. However, it was impossible to maintain the South Viet Nam regime



without US military involvement. The US public's lack of support for the Viet Nam War progressed beyond the expectations of the administration. On 30 April 1975, the Republic of Viet Nam collapsed before the military offensive of the North and the NFL, ending the Viet Nam War. In the following year, in 1976, the Socialist Republic of Viet Nam was established with the unification of the North and the South.

1.3. War after the Viet Nam War

When the Viet Nam War ended, many in Viet Nam and around the world thought it would bring peace to Viet Nam, but that hope did not materialise. The war around Viet Nam continued for 16 years.

The most basic factor behind the post-Viet Nam War conflict was that China and the Pol Pot faction of Cambodia did not want the influence of a unified Viet Nam to grow in the Indochina Peninsula. Pol Pot's attack on Viet Nam, which had been taking place since around the end of the Viet Nam War, gradually intensified. In 1977, it reached the entire border area between Viet Nam and Cambodia. When Viet Nam countered, in late 1977, the Pol Pot faction, Democratic Cambodia, announced that it would sever diplomatic relations with Viet Nam, and the conflict between the two countries became public. In 1978, China clarified its stance of supporting the Pol Pot faction, and the confrontation between China and Viet Nam over the ethnic Chinese in Viet Nam also became public.

Sensing the security crisis that the newly unified Viet Nam would be attacked from both sides by China and Cambodia, in January 1979, Viet Nam supported anti-Pol Pot faction Cambodian forces by transferring its military to Cambodia and driving the Pol Pot faction from Phnom Penh to the border with Thailand. In February 1979, China invaded Vietnamese territory along the entire Sino-Vietnamese border under the guise of 'punishing' Viet Nam. China announced its withdrawal from Viet Nam in about a month, but military clashes continued in the Sino-Viet Nam border area until 1991. In Cambodia as well, military clashes continued between the stationed Vietnamese forces and anti-Vietnamese forces led by the Pol Pot faction. Viet Nam announced in 1989 that it would withdraw its forces from Cambodia, but it is said that Viet Nam's systematic military involvement continued until 1991.



2. The Significance of the Era of War

For 46 years during its era of war, Viet Nam was compelled to engage in a prolonged armed struggle to secure its independence as a unified nation. What is the significance of this era of war, especially the Viet Nam War, in world history and for Viet Nam? It is relatively easy to understand that it was the war in which the US was defeated, and the Viet Nam War was the war in which Viet Nam achieved its independence and unification. In addition to this, the role that the Viet Nam War played in shaping modern democracy is also easy to understand. This war, in which the small country of Viet Nam repelled the military intervention of the superpower, the US, and realised its independence and unification by linking with various social movements, including the anti-Viet Nam War movement, which spread around the world during the same period. This situation pushed the recognition of the rights of the socially 'weak' in various dimensions, including ethnicity, minorities, and women. If we call this democracy that is conscious of the 'weak' a modern democracy, distinguishing it from the former type of democracy of the 'strong', we can say that the Viet Nam War played a major role in its formation (Furuta, 1999, pp.27–28).

However, it is also true that today, in some aspects, it is difficult to see the significance of the Viet Nam War in terms of world history. There seem to be some reasons why the significance of the Viet Nam War in world history is becoming more difficult to see. At the time the Viet Nam War was unfolding, the background to the war being regarded as the 'focus of the world' was the so-called 'general crisis theory', which viewed modern history as a period of transition from capitalism to socialism. However, the validity of this 'general crisis theory' has been lost due to the subsequent collapse of the socialist camp. Within the 'general crisis theory' framework, Viet Nam's war against the US intensively embodied the driving forces for progress in world history: socialism, the national liberation movement, and the capitalist state's anti-war and anti-regime movements. However, when the Viet Nam War ended with Viet Nam's victory, it was the 'revolutionary forces' that exposed various limitations. The framework of modern historical understanding that supported the understanding of the Viet Nam War as described above has lost its effectiveness (Furuta, 1991, pp.156–61). Even without extending the discussion to the whole 'general crisis theory', it should be clear that 'socialism and the Viet Nam War' is a subject with many problems to be discussed today.



The collapse of the socialist system in the Soviet Union and Eastern Europe also collapsed the socialist camp that divided the world into two during the Cold War system. As a result, it seems today that the meaning of socialism's existence as a camp post-World War II is becoming less visible. However, during the Viet Nam War, the existence of the socialist camp played a big role. In 1965, President Johnson limited the scope of the large-scale deployment of US ground forces into South Viet Nam. This was done in order to avoid intervention by the Chinese military, as in the Korean War. As a result, the United States was forced to engage in a war of attrition against the guerrillas in South Viet Nam, a battle in which it would be difficult for the US military to demonstrate its superiority. In reviews of the Viet Nam War by the US, it is a choice that is often criticised as a 'mistake' of the Johnson administration. According to these hawkish arguments, the Chinese leadership at that time was on the road to confrontation with the Soviet Union and had no intention of fighting the US in Viet Nam. However, there was a belief amongst the Chinese leadership that depending on the actions of the US, a clash between the Chinese and US forces in Viet Nam would be unavoidable. In that case, they would have had no choice but to take the path of working together with the Soviet Union. In fact, in May 1965, Mao Zedong and others confirmed the intention of the Johnson administration not to send ground troops to the North, and if that were the case, China would not take actions that would lead to a direct conflict with the US forces. After sending a message to the United States, from June 1965 onwards, the Chinese People's Liberation Army, consisting of multiple air defence units, railroad units, and engineering units whose main mission was to secure a supply route from China to North Viet Nam, was dispatched to North Viet Nam (Zhu, 2001, pp.242-412).

The Soviet Union's military expert group on North Viet Nam also emphasised air defence issues, including the operation of missiles to counter US forces' bombing of North Viet Nam. At that stage, the possibility of an invasion of North Viet Nam by the US ground forces could not be denied, as the leader of the advisory group was an experienced infantry armoured division commander with comprehensive military knowledge. The fact that the socialist powers of the Soviet Union and China were willing to support Viet Nam, including the possibility of dispatching a large-scale combat force as in the Korean War, restrained the Johnson administration from deploying ground forces to North Viet Nam.





During the Viet Nam War, it was the People's Army and the NLF that took charge of the ground battles with the US forces in the south. This was very different from the Korean War in which the Chinese volunteer army became the main force in the battle with the United Nations forces. However, the significance of assistance from both from the Soviet Union and China to Viet Nam cannot be underestimated. In April 1965, the Soviet Union dispatched a group of military experts to North Viet Nam, consisting mainly of air-missile defence personnel. The format took the form of a 'training centre' for the Viet Nam People's Army's air and missile defence unit, but in reality, Soviet soldiers directly commanded combat with US military aircraft and launched surface-to-air missiles. At its largest, the Soviet military expert group consisted of 500 personnel, with a total of 6,359 personnel dispatched, of whom 13 were killed. On the other hand, China also provided a total of 320,000 support units by 1968, mainly in support units for the defence and repair of transportation routes and national defence facilities in areas adjacent to China in North Viet Nam. It is said that 1,100 people in these Chinese support units were killed during the Viet Nam War. As the small country of Viet Nam took on the task of liberating the South and achieving unification of the North and South, which has the character of challenging the superpower of the US, the socialist countries, including the nuclear powers of the Soviet Union and China, have a significant role in international politics. It should be said that the fact that they existed as a camp was extremely important. At the time of the Viet Nam War, the conflict between the Soviet Union and China had already deepened, but in order to keep their positions as the 'leaders of the world revolution', the Soviet Union and China had no choice but to support Viet Nam, which was at the forefront of fighting against 'American imperialism' (Kurihara, 2000).

However, the 'compensation' that Viet Nam had to pay for gaining its position as a member of the socialist camp or as the frontline was not small. One big form of 'compensation' was the fact that Viet Nam had no choice but to accept the 'universal model of socialism' embodied in the Soviet Union and China as the basic policy for construction within Viet Nam. The story went back to before the Viet Nam War. In February 1950, immediately after the establishment of the People's Republic of China, Ho Chi Minh attended a meeting with Stalin in Moscow, where Mao Zedong was also staying. At the time, Ho had declared the dissolution of the Communist Party and did not propose land reforms aimed at the abolition of landownership in order to rally as many people as possible to the war against France. During a meeting with Ho, Stalin questioned these matters, pointing to the two chairs in front of him and saying, 'This is the peasant's chair, that is the landlord's chair. In which chair will the Vietnamese revolutionary sit?' (Do, 2000, p.6). The aid from the socialist camp was, from its first steps, accompanied by the intervention of imposing a 'universal model'. This structure remained unchanged during the Viet Nam War.

However, the fact that socialist construction in North Viet Nam during the Viet Nam War was strongly characterised by the mechanical introduction of the 'universal model' does not mean that such



North Vietnamese socialism was useless in the war. Rather, the 'universal model', which has a strong character of 'socialism sharing poverty', was a powerful foundation for the wartime regime and played a major role in the Viet Nam War. That is why, although it was a 'universal model' that was 'forced', it should be seen that it took root in its own way during the Viet Nam War. North Viet Nam was an agricultural society at the time of the Viet Nam War, and socialism was basically the collectivisation of agriculture. In 1958, when the socialist transformation began in North Viet Nam, agricultural collectivisation also began in the form of the construction of agricultural production cooperatives. The first five-year plan, which began in 1961, aimed to reorganise these cooperatives into high-level cooperatives in which farmland and livestock were completely owned by the cooperatives. However, it was difficult to demonstrate the economic superiority of collective farming to farmers, and the formation of high-level cooperatives went back and forth repeatedly. In 1965, when the Viet Nam War intensified and North Viet Nam was exposed to constant bombing by the US military, the participation of more than half of the farmers was finally seen, and since then this has been established as the basis of the wartime regime.

There was a big change in the evaluation of this collective farming in Viet Nam. First, in the period immediately after the end of the Viet Nam War, it contributed greatly to the victory of the war and was evaluated as demonstrating the 'superiority of socialism'. In the 1980s, the reform of collective farming in the form of the introduction of the production contract system began, and it came to be evaluated that collective farming during the war contributed to the war victory but was economically unreasonable in many ways. Furthermore, after the end of the 1980s, when collective farming was dismantled, conventional collective farming was evaluated as the mechanical application of foreign models, and it hindered the development of Vietnamese agriculture. There is even an argument that collective farming's contribution to the war was not due to its 'advancement' as an economic system but due to its 'backwardness' that embodied the egalitarianism that existed in traditional village communities.

From the 1960s, when agricultural collectivisation took place, to 1975, when the Viet Nam War ended, agricultural productivity barely improved. Whilst a large amount of manpower was invested in the war and the agricultural labour force was reduced, the cooperatives were obliged to provide heavy food supplies. Under these circumstances, the *raison d'être* of cooperatives for farmers was to realise an egalitarian distribution of the fruits of their production. This egalitarian distribution contributed greatly to the input of human resources from rural areas to the war.

The Viet Nam War, which escalated into a limited war in 1965, forced the US military to limit its ground fighting to South Viet Nam, adopting a strategy of attrition that would inflict damage on the revolutionary forces in the South that exceeded their troop supply capacity. This strategy of attrition did not work well, and the strength of the revolutionary forces in South Viet Nam was maintained at a constant level despite the heavy casualties, due to the large capacity for recruiting personnel from North Viet Nam. From 1959, when the Viet Nam Workers' Party decided to launch an armed struggle in South Viet Nam, to 1975, when the Viet Nam War ended, personnel sent from the north to the south included combatants and political cadres. It is said to have reached 2.3 million (14,000 during 1959–1964, 400,000 during 1965–1968, and 1,888,000 during 1969–1975). This number was more than 10% of the population of North Viet Nam at the time. Despite North Viet Nam being an agricultural country, North Viet Nam achieved a war mobilisation comparable to that of industrialised nations. The foundation that made possible the large-scale war mobilisation after 1965, which had a decisive influence on the outcome of the Viet Nam War, was collective farming, called cooperatives (Furuta, 1996, pp.31–37).

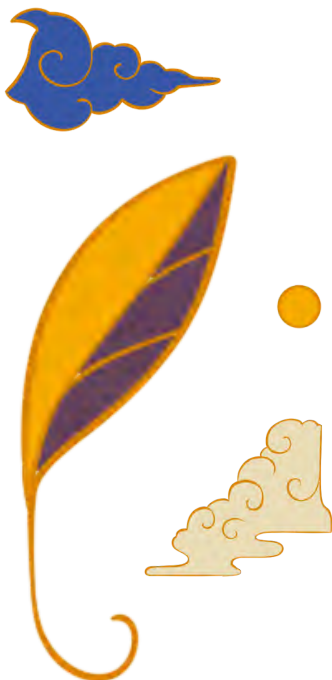
In today's economically developing Viet Nam, collective farming during the war tends to be seen as a relic of the past. However, there is a 'positive legacy' of collective farming. Despite the establishment of farm management rights of individual farming households, small farm management is still universal in Viet Nam, and farmland consolidation has not progressed much at present. One of the reasons for this is that in the farming villages in northern and central Viet Nam, farmland was distributed equally amongst the members of the villages when the land use rights of farmers were established. Despite the problem of slow progress in land accumulation, the widespread maintenance of small-scale farming provides a safety net in terms of food and other items in a rapidly fluctuating market economy. It also serves as a brake on the population influx from rural to urban areas. This is one of the reasons why Vietnamese society has been able to maintain stability even during the COVID-19 crisis. Some argue that the equal division of farmland in the northern and central regions is a revival of the traditional communities of villages. It also seems to have an aspect of the legacy of socialism before Doi Moi. There is also the aspect of the formation of homogenous farming villages through the land reforms of the 1950s and the legacy of thorough egalitarianism in the subsequent collective farming. The relationship between the legacy of socialism and the development after Doi Moi is an issue that should be examined from multiple perspectives (Furuta, 2013, pp.341–69).



3. The Viet Nam War and the Economic Development of Southeast Asia

The decision to limit the deployment of US ground forces to South Viet Nam was a decision made by the US based on the 'lessons learned from the Korean War'. The socialist camp also responded by learning from the lessons of the Korean War and making sure that China and the Soviet Union did not confront the US military directly. This made the Viet Nam War a much more 'ruled' limited war than the Korean War. In the case of the Viet Nam War, there was a 'tacit agreement' between the great powers of both the East and the West that the battlefield would be limited to Viet Nam and Indochina (the ground war would be in South Viet Nam) and that the war would not expand into a direct war between the great powers or a world war. As a result, major powers became able to introduce the latest weapons, excluding nuclear weapons, onto the battlefield without worrying about the outbreak of a world war, clearly increasing the intensity of warfare on limited battlefields. The total number of artillery bombs used by the US military in the Viet Nam War and in Laos and Cambodia is said to have reached 2.4 times that of World War II. The enormous casualties of the war, with about 3 million Vietnamese casualties, including combat personnel and civilians, and more than 60,000 US and allied forces, show the severity of the war.

On the other hand, the fact that the Viet Nam War was a 'ruled limited war' meant that neighbouring countries could pursue their economic interests without worrying that the war would expand and spread to them. The economic prosperity of neighbouring countries, including Japan, and the violent development of wars in Viet Nam and Indochina were not separate events but were closely related.



Southeast Asia had a regional framework that had great significance in relation to the economic prosperity of countries such as Japan. From the beginning, the Viet Nam War was closely related to the formation of the region of Southeast Asia. It was after the establishment of the People's Republic of China in 1949 that the regional concept of Southeast Asia became strongly conscious amongst US policymakers. The strategic meaning given to Southeast Asia by the US was that it could serve as a region that could stop the spread of the influence of the Chinese Revolution and support Japan's economic reconstruction. The first piece of the existing frontline was Viet Nam and Indochina, where the Indochina War was being fought at the time. Such logic formed the basis of the US intervention in the Indochina War in the 1950s, known as the domino theory.

However, the concept of 'Southeast Asia to support Japan's economic development' did not come to fruition immediately. It was the special procurements from the Korean War that brought the Japanese economy back to life in the early 1950s. Rather, the idea of 'Southeast Asia, which supports Japan's

economic development', seems to have materialised through Japan's provision of war reparations to Southeast Asian countries in the late 1950s, and the 'dollar scattering' accompanying the Viet Nam War in the 1960s.

For the Japanese economy, the special procurements for the Korean War accounted for more than 60% of the export volume at that time, whilst the special procurements for the Viet Nam War accounted for only 7%–8%, both directly and indirectly, and the impact was less than that of the Korean War. However, the role that the Korean War played for the Japanese economy was fulfilled by the Viet Nam War for the Republic of Korea, Taiwan, and some Southeast Asian countries. Considering the fact that Japan was able to become an economic superpower through its strengthening ties with Southeast Asia, it seems to be quite valid that 'Southeast Asia to support Japan's economic development' was materialised through the Viet Nam War. In particular, due to the import substitution orientation of Southeast Asian countries, Japan secured a stable market for its heavy and chemical products, whilst Southeast Asia formed the basis for early industrialisation, and a mutually complementary relationship between Japan and Southeast Asia was formed (Kawamura, 2010, pp.303–48).

The fact that the US saw the Viet Nam War in the context of the regional developments in Southeast Asia seems to explain why the US made a full-scale intervention in the Viet Nam War in 1965. For the US, Southeast Asia in 1965 was in an extremely critical and fluid situation. In January of that year, the Sukarno government of Indonesia declared its withdrawal from the United Nations due to the conflict with Malaysia, and the Communist Party expanded its power in the country, deepening the conflict with the national army and Islamic forces. In May, Cambodia's Sihanouk cut diplomatic ties with the US. In August, Singapore separated from Malaysia. Under these circumstances, if the US had not shown a strong stance to maintain the pro-American regime in South Viet Nam, there is a possibility that the influence of the US in Southeast Asia as a whole would have been shaken. Judging that the credibility of its global commitment was at stake, the United States made the decision to send a large number of US military combat units to Viet Nam in July 1965. It can be seen that the fluid situation in Southeast Asia at that time had a great influence (Furuta, 2002, pp.182–88).

As a result of the 9/30 Incident that occurred in Indonesia in 1965, the Communist Party of Indonesia collapsed and the pro-US, anti-communist Suharto administration was born. However, it took several more years for the Southeast Asian countries, which had taken an anti-communist stance, to gain prospects for political stability and



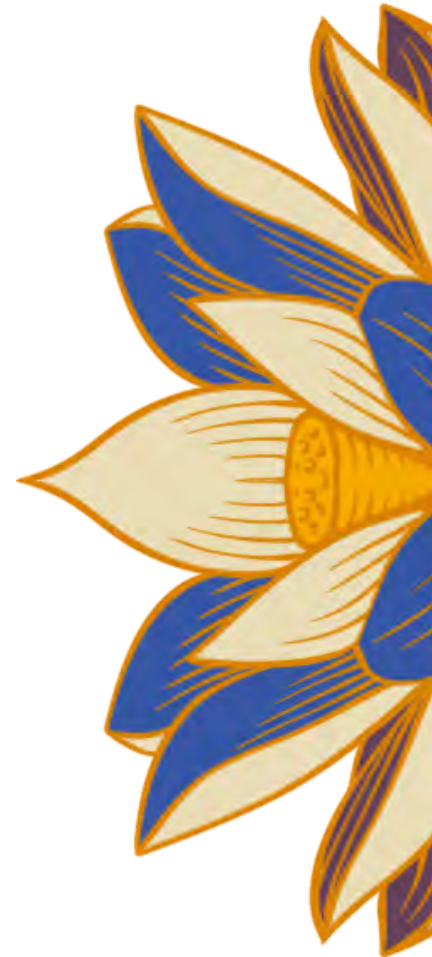
economic development. From the perspective of the leaders of anti-communist Southeast Asian countries, the US intervention in Viet Nam was a time-buying effort to hold back the communist threat until the country's economic development became clear (Ang, 2010, pp.28–29). For these Southeast Asian countries, it was fortunate that the Viet Nam War had an economic ripple effect and provided an opportunity for economic development. In the 1970s, Southeast Asia entered a full-fledged 'era of development'. This situation undermined the international significance of the US military intervention in Viet Nam, but by that time, the Viet Nam War had already become the longest-running foreign war for the US. In this way, when looking at the Viet Nam War from the perspective of Southeast Asia, the war and economic development have an inseparable and close relationship, and the two cannot be discussed separately.

4. ASEAN's Active Role and a Unified Viet Nam

The development of Viet Nam after the war era was remarkable. One of the important factors that supported Viet Nam's development was the country's accession to ASEAN and the formation of ASEAN10, which encompasses the entire Southeast Asian region, enabling peace and active development in the region.

Currently, ASEAN is not only playing a major role in the integration of the Southeast Asian region as a regional cooperation organisation encompassing 10 Southeast Asian countries, but also in the East Asian community, Asia-Pacific regional cooperation, and dialogue between Asia and Europe. It has played a leading role in the development of regionalism and the formation of free trade blocs in East Asia, including the multilateral integration of free trade blocs. One of the reasons why ASEAN, which was originally an alliance of small nations, is playing such an active role is that ASEAN has become an alliance of nations encompassing 10 countries in Southeast Asia. It seems to be a short-sighted view to understand the realisation of ASEAN10 solely as the economic development of ASEAN's original member countries and the Indochina countries following it.

It is believed that the achievement of the unification of the north and south of Viet Nam was of great significance for Viet Nam's accession to ASEAN in 1995. It is only after the Cambodian dispute was settled and the stability of the Indochina region could be expected that the voices of the ASEAN original member countries to approve the accession of Viet Nam became louder. If Viet Nam's North-South division had continued, the Indochina region could not have become stable, and voices amongst the ASEAN original member countries to embark on an 'adventure' to have such an unstable Indochina in ASEAN would not have been strong. In this respect, the achievement



of the unification of Viet Nam's North and South created a foundation for Indochina to become a stable region, which had great significance in motivating the ASEAN original member countries to include Viet Nam as a member of ASEAN.

In the 1980s, in order for the reformists to become more powerful within the Communist Party of Viet Nam and to start Doi Moi, it was important that Viet Nam had achieved unification of the North and South and the foundation of its own security was secured to some extent. The reason why the Doi Moi reform line occupied the majority within the Communist Party of Viet Nam in 1986 was that the extremely delicate power relationship between the reformist forces and the conservative forces within the party turned at the last minute in favour of the reformist forces (Furuta, 2009). Considering this, if the North–South unification of Viet Nam had not been achieved and the leadership of the Communist Party of Viet Nam had continued to feel a great threat to the security of North Viet Nam, reforms within the party in the late 1980s would have been extremely difficult, and perhaps the Communist Party of Viet Nam would have been forced to maintain a rigid line similar to that of the North Korean leadership regarding security and economic management. I believe that there is a big difference between the political cultures of North Korea and Viet Nam, and that the Communist Party of Viet Nam is more realistic than the Workers' Party of Korea. However, the main reason for the difference between North Korea and Viet Nam can be found in the fact that North–South unification was achieved in Viet Nam, whilst the North–South division continued on the Korean Peninsula. The start of the Doi Moi reform was decisive in leading Viet Nam to prioritise the creation of a peaceful international environment that supports economic development, as well as the shift to omnidirectional diplomacy, including improving relations with neighbouring countries and leading Viet Nam to ASEAN,

Furthermore, the significance of the unification of Viet Nam as a premise, so to speak, must be reconfirmed. Since Northeast Asia's international relations have not overcome the division of the Korean Peninsula, the military alliances that were formed during the Cold War remain the cornerstone of its international relations there. Since the legacies have been liquidated with the realisation of ASEAN10, Southeast Asia is playing a very active role in the new regional integration. Today's ASEAN includes both countries that experienced the Cold War era by fighting through wars of national liberation and countries that experienced economic development. If these two currents shape ASEAN today, it would be an extremely short-sighted view of history to determine which was the main aspect, war or economic development. Considering this, from the



time ASEAN was formed in 1967, ASEAN has not been an anti-communist alliance but rather a group of Southeast Asian countries that agreed to the Bangkok Declaration for regional cooperation centred on economic growth and social development. It should also be noted that the fact that it started as an open organisation has a very important meaning (Sato, 2011, p.340).

Of course, the long war era had various aftereffects on Viet Nam, including the great sacrifices made by the Vietnamese people. The question of whether there was any other way for Viet Nam to achieve the unification of the North and South than by making the enormous sacrifice of 3 million people is the most important question posed in the modern history of Viet Nam. The divisions the war left for the Vietnamese people still remain a major challenge today. In times of war, when we do not know what tomorrow will be, people's ideas tended to be short-sighted. However, I would like to emphasise that the basic foundation for the rapid development of Viet Nam after 1991, which has now enabled Viet Nam to have a 'big dream' of becoming a developed country in 2045, was formulated through the long era of war.



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Chapter 2

Viet Nam's Foreign Policy and Japan–Viet Nam Relations Since the Start of Doi Moi

Masaya Shiraishi



Introduction

The Communist Party of Viet Nam (CPV) adopted the Doi Moi policy at the 6th Party Congress held in December 1986. Since then, especially since the Cambodian peace agreement in October 1991, Viet Nam has developed rapidly and expanded its external relations widely.

In 1986, when it started the Doi Moi policy, Viet Nam was isolated from the international society. It was a low-income country with a gross domestic product (GDP) per capita of less than US\$100. By 2021, 35 years later, Viet Nam had signed bilateral commercial agreements with 60 countries and investment agreements with 40 countries. It has reached the level of a lower middle-income economy, with GDP per capita of US\$3,600.

Japan is one of the ardent countries that have consistently supported Viet Nam's development and its integration into the regional and international community. Moreover, in recent years, as Viet Nam has developed further and expanded its regional and international roles, its importance to Japan has been significantly increasing. The two nations have frequently cooperated and helped each other.

The first section of this chapter briefly looks back on the development of Viet Nam's external relations since the start of Doi Moi. The second section reviews the expansion of bilateral relations between Japan and Viet Nam since the early 1990s. The third section discusses the more recent developments in the countries' bilateral relations, where they have witnessed steadily growing mutual importance.

1. Viet Nam's Development of External Relations and its Economy since the Start of the Doi Moi Policy

Viet Nam declared independence in August 1945 and started the process of nation-building. However, shortly after that, the country began suffering from continuous conflicts for nearly half a century: the First Indochina War (1946–1954), the Second Indochina War (1960–1975), and the Sino-Viet Nam Confrontation and Cambodian Conflict (1978–1991). Only after the conclusion of the peace agreement in Cambodia in 1991 did Viet Nam enter a new era of long-lasting peace.

1.1. Start of the Doi Moi Policy

The first factor that enabled Viet Nam to enter the new era was the decisions and efforts of the Vietnamese people themselves. In December 1986, the 6th Party Congress adopted the Doi Moi policy of economic reform and door-opening. For its foreign policy, Viet Nam decided to expand its ties with all countries in the world, including capitalist countries, based on new thinking about the rapid development of economic interdependency amongst countries regardless of their different socio-political systems. The slogan applied by Congress was 'to combine the force of the nation with that of the time'. This implied that Viet Nam took the first steps to shift from an ideological worldview to a more pragmatic way of thinking based on the concept of national interests (Shiraishi, 2004).

After the 6th Party Congress, the Vietnamese leaders made a more decisive shift in their thinking on national security and external relations, a shift from a perception of national security focusing mainly on military strength to one of comprehensive national security that put more emphasis on economic power and diplomatic efforts (CPV Politburo Resolution No. 2 on National Defence in July 1987, and Politburo Resolution No. 13 on Foreign Policy in May 1988).

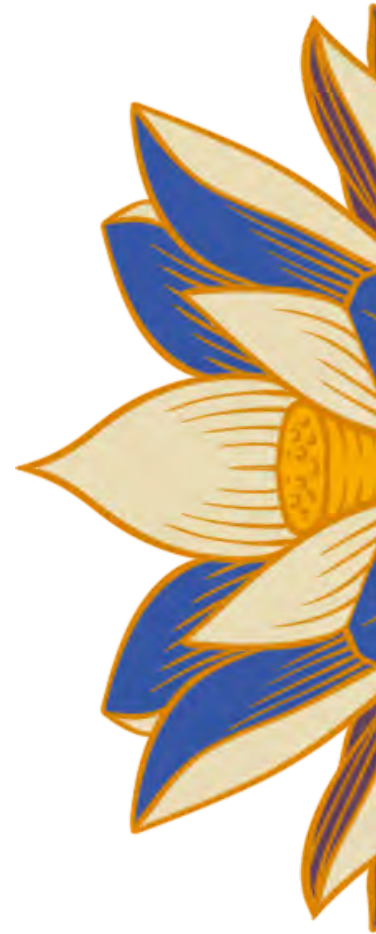
The actual measures were: the national assembly's passing of a foreign investment law and land law in December 1987, the regular army reduction in accordance with the new defence strategy in December 1989, the withdrawal of Vietnamese volunteer soldiers from Cambodia in September 1989, and the national assembly's deletion of hostile words against China and the United States (US) from the 1982 constitution preamble in December 1989, etc.

1.2. Cambodian Peace

The second factor was the changes in international and regional environments, which enabled Viet Nam to end its international isolation and start the process of integration into the regional and international community.

Association of Southeast Asian Nations (ASEAN) countries were the first actors responding to Viet Nam's new policy. Indonesia hosted the first unofficial meeting on Cambodia (JIM-1) in July 1988. Thailand advocated a new Indochina policy (from battlefield to market) in August 1988.

Taking over the ASEAN initiative, international society started peace talks on Cambodia in Paris in July–August 1989. Japan arranged the Tokyo meeting on Cambodia in June 1990.



In the meantime, fundamental changes took place in the international balance of power in the late 1980s. Following the start of the Soviet Union policy of perestroika, Gorbachev visited Beijing, which resulted in the Sino-Soviet rapprochement in May 1989, and the Gorbachev-Bush Malta Summit declared the end of the Cold War in November 1989.

Viet Nam began negotiations with China in January 1989, and the two countries agreed on the solution to the Cambodian issues at an unofficial summit in Chengdu in September 1990.

Thus, in October 1991, 19 countries (including Japan) signed the peace agreement on Cambodia in Paris. The United Nations Transitional Authority in Cambodia (UNTAC) was established in February 1992.

In November 1991, shortly after the Cambodian peace agreement, the top Vietnamese leaders visited Beijing and the two countries officially declared the restoration of bilateral relations.

1.3. Omnidirectional Foreign Policy and the Diversification and Multilateralisation of External Relations

By the end of the 1980s, Viet Nam had suffered from the international isolation and blockade imposed by regional countries and developed countries. However, the Cambodian peace agreement and Sino-Viet Nam rapprochement in late 1991 dramatically changed the East Asian regional setting surrounding Viet Nam. In the meantime, globalisation and regionalisation had accelerated all over the world.

The international and regional circumstances during the 1990s were quite favourable and friendly to Viet Nam.

Responding to the changing situation, Viet Nam articulated an omnidirectional foreign policy. In June 1991, the 7th Party Congress declared, 'Viet Nam wishes to be a friend of all members in the world community'. In April 1992, the national assembly passed the new constitution, which declared, 'Viet Nam enhances exchange and cooperation with all countries in the world, regardless of different political and social systems'.

Furthermore, in June 1992, the third plenary session of the party central committee (the seventh tenure) decided on a new foreign policy of 'diversification and multilateralisation'. Multilateralisation here implied, first of all, the country's approach to the regional organisation ASEAN (Thayer, 1999; Shiraishi, 2004).

1.4. Viet Nam's Joining of ASEAN

In July 1992, on the occasion of the ASEAN annual foreign ministers' meeting (AMM), Viet Nam and the Lao PDR signed the 1976 Bali Treaty (TAC in Southeast Asia), thus acquiring ASEAN observer status. In February 1993, the CPV politburo meeting agreed that 'Viet Nam is ready to join ASEAN at an appropriate time'. In July 1994, Viet Nam and Lao PDR as ASEAN observers joined the first meeting of the ASEAN Regional Forum (ARF: a ministerial meeting for cooperative security in Asia-Pacific).

In July 1994, the ASEAN AMM in Bangkok agreed that ASEAN would welcome Viet Nam as the seventh official member. Receiving the news, the CPV politburo in Hanoi immediately held a meeting to decide the country's joining of ASEAN in 1995. In July 1995, at the ASEAN AMM held in Brunei Darussalam, Viet Nam became an official member of ASEAN. And in January 1996, Viet Nam started the tariff reduction process in accordance with the ASEAN Free Trade Agreement (AFTA) (Yamakage, 1997; Nguyen, 2021).

The implication of ASEAN membership was multifaceted for Viet Nam. First, Viet Nam's political regime was recognised by its neighbouring countries. This contributed to the enhancement of the political stability of the country. One of the 'ASEAN Way' principles is that of non-interference. In addition, as the Cold War confrontation came to an end, ideological differences stopped being a serious issue of controversy in international relations.

Second, Viet Nam's relations with regional countries were stabilised. During the Cold War era, its relations with some ASEAN countries, especially Thailand and the Philippines, had been very confrontational. Viet Nam now became a signatory of the Bali Treaty and a member of ASEAN, a type of non-war community. Thus, Viet Nam had favourable conditions for building confidence with its neighbouring countries.

Third, Viet Nam participated in multi-layered networks of regional cooperation in Southeast Asia. It could acquire precious experience and knowledge and skills necessary for regional and international integration.

Fourth, the ASEAN membership was significant for Viet Nam to expand its scope of cooperation with extra-regional actors. When Viet Nam joined ASEAN, there already existed various frameworks, such as the ASEAN+1 Summit (sporadic), Post Ministerial Conference (PMC, annual) and ARF (annual), where extra-regional powers were invited on the basis of the ASEAN centrality principle. Later on, other forums, such as the ASEAN+3 Summit and the East Asia Summit (EAS), were also added. Viet Nam was able to enjoy many chances to exchange with the leaders of extra-regional countries.

ASEAN as a regional group also established the ASEAN+1 formula of free trade agreement (FTA)/ economic partnership agreement (EPA) with China, the Republic of Korea (henceforth, Korea), Japan, India, Australia/New Zealand, and more recently Hong Kong. The Asia-Europe Meeting (ASEM) and Regional Comprehensive Economic Partnership (RCEP) were inter-regional frameworks in which all the ASEAN member countries took part.

Fifth, the ASEAN membership also enhanced Viet Nam's prestige and position in the international arena and worked as a springboard to wider multilateral cooperation, such as Asia Pacific Economic Cooperation (APEC) in November 1998 and the World Trade Organization (WTO) in January 2007 (Shiraishi, 2008).

1.5. Start of the Economic Take-off: Industrialisation and Modernisation of the Country

Whilst it joined ASEAN, Viet Nam quickly restored and enhanced its relations with major countries in the region and the world.

In November 1992, one year after the Cambodian peace agreement, Japan became the first developed country to resume official development assistance (ODA) towards Viet Nam. Since then, Japan has been the top donor to the country until today.

Viet Nam also established regular relations with other important actors in East Asia. In June 1992, Viet Nam and Taiwan agreed to the mutual opening of a trade office. Meanwhile, in December 1992, Viet Nam and Korea normalised diplomatic relations.

The US, which had been deeply involved in the conflicts in Indochina for a long time, was rather slow in the beginning at approaching Viet Nam. However, in April 1991, the Bush (senior) administration put forward a road map for the normalisation of relations with Viet Nam. Following the road map, the Clinton administration also took necessary actions step-by-step to improve relations with Viet Nam. For example, in September 1993, the US government let international financial organisations resume loans to Viet Nam. This decision led to the international community's first holding of the consultative group meeting in Paris in November 1993. In February 1993, the US government decided to lift its embargo vis-à-vis Viet Nam. In July 1995, President Clinton finally announced the normalisation of diplomatic relations with Viet Nam.

In July 1995, the European Union (EU) signed a basic framework agreement of cooperation with Viet Nam (effective from June 1996), which allowed most-favoured-nation (MFN) status for the latter (Nguyễn et al., 2005; Vū, 2015).

To sum up, whilst Viet Nam faced many socioeconomic difficulties inside the country and suffered from the sudden loss of its traditional partners, the Union of Soviet Socialist Republics (USSR) and East European countries, it was able to improve and expand relations with major regional and developed countries as well as various international organisations.





During the mid-1990s, the first wave of the 'Viet Nam boom' took place: Taiwan, Korea, Hong Kong, Japan, ASEAN, and EU countries quickly became major investors in Viet Nam.

Together with its domestic efforts of Doi Moi, the rapid expansion of foreign relations helped Viet Nam to get escape the socioeconomic crisis and stabilise its economy, thus obtaining the necessary conditions to enter a new stage of economic development.

In January 1994, the CPV held the Mid-term Conference and judged the country had preconditions for a new phase of development, i.e. industrialisation and modernisation of the country, adopting a new slogan, 'rich people, strong country, equitable and civilised society'.

In June 1996, the 8th Party Congress presented new guidelines for development: GDP per capita should be doubled from 1990 to 2000, and the country's economy should reach the level of an industrialised country by 2020.

1.6. Opportunities and Challenges

Viet Nam's door-opening and regional and international integration created both opportunities and challenges.

The first serious experience was the Asian regional financial crisis in 1997–1998. Although Viet Nam was not directly affected by the crisis, it could not escape from the negative impacts, such as the decrease in foreign investment, external trade, and international visitors.

Meanwhile, the 1997 peasant demonstrations in the Thai Binh province gave alarming signs concerning the widening disparity between the poor and the rich, between the urban and rural areas, and increased corruption amongst officials.

In December 1997, in the midst of the Asian financial crisis, the first ASEAN+3 summit was held in Kuala Lumpur. Since then, the three countries in Northeast Asia, i.e., Japan, China, and Korea, began dramatically expanding their close relationships with ASEAN. The ASEAN+3 mechanism swiftly developed to comprise various exchanges and cooperation at the summit, ministerial, senior officials' meeting (SOM), and expert levels.

In December 1998, Viet Nam hosted the second ASEAN+3 summit in Hanoi (which Japanese Prime Minister Keizo Obuchi attended). This was the second experience for Viet Nam in organising a multilateral gathering of government leaders, following the Francophone summit in Hanoi in November 1997.

1.7. The 9th Party Congress and the 8th Plenum Resolution

The term 'market economy' had been carefully avoided in Viet Nam for a long time. Instead, the earlier term adopted since the 6th Party Congress was 'multi-component commodity economy in accordance with the market mechanisms under the management of the state and with socialist orientation'. However, in April 2001, the 9th Party Congress officially recognised for the first time the concept of a 'socialist-oriented market economy'. The Congress also approved that 'economic globalisation is an objective trend in which more and more countries are involved' as a new development in the 21st century. It also recognised an 'economic sector with foreign capital' as one of the important components of the national economy. As for external relations, the Congress added the term 'a reliable partner' to the slogan that was originally adopted by the 7th Party Congress in 1991, the new slogan being, 'Viet Nam wants to be a friend and a reliable partner of all countries in the international community'.

In November 2001 (two weeks before the US-Viet Nam Bilateral Trade Agreement came into effect), the CPV Politburo Resolution No. 7 on International Integration of the Economy was issued, reconfirming the further development of external economic relations in order to promote socialist-oriented industrialisation and modernisation.

In July 2003, the eighth plenum of the party central committee (ninth tenure) adopted a resolution on strategy for national defence in the new context. The document articulated the definition of partners (who respect independence and sovereignty and promote friendly, equal, and mutual-interest relationships and cooperation with Viet Nam) and opponents (who have conspiracy and actions against Viet Nam's objectives of national building and defence). However, it added that 'some partners may be contradictory with our nation's interests', therefore 'we should overcome both tendencies, an ambiguous and careless tendency on one hand and a stereotyped tendency on another' (Mai, 2018).

1.8. The US–Viet Nam Bilateral Trade Agreement and Viet Nam's Accession to the WTO

During the 1990s, Viet Nam enjoyed rather stable economic development thanks to various favourable external conditions. However, it could not promote commercial and business activities with the US. As the country started the full-fledged process of industrialisation and modernisation and had a bitter experience from the Asian financial crisis, Viet Nam more clearly realised the necessity of the US market for further development.

The negotiations between the two governments for the bilateral trade agreement were prolonged. However, in July 2000 they finally reached a consensus and signed the agreement, which came into effect in December 2001. As a result, the US quickly became the main destination of Viet Nam's exports. The conclusion of the US-Viet Nam Bilateral Trade Agreement was also an important stepping stone for Viet Nam to further promote WTO negotiations.

Viet Nam applied for WTO membership in January 1995. Since then, Viet Nam conducted bilateral negotiations with 25 member countries. In May 2006, the final bilateral negotiator, the US, signed an agreement with Viet Nam. In November 2006, the WTO General Council (ministerial level) agreed on Viet Nam's accession, and in January 2007, Viet Nam became the 150th member of the WTO.

Viet Nam's accession to the WTO created a strong impetus to further promote the country's external trade and diversify its foreign direct investment (FDI) reception. It also required the readjustment of various domestic systems, including legal documents. For example, Viet Nam abolished the discrimination between domestic and foreign capital and the dual system of prices for Vietnamese people and foreigners (Fujita, 2006).

1.9. New Emerging Issues

In April 2006, the 10th Party Congress decided to accelerate the process of industrialisation and modernisation, integration into the world economy, and breaking away from its status as a low-income country.

Viet Nam continued socioeconomic development: GDP per capita surpassed US\$1,000 in 2008 and US\$2,000 in 2014. The country, thus, broke away from its low-income status to enter the next stage of being a middle-income country. At the same time, however, Viet Nam faced a new challenge: how to escape from the 'middle-income trap' and pursue higher economic development (Tran and Karigome, 2019).

In the meantime, various new issues emerged that the international and regional communities (of which Viet Nam is a member) had to tackle:

First, due to the 11 September 2001 terrorist attacks against the US and rampant cross-border crimes in continental Southeast Asia and elsewhere, international and regional cooperation concerning non-traditional security became more and more important.

Second, the UN declaration of the Millennium Development Goals (MDGs) (September 2000) and Sustainable Development Goals (SDGs) (September 2015), epidemics, poverty, and environmental destruction in various parts of the world made human security issues more serious.

Third, the building of the ASEAN Community (for which the target year was moved forward from 2020 to 2015) and the further efforts thereafter became regional issues for all the ASEAN members.

Fourth, the conclusion of wider FTAs/EPAs imposed new challenges. Viet Nam (as well as Japan) was a member of the Trans-Pacific Partnership (TPP)-11 (8 countries started negotiations in March 2010 and 11 countries signed the final agreement in March 2018) and RCEP (16 countries started



negotiations in November 2012 and 15 countries signed the final agreement in November 2020). How could it pursue further development and industrialisation with the conditions imposed by the free trade arrangements?

Fifth, the South China Sea dispute became more and more crucial. Viet Nam was one of the countries directly involved in it.

1.10. The 11th and 12th Party Congresses

In January 2011, the 11th Party Congress adopted a new development model, putting more emphasis on quality enhancement (shifting from a simple model of development by quantitative expansion). The Congress presented a detailed image of the level of an industrialised country by 2020: GDP per capita should surpass US\$3,000, and the industrial and service sectors should account for 85 % of GDP, etc. It also allowed the trial acceptance of private entrepreneurs to be party members. The Congress declared that Viet Nam would proactively build a powerful ASEAN Community (Teramoto and Fujita, 2012).

In October 2013, the eighth plenum of the party central committee (11th tenure) reviewed the results of the 10-year implementation of the eighth plenum (ninth tenure) resolution (July 2003). It adopted a new resolution on the strategy for national defence in the new context that emphasised the shift from conventional stereotyped thinking to more dialectic thinking. It argued that partners can have something contradictory, which necessitates struggle, whilst opponents might have something positive, which is worth cooperating. In general, the new guidelines were, 'make more friends, less enemies; we must cooperate whilst struggling' (Tap chi Quoc phong toan dan, 2014; Sakuma, 2012).

In January 2016, the 12th Party Congress did not refer to the year 2020 as the target to reach the level of an industrialised country. As for external policy, reflecting the serious concerns on the South China Sea situation, the Congress emphasised the solid defence of the fatherland, and the maintenance of peaceful and stable circumstances, based on the policy of 'cooperate whilst struggling' decided by the eighth plenum of the central committee.

1.11. More Recent Issues and the 13th Party Congress

More recently, the spread of the coronavirus disease (COVID-19) has deeply affected the international and domestic economy and society.

The February 2021 Myanmar military coup has also posed a serious challenge to ASEAN unity.

In January–February 2021, the 13th Party Congress put forward a long-term goal: Viet Nam would be a socialist-oriented industrialised country by the mid-21st century (instead of the earlier target year of 2020). More concretely, Viet Nam would be a developing country beyond lower-middle-income status by 2025 (the 50th anniversary of the liberation of the South); a developing country of higher middle-income by 2030 (the 100th anniversary of the Communist Party); and a developed country with high-income-level status by 2045 (the 100th anniversary of the August Revolution).

The congress also listed six major tasks, of which the second task included measures against COVID-19. The third included efforts 'to continue enhancing the quality and effectiveness of external activities and international integration', 'to resolutely maintain and defend the integrity of land territory, territorial waters, islands, and air space', and 'to maintain peaceful and stable circumstances for the nation's development' (Ishizuka, 2022).

2. Doi Moi Policy and the Development of Japan-Viet Nam Relations

Since the start of the Doi Moi policy, and especially since the conclusion of the Cambodian peace agreement, the Japan-Viet Nam relationship has steadily expanded and deepened. This section outlines the process.

2.1. Japan's Consistent Support for Viet Nam's Doi Moi Policy

Japan is one of the major countries that has consistently and eagerly supported Viet Nam's development and integration into the world community.


As mentioned above, as early as November 1992, one year after the conclusion of the Cambodian peace agreement, Japan became the first developed country to resume ODA to Viet Nam.

In the meantime, Japan played an important role in raising international concerns to support Viet Nam. For example, in November 1993, the Tokyo government, together with the French, took the initiative to organise the first Consultative Group meeting for Viet Nam in Paris.

In February 1995, Japan hosted a ministerial meeting of the Forum for Comprehensive Development of Indochina in Tokyo, based on Prime Minister Kiichi Miyazawa's appeal in January 1993. It aimed to encourage international support for the economic reconstruction and development of the three countries in Indochina, Viet Nam as well as Cambodia and the Lao PDR.

In May 1999, after the outbreak of the Asian financial crisis, Finance Minister Kiichi Miyazawa visited Hanoi and met Prime Minister Phan Van Khai, promising a ¥20 billion loan for Viet Nam's economic reform (Japan Ministry of Finance, 1999).

Japan also supported Viet Nam's integration into the world community. For example, in August 2005, Japan swiftly reached a conclusion on bilateral negotiations with Viet Nam concerning the latter's accession to the WTO. In December 2008, the Japan-Viet Nam EPA was signed. This was the first bilateral EPA for Viet Nam (and the 10th bilateral EPA for Japan).



In 2011, Japan became the first G7 country to recognise Viet Nam as a market economy (Umeda, 2019). If the country had not been able to achieve market economy status, unfavourable conditions may have been imposed in anti-dumping conflicts with other countries. Moreover, being labeled as a non-market economy would have been humiliating for Viet Nam, as it aimed for the development of its 'socialist-oriented market economy'.

2.2. Mutual Visits of the two Countries' Leaders

In March 1993, half a year after Japan's resumption of ODA to Viet Nam, Vo Van Kiet became the first Vietnamese prime minister to make an official visit to Japan. A year later, in August 1994, Tomiichi Murayama was the first Japanese prime minister to visit Hanoi, the capital city of the Socialist Republic of Viet Nam. Since then, mutual visits of top leaders have been annualised between the two countries.

For example, in April 1995, Do Muoi visited Japan for the first time as secretary general (SG) of the VCP. Thereafter, SG Nong Duc Manh visited Japan in October 2002 and April 2009. SG Nguyen Phu Trong visited in September 2015. Three presidents have also come to Japan as state guests: Nguyen Minh Triet in November 2007, Truong Tan Sang in March 2014, and Tran Dai Quang in May–June 2018.

As for the imperial family members from Japan, Prince and Princess Akishino visited Viet Nam in June 1999, the Crown Prince (now Emperor) in February 2009, and the former Emperor and Empress in February–March 2017.

As for the foreign minister level, the annual meeting of the Japan-Viet Nam Cooperation Committee started in 2007. This is a meeting co-chaired by the foreign ministers of the two countries, where many officials of the concerned ministries attend to discuss various issues related to the economy, agriculture, and energy, etc.

At the end of 2010, the Japan-Viet Nam Strategic Partnership Dialogue (at the vice minister level) started between the officials of the foreign and defence ministries. Since then, the dialogue has been held frequently (although not strictly annually).

2.3. Multi-layered Concentric Circles of Multilateral Cooperation in the Region

In addition to the mutual visits between the counterpart countries, the leaders have had many other occasions for exchange.

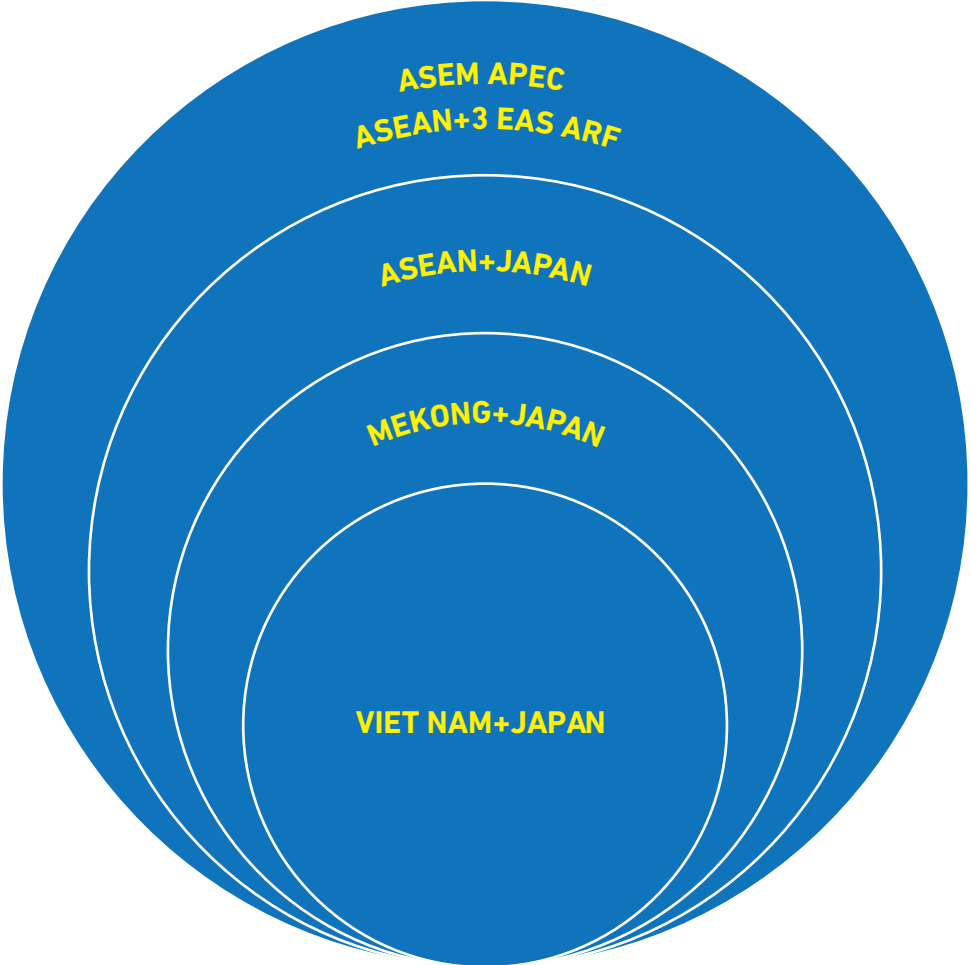
Japan and Viet Nam have joined various multilateral cooperation frameworks in East Asia and Asia-Pacific, which have reinforced bilateral relations.

For example, in 2016, in addition to Prime Minister Nguyen Xuan Phuc's visit to Japan in May to attend the G7 Ise-Shima summit (which will be mentioned later) and for a bilateral meeting with PM Shinzo Abe, they met again in Vientiane (Lao PDR) in September on the occasion of ASEAN-related summits (including Japan-ASEAN and Japan-Mekong). In November, Prime Minister Abe met bilaterally with President Tran Dai Quang in Lima (Peru) where the APEC summit was held.

Thus, when ASEAN, APEC, ASEM, and other related multilateral meetings are held, bilateral exchanges are frequently arranged, not only at the summit level but also at the ministerial, high official, and expert levels. This contributes a lot to the deepening and diversification of cooperation between the two countries.



Figure 2.1. Multi-layered Concentric Circles Surrounding Japan and Viet Nam



**Diagram drawn by
Masaya Shiraishi**

**In addition, various global
organisations (such as
United Nations institutions)
as bigger circles**

Source: Author.

2.4. Japan–Mekong Cooperation

One of the important regional cooperation frameworks that both Japan and Viet Nam have participated in is the framework between Japan and the Mekong region, which consists of five continental Southeast Asian countries. Four of them are new ASEAN members, the so-called CLMV (Cambodia, Lao PDR, Myanmar, and Viet Nam), which joined ASEAN one by one during the 1990s, whilst Thailand is an original member of ASEAN.

As the membership enlarged, ASEAN as a regional organisation faced a new challenge, i.e., the developmental gap (ASEAN divide) between the more developed members and the newcomers. In order to maintain the organisation's unity and the region's integration, it became necessary to reduce the existing gap.

From the early period, the Japanese government paid attention to this issue and tried to support the CLMV. The abovementioned Forum for Comprehensive Development of Indochina was one of the earliest examples.

Furthermore, in 1995, a working group was started under the umbrella of AEM-Ministry of International Trade and Industry (later the Ministry of Economy, Trade and Industry [METI]) (economic ministers' meeting between ASEAN and Japan) to help CLMV's economic development through collaboration between the ASEAN forerunners and Japan. In 1998, a year earlier than the realisation of ASEAN-10, the working group was promoted to the AEM-METI Economic and Industrial Cooperation Committee (AMEICC). The committee has been active until today.

The Greater Mekong Subregion (GMS) cooperation was started in 1992 as an Asian Development Bank (ADB) initiative, and the Japanese government became very interested in it when the idea of GMS economic corridors was announced in 1998. Japan began providing large-scale ODA (both yen loans and grants) for the construction of transport infrastructure, etc., in the East-West and Southern Corridors. These ODA projects were aimed not only at reducing the ASEAN divide but also to reconstruct the linkages between the continental Southeast Asian countries, which had been seriously damaged during the Cold War.

In 2003, the Japanese government published 'a New Concept on Mekong Regional Development' and initiated the new framework of Japan-CLV (Cambodia, the Lao PDR, and Viet Nam) cooperation. The summit and foreign ministers' meetings were held on the occasions of the ASEAN-related meetings from 2004 to 2008. One of the important agenda items within this cooperation framework was the Japanese support for the



CLV's joint 'developmental triangle' project (poverty reduction and socioeconomic development in the border provinces of the three countries).

In 2006, the Japan-ASEAN Integration Fund was established based on a promise by Prime Minister Junichiro Koizumi. The fund aimed to support CLMV's poverty reduction and economic development and thus contribute to ASEAN integration.

In 2007, the Tokyo government published the Japan-Mekong Subregion Partnership Program and in 2008 hosted the first Japan-Mekong Foreign Ministers' meeting in Tokyo. The next year, in 2009, in addition to the foreign ministers' meeting, economic ministers' and summit meetings were also organised. The meetings have been annualised, and the summit meeting decides a mid-term action plan for Japan-Mekong cooperation every three years (Shiraishi, 2010; Shiraishi, 2016).

2.5. Japan–Viet Nam Strategic Partnership

As the bilateral relationship became more and more intimate, the two countries' leaders frequently issued joint statements about their 'partnership' at the beginning and later their 'strategic partnership'.

As mentioned above, the July 2003 Plenum of the VCP Central Committee articulated the definition of 'partners'. Around that time the Hanoi government started diplomatic efforts to establish 'partnerships' with major countries. The first counterpart was the Russian Federation (in 2001). As of April 2019, Viet Nam had three 'comprehensive strategic partnership' countries (Russian Federation, China, and India), 13 'strategic partnership' countries (including Japan), and 14 'comprehensive partnership' countries (including the US) (Socialist Republic of Viet Nam, 2019).

In the meantime, Japan started partnership diplomacy around 2002–2003. As of June 2013, Japan had issued joint documents on bilateral 'strategic partnership' with 21 countries (Shiraishi, 2014a).

Between Japan and Viet Nam, the first document in which the term 'partners' was mentioned was the October 2002 joint press release by Prime Minister Junichiro Koizumi and Party SG Nong Duc Manh, who visited Tokyo. In the document, they referred to 'sincere and open partners acting together, advancing together'. In July 2004, when Foreign Minister Yoriko Kawaguchi visited Viet Nam and met Foreign Minister Nguyen Dy Nien, they released a joint statement, 'Toward a Higher Sphere of Enduring Partnership'.

The first document in which the term 'strategic partnership' was mentioned was the joint statement by Prime Minister Shinzo Abe and Prime Minister Nguyen Tan Dung when the latter visited Tokyo in October 2006. They agreed to establish a 'strategic partnership' between the two nations. And in April 2009, when Party SG Nong Duc Manh met Prime Minister Taro Aso in Tokyo, they released a joint statement in which both parties recognised that a 'strategic partnership has been established'.

In October 2010, when Prime Minister Naoto Kan visited Hanoi to attend the ASEAN-related summits and met Prime Minister Nguyen Tan Dung, they issued a new joint statement in which they agreed to further promote the strategic partnership 'in a stronger and more comprehensive manner'.

In March 2014, when President Truong Tan Sang visited Japan as the second state guest from Viet Nam and met Prime Minister Abe, they released a statement in which both parties agreed to build an 'extensive strategic partnership'. And in September 2015, when Party SG Nguyen Phu Trong met Prime Minister Abe in Tokyo, they released a new statement in which both parties recognised that 'the extensive strategic partnership has been established' (Shiraishi, 2014b). More recently, in November 2021, new Prime Minister Phạm Minh Chính visited Japan and met new Prime Minister Fumio Kishida. The title of their joint statement was 'Toward the Opening of a New Era in Japan-Viet Nam Extensive Strategic Partnership for Peace and Prosperity in Asia' (Japan Ministry of Foreign Affairs, 2021a).

In summary, Japan is not a 'comprehensive strategic partner' itself by the definition of the Vietnamese categorisation. However, Japan is ranked as a counterpart to promote strategic partnership in a 'comprehensive manner', and more recently a counterpart for 'extensive' strategic partnership.

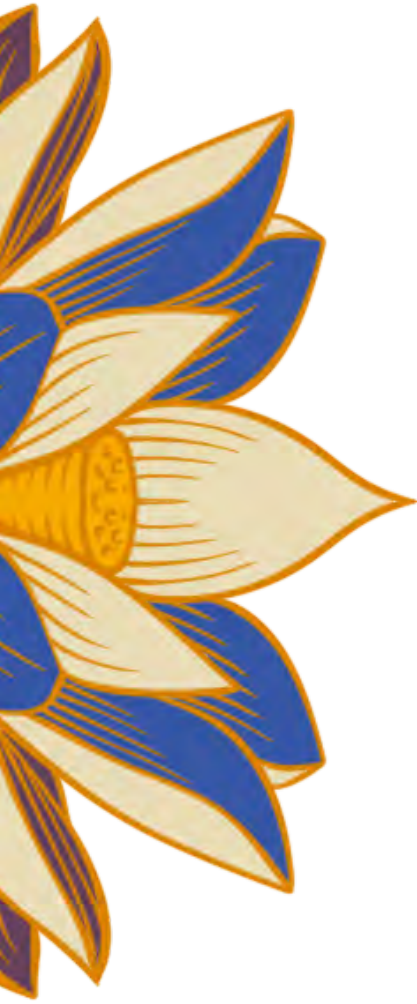
2.6. Japanese ODA to Viet Nam

Japanese ODA has played an important role in the process of building and promoting the strategic partnership. In November 2021, Prime Minister Pham Minh Chinh visited Japan and issued a new joint statement with Prime Minister Fumio Kishida. The document described that 'Viet Nam expressed gratitude to the Government of Japan and the Japanese people for the effective support for its socio-economic development and poverty reduction efforts through Official Development Assistance (ODA) during the past 30 years' (Japan Ministry of Foreign Affairs, 2021a).

As mentioned above, in November 1992, Japan became the first developed country to resume ODA, and since then it has been the top donor for Viet Nam. Thus, as of the end of 2021, the accumulated amount of Japanese ODA to Viet Nam reached ¥3 trillion (approximately US\$26 billion), of which more than ¥2.7 trillion was provided in the form of yen loans mainly to support infrastructure projects in the transport and energy sectors, etc., and the rest was provided in the form of grants and technical assistance to support various sectors, such as the medical services, environment, rural development, capacity building, education, and culture sectors (Japan Ministry of Foreign Affairs, 2022). The Japanese ODA in various fields has contributed significantly to Viet Nam's economic recovery, industrialisation and modernisation, and human resource development, etc., whilst enhancing Viet Nam's economic competitiveness and attractiveness as a destination for FDI.

Amongst the ODA projects, for instance, the Ishikawa project (a joint research project concerning Viet Nam's transformation into a market economy), which started in 1995 (Ishikawa, 2004), and a legal system reform project that was started in 1996 (Aikyuu, 2011), were the test cases for the Japanese government. Viet Nam was the first recipient country of such 'intellectual support projects'. With good results from the pioneer projects in Viet Nam, the Japanese government began implementing similar projects in other market transition countries.

Furthermore, in 1999/1995, after the outbreak of the Asian financial crisis, Foreign Minister Kiichi Miyazawa promised loans of ¥20 billion for Viet Nam's economic reform, as mentioned above.



At the turn of the century, the Tokyo government began making ODA programmes by country, and Viet Nam became the first target country in June 2006 (Shiraishi, 2009).

In 2003, following the agreement between Prime Minister Junichiro Koizumi and Prime Minister Phan Van Khai, a Japan-Viet Nam joint initiative was started to improve investment environments for enhancing Viet Nam's economic competitiveness. This was an effort to redress Viet Nam's weak and insufficient economic systems and institutions based on suggestions made by the Japanese government and businesses (Embassy of Japan in Viet Nam, 2019). Such an ambitious project could be agreed upon only with a solid relationship of mutual confidence between the two governments. The joint initiative has continued until today. The kick-off meeting of its eighth phase was held in October 2021.

In May 2002, Viet Nam initiated the Poverty Reduction Strategic Program (PRSP). It was the first attempt in Asia. However, reflecting the opinion of the World Bank and European donor countries, the original document did not pay enough attention to economic development through the building of infrastructure. With the strong initiative by Japan as the top donor and with the consent of the Hanoi government, a revised version of the document was accomplished with a new additional chapter on infrastructure building, which was accepted by the Consultative Group meeting in December 2013 (Shiraishi, 2009).

In the same period, the description of Viet Nam in the Japanese government's ODA white paper (annual report) underwent a significant change. Previously, the paper had regarded Viet Nam as a potential source of instability in Southeast Asia. However, during the first decade of the 21st century, the paper began emphasising the positive role of Viet Nam in the reduction of the ASEAN divide and the promotion of regional integrity. The paper regarded Viet Nam's stability and development as an important factor for realising well-balanced development in Southeast Asia, and noted that Viet Nam, as a more developed economy amongst the ASEAN newcomers, could be a good 'model' for the other less-developed CLM countries (Shiraishi, 2009). As mentioned above, Viet Nam showed that it could be 'a reliable partner in the international community' on the occasion of the 9th party congress in April 2001.

Viet Nam was one of the biggest destinations (number one or two) for Japanese ODA for more than a decade in the early 21st century. However, according to the Japanese Ministry of Foreign Affairs' ODA white papers, Viet Nam's ranking as a recipient country (on

the basis of the total amount of Japan's spending) was third in 2017 and 2018, sixth in 2019 and 2020, and eighth in 2021. Such a downgrading may be interpreted as a sign of Viet Nam's gradual 'graduation' from recipient status, although Viet Nam is still an important destination for Japanese ODA. In 2020, Japan's total spending to Viet Nam was US\$620.42 million, but reducing this by the US\$545.24 million paid back by Viet Nam (for returning past loans), the net spending of Japan was only US\$75.18 million (Japan Ministry of Foreign Affairs (2021), *ODA Hakusho*).

2.7. China's Role in Japan–Viet Nam Relations

One of the important reasons for the recent development of Japan-Viet Nam relations may be the role of China.

In September 2010, a Chinese fishery boat clashed with a Japanese sea patrol boat near the Senkaku islands in the East China Sea, and China temporarily stopped rare earth exports to Japan. Shortly after the incident, in October 2010, Prime Minister Naoto Kan visited Hanoi. On that occasion, Prime Minister Nguyen Tan Dung offered a joint development of rare earth in Viet Nam, which deeply moved the Japanese people (Umeda, 2020).

A year later, in October 2011, Prime Minister Dung visited Japan and met with Prime Minister Yoshihiko Noda. They issued a joint statement in which both parties confirmed that 'the peace and stability of the South China Sea is a common interest of the international community'. This was the first occasion where the two governments' joint statement referred to the South China Sea issue. Since then, all the joint statements have included a statement the paragraphs on the issue. In the meeting between Prime Ministers Noda and Dung, they also signed a document concerning the joint development of rare earth.

In July–August 2014, Foreign Minister Fumio Kishida visited Hanoi and exchanged notes with Minister of Planning and Investment Bui Quang Vinh concerning the ¥500 million grant for the capacity improvement of Vietnamese maritime law-enforcement organisations, which would provide six used vessels and related equipment. Two months earlier, in May of the same year, the China National Petroleum Corporation (CNPC) conducted oil research under the sea inside the Vietnamese Exclusive Economic Zone.

Thereafter, in September 2015, the Japanese government signed a new document concerning an additional grant aid amounting to ¥200 million to provide other used vessels and equipment. In June 2017, it also signed another document regarding a ¥38.482 billion loan to provide six new patrol boats.



Despite these examples, however, it may be misleading to conclude that Japan and Viet Nam have established a joint front against China. As mentioned in the first section, Vietnamese diplomatic policy is basically to 'cooperate whilst struggling'. It is also true that Japan does not necessarily totally stand against China.

3. Importance for Each Other

Vietnamese leaders often mention that Japan is a major partner as the top donor of ODA, the second biggest investor (following Korea) in terms of the accumulated amount of registered investment, the third biggest source of foreign visitors to Viet Nam (following China and Korea), and the fourth biggest trading partner (following China, Korea and the US).

For Japan, too, Viet Nam is becoming a more and more important partner.

3.1. Trade

The amount of bilateral trade between Japan and Viet Nam was merely US\$5 million in 1990. However, by 2011, the amount had increased to almost US\$21.2 billion.

In recent years, thanks to Viet Nam's accession to the WTO (effective since January 2009) and the conclusion of the Japan-Viet Nam EPA (effective since October 2009), etc., bilateral trade is expanding. Vietnamese exports to Japan increased from US\$10.781 billion in 2011 to US\$20.334 billion in 2019; Vietnamese imports from Japan increased from US\$10.400 billion in 2011 to US\$19.540 billion in 2019 (*Vietnam Statistical Year Book*, each year's edition).

One of the features of recent bilateral trade is that the amounts of imports and exports are rather well balanced. Second, the bilateral trade structure was typically vertical during the 1990s: Japan mainly exported industrial goods, whilst Viet Nam mainly exported natural resources (such as oil and sea products) and light industrial products (such as apparel goods). However, in recent years, Vietnamese exports of machinery and parts, and transport machines and parts, are increasing both in terms of the amount and their share of total exports (Japan External Trade Organization, 2022). This change seems to be a reflection of Viet Nam's swift development in industrialisation, partly thanks to Japanese and other foreign capital investment to Viet Nam.

As for its importance as Viet Nam's trade partner, Japan used to be ranked number one, but in recent years (since 2013) Japan has been fourth after China, Korea, and the US (Japan Bank for International Cooperation, 2019). Meanwhile, the importance of Viet Nam as Japan's trade partner has been growing year by year. Viet Nam as a destination for Japan's exports ranked 29th in 2000, 10th in 2015, and 9th in 2019, whilst Viet Nam as the origin of Japan's imports ranked 28th in 2000, 14th in 2015, and 10th in 2019. Viet Nam's ranking in terms of the total amount of bilateral trade was 8th in 2019 (Japan Ministry of Finance, each year's edition).

3.2. Foreign Direct Investment

For Japanese corporations' investment in Viet Nam, the accumulated amount of registered capital from 1988 (the year in which Viet Nam introduced the foreign investment law) to the end of 2020 was US\$60.3 billion (15.7% of total FDI), ranking second after Korea (US\$70.6 billion, 18.4%) (Embassy of Japan in Viet Nam, Economy Section, 2021). However, for the annual investment amounts in 2012, 2017, and 2018, Japan was the biggest investor.

The general trend of Viet Nam's receipt of Japanese FDI has been as follows: the first wave of the 'Viet Nam boom' was from around 1995 (the year Viet Nam joined ASEAN) until the outbreak of the Asian financial crisis in 1997; the second wave was from around 2004 (when the 2003 Japan-Viet Nam investment agreement came into effect) until around 2008 (when the global financial crisis occurred); and the third wave was from the early 2010s until 2020 (when the COVID-19 pandemic began).

As for the investment sectors, in the beginning, the major investment came from Japanese manufacturers, which contributed significantly to Viet Nam's exports, especially to Japan. In recent years, however, Japanese investment in the retailing and service sectors has also become quite active thanks to the growing consumption market in Viet Nam and the relaxation of government regulations (Mitsubishi-Tokyo-UFJ Bank, 2010).

For Japanese companies, the importance of Viet Nam as an investment destination has continually increased. An example demonstrating this fact is that during the summer of 2021, due to the COVID-19 pandemic, many factories in Viet Nam had to stop operations. Japanese enterprises' world supply chain was disrupted, and therefore domestic production in Japan and elsewhere was seriously damaged (*Nihon Keizai Shimbun*, 2021; *Yomiuri Shimbun*, 2021; *Asahi Shimbun*, 2021).

The total number of Japanese companies joining the Japan Chambers of Commerce and Industry in Hanoi (established in 1992), Ho Chi Minh City (established in 1994) and Da Nang (established in 2008) was 894 in 2010, but this increased to 1,772 in 2018, ranking number one in Southeast Asia and surpassing the number of Japanese companies belonging to a similar organisation in Thailand (Umeda, 2018). There are many factories that are not members of the abovementioned organisations, so the real number of Japanese companies doing business in Viet Nam must be much bigger. The total number of Japanese investment projects in Viet Nam from 1988 to the end of 2020 was 4,632.

Regarding the future prospects, according to the Japan Bank for International Cooperation (JBIC)'s questionnaire research targeting Japanese companies (multiple answers possible), as a promising business target in about three years, Viet Nam was ranked third (after China and India) in 2020 and fourth in 2021 (after China, India, and the US). Meanwhile, according to similar research by the Japan External Trade Organization (JETRO), as a good target to expand business activities abroad, Viet Nam was ranked second (after China) in 2020 and second again in 2021 (after the US). These research results suggest that many Japanese enterprises have big hopes for Viet Nam.

3.3. Human Interactions (1): Increasing Visitors

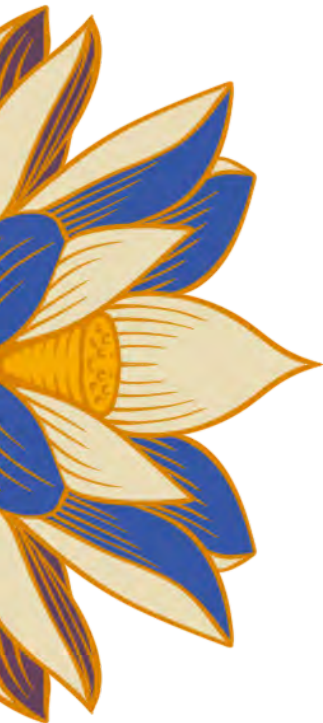
The number of Japanese visitors to Viet Nam is also steadily increasing. The opening of regular flight routes (between Kansai and Ho Chi Minh City airports in November 1994 and between Narita and Hanoi airports in July 2002, etc.) and the Vietnamese government's promotional policies (such as a visa exemption for short-term visitors from Japan for stays within 15 days) with direct impacts, as well as more general factors such as the increase in business activities between the two nations, the geographical closeness, and the development of the tourist industry in Viet Nam, have helped more Japanese to visit Viet Nam.

The number of Japanese visitors arriving in Viet Nam has also increased rapidly, from 120,000 in 1995 to 210,000 in 2003, 440,000 in 2010, 600,000 in 2013, and 950,000 in 2019. The figures in recent years show that Japan is ranked third as the origin of visitors (following China and Korea) (*Vietnam Statistical Year Book*, each year's edition). Meanwhile, from the Japanese point of view, the importance of Viet Nam as a destination when travelling abroad is growing year by year. Amongst the countries in the world, Viet Nam was ranked twelfth in 2010 and eighth in 2015. The detailed figures in 2019 were as follows: the US (including Hawaii) was the number 1 destination (3.75 million visitors), Korea was number 2 (3.27 million visitors), China was number 3 (2.68 million visitors), Taiwan was number 4 (2.12 million visitors), Thailand was number 5 (1.81 million visitors), and Viet Nam was number 6 (950,000 visitors) (Japan Travel Bureau, each year's edition).

Visitors from Viet Nam to Japan have also been rapidly increasing, especially in recent years. The number of Vietnamese visitors was 17,000 in 2003, 42,000 in 2010, 85,000 in 2013, 124,000 in 2014, 185,000 in 2015, 309,000 in 2017, 389,000 in 2018, and 495,000 in 2019 (Japan National Tourism Organization, 2022). Various factors have combined to contribute to this, such as the increasing income of many Vietnamese, their feelings of affinity and sympathy towards Japan and the Japanese people, and the popularity of cheaply priced flights between the two countries. As for the ranking of foreign visitors to Japan, Viet Nam ranked 15th in 2015, 12th in 2018, and 10th in 2019 (Japan National Tourism Organization, 2022). Thus, the importance of Viet Nam is enhancing year by year.

3.4. Human Interactions (2): Increasing Residents

As business activities between the two nations have increased, the number of Japanese residing in Viet Nam has also risen, though the speed has been relatively slow: 1,913 persons in 1996, 2,682 in 2000, 8,543 in 2010, 12,254 in 2013, and 23,148 in 2019 (Japan Ministry of Foreign Affairs, each year's edition). According to the information by Japan's Ministry of Foreign Affairs concerning the ranking of the top 50 countries/regions in terms of Japanese residents, Viet Nam was 31st in 1996,



26th in 2000, 20th in 2010, 18th in 2013, and 14th in 2019 (Japan Ministry of Foreign Affairs, each year's edition). Thus, Viet Nam's ranking has gradually improved.

Meanwhile, the number of Vietnamese residing in Japan has increased rapidly, especially in recent years. The number increased rather slowly in the past: 9,009 persons in 1995, 16,908 in 2000, 41,781 in 2010, and 72,256 in 2013. However, a rapid increase suddenly started in the mid-2010s: 99,865 in 2014, 146,956 in 2015, 199,990 in 2016, 262,405 in 2017, 330,835 in 2018, 411,968 in 2019, and 426,908 in 2020 (Immigration Services Agency of Japan, each year's edition).

Accordingly, the ranking in terms of foreign residents in Japan has also rapidly risen: Viet Nam ranked fourth in 2016 after China, Korea, and the Philippines, whilst surpassing Brazil; third in 2017 surpassing the Philippines; and second in 2020 surpassing Korea (Immigration Services Agency of Japan, each year's edition).

The rapid increase in Vietnamese residents has been mainly due to the increasing numbers of Vietnamese technical intern trainees and students.

As for the total number of workers in Japan, in 2019, Viet Nam ranked second, after China, but the number of technical intern trainees alone already ranked first by the end of 2016, surpassing China. As of October 2019, the number of intern trainees from Viet Nam was 194,000 (first), 87,000 from China (second), 35,000 from the Philippines (third), and 32,000 from Indonesia (fourth). Thus, the number of Vietnamese was by far the biggest. Furthermore, in 2020 Viet Nam became the number one country in terms of the total number of workers (Japan Ministry of Health, Labor and Welfare, each year's edition).

In terms of the destinations of Vietnamese workers going abroad, according to the Vietnamese Ministry of Labor, Japan ranked first in 2018, surpassing Taiwan. In 2019, out of 150,000 workers going abroad, 80,000 departed for Japan (first), 55,000 for Taiwan (second), and 7,000 for Korea (third) (Japan External Trade Organization, 2020).

According to the Japanese government's regulations, foreign students in Japan are allowed to work (side jobs) up to 28 hours per week (40 hours during long holidays, such as summer vacation). This is a strong incentive for more and more Vietnamese to arrive in Japan as students.

In terms of the origins of foreign students in Japan, Viet Nam ranked second in 2014, following China and surpassing Korea. According to the 2019 statistics, the total number of foreign students (including those studying in Japanese language schools) was 312,000, amongst which Vietnamese students numbered 73,000. In other words, one-fourth of foreign students in Japan were Vietnamese (Japan Student Services Organization, each year's edition).



3.5. Mutual Importance Demonstrated in Diplomatic Activities between Japan and Viet Nam

Diplomatic activities between Japan and Viet Nam demonstrate well that the two countries' leaders highly appreciate each other as counterparts. The following are some examples in recent years based on information from the Japanese Ministry of Foreign Affairs.

In January 2013, Prime Minister Abe chose Viet Nam for his first official trip overseas since the start of his second cabinet in late 2012.

In May 2016, the Japanese government, hosting the G7 Ise-Shima summit, invited the leaders of seven countries and five organisations as special participants to the outreach meetings. Prime Minister Nguyen Xuan Phuc from Viet Nam was one of them.

In February–March 2017, Emperor Akihito and Empress Michiko (the present-day emperor emeritus and empress emerita) visited Viet Nam as the final destination of their trip abroad just before their resignation. Finally, in May–June 2018, President and Mrs Tran Dai Quang came to Japan as the last state guests to be welcomed by the emperor and empress.

In the meantime, in November 2017, Prime Minister Abe visited Da Nang to attend the APEC summit and met bilaterally with President Tran Dai Quang, the host of the summit. Furthermore, after attending the official meetings in Da Nang, Prime Minister Abe went down to the neighbouring city of Da Nang, i.e. Hoi An in the Quang Nam province. He was invited by Prime Minister Nguyen Xuan Phuc (who originated from that province) to have dinner. Prime Minister Phuc only invited Prime Minister Abe, although there were many other important leaders attending the APEC summit.

Also during the Da Nang summit, Vietnamese Minister of Commerce and Industry Tran Tuan Anh and Japanese Minister of Economic Revitalization Toshimitsu Motegi co-chaired the TPP ministerial meeting and collaborated closely with each other to obtain a final consensus amongst the 11 TPP countries.

In June 2019, the Japanese government, hosting the G20 Osaka summit, invited the leaders of eight countries and nine organisations as special participants. Amongst them was Prime Minister Nguyen Xuan Phuc again. Viet Nam had been invited three times to the G20 summit in the past. However, the reason was that Viet Nam had acted as the host country of the ASEAN-related meetings and the APEC summit that year. For the fourth occasion this time, the Japanese government invited Prime Minister Phuc because it regarded Viet Nam to be especially important.

In October 2020, in the midst of the COVID-19 pandemic, Prime Minister Yoshihide Suga chose Viet Nam as the destination for his first trip abroad after his inauguration.

In early October 2021, Fumio Kishida went to Glasgow (United Kingdom) to attend the COP26 summit. This was his first trip overseas as prime minister since his inauguration. Whilst attending the formal conference, in his very busy schedule, he held bilateral meetings with only five leaders: Prime Minister Boris Johnson of the United Kingdom (as the conference host), President Joseph

Biden of the US, Prime Minister Scott Morrison of Australia, Secretary-General António Guterres of the United Nations, and Prime Minister Pham Minh Chinh of Viet Nam. Kishida had served as foreign minister and Chinh as the chairman of the Viet Nam-Japan Friendship Association of Parliamentary Members for a long time and, therefore, had had chances to meet in the past. However, this was the first time for direct contact after both became prime ministers.

Three weeks later, in late November, Prime Minister Phạm Minh Chính visited Japan as the first foreign leader whom Prime Minister Kishida welcomed in Tokyo.

Conclusion

In recent years, Vietnamese leaders have often stated that Japan is a reliable and true friend and that the Viet Nam-Japan bilateral relationship is at an all-time height: for instance, during President Truong Tan Sang's speech at the state banquet hosted by Emperor Akihito in March 2014, Prime Minister Nguyen Xuan Phuc's comments to Japanese journalists in Hanoi in May 2016, and President Tran Dai Quang's speech at the state banquet hosted by himself to welcome Emperor Akihito and Empress Michiko in March 2017.

For Japan, too, Viet Nam has become a very important partner, as mentioned in the previous section. In November 2020, for example, when Prime Minister Suga visited Hanoi, he emphasised to his counterpart, Prime Minister Nguyen Xuan Phuc, that 'Viet Nam is an important partner for Japan which will serve as the linchpin in the efforts to realise a free and open Indo-Pacific' (Japan Ministry of Foreign Affairs, 2020). A year later, in November 2021, new Prime Minister Kishida made a similar statement to Prime Minister Pham Minh Chinh who visited Japan (Japan Ministry of Foreign Affairs, 2021b).

As Viet Nam develops further and becomes more powerful, the two nations will have more opportunities to help each other and learn from each other. There are many ways in which Japan can contribute to helping Viet Nam escape the 'middle-income trap' and continue towards higher stages of growth. For Japan, too, as the country enters the stage of an aged society with fewer children, which human society has never experienced, Viet Nam's contributions will become more and more important.

Meanwhile, there remain many challenges that both countries must jointly or individually tackle. These include the struggle against the COVID-19 pandemic, various problems related to Vietnamese technical intern trainees in Japan, and issues concerning the rise of China. More recently, there are some examples where both countries



do not necessarily share the same opinion, such as the Myanmar situation and the war in Ukraine. In the future, there will be other similar issues. Furthermore, concerning international issues, such as the US-China confrontation, that involve the global society as a whole, it is impossible for Japan and Viet Nam to take the same position. For instance, Viet Nam will not join the Quadrilateral Security Dialogue of which India is a member. In such cases, it is important that both Japan and Viet Nam are considerate of the other's position and maintain an attitude of tolerance and sympathy.

The author believes that the two countries' leaders and people will overcome the challenges and difficulties with wisdom and continue to grow their friendly and cooperative relationship.

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Chapter 3

The Role of Japanese Official Development Assistance in Viet Nam's Socio-economic Development

Motonori Tsuno



Introduction

Japan's official development assistance (ODA) to Viet Nam marked its 30th anniversary after its resumption at the end of 1992. After independence in 1945, Viet Nam had been unable to move forward with nation-building due to years of warfare and remained internationally isolated after the end of war (1975), when the country was reunified from north to south. Following the establishment of peace in Cambodia in 1991, Japan became the first country to resume ODA to Viet Nam, paving the way for its return to international society and international assistance, including from the World Bank and the Asian Development Bank (ADB). The first donor meeting was held in November 1993 and since then, Japan has been the largest donor of ODA to Viet Nam.

Immediately after ODA resumed, the author was dispatched to the Embassy of Japan in Ha Noi from the Overseas Economic Cooperation Fund (OECF), the implementing agency for Japan's ODA loan (Yen Loan). At that time, the embassy was in a corner of an apartment complex outside the centre of Ha Noi, symbolising the difficult relationship between Japan and Viet Nam since the establishment of diplomatic relations in 1973. Embassy staff lived in the same apartment, enduring conditions considered one of the worst amongst Japanese embassies across the world.¹ ODA changed their previous work and lifestyle, and they spent their days building relationships with Vietnamese government ministries and gathering information. At the time, although Viet Nam was opening to the outside world through its Doi Moi (renovation) policy, a movement permit was required in advance to travel outside Ha Noi, and National Highway 5 to Haiphong was narrow and poorly paved road, making the round trip a day-long event. In response to Vietnamese expectations that the region would be a key development hub, Japanese ODA initially targeted improvements to National Highway 5 and Hai Phong Port. Before the projects, the surrounding area was covered with rice fields as far as the eye could see, with women working hard to irrigate the fields by hand using buckets and tilling the fields using water buffaloes, and no one could imagine what it would look like today, with so many industrial parks and factories lining the highway. The dramatic change brought about by infrastructure development illustrates the large impact of ODA. Along with transport and electricity infrastructure, the results of

¹ In 1993, the Embassy of Japan in Ha Noi was in one of the three worst locations based on the six-level evaluation criteria of the Ministry of Foreign Affairs. Almost all its about 15 staff members were posted without their families. Only 70-odd Japanese residents, including embassy staff, were in Ha Noi at that time. There are now some 8,600 in Ha Noi and 22,000 nationwide (Ministry of Foreign Affairs, 2022). Viet Nam has become a popular destination for Japanese, not only for tourism but also for work assignments.

Japanese ODA have spread throughout the country, including policy and institutional improvement of the market economy and legislation, as well as human resource development. Viet Nam, one of the poorest countries in the world when ODA resumed, joined the group of middle-income countries about 15 years later. The process is highly regarded internationally as a model of development that has simultaneously achieved economic growth and poverty reduction.

Japan–Viet Nam relations, including cultural exchanges, have flourished. The year 1993 marked the 20th anniversary of the establishment of diplomatic relations between the two countries, and the first Japan Festival was held in Ha Noi for a month in October, where Japanese culture was introduced, such as through Japanese-style fireworks and traditional Okinawan performing arts. Ha Noi's atmosphere became brighter and more open, and its energy overflowed to other parts of Viet Nam, including Ho Chi Minh City, attracting many Japanese people and businesses and deepening the friendly relations between the two countries' provinces. With China's growing presence in Asia, Viet Nam is now a core strategic partner of Japan, and relations between the two countries are good in all areas, including diplomacy, economy, culture, and security. ODA was the foundation of the relationship.²

Viet Nam will need to further upgrade its infrastructure, human resources, and policies to break out of the middle-income country trap and move to the next stage, with a view to graduating from ODA. Japan's ODA has evolved in recent years, along with the rapid development of emerging economies such as Viet Nam's, from traditional ODA from developed to poor countries, to cooperation with greater emphasis on interdependence. Japan's own growth strategy for overcoming long-term economic stagnation and difficulties such as falling birth rates and an ageing population is to emphasise investment in human resources, digital and green growth, amongst others, which is relevant to Viet Nam's future. Thus, new cooperation that contributes to mutual development between the two countries is expected, drawing on the achievements and lessons learnt from 30 years of ODA cooperation.

² Immediately after the Great East Japan Earthquake in 2011, a campaign to donate 1 day's salary per citizen spread throughout Viet Nam, and many donations from ODA-related organisations were sent to the Embassy of Japan and the Japan International Cooperation Agency (JICA) office, demonstrating the friendship that had grown through ODA.

1. History of Viet Nam–Japan ODA Cooperation

1.1. Cooperation Inherited from the 1950s

The starting point for Japan's ODA was post-war compensation to Burma (Myanmar), the Philippines, Indonesia, and Viet Nam (former Republic of Viet Nam, hereinafter South Viet Nam) after Japan returned to the international community with the San Francisco Peace Treaty in 1951 (Okaido, 2019). The projects that Viet Nam received still contribute to the country's progress more than 50 years later and have become a symbol of ODA's significance.

1.1.1. Da Nhim Hydropower Project

Post-war compensation to Viet Nam (1959) was mainly allocated to the Da Nhim Hydropower Project in the southern part of the country, which had been planned by Japanese engineers since the 1950s as a representative hydropower development project in the Mekong region (Nippon Koei, 2010). It was Viet Nam's first large-scale power generation project and was completed in January 1964, a year short of the original construction schedule, demonstrating Japan's cutting-edge construction technology. The hydropower plant has supplied electricity to the southern region through transmission lines, and irrigation through canals, the water of which had been used to generate electricity. The 'Japanese canals', as farmers call them, have transformed arid land into paddies and fields. After ODA resumed in 1992, Japan provided technical cooperation and loans to help formulate and implement plans to renovate the project's ageing facilities. In 1994, another yen loan was provided for the expansion project to maximise the use of water from the dam lake for power generation. On the other hand, the Can Tho Thermal Power Plant, completed in 1973 with a yen loan, in the heart of the Mekong Delta region has been well maintained and, like the Da Nhim project, remains a valuable source of electricity 50 years after its completion.

1.1.2. Cho Lai Hospital

Japan's cooperation in the medical field began in the mid-1960s with technical assistance to the Saigon Cho Lai Hospital. In 1973, a new ward—called the 'Japanese Hospital' by residents—was constructed with a grant aid. Even when Japanese ODA was frozen due to the problems in Cambodia, Japan continued to provide medical equipment as humanitarian aid. Upon its resumption, ODA supported the renovation project through grant aid and provided technical cooperation for about 15 years until 2014 as a hub for medical human resource development in the southern region. The cooperation model of Cho Lai Hospital was extended to Hanoi Bac Mai Hospital and Hue Central Hospital, and developed into a nationwide medical cooperation programme with the three hospitals at its core, becoming a model for Japan's medical cooperation around the world.

1.1.3. Can Tho University

Japan and Viet Nam are both rice-growing countries and have a long history of cooperation in agriculture. The Faculty of Agriculture at Can Tho University, a centre to develop agricultural human resources, began its study and research cooperation with Japan in the 1960s. (Its technical cooperation with Japan International Cooperation Agency [JICA] started in 1969.) Its faculty includes

Professor Vo Tong Xuan, who obtained his degree from Japan's Kyushu University in 1975. Known as 'Dr Rice', he served as dean of the Faculty of Agriculture at Can Tho University and president of An Giang University, helping develop agriculture in the Mekong region. Following Professor Xuan, many of the current faculty members have studied in Japan. In 1995, immediately after ODA resumed, a new campus for the Faculty of Agriculture was built through a grant aid. Since 2015, the entire university's facilities have been improved through yen loans and technical cooperation. The project simultaneously supports joint research with Japanese universities and companies, study in Japan, and other activities.

The Emperor Emeritus and Can Tho University

In 1976, His Majesty Emperor Emeritus, then the Crown Prince, published a research paper on a new species of goby, specimens of which were collected in a tributary of the Mekong River by two Japanese researchers from the Tokyo University of Fisheries, who participated in a research and educational cooperation project between Japan and the Faculty of Agriculture of Can Tho University. The specimens were donated to the Vietnam National University and the thesis to Can Tho University (Taki, 2010). In March 2017, the Emperor Emeritus became the first Emperor to visit Viet Nam to deepen the friendship between the two countries.

1.2. ODA to Unified Viet Nam

1.2.1. Fukuda Doctrine

In 1977, Japan Prime Minister Takeo Fukuda, during a visit to Southeast Asia, announced a set of guiding principles for Asian diplomacy. The Fukuda Doctrine, as it was called, aimed for the country to act not as a military power, as pre-war Japan was, but to expand cooperation in Asia as an 'equal partner' to break away from Japan's economically oriented past, and to build 'heart-to-heart' contact against the background of animosity from Southeast Asian countries wary of Japan's rapid growth and economic expansion (Iokibe et al., 2021). Japan's contribution to peace and development in the Indochina region was emphasised. Japan established diplomatic relations with Democratic Republic of Viet Nam (North Viet Nam) in 1973 and provided grant aid of ¥13.5 billion in 1975 and 1976 in lieu of post-war compensation. In April 1978, after the reunification of North and South Viet Nam in 1976, Japan started providing yen loans to Viet Nam through a ¥10 billion commodity loan, with the agreement that the Vietnamese government would take over South Viet Nam's loan obligations. However, in a short span of time, international aid to Viet Nam was halted in late 1978 due to the Cambodia-related issues, leading Japan to suspend its ODA programmes. Consequently, Viet Nam ceased making repayments towards its yen loan obligations. The resumption of Japanese ODA had to wait until the Cambodian peace process was concluded in 1991, some 10 years later. The resumption of yen loans was also contingent on the elimination of overdue debts accumulated during this period (Furuta et al., 2000).

1.2.2. Peace in Cambodia and Resumption of ODA to Viet Nam

Viet Nam lagged behind other Asian countries economically due to its international isolation since 1979. But with the end of the Cold War in 1988 and the collapse of the Soviet Union, the Cambodian

peace accords were concluded in October 1991, opening the way for Viet Nam to return to the international community. The Government of Japan encouraged Viet Nam to negotiate for peace through its own channels and held a series of discussions to resume ODA, including a visit to Viet Nam in November 1989 by Diet member Michio Watanabe,³ talks with the Chairman of the State Planning Committee, and a meeting between the two countries' foreign ministers in June 1991. On 6 November 1992,⁴ for the first time in 14 years, a yen loan was granted to Viet Nam (Kono, 1999; Imagawa, 2002; Furuta, 2017). Japan's contribution to peace in Cambodia through its diplomacy and the resumption of ODA to Viet Nam realised the spirit of the Fukuda Doctrine, which aimed to contribute to peace and development in Indochina, and met world expectations of 'turning Indochina from a battlefield to a market' (Thailand Prime Minister Chatchai, 1991).

Viet Nam's Clearance of Arrears and Commodity Loan

The resumption of yen loans to Viet Nam was conditional on the payment of overdue debts (the sum of principal, interest, and accumulated overdue charges from the original due date). However, as Viet Nam had difficulty preparing a budget for repayment, a solution was agreed upon: a 'bridge loan' by private Japanese banks (Matsuura and Yamamoto, 2022). In exchange for Viet Nam paying the arrears to Japan after receiving a ¥23.5 billion syndicated bridge loan from Japanese banks, Japan provided a ¥45.5 billion commodity loan to finance Viet Nam's imports. The imports included those that had already been settled retrospectively, so that the full loan could be disbursed immediately after the loan agreement was signed, with Viet Nam using ¥23.5 billion to repay the bridge loan and the remaining ¥22 billion to pay for new imports (Nihon Keizai Shimbun, 1992). The assistance of foreign currency funds through a commodity loan was based on the experience of assisting neighbouring countries after the collapse of the Soviet Union (such as the contribution to the Polish Currency Stabilisation Fund in 1991). Combined with a bridge loan from private banks, the assistance was applied when ODA to Myanmar resumed in 2013 (Ezaki, 2022).⁵ Regarding debt problems of developing countries, it has been international practice to agree on relief measures such as debt rescheduling at the Conference of Creditors (Paris Club), led by the Government of France. But Japan's willingness to support Viet Nam was demonstrated when Japan offered its own solution through bilateral negotiations, rather than relying on the French framework. Whilst Viet Nam's outstanding yen loans amounted to about ¥1.54 trillion at the end of FY2021, with annual repayment amounting to about ¥67 billion, Viet Nam has never had problems paying principal and interest.

³ Michio Watanabe, former Deputy Prime Minister and Minister of Foreign Affairs, built relationships with the leaders of both countries through his own parliamentary diplomacy to promote peace in Cambodia and the resumption of ODA to Viet Nam. He is remembered in Viet Nam as a politician who developed a personal relationship of trust with Chairman Phan Van Khai and Vice Chairman Vo Hong Phuc of the State Planning Committee (SPC) and contributed most to the resumption of ODA.

⁴ In consideration of the political impact on the United States (US), which had delayed normalisation of diplomatic relations with Viet Nam because of issues such as missing US soldiers after the Viet Nam war, the signing by the governments of Japan and Viet Nam of the yen loan was held pending the US presidential election in November 1992 (Kawaue, 2023).

⁵ ODA to Myanmar had been frozen since the suppression of the pro-democracy movement in 1988. It was resumed in 2013, 20 years behind Viet Nam, based on progress in democratisation. Myanmar became a priority country for Japan's ODA after Viet Nam, and it was hoped that Viet Nam's experience could be applied to it. However, ODA was frozen again in 2021 because of a situation similar to the previous one and has no prospect of resumption at present.

1.3. Start of Full-fledged ODA Projects

1.3.1. Yen Loan

Parallel with the resumption of ODA through a commodity loan in November 1992, Japan accelerated preparations for project-type loans to support infrastructure. In June 1993, through the first government mission on yen loans, the Japanese government agreed on the projects to be supported and, based on the appraisal by the OECF, decided on the first package of yen loans totalling ¥52.3 billion for eight projects. The loan agreements were signed in January 1994. The projects were the rehabilitation and improvement of National Highway 5 (Ha Noi–Haiphong) and Haiphong Port in the north and bridges of National Highway 1 and North–South Railway; construction of three power stations; and rehabilitation of rural infrastructure (roads and water supply). Viet Nam’s transport infrastructure, including national roads, bridges, and port facilities, was damaged by bombing during the Viet Nam War and, without satisfactory repairs, deteriorated and needed urgent rehabilitation. Japanese ODA was expected to fully support reconstruction some 20 years after the war ended. Stable electricity supply was also essential for economic recovery and new power plants were urgently needed. To respond quickly to the enormous needs of transport and power infrastructure, the Japanese side took the initiative in conducting supplementary studies addressing any inadequacies in the plans that had been prepared by the Vietnamese side.⁶ Since the total cost of the eight projects exceeded ¥250 billion and could not all be covered by yen loans in a single year, a method was adopted whereby yen loans were provided in stages according to the progress of each project. To start a project, overall financing must be assured, which was made possible by positioning Viet Nam as an annual recipient country since the first year, alongside long-standing major borrowers such as other Association of Southeast Asian Nations (ASEAN) countries. This method of finance provision, known as ‘time-slicing’ loans, with active project formation as above, became the features of yen loans to Viet Nam in subsequent years.

1.3.2. Grants and Technical Cooperation

The focus of grant aid was on the basic human needs (BHN), including the medical and education sectors and, parallel with the resumption of yen loans, grant aid started in 1992 for the renovation of the Cho Lai Hospital, followed by projects such as the construction of the campus of the Faculty of Agriculture of Can Tho University. To develop human resources in conjunction with grant aid projects, technical cooperation projects by Japanese experts were initiated and the areas covered were expanded to other challenging fields such as legislation. Parallel with the yen loan for National Highway 5 and Haiphong Port, the first development study supported a master plan for transport in the north (Northern Region Transport System Development Plan). The study was followed by about 15 more projects through 1994, including urban transport in Ha Noi and Ho Chi Minh City and industrial development and drainage system improvement in Ha Noi, each of which contributed to implementing projects financed by yen loans. The Support for Market Economy Policy was implemented as a national strategic-level development study and served as the basis for overall Viet Nam–Japan cooperation.

⁶ The Special Assistance for Project Formation (SAPROF) was introduced in 1988 in OECF, as a new facility of technical assistance for the borrowing countries to prepare for new projects.

As a result, a coherent cooperation system was established from the very beginning of Japanese ODA, whereby projects are implemented through large-scale financial cooperation (yen loans), whilst technical cooperation provides comprehensive and consistent support from the country's overall development strategy to sectoral and regional development plans and the formation of individual projects based on these plans.

2. Basic Policy on ODA to Viet Nam

2.1. Importance of Viet Nam in Japan's Foreign Policy and ODA

The Fukuda Doctrine aimed to make international contributions befitting Japan, the only developed country in Asia, and focused on peace and reconstruction in Indochina, with ODA to Viet Nam from 1992 being a focal point. Since then, Japan has experienced a period of economic stagnation known as the 'lost decade'. China overtook Japan in GDP in 2010, becoming the largest economy in Asia and the second largest in the world, and intensifying its hegemonic moves. Meanwhile, the importance of Viet Nam, which is located at the heart of the ASEAN and Mekong regions and has become a major economic power, has grown over the years and, since 2009, has become a 'strategic partner' of Japan, with ODA expected to be of a scale and content appropriate to this change.

2.2. ODA Charter and Viet Nam

At the time of the resumption of ODA to Viet Nam, Japan's ODA was focused on Asian countries, including China, India, Indonesia, Malaysia, the Philippines, and Thailand, and had accumulated experience and lessons from many ODA projects. In Thailand, for example, a comprehensive development project, Eastern Seaboard Development Program, which included industrial parks, ports, roads, railway, power, water supply, and other infrastructure, had just been completed. In China, infrastructure development was progressing with Japanese assistance under the reform and opening-up policy. Japanese investment in both countries had increased against the backdrop of the strong yen since 1985, and Viet Nam was expecting similar benefits from ODA.

In June 1992, the Government of Japan adopted the ODA Charter, stipulating the philosophy and policies of ODA in the light of growing public interest in ODA, including large-scale financial contributions during the 1991 Gulf War and the socio-environmental problems encountered in some ODA projects, such as resettlement of people affected by the projects. The charter set out humanitarian considerations, recognition of interdependence with developing countries, environmental protection, and support for self-help efforts as basic principles. The charter also stipulated that attention should be paid to balancing the environment and development, avoiding use of ODA for military purposes and encouragement of international conflict, and promoting democratisation and efforts to introduce a market-oriented economy.⁷ The resumption of ODA to Viet Nam occurred immediately after the enactment of the ODA Charter, and project selection and implementation were conducted with a

⁷ The background was the international situation at the time, including the freeze on ODA in response to the suppression of the Myanmar democracy movement (1988), and the Tiananmen Square incident in China (1989), as well as the emphasis on assistance to countries in market transition following the collapse of the Soviet Union.

strong emphasis on the principles of the Charter.⁸ With regard to priority areas, JICA established the Vietnam Country Assistance Study Group⁹ to study development scenarios and strategies for Viet Nam based on its Sixth Development Plan (1995–2000). Taking into account recommendations of the study group and policy dialogue with the Government of Viet Nam via a government mission (1994 Comprehensive Economic Cooperation Study Mission), the Government of Japan agreed on six priority areas: (i) human resource and institutional building, (ii) electricity, (iii) transport, (iv) agriculture and rural development, (v) education and health care, and (vi) environment.

[Emphasis on Human Resources: “Wise human resources are the vigour of a nation.”]

In August 1994, Prime Minister Tomiichi Murayama became the first Japanese prime minister to visit Viet Nam. In his speech at the welcome dinner, he referred to the Japanese TV drama *Oshin*, which was popular in Viet Nam at the time, and to the words ‘賢材国家之元氣’ inscribed on a stone tablet in the Temple of Literature in Ha Noi, the site of Viet Nam’s oldest university: ‘It is no exaggeration to say that Japan’s post-war reconstruction and economic development were supported by the labour and hardship of the *Oshin* generation, and human resources are also important for the nation-building of Vietnam. Japan would like to promote cooperation in this field of human resource development’ (Speeches of Prime Minister Murayama, 1998). His speech expressed the sentiments of the Japanese people, who saw in Viet Nam their own post-war hardships and wished for its recovery. Those words (in Vietnamese: “Hiện tại là nguyên khí quốc gia”) are now prominently displayed at the main gate of the Vietnamese Ministry of Education.

2.3. Strengthening the Strategic Nature of ODA to Viet Nam

2.3.1. From ‘Aid’ to ‘Development Cooperation’

Whilst Asia, which had been Japan’s top priority region for ODA, developed into a global growth centre, Japan’s own economy has remained sluggish since the bursting of the bubble economy in 1991. The aid budget has been halved since its peak in 1997. The ODA Charter, revised in 2003, stated that ‘active contributions to the stability and development of developing countries will ensure the security and prosperity of Japan and promote the interests of its people’. This idea of linking international contributions to national interests was reflected in the Japan Revitalisation Strategy (Cabinet decision in 2013), which was formulated as a new growth strategy after the 2011 Great East Japan Earthquake. As part of the strategy, emphasis was placed on the contribution of ODA to the Infrastructure Export Strategy to incorporate global infrastructure demand into Japan’s growth, as well as the overseas expansion of Japanese companies. In 2015, the Development Cooperation

⁸ JICA supported the planning of a new terminal for Noi Bai International Airport in Hanoi, as the first development study from 1993, and the project was expected to be implemented with a yen loan, and become the highlight of Japanese ODA. But as the Vietnamese Air Force was sharing one runway, Japan’s policy of strict separation of military and civilian use forced a long-term plan to build a another international airport. Viet Nam, in its haste to start the project, built new terminal with its own funds and design (completed in 2001). To cope with the ever-increasing number of passengers, along with Viet Nam’s development, the new international terminal was completed at the end of 2013, almost 20 years later, with the help of yen loans. Since then, the old terminal has been used exclusively for domestic flights.

⁹ Professor Shigeru Ishikawa chaired the study, and academics with close ties to Viet Nam, as well as Keidanren and OECF, participated as committee members. JICA organised a task force, including experts, to support the study. The study group proposed strategies for agriculture and rural development, infrastructure, industrial policy, rural development, poverty alleviation, human resource development, health and medical care, and others based on Viet Nam’s Sixth Development Plan (1995–2000) (JICA, 1995). The study group’s discussions with the Vietnamese side developed into the Policy Support for a Market Economy (Ishikawa Project).

Charter was formulated in place of the ODA Charter, positioning ODA not as traditional 'aid' but as 'collaboration as an equal partner' with developing countries, as indicated by the change of title from 'ODA' to 'Development Cooperation' and listing 'high-quality growth', 'sharing universal values', and 'addressing global challenges' as key areas of focus. And as its regional policy towards the ASEAN region, the Charter emphasises the strengthening of hard and soft infrastructure support (particularly in the Mekong region) to 'enhance connectivity', human resource development to promote productivity growth and technological innovation to avoid the 'middle-income country trap', disaster management and disaster response capacity building, and the promotion of the rule of law. All of these are challenges for Viet Nam, which has become an important country in the region.

2.3.2. Focused Priority of Country Assistance Policy for Viet Nam

In 2003, when the ODA Charter was revised, the Japan–Vietnam Joint Initiative was launched to promote an improved investment climate in preparation for Viet Nam's accession to the World Trade Organization (2007). Policy dialogue with the World Bank and others on Viet Nam's poverty-reduction programme was intensified. To respond more effectively to the new developments in Ha Noi, the ODA Task Force, a consultative body with JICA, Japan Bank for International Cooperation (JBIC), and Japan External Trade Organisation (JETRO), was set up at the initiative of the Japanese Embassy, and a revised draft of the Country Assistance Policy was discussed through the local initiative with Professor Kenichi Ohno as advisor.¹⁰ As a result, the priority areas have been consolidated into three pillars: (i) promotion of economic growth, (ii) improvement of livelihood and social aspects, and (iii) institutional development. The idea was to make further efforts to improve infrastructure and the investment environment, correct disparities between the rich and the poor and between regions, and improve the administrative and judicial systems that support implementation of the policies. The emphasis on economic growth and infrastructure contrasted with the international aid trend at the time, which was inclined towards poverty reduction and social sector support from the perspective of contributing to the Millennium Development Goals (MDGs), whilst Japan and Viet Nam shared the philosophy of poverty reduction through growth.¹¹ The Country Assistance Policy was subsequently reviewed based on the Development Cooperation Charter (2015) and became the current Development Cooperation Policy (2017). The three-pillar basic policy has evolved as (i) promoting economic growth, (ii) addressing vulnerabilities, and (iii) strengthening governance, and in line with the focus for the ASEAN region set out in the charter. The policy aims to strengthen connectivity in the Mekong region and contribute to the promotion of the Free and Open Indo-Pacific Strategy by contributing to Viet Nam's economic development. At the same time, it takes into account newly emerging social issues, including disaster prevention, social security, and ageing measures based on Japan's experience as a response to vulnerability.

¹⁰ Professor Kenichi Ohno and Professor Izumi Ohno, former Executive Director of JICA Research Institute, have continued to make intellectual contributions to ODA policy, particularly in Viet Nam and Africa, since their participation in the Ishikawa Project in Viet Nam. Professor Ohno contributed to the review of the ODA Charter and the establishment of the Development Cooperation Charter (2014) as a member of the Advisory Panel.

¹¹ In May 2002, the Government of Viet Nam established the Comprehensive Poverty Reduction and Growth Strategy (CPRGS) as a comprehensive approach based on a growth-oriented policy, adding a growth component to the PRSP and emphasising infrastructure development and improvement of the investment environment.

3. ODA Implementation Arrangements

3.1. Implementation Arrangements on the Japanese Side

3.1.1. Japanese Government Structure for ODA

Japan's ODA has been implemented under a consultative system between relevant ministries; mainly the Ministry of Foreign Affairs, Ministry of Finance, and Ministry of Economy, Trade and Industry, and executing agencies for technical cooperation and yen loans respectively. From the 2010s, against the background of the emphasis on ODA which will serve Japan's growth strategy and national interests, to ensure more strategic and speedy implementation of ODA, the command post function under the direct control of the Prime Minister's Office has been strengthened. Viet Nam has been positioned as a 'strategic partner' of Japan since 2009, and the Prime Ministers of Japan and Vietnam have a relationship of frequent summit meetings, including mutual visits, with ODA always being a key agenda item. In addition, a new mechanism has been established whereby the Economic Cooperation and Infrastructure Council, hosted by the Chief Cabinet Secretary, discuss and direct responses to relevant ministries to promote the Infrastructure Export Strategy, including specific candidate projects.¹²

3.1.2. Integration of ODA Implementation System

For many years, ODA was implemented under a system in which OECF provided yen loans and JICA provided technical cooperation. However, in 1999, JBIC was established through the merger of OECF and the Export-Import Bank of Japan to provide integrated support for ODA and promotion of trade and investment. Although many yen loan projects were completed in Viet Nam under the name of JBIC, in 2008 about 10 years after the integration, the yen loan part of JBIC was merged into JICA from the perspective of improving ODA by realising a new system to implement yen loans and technical cooperation in a comprehensive and integrated manner (JBIC remained as the former export credit agency). As Japan has been the largest donor of ODA in Viet Nam, the new JICA which is overall in charge of ODA, has further strengthened Japan's presence in the donor community. (The author served as the Chief Representative of the Vietnam Office of the new JICA from its establishment until mid-2013, following assignments at the Embassy of Japan and the Representative Office of OECF in Ha Noi in 1992-1995.)

3.1.3. Strengthening of Local Implementation System

At the start of ODA to Viet Nam, OECF and JICA seconded staff to the Embassy of Japan before OECF opened a representative office in October 1994 and JICA a year later. The OECF office initially started with two Japanese (Chief Representative and the author) and a Vietnamese staff member, and a

¹² In the Vietnamese Government as well, the Prime Minister's Office also began to play a more central role in response to Japan, but both the North-South High Speed Rail and the nuclear power plant project agreed between the Prime Ministers around the same time were later rejected by the Vietnamese National Assembly and have not been implemented. These difficult cases should be noted as lessons for the future.

room in the State Planning Committee (SPC) was provided as a temporary office for about 6 months until the office was ready, thanks to special consideration by the SPC. The room was on the same floor as the Deputy Minister in charge of ODA and the Foreign Economic Relations Department, and the daily interaction with them formed the basis for the close relationship with Ministry of Planning and Investment (MPI) that has continued to this day.¹³

The role of the representative office is to monitor and promote the implementation of ODA projects in cooperation with the Vietnamese government and project-implementing agencies, and to gather local information. In response to the increase in ODA projects, the staffing and structure of the office was strengthened, including Vietnamese professional staff.¹⁴ The authority to approve procedures, such as international tenders for yen loan projects and loan disbursement, which had been carried out by headquarters, was transferred to the representative office and welcomed by the Vietnamese side as it helped speed up the yen loan process. In particular, the Vietnamese staff have deepened their relationship of trust with their counterpart officials through years of service, and have accumulated experience and know-how, becoming an asset in supporting ODA field operations.

The World Bank and ADB also strengthened their local structures early on, with a country director stationed in Hanoi and local leadership of operations from aid policy to individual projects. Against the background of the emphasis on aid coordination, including with other donors, in the early 2000s, Japan established the ODA Task Force (see above) under the leadership of Japanese Embassy to reflect local information and opinions in the formulation of government aid policies and the selection of projects. Its integrated approach to policy dialogues on development strategies with the Vietnamese government, the World Bank and other donors was also recognised as having contributed to reflecting the voice of Japan. (Shimamura, 2005; Kitano, 2006).

3.2. Implementation Arrangements on the Vietnamese Side

3.2.1. Core Role of the Ministry of Planning and Investment

The Vietnamese government's SPC has long played a leading role in Viet Nam's development planning and was the central point of contact for the Vietnamese side when ODA was resumed. In 1995, the SPC was merged with the State Committee for Cooperation and Investment (SCCI), which was in charge of private investment, and became the MPI, with overall responsibility for both ODA and private investment, which had begun to increase along with ODA. The implementation of ODA required to harmonise the Vietnamese system with international standards, that differed from those of the former Soviet Union, which had previously assisted Viet Nam. The Foreign Economic Relations Department of MPI played a central role under Minister Vo Hong Phuc, who was deputy chairman of SPC when ODA resumed and served as minister until 2011. His leadership in developing the ODA system, including international aid coordination, was highly appreciated by donors. The new

¹³ The SPC, a central agency within the Vietnamese government, had never accepted offices of foreign agencies in its buildings. The special treatment given to OECF was reported to the Party General Secretary for approval (Phuc, 2022).

¹⁴ Besides supervising projects, OECF employed experts to support the implementing agencies through Special Assistance for Project Implementation, which was part of the yen loan implementation support system introduced in 1989, and, together with the Special Assistance for Project Formation and Special Assistance for Project Sustainability for improving project preparation and post-completion operations, was used for many projects in Viet Nam.

initiatives of Japanese ODA, represented by the support for market economy policy in the late 1990s and the Japan–Vietnam Joint Initiative from the early 2000s onwards, were both realised under a high-level trust relationship between MPI and the Japanese government.

3.2.2. Strengthening Relevant Ministries and Implementing Agencies

In line with the priority areas of ODA, the relevant Vietnamese government agencies were spread across the ministries of transport, industry (Electricity of Vietnam), agriculture, and health and education; and people’s committees nationwide, where ODA projects were implemented. Under their supervision and guidance, the project management unit (PMU) was established for implementation of each project. The MPI closely guided the staff of the ministries and PMUs, and OECF and JICA representative offices worked together to provide day-to-day consultation and advice, as well as intensive ODA training by inviting their counterparts to Japan. Japanese consultants and experts who assist implementing agencies with various procedures and project supervision have played a crucial role.

As the Vietnamese side accumulated experience, various efforts were made to promote ODA implementation. For example, the Ministry of Transport, where the largest number of yen loan projects have been concentrated and large-scale projects have progressed since the early 2000s, established a system whereby the deputy minister co-organised with JICA monthly monitoring meetings. All implementing agencies reported on projects’ progress and problems and were instructed on how to handle them, taking into account JICA’s advice. On the other hand, JICA held regular meetings with the Deputy Prime Minister (DPM) in charge of ODA on issues that were difficult to resolve at the ministerial level and, where necessary, the DPM himself convened all the parties, including ministries, people’s committees, and others, to spearhead the resolution of problems.¹⁵ An increasing number of cases have been reported in recent years where implementing agencies and ministries have taken time to coordinate and seek decisions from the Prime Minister’s Office, but strong ownership and reliable leadership from the implementing agency itself is essential for smooth implementation of ODA projects.

4. Track Record of Japan’s ODA to Viet Nam

4.1. Scheme and Sector Breakdown

Japan’s ODA consists of three main schemes; yen loans, grant aid and technical cooperation, and in terms of volume, yen loans account for a large proportion, reflecting the development stage and borrowing capacity of Asian countries, which have been Japan’s traditional focus area, and their great need for funds for infrastructure development. The same is true for Viet Nam, where the cumulative total amount of yen loans granted as of the end of FY2021 amounted to ¥2.78 trillion, accounting for about 90% of the total ODA amount of ¥3 trillion, including ¥95.8 billion in grants and ¥178.4 billion in technical cooperation. (Table 3.1) The main breakdown of each scheme is as follows.

¹⁵ Around 2010, when major transport projects made progress whilst overcoming many difficulties, such as dealing with the Can Tho Bridge accident, the Saigon East–West Highway payment issue, and the delay in land expropriation for the Noi Bai–Nhat Tan expressway, the efforts of the Vietnamese partners such as Deputy Prime Minister Hoang Trung Hai and Deputy Minister of Transport Ngo Think Duc were noteworthy.

4.1.1. Yen Loan

The main focus of yen loans is on infrastructure development contributing to economic growth, the first pillar of Vietnam's country assistance policy, with the transport sector (roads, bridges, ports, etc.) accounting for the largest share at 46%, and the power sector (power generation, transmission, distribution, etc.) 24%, together accounting for 70% of the total. The second pillar, addressing vulnerability, includes social services such as wastewater and sewage treatment, accounting for 14%, and financial support for poverty reduction and climate change measures, 11%, for a total of 25%, indicating that along with infrastructure, soft areas such as environment, rural development, and support for policy and institutional development have also been emphasised.

Table 3.1. Japan's ODA to Viet Nam in recent years (¥ billion)

Fiscal Year	Yen Loan	Grant	Technical Cooperation
2016	187.1	1.1	9.0
2017	61.8	2.6	6.7
2018	0	0.5	6.4
2019	0	2.4	5.0
2020	48.5	2.1	4.3
2021	10.8	0.7	4.9
Cumulative Total	2,784.2	95.8	178.4

Source: Japan International Cooperation Agency. (The amount for each year is the sum of loan agreements, grant agreements, and actual expenditure for technical cooperation.)

4.1.2. Grant Aid

As mentioned above, grant aid has mainly targeted the BHN sector, such as healthcare and education, and has achieved comprehensive results by combining technical cooperation for human resource development as well as improving facilities through grant aid, such as cooperation with major hospitals in Viet Nam (Ho Chi Minh City Cho Lai, Ha Noi Bac Mai, and Hue Central Hospital, etc.), the National Institute of Hygiene and Epidemiology (NIHE), and national universities, including Agricultural Faculty of Can Tho University. Since Viet Nam, now a middle-income country, is about to graduate from grant aid, the annual grant amount has decreased from about ¥5 billion in 2005 to ¥1 billion–¥2 billion in recent years. Even in the medical and educational fields, yen loans have been used in place of conventional grants for larger-scale projects such as medical equipment supply for rural hospitals, construction of the second Cho Lai Hospital, and facility expansion at Can Tho University.

4.1.3. Technical Cooperation

Technical cooperation mainly comprises development studies to support development policy and planning of development projects, and project-type technical cooperation (technical cooperation projects) that address various development issues by sending Japanese experts to provide guidance and equipment and by providing training programmes that invite counterparts to Japan. In Viet Nam, many of the cooperation projects have been implemented on a large scale and over a period of more than 10 years and have had a large impact, such as the Market Economisation Policy Support and National Transport Strategy Study, conducted as development studies, and the support for three hospitals and legal development, which are representative examples of technical cooperation projects. On the other hand, when ODA resumed, Vietnamese were still wary of foreigners because of years of war and international isolation and cautious of accepting long-term experts and overseas cooperation corps (JICA volunteers). The technical cooperation project started with one expert in forestry and four volunteer Japanese-language teachers, then based on the results and sense of trust, it expanded the target fields and the number of participants. Cumulatively, by the end of FY2021, 15,193 Japanese experts had been dispatched to Viet Nam and 27,129 Vietnamese trained in Japan. In addition, a total of 690 young and senior volunteers were dispatched mainly to rural areas of Viet Nam, where they trained nurses, physiotherapists, and others; developed villages; and taught Japanese language.

4.2. Trends in the Amount and Terms of Yen Loan

4.2.1. Amount of Loan

The above cumulative amount of yen loans for Viet Nam (end of FY2021) is the fifth largest after India (¥6.9 trillion), Indonesia (¥5.3 trillion), the Philippines (¥3.6 trillion), and China (¥3.4 trillion, ended new yen loans in 2008), followed by Bangladesh (¥2.7 trillion) and Thailand (¥2.4 trillion). Since the resumption of yen loans, Viet Nam has been positioned as an Annual Recipient Country like other major borrowers, and the annual loan amount has increased from ¥45.5 billion in 1992 for a commodity loan and ¥52.8 billion in 1993 for project loans to the level of ¥8 billion at the end of the 1990s, ¥100 billion around 2005, and in the early 2010s, the annual loan amount exceeded ¥150 billion. (Table 3.2) The expansion of yen loans to Viet Nam was based on the fact that the country has extremely large infrastructure needs and that many projects have achieved results since the start of yen loans, and because Viet Nam has become increasingly important as a strategic partner in Asia in recent years, and has been emphasised in the Japanese Government's Infrastructure Export Strategy.

Declining trend in recent years

In recent years, however, with Viet Nam's economic growth, sources of funds for infrastructure development have diversified beyond ODA to include private investment and government bond issuance. Against the backdrop of the Vietnamese government's policy to curb public debt (National Assembly resolution in October 2016 to cap public debt to GDP ratio at 65%), new borrowing from the World Bank and ADB, including Japanese yen loans, has declined significantly (zero new yen

loan acceptances in FY2018–2019) (Table 3.1). Since then, the public debt-to-GDP ratio has been in the 40% range, and the resumption of new yen loans was agreed upon during the Japan–Viet Nam summit meeting in November 2019 (Umeda, 2021). Expectations for yen loans have been heard from the Vietnamese government, using the expressways and North–South High-Speed Rail as examples, whilst public debt management and the balance with private financing remain a concern. Looking at the amount of yen loans in FY2021, India (¥312.3 billion), Bangladesh (¥310.6 billion), and the Philippines (¥253.3 billion) were the three main borrowing countries, actively utilising yen loans for strategic infrastructure such as high-speed rail and urban transportation, in sharp contrast to Viet Nam (¥10.8 billion).

Table 3.2. Trends in the Amount of Yen Loans (¥billion)

Fiscal Year (5 years)	1992–1996	1997–2002	2002–2006	2007–2011	2012–2016	2017–2021	Total (30 years)
Total Amount of Loans	306.8	419.5	426.6	683.3	800.3	121.2	2,757.6
Annual Average	61.4	83.9	85.3	136.7	160.1	24.2	91.9

Source: Author, based on Japan International Cooperation Agency data.

4.2.2. Terms of Loan

4.2.2.1. Interest Rate and Repayment Period

Yen loans are long-term, low-interest loans with standard terms and conditions for each income group of developing countries, which are regularly reviewed based on market trends and other factors. Preferential interest rates are applied to the environment, climate change, healthcare, disaster management, and human resource development. When the yen loans resumed for Viet Nam, conditions for the poorest countries—interest rate of 1.0% and repayment of 30 years (including a 10-year grace period)—were applied. Now that it has become a low- to middle-income country, the standard interest rate is 1.7% and the preferential rate for the environment and others is 1.5%, with the same repayment period. Consulting services for design and construction supervision are subject to an interest rate of 0.01%, whilst special preferential terms of 0.1% interest and 40-year repayment (including a 10-year grace period) are applied to the Special Terms for Economic Partnership (STEP)



loans (see below) for promoting the use of Japanese technology with tied procurement conditions.¹⁶ The Vietnamese government (in particular, the Ministry of Finance), however, has a cautious view of the concessionary nature of borrowing in yen, and has been requesting further relaxation of conditions.¹⁷

4.2.2.2. Procurement Conditions

For the implementation of the project supported by yen loans, procurement should be based on the general untied principle, open to all developing and developed countries. In addition, domestic tendering is also applied to projects where it is appropriate for local companies to implement the project, such as small-scale construction works. As a result, Vietnamese companies participate in almost all projects in one form or another, and many third-country companies have been involved, including companies from the USA, France, Republic of Korea, China, and other countries in projects such as electric power and highway constructions. On the other hand, within the scope allowed by Organisation for Economic Co-operation and Development (OECD) rules, the Special Yen Loan under tied conditions was introduced in 1998, as additional assistance in response to the Asian currency crisis, and in 2002, was expanded as STEP. STEP targets projects that can take advantage of Japan's superior technology and know-how and has adopted a flexible system for effective implementation. The main contractor for the contract, which is determined by bidding, must be a Japanese company, but to avoid high costs, at least 30% of the work must be procured from Japan, whilst up to 70% can be procured from outside Japan. The project also allows companies of borrowing country and third countries to participate as joint ventures or sub-contractors. Viet Nam has been the most active user of STEP since its introduction, expecting its preferential conditions and the high quality of Japanese firms. Through STEP, many Vietnamese companies, along with Japanese companies, participated in Japanese ODA projects, and it was evaluated that the use of local materials and technology transfer had progressed. However, it should be noted that in recent years, the Vietnamese government increasingly views STEP as less competitive and more expensive for bidding.¹⁸

¹⁶ To support projects that promote quality infrastructure, High-Specification Loans (untied) were introduced in 2017, with preferential conditions: for low- to middle-income countries, a base rate of 0.5%, 30-year term (10-year grace period).

¹⁷ The Vietnamese Ministry of Finance has applied its own calculation method to the grant element of the ODA definition set by the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC), and is seeking further relaxation of conditions, arguing that the current yen loan conditions do not constitute ODA. It should be noted that in the OECD (DAC) and the Export Credit Group, countries that have traditionally used grant-based ODA, have raised the issue of revising the ODA definition and regulating tied aid in the direction of regulating ODA through loans from the perspective of improving the quality and reducing trade distortions of ODA.

¹⁸ In Viet Nam, ODA projects are generally considered to be expensive, and it is cheaper and more profitable for local companies, rather than foreign companies, to undertake them. However, cost comparisons need to be assessed from a long-term perspective, including project sustainability and life-cycle cost.

5. Characteristics of Japan's ODA and Problems in its Implementation

5.1. Features of ODA to Viet Nam

Japan has been Viet Nam's largest ODA donor, and whilst its massive contribution to nation-building through infrastructure development is noteworthy, its qualitative features include the promotion of broad partnerships through ODA projects, the comprehensive impact of hard and software together, active and systematic cooperation from policy development to project implementation, and coordination with other donor countries and agencies.

5.1.1. Partnerships

Japan's ODA is characterised by its contribution to broad-based Japan-Viet Nam partnership by building bridges between governments, businesses, universities, and local authorities. Traditionally, Japanese ODA has been characterised by 'request-based', passive cooperation at the request of developing countries, but this is not the case in Viet Nam. Nevertheless, rather than imposing Japanese way of thinking, but cooperation in the formulation of market economy policies and national transport strategies was carried out as joint research activities by Japanese and Vietnamese experts, sharing experience and know-how through long-term collaboration, and contributing to the development of counterparts' human resources. In infrastructure projects, through cooperation in the preparation of regional and sectoral master plans and individual project feasibility studies, projects were jointly formed utilising Japanese experience and technology. In the implementation of the projects, technology transfer to Viet Nam also progressed through Japan-Vietnam joint ventures, and many projects, such as bridges, tunnels, and highways, are now carried out by Vietnamese companies themselves. Staff from the implementing agencies of ODA projects have absorbed project management know-how, including project planning, appraisal, and principles and procedures for international tendering and contracting, and have become valuable players in non-ODA projects, as well.

5.1.2. Comprehensiveness

Infrastructure development through yen loans ranged from large-scale transport and electricity projects to small-scale infrastructure in rural poor areas, whilst human resource development through technical cooperation covered a wide range of areas, including agriculture, healthcare, education, and justice. This broad scope and comprehensive cooperation, combining hardware and software, infrastructure and human resources, and policy and institutional improvement, is a characteristic of Japanese ODA, and has been further strengthened by the centralisation of the implementation system under JICA (2008). Human resource development and institutional improvement necessary for infrastructure projects are carried out as incidental technical cooperation under yen loans (e.g. preparation of operational systems and human resource development in urban railway projects).

5.1.3. Planning

In addition to the wide range of areas covered, Japanese ODA supported a series of cycles leading from sectoral and regional master plans to the implementation of individual projects, through technical cooperation (development studies) and financial cooperation (yen loans). With regard to yen loans, based on the relationship of trust with the Vietnamese government through years of cooperation, a medium-term candidate list ('long list') was agreed between Japan and Viet Nam, and good projects with high maturity were systematically adopted based on the needs of each project and progress in project formation (e.g. a series of support for national roads, ports, etc., based on the Northern Transport Master Plan).

5.1.4. International Cooperation

Since the resumption of ODA to Viet Nam, Japan, the World Bank, and ADB have been the three major donors, accounting for about 80% of the total ODA, and since cooperation and coordination amongst the three became extremely important in aid strategies and individual projects, their Ha Noi offices exchanged information closely, which led to regular meetings known as '3 Banks'. From the late 1990s to the early 2000s, when ODA expanded, OECD-DAC took the lead in maximising aid effectiveness by harmonising aid procedures and the World Bank also proposed a framework for sharing aid strategies and sharing roles amongst donors, and Viet Nam became a model country. Japan's active participation in donor coordination has been recognised as effective in terms of efficient aid implementation and international intellectual dissemination (Ohno, 2007).¹⁹ The 3 Banks were later joined by Agence Française de Développement of France, Kreditanstalt für Wiederaufbau (KfW) of Germany, and the Economic Development Co-operation Fund of the Republic of Korea, forming the '6 Banks'. Besides regularly exchanging information, the six agencies met annually to review the implementation of ODA with the MPI and worked on improvements by formulating and monitoring a joint action plan.

5.2. Problems in Implementing ODA

Japan's ODA for Viet Nam is regarded on the Japanese side as having provided many exemplary projects in infrastructure development, policy and institutional improvement, and human resource development (KPMG AZSA LLC, 2016).

JICA conducts an ex-post evaluation of all yen loan projects about 2 years after completion, based on the relevance, consistency, effectiveness, impact, efficiency, and sustainability criteria set by OECD-DAC. Since the basic premise of ODA projects is that they are priority projects positioned in national development plans, and in Viet Nam, JICA is involved from the planning stage, the relevance and consistency of projects are not a major issue in ex-post evaluation. The effectiveness, long-

¹⁹ JICA has dispatched an expert to MPI to support aid coordination activities led by the ministry. Until the mid-2010s, international aid coordination was extremely active in Viet Nam, with an annual Consultative Group (CG) meeting in Ha Noi and midyear interim CGs held in regional cities. However, since Viet Nam became a middle-income country, the role of ODA has relatively declined with the growth of private sector, and the traditional framework for donor coordination with the World Bank and other aid agencies is ending its role.

term impact, and sustainability of projects in Viet Nam are well established, as shown by the Da Nhim hydro power project and Cho Lai Hospital, which have been in operation for more than 50 years and are still contributing to the economy and society. In contrast, a common problem with ODA projects is efficiency, with most infrastructure projects experiencing delays in implementation and a corresponding increase in project costs. Donor agencies also agree that ODA projects in Viet Nam are generally highly effective but time-consuming. The weaknesses in ODA implementation highlight structural challenges that Viet Nam must overcome in its next stage of development.

5.2.1. Delays in Project Implementation

Viet Nam's infrastructure needs have grown from rehabilitation and improvement, when ODA was first resumed, to larger and more sophisticated and difficult projects, as the country as a whole has developed (Nhat Tan Bridge, Saigon River Tunnel, Ho Chi Minh City Metro, and so on). Especially since the 2000s, many infrastructure projects have taken longer than expected to complete bidding and contracting procedures and land expropriation. Contractors and implementing agencies, as well as agencies and government ministries, have had difficulty coordinating on issues such as payment of increased project costs, budget allowances, and plan changes, causing delays in overall project implementation. The experience has placed a heavy financial burden on and tried the patience of contractors and has reduced their willingness to participate in new projects, leading to a decline in the number of companies bidding on projects and a decline in competition. Although there has been criticism on the Vietnamese side that yen loan projects in recent years have been less competitive and more expensive, particularly in the case of Japan-tied STEP projects, it is also necessary to recognise that this is the result of inadequate response on the Vietnamese side to project delays and payment problems and other issues.

5.2.2. Complexity of Powers and Procedures

For the Government of Viet Nam, as the projects became larger and more sophisticated, the technical issues and interests became more complex as typified by the transport projects in Ha Noi and Ho Chi Minh City. The Prime Minister (Prime Minister's Office) has increasingly been asked to make decisions, beyond the conventional MPI-centred coordination amongst relevant ministries and agencies, and individual project issues have even come up on the agenda of Japan–Viet Nam summit meetings. In addition, in recent years, with the expanding role of the National Assembly of Viet Nam, its approval is required for large-scale projects, as exemplified by the fact that the North–South High-Speed Rail project, which was agreed on by the leaders of Viet Nam and Japan, was not approved by the National Assembly in 2010, requiring the plan to be reconsidered. The more important and socially significant a project is, the more it must be coordinated with government ministries (regulatory agencies, MPI, Ministry of Finance), Party-related organisations, experts from universities and other organisations, the audit department—which has been strengthened to prevent corruption and fraud—as well as the public, whose opinions have been affected by the proliferation of social networking sites. The government's decision-making process requires coordination with a greater number of relevant organisations. On the other hand, from the Vietnamese point of view, there are many complaints that aid procedures are as rigid and time-consuming as in the past, despite the fact that the country has improved the implementation system, including the development of ODA-related laws and regulations in response to donor requests, and has accumulated experience in project implementation. It goes without saying that improving the efficiency of ODA systems and

implementation procedures is a common challenge for aid agencies and the Vietnamese side, and mutual efforts and trust are a prerequisite.

5.2.3. Fraud and Corruption Prevention

Serious corruption cases have been uncovered twice in Japanese ODA projects. The first incident, in 2008, led to the suspension of new ODA, which was resumed after a Japan–Viet Nam agreement on anti-corruption measures. The second incident, in 2014, caused public distrust and was taken more seriously by both governments. JICA has learnt a great lesson and is working to further strengthen and thoroughly implement anti-corruption measures, such as improving the transparency of procurement procedures and enhancing audits in yen loan projects.²⁰ Two consultancy firms involved in the case closed their businesses as a result of the incident, which had a serious impact on related business community in Japan. The problem of corruption in public works is common worldwide, and a comprehensive approach is needed for fundamental improvement, including reform of the civil service system, human resource development, and compliance by the public and private sectors. In recent years, the Government of Viet Nam has stepped up corruption control, the effects of which have been highlighted.

6. Representative Examples of ODA Projects and Results

The results of infrastructure projects funded by Japanese ODA can be witnessed all over the country. Travellers arriving in Ha Noi see the beautiful Nhat Tan Bridge via the highway from the new international terminal at Noi Bai Airport, which was built with Japanese ODA. The socio-economic impact of the East–West Highway in Ho Chi Minh City, the Hai Van Tunnel between Da Nang and Hue, and the Can Tho Bridge in the Mekong Delta is obvious to all, and in particular those familiar with the situation before the project are surprised by the changes after the project. Whilst the results of technical cooperation are not as visible as those of large-scale infrastructure projects, they have been used to develop human resources across the country and improve policies and institutions, which have contributed to national development and broadened the partnership between Japan and Viet Nam. The results of ODA are a valuable asset, as the following representative examples show for each priority area.²¹

²⁰ In response to the corruption case, the Government of Viet Nam fully repaid the disbursed amount of loans for contracts awarded to the companies, and the Japanese side suspended the provision of new yen loans. The governments of Viet Nam and Japan set up a committee, which agreed on measures to prevent recurrence of such cases. The measures included, on the Vietnamese side, strengthening information sharing on ODA projects and the functions of the Administrative Inspectorate, revising laws, and strengthening supervision of ongoing projects and post audit. On the Japanese side, the measures included strengthening the role of the corruption information desk and excluding from bidding, amongst others, companies involved in corruption.

²¹ Representative examples of cooperation were taken from JICA's ex-ante and ex-post evaluation of yen loan projects, as well as JICA research reports, including a comprehensive ODA impact study conducted on the 20th anniversary of the resumption of ODA (JICA, 2014).

6.1. Infrastructure Development (Transport, Power, Water Environment, Rural Development)

6.1.1. Transport Sector

(1) Formulation of National Development Strategies

Japanese technical cooperation supported the formulation of Viet Nam's national transport development strategy and the planning of major high-priority projects, with each study being used as the basis to implement projects financed by yen loans, and also contributed to human resource development and planning capacity building of Vietnamese agencies through joint research and study activities with Japanese experts.

- (i) Northern Regional Transport System Development Plan (1993–1994)
- (ii) Vietnam Transport Development Strategy Study (VITRANSS) (1999–2000, 2007–2010, 2020–2021)
- (iii) Ho Chi Minh City Urban Transport Plan (2002–2004)
- (iv) Ha Noi City Comprehensive Urban Development Plan (2005–2007)

* The studies were conducted under the guidance and advice of leading Japanese experts in land planning and civil engineering in Japan (Professor Hideo Nakamura and Professor Shigeru Morichi), and were characterised by a high-level relationship of trust with the Government of Viet Nam (Ministry of Transport).

* VITRANSS has contributed for 20 years to the Vietnamese government's development planning by examining long-term strategies for all transport, including national roads, railways, aviation, and shipping, and reviewing the second (2007–2010) and third (2020–2021) phases about every 10 years. It has provided information to guide not only Japanese ODA but also international assistance such as that of the World Bank.

6.1.1.2. Northern Regional Transport Network

Japanese ODA initially focused on transport infrastructure in the Northern Triangle region linking Ha Noi, Haiphong, and Quang Ninh province and developed the transport network, including the upgrading of National Highway 5 and Haiphong Port, followed by the construction of the other main highways (Highway 18 and Highway10) and international ports (Cai Lan and Lach Huyen). Improved infrastructure and logistics have led to the development of industrial parks in the region, contributing to economic growth through rapid industrial agglomeration (Tran et al., 2003).

(Note: The amounts below are the cumulative total of yen loans to each project.)

- (i) National Highways 5, 10, 18: ¥75 billion (completed 2003, 2005, 2008, respectively)
- (ii) Binh Bridge (Haiphong), Bai Chai Bridge (Ha Long): ¥14.8 billion (completed 2005, 2006, respectively)
- (iii) Haiphong Port: ¥17.3 billion (1st phase completed 2000, 2nd phase completed 2011)
- (iv) Cai Lan Port: ¥10.2 billion (completed 2004)
- (v) Lach Huyen Port: ¥114.2 billion (completed 2017–2018)

* Synergistic effects of ODA and private investment (infrastructure development and industrial agglomeration): The improvement of National Highway 5 and Haiphong Port, as a result of ODA-funded infrastructure development, brought industrial concentration to the surrounding areas and became a typical model of poverty reduction through dynamic economic growth. (i) Capacity building (development of infrastructure and investment-related institutions) created the conditions to attract enterprises; (ii) ‘anchor companies’ led to the establishment of many related enterprises, such as the components industry, in the industrial parks; and (iii) anchor companies’ success became a conduit for industrial agglomeration. Canon, a Japanese corporation, established its presence in the Thang Long Industrial Park in Ha Noi in the year 2001. It marked a significant milestone as the inaugural anchor company in the region, subsequently catalysing the emergence of affiliated enterprises in what became famously known as the ‘Canon Effect’ (Kuchiki, 2012).

* Traffic safety: as a result of the improvement of National Highway No. 5, the traffic volume increased and the number of accidents increased, so as part of the post-completion supervision of the yen loan project, additional safety facilities such as traffic signals, signs and footbridges were added, and awareness-raising activities were conducted at schools, factories and public facilities. This experience led to a yen loan project for all national roads in the northern region (Northern National Highway Traffic Safety Enhancement Project: 6.6 billion yen, 2007) and technical cooperation to improve road safety nationwide (Road Traffic Safety Master Plan Formulation Study, 2009).

* Thang Long Industrial Park (TLIP): The site of the park was selected based on the Hanoi Industrial Development Plan, a JICA development study, and its infrastructure (wastewater and sewage treatment, power distribution, and access roads) was supported with a yen loan of ¥11.4 billion (1997). The park is a representative example of synergy of ODA and private investment, and public–private partnership (PPP). Based on the success of the first phase, the second and third phases of TLIP (established in 2006 and 2015, respectively) were developed. Following their success, a number of industrial parks have been developed along the national highways, creating even more jobs with increased large-scale investments from Japan and other countries, such as Korean Samsung Electronics, which entered in 2008.

* Environmental protection of the World Natural Heritage site Halong Bay: The Northern Transport Master Plan considered the development of national roads and ports with an emphasis on balancing local industrial development with the environmental protection of Halong Bay. Cai Lan Port (about 13 m deep), located at the edge of Ha Long Bay, was expanded as a complementary port to the river port of Hai Phong (about 7 m deep), and the Bai Chai Bridge was constructed in the strait at the entrance to the port (National Highway 18 ferry section) to make navigation for ships and automobile traffic safer. As the bridge is adjacent to the World Heritage Area, it was designed to harmonise with the landscape, and maximum attention was paid to the method of dredging the navigation channel to avoid any negative impact on water quality.

- * Progress in construction of expressways: Following the ODA-funded construction of national highways, private investment has led to the construction of expressways since the 2010s, with the Ha Noi–Hai Phong route completed at the end of 2015 and the Hai Phong–Ha Long route completed in 2018, significantly reducing travel time from about 4 hours to 2.5 hours (JETRO, 2018). However, as tolls are expensive, truck transport continues to be handled by national highways.
- * Lach Huyen Port: A large-scale deep-water port off the coast of Hai Phong has been a long-cherished dream of northern Viet Nam, as Hai Phong Port is a shallow-water river port that cannot accommodate large ships, and Cai Lan Port is in the World Heritage Site of Ha Long Bay, making expansion difficult. The Lach Huyen Port project constructed the lower infrastructure (dredging, reclamation, 16 km sea bridge connecting Hai Phong city to the new port) with yen loans, whilst the upper infrastructure (gantry cranes and other port facilities of 2-berth) was developed and operated with private investment, which became the first full-fledged PPP as a yen loan project²². Negotiations between the company and the government over government guarantees and other conditions that were required for private investment were difficult and delayed the start of the project, but the project is expected to contribute to institutional improvements as a lesson learnt for the promotion of PPPs.

6.1.1.3. Transport Linking the North and South

National Highway 1 (about 2,300 km) and the North–South Unification Railway (about 1,700 km), which traverses Viet Nam from north to south, are key infrastructure for north–south transport. However, they were damaged during the Viet Nam War, and many bridges in particular were not adequately repaired and deteriorated, necessitating weight and speed restrictions. The continuous yen loans since resumption of ODA enabled the project to replace them in stages to improve road and rail transport efficiency and safety. Viet Nam’s first large-scale tunnel at the Hai Van Pass between Da Nang and Hue (the biggest bottleneck in north–south traffic) and the Can Tho Bridge at the ferry operation section of Mekong River (the largest tunnel and cable-stayed bridge in Southeast Asia) were constructed, greatly improving traffic and logistics in central Viet Nam and the Mekong Delta region.

- (i) National Highway 1 bridges: ¥41.9 billion, 82 bridges in total (Lang Son–Ca Mau)
- (ii) North–South Railway Bridge: ¥45.1 billion, 63 bridges in total (Ha Noi–Ho Chi Minh City)
- (iii) Hai Van Tunnel (¥18.9 billion, completed 2005): The National Highway over Hai Van Pass was a difficult road with steep curves that took more than 1.5 hours to traverse and was prone to accidents and natural disasters. But thanks to Viet Nam’s first and longest tunnel (6 km), it now takes less than 10 minutes to pass through safely.
- (iv) Can Tho Bridge (¥40.6 billion, completed 2010): Following My Thuan Bridge, which was built with Australia’s grant assistance, the Can Tho Bridge (2.7 km, including approach road) eliminated the biggest bottleneck on National Highway 1 in the Mekong Delta. Travel time used to be more

²² After the successful completion of the yen loan project, the second phase, involving the addition of two more berths, is now underway, led by the Hai Phong Port Joint Stock Company. This company had previously been entrusted with the implementation of the initial yen loan project for the rehabilitation of Hai Phong Port, right after the resumption of ODA to Viet Nam. This progress stands as a significant symbol of the nation’s transition away from ODA dependency.

than an hour, including waiting time for ferries during busy times. The completion of the bridge made for a pleasant drive of just several minutes.

(v) North–South Expressway (three sections, ¥181.4 billion): Ho Chi Minh City–Dau Giay (55 km, completed 2015), Da Nang–Quang Ngai (139 km, completed 2018), Ben Luc–Long Thanh (58 km, under construction)

* International Co-finance for National Highway 1: The road widening and pavement improvement were financed by the World Bank and ADB, whilst the replacement of the bridge in the same section was co-financed by yen loans, covering the entire north–south section over 20 years after ODA resumed.

* ODA and Private Investment for North–South Expressway: Since 2009, through the Japan–Viet Nam Summit Meeting, the two countries agreed to promote cooperation on three major projects (commonly known as the Prime Minister’s Three Projects): (i) the North–South Expressway, (ii) the North–South High-Speed Rail, and (iii) the Hoa Lac Hi-Tech Park,²³ of which three sections of the North–South Expressway were implemented sequentially by priority. Subsequently, the Ministry of Transport aimed to construct the project through PPPs and did not utilise yen loans. However, the number of sections where PPPs have been established is limited and most sections have been implemented through the government’s public investment, suggesting that PPPs for expressways are difficult to implement.²⁴

* North–South High-Speed Rail Project: Based on the experience of replacing bridges through yen loans, the North–South Unification Railway has continued to be improved through the government budget, and the travel time between Ha Noi and Ho Chi Minh City has been reduced from about 40 hours to about 30 hours. On the other hand, a high-speed railway plan was considered as a drastic improvement measure for the future, and the Vietnamese government decided in March 2010 to construct a new line adopting the Japanese shinkansen system. But in June of that year, the National Assembly failed to approve the project and it was put on hold for further deliberation, and the matter was referred back to the National Assembly (JICA, 2013). Since then, various alternatives have been considered, mainly by the Vietnamese Ministry of Transport, and Japan has continuously cooperated through JICA development studies, but no conclusion has yet been reached. To realise such a large-scale national strategic project, the government’s strong commitment and leadership are essential to overcome various challenges, such as securing land and developing human resources, in addition to financing. The government is said to continue to have high expectations for Japanese technology and funds, and future progress of talks between the two countries will be closely watched.²⁵

* Accident during the construction of the Can Tho Bridge and its completion: In September 2007, a part of the bridge girder collapsed during the construction of the Can Tho Bridge, resulting in

²³ To attract investments to the hi-tech sector, JICA’s technical cooperation (development studies) supported from the mid-1990s development of a plan for establishing a high-tech park near Ha Noi, and infrastructure development was completed through yen loans in 2020.

²⁴ The construction plan for the east side of the North–South Expressway in 2021–2025 (12 sections) was originally planned to be implemented through PPP for all sections. But since it was not successful in attracting private investment, all the sections were changed to public investment projects, which started at the end of 2022 (VIETJO, 2022).

²⁵ It was reported in November 2021 that the Ministry of Transport and MPI agreed on a proposal to build a semi-high-speed (250 km/h) passenger and freight railway (total project cost: \$64.8 billion, about ¥8.3 trillion) instead of the initial plan of the Ministry of Transport (maximum speed: 320 km/h, passenger only, shinkansen system). Meanwhile, in January 2022, Prime Minister Pham Minh Chinh requested Japanese cooperation for finalising the plan and implementing the project with Japan’s Finance Minister (NNA, 2023).

a major accident that killed 55 people and injured 79 others. The Vietnamese government set up a committee to investigate the accident, which concluded that the cause was 'unpredictable and unequal settlement of the temporary support columns' due to the soft ground unique to the Mekong Delta. The accident, the largest in the history of Japanese ODA, remains a major lesson learnt and the starting point for the safety measures (JICA, 2019), and JICA has made safety measures a top priority in the appraisal and monitoring of construction of yen loan projects. Construction work resumed one year after, and the completion ceremony in April 2010 was attended by many local residents along with government and project officials, who were delighted to see that the Can Tho Bridge had fulfilled a '100-year dream' of the people (*tuoi tre*, 2010).

6.1.1.4. Mekong Connectivity (Indochina East–West and Southern Economic Corridors)

Japanese yen loans, along with the ports in northern region, supported the improvement of the Da Nang (Thien Sa) port in the central region and the construction of the Cai Mep Chi Bai port in the south, which are major hub ports of each region and are also important as ports for the East–West Economic Corridor and the Southern Economic Corridor, respectively, under the Greater Mekong Subregion (GMS) Development Program. Both are expected to contribute to strengthening Mekong connectivity.

(i) Da Nang (Tien Sa) port: ¥10.7 billion (completed in 2004)

As part of the Da Nang Port Improvement Project, the access road and bridge connecting Da Nang and National Highway 1 were constructed, contributing to improvement of traffic around the city. Together with the Hai Van Tunnel (completed in 2005) and the Second Mekong International Bridge (completed in 2006), which crosses the Mekong River on the border between the Lao People's Democratic Republic (Lao PDR) and Thailand, both built with yen loans during the same period, Da Nang Port is important infrastructure supporting the East–West Economic Corridor (Viet Nam–Lao PDR–Thailand).

(ii) Cai Mep Tri Vai Port: ¥45.3 billion (completed 2015)

It is the gateway port to the Southern Economic Corridor (Viet Nam–Cambodia–Thailand), and the Mekong River Bridge ('Tsubasa Bridge') (completed 2015) on the same corridor in Cambodia was also implemented in parallel through yen loans.

6.1.1.5. Urban Transport

In Ha Noi, following the upgrading of the city's road network, including the construction of multi-level intersections at heavily congested intersections, and the construction of Ring Road 3 (an elevated road that includes the Thanh Tri Bridge), the new international terminal at Noi Bai Airport, the expressway connecting the airport and Ha Noi, and the Nhat Tan Bridge were simultaneously constructed, completing a gateway suitable for the capital city. In Ho Chi Minh City, following the construction of the new international terminal at Tan Son Nhat Airport, the Saigon East–West Highway running through the city and a tunnel under the Saigon River (Viet Nam's first and Southeast Asia's largest submerged tunnel) were built, completing a new artery linking the city and the surrounding area. Ho Chi Minh City Urban Railway Line 1 is nearing completion as the first subway and elevated railway and is expected to serve as the foundation for future development of the urban rail system.

International Airport Terminal

- (i) Noi Bai International Airport Terminal 2: ¥59.3 billion (completed end of 2013)
- (ii) New international terminal at Tan Son Nhat Airport: ¥22.8 billion (completed 2007)²⁶

Road, Bridge, and Tunnel

- (i) Ha Noi Transport Infrastructure Improvements: ¥12.5 billion (completed 2008)
- (ii) Thanh Tri Bridge and Ha Noi Ring Road 3: ¥89.7 billion (completed 2007 and 2020, respectively)
- (iii) Nhat Tan Bridge and Noi Bai–Nhat Tan Expressway: ¥72.3 billion (completed end of 2014)
- (iv) Saigon East–West Highway: ¥55.1 billion (completed 2011)

Urban Railway

- (i) Ho Chi Minh City Urban Railway Line 1: ¥155.4 billion (scheduled to start commercial operation 2024)
- (ii) Ha Noi Urban Railway Lines 1 and 2 (under preparation)

* Success of two largest projects in Ha Noi and Ho Chi Minh City: The Ha Noi Gateway (Noi Bai Airport to Nhat Tan Bridge) and the Saigon East–West Highway were unprecedented large-scale projects in the two cities and experienced many difficulties, such as delays in land expropriation and payment problems for the contractors. After their completion, they were named Vo Nguyen Giap Boulevard and Vo Van Kiet Boulevard after the hero of Viet Nam's independence and the Prime Minister at the time of resumption of Japanese ODA, respectively, and have become the new symbols of Japan–Viet Nam cooperation.

* Responding to resettlement: The Ha Noi Transport Infrastructure Improvement (Kim Lien Tunnel, overpasses, widening and improvement of roads) and the Saigon East–West Highway projects were located in densely populated areas, resulting in the resettlement of 1,700 and 6,800 households, respectively. The people's committees of the cities responded by constructing housing complexes whilst yen loans covered infrastructure development in the relocation areas. In addition, the dredging and revetment of waterways and canals along the roads were carried out at the same time through water environment improvement projects funded by yen loans, which also contributed to the improvement and beautification of the urban environment (see below).

²⁶Along with the expansion of Tan Son Nhat International Airport, the construction of Long Thanh International Airport, a hub, was initiated to meet increasing demand for air travel in southern Viet Nam. Based on the results of the Lach Huyen Port PPP, Japan proposed a PPP project combining yen loans and private investment through a JICA study, although the first phase of the project is being implemented with Viet Nam's own funds and domestic borrowing.

* Ho Chi Minh City Urban Railway: Main civil works for the project have been completed and the line is scheduled to start commercial operation after the installation of equipment, test runs of rolling stocks, and staff trainings conducted through 2023. The start of the projects of Ha Noi Urban Railway Lines 1 and 2 has been delayed due to increased project costs and a review of the station plan in the city centre and so on. It is hoped that the projects will be implemented as soon as possible, drawing on lessons learnt from earlier projects.²⁷

6.1.2. Electric Power Development

Vietnam is rich in coal in the north, gas in the south and hydropower resources in the central mountainous regions, and the power generation capacity (approximately 4.6 million KW) of the nine power projects built with yen loans accounted for about 10% of Viet Nam's total power generation capacity in 2021. These power plants, including the first three at the time of resumption of ODA, were completed one after another amid the tight electricity supply-demand situation, contributing to the improvement of people's lives as well as responding to the increase in foreign investment in each region. In recent years, JICA's contribution through the Private Sector Investment Finance (PSIF) scheme has been promoted for private sector projects in the renewable energy sector.

Thermal Power (¥439.1 billion, five power plants, 3,552 MW)

(Coal-fired)

(i) Pha Lai (600 MW, completed 2003); (ii) Nghi Son (600 MW, completed 2015); (iii) Tai Binh (600 MW, completed 2018)

Gas-fired

(iv) Phu My (1,092 MW, completed 2002); (v) Omon (660 MW, completed 2015)

* Technology change for higher efficiency of Phu My thermal power: In anticipation of progress in the offshore natural gas development, the technology of the project was switched from dual firing of heavy oil and gas to the more efficient gas combined cycle, in response to a strong request from the Vietnamese side just before the tender. The privately funded gas pipeline construction project (about 400 km, \$1.3 billion) has been in operation since the end of 2002.

* Development from ODA to Private Investment: Following the success of the yen loan projects, private power generation projects have progressed in Nghi Son, Thai Binh, Phu My, and Omon, all with the participation of Japanese companies, and large power generation complexes have been formed. Prior ODA projects, including the construction of common transmission lines, have contributed to attract private investments in the power sector.

²⁷ In November 2021, Ha Noi's first urban railway (13 km), financed by the Export-Import Bank of China and built by Chinese companies, was completed. It took 10 years to complete because of delays in land expropriation, accidents during construction, design reviews, and increased construction costs. Line 3, supported by France and ADB, is under construction but has been delayed by similar difficulties.

Hydropower (¥106.8 billion, four power plants, 1,090 MW)

(i) Ham Thuan Da Mi (475 MW, completed 2001); (ii) Da Nhim rehabilitation (160 MW, completed 2006) and expansion (80 MW, completed 2018); (iii) Dai Ninh (300 MW, completed 2008); (iv) Thac Mo expansion (60 MW, completed 2017)

* Extending the experience of the Da Nhim Project: Hydropower generation in southern Viet Nam began with the Da Nhim project, completed in 1964 using Japanese war compensation to the former South Viet Nam. The experience of the project was utilised in the construction of the Ham Thuan Da Mi and Dai Ninh projects in the same area after the resumption of ODA, where irrigation projects were carried out along with power generation. In particular, for the Dai Ninh project, the Phan Ri Phan Thiet Irrigation Project (¥5.3 billion, 2001 and 2006) was proposed by the Japanese side and implemented as a yen loan project, based on the project formation and agricultural guidance through Japanese technical cooperation.

Renewable Energy

JICA provided investment of \$1.5billion to ADB for establishing 'Leading Asia's Private Infrastructure Fund (LEAP)' in 2016, with the aim of promoting quality private sector infrastructure. LEAP has supported the following renewable energy projects in Viet Nam:

- (i) Phu Yen Province Solar Power (257 MW): \$9.3 million (2020)
- (ii) Quang Tri Province Wind Power (144 MW): \$25 million (2021)
- (iii) Ninh Thuan Province Wind Power (88 MW): \$25 million (2022)

* Ninh Thuan Province Nuclear Power Project: In 2009, the Vietnamese government approved two nuclear power projects implemented by a group of Japanese and Russian Federation companies as a trump card to solve the electricity shortage. The Japanese government and related companies hoped the project would serve as a model for exporting nuclear power to emerging Asian countries. But following the accident at the Fukushima-1 Power Station caused by the 2011 Great East Japan Earthquake, the decision was made by the Vietnamese National Assembly in 2016 to cancel the project. The main reason was said to be the huge amount of funding required as well as residents' concerns about the safety of nuclear power plants (Nihon Keizai Shimbun, 2016). It should be noted that ODA cannot support nuclear power plant programmes under OECD rules but was expected to provide lateral assistance to contribute to regional development, including the construction of roads, water supply, and other infrastructure.

6.1.3. Urban Water Environment

Although Ha Noi and Ho Chi Minh City had experienced rapid urbanisation, inadequate drainage and sewage treatment had led to serious flood damage and environmental degradation during heavy rainfall. Japanese ODA provided continuous assistance in planning and supporting improvements from the time of resumption, contributing to the beautification of the cities as well as improving the water environment. Based on the experience gained from each project, similar projects have been implemented in the major provincial cities of Haiphong, Ha Long, Hue, Binh Duong, and Bien Hoa with the support of yen loans.

- (i) Ha Noi Water Environment Improvement: 1st phase, ¥18.6 billion (completed 2005); 2nd phase, ¥32.3 billion (completed 2016)
 - (ii) Ho Chi Minh City Water Environment Improvement: 1st phase, ¥28.3 billion (completed 2012); 2nd phase, ¥46.5 billion (to be completed 2023)
- * In Ha Noi, the dredging of numerous lakes and marshes scattered throughout the city and the combined improvement of drainage channels and roadsides have contributed to environmental improvements, whilst a large drainage pumping station that collects rainwater in reservoirs and discharges it into the Red River has also reduced flooding and inundation damage. A substantial sewage treatment plant is currently under construction drawing from the lessons learned from a similar project in Ho Chi Ming City.
- * Japanese local authorities have established cooperative relations with Vietnamese cities in conjunction with ODA projects and are promoting cooperation in the water, sewage, and environmental sectors. (Ha Noi–Fukuoka Prefecture and Yokohama City, Ho Chi Minh City –Osaka City, Haiphong–Kitakyushu City, Ha Long–Shiga Prefecture, Da Nang and Hue–Yokohama City, Hoi An–Okinawa Naha City, amongst others)
- * The implementing agency of the Binh Duong Sewerage Development Project (¥27.7 billion, 2007 and 2012) was privatised in 2016 based on the experience and management efforts of the yen loan project (Japanese companies also invested). Its subsequent water supply project (2020) and waste power generation and treatment project (2022) were supported by JICA's new cooperation through PSIF, which became a model case of graduating from ODA to private sector development.

6.1.4. Rural Development

For the purpose of rural development, small-scale infrastructure improvement projects in remote areas, initiated in the form of rehabilitation loans for roads and water supply (commodity loan for importing materials and equipment) were developed into Sector Program Loans (SPLs), including construction costs and expanded to cover more sectors such as electricity distribution and small-scale irrigation. Over 20 years, SPLs amounting to more than ¥70 billion have been implemented, focusing on poorer areas. The project is credited with improving roads, water supply, and other infrastructure close to rural residents; facilitating logistics; improving access to public services; and increasing agricultural productivity. More than 20 years of continuous cooperation has reached all parts of Viet Nam and become the best-known Japanese ODA project in rural areas.

- (i) Rehabilitation Loan (commodity loan): ¥7.3 billion (1993–1994)
- (ii) Sector Program Loan (SPL1-3): ¥23 billion (1996–1998)
- (iii) Small-Scale Pro-Poor Infrastructure Development Project (SPL4-6): ¥43.3 billion (2003–2009)

6.2. Policy and Institutional Reforms (Market Economy, Legislation, Response to Climate Change)

6.2.1. Policy Support for Market Economy

The Ishikawa Project to support policies for the transition to a market economy was a joint research project between Japanese development economists led by Professor Shigeru Ishikawa and Vietnamese policy officials. The project focused on proposals for the Sixth Five-Year Plan for Socio-Economic Development (1995–2000), including analysis of agriculture and rural development, industrial policy, fiscal and monetary policy, and state-owned enterprise reform. It contributed to the human resource development of participating administrators and researchers on the Vietnamese side, and its experience and achievements have been used to provide yen loans in response to the Asian currency crisis and for poverty-reduction strategies, as well as policy support for the development of supporting industries and industrialisation strategies.

(i) Ishikawa Project: 1995–2000 (3 phases)

- * Professor Shigeru Ishikawa, who chaired the JICA Country Assistance Study Group, met with General Secretary Do Muoi during his visit to Viet Nam in 1994. The General Secretary, after hearing the study group's recommendations and the professor's thoughts on market transition policy, asked him to exchange views with members of the Party Politburo, which led to the project (Sasaki, 2022). The Vietnamese government had difficulties undertaking rapid reforms such as privatisation of state-owned enterprises recommended by the International Monetary Fund and the World Bank. Japanese advice on a gradualist approach was expected, however, which introduced multiple perspectives into the international aid community and acted as a 'counterforce' to create checks and balances, and was highly appreciated by the Vietnamese leaders (Shimomura, 2018).
- * The transition to a market economy in Viet Nam has attracted the interest of many development economists in Japan, notably Professor Tran Van Tho, who has served as an advisor and bridge between Japan and Viet Nam, and Professor Kenichi Ohno, who continues to advise on important issues, following the Ishikawa Project, such as supporting industrial development, industrialisation strategies, and productivity enhancement (Ohno, 2013).

(ii) Economic Reform Support Loan (¥20 billion, 1999)

- * As part of its emergency assistance in response to the Asian currency crisis in 1997 (New Miyazawa Initiative), Japan provided Viet Nam with a policy support loan, not in the form of co-financing with the World Bank but as a stand-alone structural adjustment loan. It was the first case of a yen loan and, based on the results of the Ishikawa Project, the main reform programmes were (i) fostering the private sector (promoting small and medium-sized enterprises), (ii) auditing large state-owned enterprises, and (iii) implementing tariff reform of non-tariff barriers. Fostering the private sector, including the change from a licensing system to a notification system for enterprises, has led to a rush to establish private enterprises since 2000, creating jobs and changing the investment structure (Tajika, Miura, and Oizumi, 2003).

(iii) Poverty Reduction Support Credit (PRSC) and Economic Management and Competitiveness Credit (EMCC) (PRSC: 7 loans, ¥72.4 billion (2004–2012); EMCC: 3 loans, ¥41 billion (2013–2017), total ¥113.4 billion)

* In policy discussions between the World Bank and other donors and the Vietnamese government on the Poverty Reduction Strategy, Japan actively participated in preparing reform programmes to reflect its voice through the ODA Task Force, particularly on investment environment improvement, public expenditure management, financial and banking reform, and state enterprise reform. In addition, Japan participated in co-financing with the World Bank from phase 3 of PRSC (2004), and provided similar cooperation to EMCC, which was implemented as a successor programme to PRSC.

* In the 8th phase of PRSC (2009), Japan provided an additional yen loan (¥47.9 billion) for economic stimulus as its own assistance in response to the Lehman Shock.

6.2.2. Judicial Reform

Along with Viet Nam's market economy policy, technical cooperation projects have been implemented since 1996 to reform and develop the legal system as the basis of nation-building. The cooperation—which developed with long-term Japanese experts (prosecutors, judges, and lawyers) stationed in Ha Noi and organised support by the Japanese Ministry of Justice, the Supreme Court, the Japan Federation of Bar Associations, and Nagoya University—has become a model for Japan's international cooperation in the justice sector and has led to cooperation in Cambodia, Lao PDR, and other Asian countries.

- (i) Support for legislation (3 phases, 1996–2007): To develop legislation in line with the transition to a market economy, Japan supported the drafting of basic legislation, including the Civil Code and the Civil Procedure Code, and the training of human resources, with the Ministry of Justice (MOJ), the Supreme People's Court, the Supreme People's Prosecutor's Office, and the Federation of Vietnamese Lawyers targeted for cooperation. The Civil Procedure Code and the revised Civil Code, which Japan helped draft, were passed by the Vietnamese National Assembly in 2004 and 2005, respectively.
- (ii) Support for law and judicial system reform (2 phases, 2007–2015): Long-term Japanese experts from the three legal professions (judges, prosecutors, and lawyers) were stationed in Ha Noi to follow up on the results of previous legal support and to help strengthen local justice-related institutions.
- (iii) Support for legal and judicial reforms targeting 2020 (2015–2020) and
- (iv) Improving the quality and efficiency of law development and enforcement (2021–2025): In light of the amendments to the Constitution of Viet Nam (November 2013), the Prime Minister's Office and the Communist Party (Central Interior Affairs Committee) were added as cooperating bodies for Japanese cooperation to help ensure the consistency of laws and regulations, review legal normative documents, and train personnel involved in ex-post audits and court enforcement practice.

* Japan–Viet Nam judicial cooperation was initiated by Professor Akio Morishima of Nagoya University, who introduced and advised on Japanese civil law in 1993 in preparation for the enactment of the Vietnamese Civil Code, which led to JICA's technical cooperation. As this was Japan's first attempt at technical cooperation, the professor persuaded the officials who were hesitant by explaining the importance of long-term human resource development support—based on Japan's own history of learning from other countries and developing its own laws—for the enactment, enforcement, and revision of laws (Sasaki, 2022). On the Vietnamese side, former Justice Minister Ha Hung Cuong (Director General of the International Cooperation Department in 1993) has continued to play a

central role in the MOJ for more than 30 years. His successor, the current minister and one of deputy ministers, also studied and obtained a degree at Nagoya University as part of Japanese cooperation. Their involvement demonstrates the cooperation between MOJ and Japan, which is particularly long and deep in the history of Japanese ODA.

- * In preparation for the revision of the Vietnamese Constitution (2013), in July 2012, a constitutional study mission was formed, headed by Deputy Prime Minister Nguyen Xuan Phuc (later Prime Minister and President of the State). The mission comprised about 30 members, including seven ministers, such as the Minister of Justice and the President of the Supreme Court. It was sent to Japan to exchange views with Japanese constitutional scholars as well as the House of Representatives Legislation Bureau, Supreme Court, Ministry of Justice, Nagoya University, and others (Nishioka, 2012).²⁸ The mission was symbolic of the trust between the two countries through years of judicial cooperation, and the survey team appreciated as meaningful the free exchange of views with Japanese experts on constitutional principles, including constitutionalism.

(3) Response to Climate Change

Viet Nam has the second-highest rate of increase in greenhouse gas (GHG) emissions amongst ASEAN member countries and is considered to be the most vulnerable to the effects of climate change (e.g. sea-level rise). Based on policy dialogue with Vietnamese ministries and agencies, led by the Ministry of Natural Resources and Environment, Japan has agreed on an action programme to respond to climate change and provided financial assistance and technical cooperation to promote its implementation. The Support Program to Respond to Climate Change (SP-RCC) became a prime example of Japanese ODA leading international assistance in the field of climate change.

(i) SP-RCC: I–VII: ¥80 billion (2010–2017)

In response to Japan's call, Australia, Canada, France, the Republic of Korea, and the World Bank, participated in the policy dialogue with the Vietnamese side and provided co-financing totalling \$492 million.²⁹ It was the first case of co-financing of a policy programme initiated by Japan with the participation of international organisations and other countries.

(ii) Technical Cooperation in the field of Climate Change

- Support for the development of national GHG inventories (2010–2014)
- Development and implementation support for Nationally Appropriate Mitigation Actions (NAMA) (2015–2019)
- Energy efficiency and conservation promotion master plan study (2008–2009)

- * As a major outcome of Japan's cooperation, NAMA, which each country had agreed to prepare at the 16th session of the Conference of the Parties (COP 16) in 2010, was completed and introduced as an exemplary example at the COP.

²⁸ The constitutional mission (July 2012) was organised and conducted with Professor Yoshiharu Tsuboi as an expert advisor, based on a cooperation agreement between the JICA Vietnam Office and the Vietnamese Academy of Social Sciences. Member of the House of Representatives Yoshito Sengoku (former Chief Cabinet Secretary and Minister of Justice) helped organise a meeting with constitutional scholars (Professor Yasuo Hasebe, Professor Katsutoshi Takami) at the Constitution Memorial Hall, where he himself participated and exchanged views with the mission. He was one of the leading politicians who promoted cooperation with Viet Nam, partly due to his involvement in the anti-Viet Nam war movement from his university days.

²⁹ Co-financing for SP-RCC: World Bank, US\$300 million; France, US\$126.2 million; Republic of Korea, US\$50 million; Australia, US\$12 million; and Canada, US\$4.3 million. Yen loans (about US\$7.8 million) account for about 60% of the total (US\$1,270 million).

- * Coping with Sea-level Rise: Along with policy and institutional improvements, a project to build sluice gates to prevent saltwater intrusion and install observation and control systems in the Mekong Delta region has been implemented to counter the effects of rising sea levels caused by global warming (Ben Tre Province Water Management Project: ¥24.3 billion loan, 2017).
- * Prime Minister Pham Minh Chinh announced at COP 26 (2021) that the Vietnamese government aims to achieve virtually zero GHG emissions (carbon neutrality) by 2050 and agreed to cooperate with Japan in realising this goal at the Japan–Viet Nam Summit on that occasion. Climate change is a common challenge for Japan and Viet Nam and the focus of future cooperation.

6.3. Human Resource Development (Healthcare, Higher Education, Industrial Human Resources, Governance)

6.3.1. Medical Sector

Cooperation with Ha Noi Bac Mai Hospital, Ho Chi Minh City Cho Lai Hospital, and Hue Central Hospital, the 'three hub hospitals' in the north, south, and central regions, in improving facilities and human resource development, helped upgrade healthcare nationwide through each hub hospital. Cooperation with National Institute of Hygiene and Epidemiology (NIHE) and Center for Research and Production of Vaccines and Biologicals (POLYVAC) also contributed to strengthening measures against infectious diseases, including measles, severe acute respiratory syndrome (SARS), and coronavirus disease (COVID-19).

(i) Three Hub Hospitals

- 1) Ho Chi Minh City Cho Lai Hospital: grants (¥2.52 billion, 1992–1994) and technical cooperation (3 phases, 1995–2009); the Second Cho Lai Hospital (Viet Nam–Japan Friendship Hospital) will be constructed with a yen loan (¥28.6 billion, 2015).
- 2) Ha Noi Bac Mai Hospital: grants (¥6.32 billion, 1998–2000) and technical cooperation (2 phases, 2000–2009)
- 3) Hue Central Hospital: grants (¥2.83 billion, 2004–2006) and technical cooperation (2002–2010)
- 4) Hoa Binh Hospital: grant (¥970 million, 2005) and technical cooperation (2 phases, 2000–2017).
The cooperation model of the three hub hospitals was extended to the north-west mountainous region.

(ii) National Institute of Hygiene and Epidemiology (NIHE)

Biosafety level-3 laboratory of pathogen diagnostic was constructed with a grant (¥891 million, 2006) and supported by technical cooperation (2 phases, 2005–2016), with the cooperation of the National Institute of Infectious Diseases of Japan, which supported the operation of the laboratory and the development of human resources.

(iii) Center for Research and Production of Vaccines and Biologicals (POLYVAC)

Following the grant assistance for measles vaccine (¥1.17 billion, 2001–2002), covering 20 million infants nationwide, Japan supported the construction of a vaccine production centre through grants (¥2.14 billion, 2003–2005) and technical cooperation (2 phases, 2013–2017), with the cooperation

of the Kitasato Institute,³⁰ which supported the operation of the centre and human resource development, contributing to the production of the first domestic measles vaccine in Viet Nam.

- * Control of SARS: After the first case of SARS was identified in Ha Noi in February 2003, patients were admitted to Bac Mai Hospital to control the spread of infection, and the hospital declared it under control in April. Along with the support of the JICA Emergency Relief Team, consisting of Japanese doctors and nurses, the improved system for the prevention of nosocomial infections, which had been developed through years of technical cooperation with the hospital, contributed to the early control of the infection .
- * Response to COVID-19: During the COVID-19 outbreak, the three hub hospitals were at the forefront of inpatient treatment and helped in the treatment of critically ill patients by sending medical personnel to rural hospitals. NIHE also played a central role in establishing and expanding the testing network, and POLYVAC has been working on developing and producing a domestic vaccine.
- * JICA's medical cooperation has been carried out in collaboration with medical institutions and universities across the country, including the National Centre for Global Medical Cooperation of Japan. It should also be noted that many Japanese doctors have contributed to Vietnamese healthcare outside of ODA projects, such as Dr Masashi Hattori (ophthalmology) and Dr Nagato Natsume (cleft lip and palate), who have provided free medical care for many years.

6.3.2. Higher Education

To develop high-level human resources in Viet Nam, Japan has supported universities such as National University of Agriculture, Ha Noi University of Technology, and Can Tho University, amongst others, through a combination of financial and technical cooperation supported by Japanese universities with which they have deep historical relations, to strengthen the education and research systems of respective universities. The project of Viet Nam–Japan University (VJU),³¹ initiated by the high-level agreement between governments, has also made progress in cooperation with Vietnam National University. Meanwhile, the Human Resource Development Scholarship Program (JDS), which accepts international students, mainly from countries in market transition, to Japanese postgraduate schools is expected to foster a number of young Vietnamese administrators who will act as a bridge between Japan and Viet Nam.

(i) National University of Agriculture

- 1) Technical cooperation for strengthening research functions (1998–2004): collaboration with Kyushu University
- 2) Technical cooperation for developing crop varieties (2010–2015): under the Japanese government's programme, Science and Technology Research Partnership for Sustainable

³⁰ The cooperation was based on long-standing exchanges and trust between experts of Japan and Viet Nam; Dr Makino (Kitasato Institute) who contributed to the development of polio and measles vaccines in Japan, and Dr Manh (POLYVAC) who led the research and production of polio vaccine in Viet Nam.

³¹ Viet Nam–Japan University (VJU): Proposed by former Member of the House of Representatives Tsutomu Takebe for establishing a new centre for high-level human resources development in Viet Nam, the VJU project has been implemented based on high-level commitments of both countries, including Prime Ministers, former President Truong Tan Sang, former Party Politburo member To Huy Rua (President of the Vietnam–Japan Parliamentary Friendship Association), and Toshihiro Nikai, Member of the House of Representatives (Chairman of the Japan–Vietnam Friendship Parliamentary Association).

Development (SATREPS)³², Kyushu University and Nagoya University supported the development of new rice varieties adapted to northern mountain regions with high yields and disease and pest resistance, contributing to improving food shortages and stabilising and improving farmers' livelihoods.

(ii) Ha Noi University of Technology

Higher Education Development Support Project on Information and Communication Technology (HEDSPI): Yen loans (¥5.4 billion, 2006) and technical cooperation (2006–2012) supported the establishment of a department of information technology (IT) by introducing a Japanese IT education programme, together with Japanese-language education and study in Japan (Ritsumeikan University and Keio University) to support the development of advanced IT personnel expected by Japanese companies.

* HEDSPI students dispatched to Japanese universities have achieved excellent results, including the top graduates in the IT departments of the universities and many have been employed by Japanese companies. In addition, there have been successful cases of graduates founding software companies and developing their businesses by linking Japan and Viet Nam. The network of graduates is unique in giving birth to new IT businesses.

(iii) Can Tho University

1) Improvement of Faculty of Agriculture (grant, ¥2.26 billion (1993–1995): based on a long-standing relationship through JICA technical cooperation (started 1969), a new campus was built (completed 1995) and research equipment supported.

2) Can Tho University Strengthening Project:

- Yen loan, ¥10.5 billion (2015) supported construction of new facilities (completed 2022), educational and research equipment, research grants, and study in Japan
- Technical cooperation (2016–2021) supported joint research with nine Japanese universities, including Kyushu University, Tokyo University of Agriculture and Technology, and Tokyo University of Marine Science and Technology, in collaboration with technology of Japanese companies, which has led to new investments in the agricultural sector in the region.

(iv) Vietnam–Japan University (VJU)

Technical cooperation (2 phases, 2015–2025) have supported the development of the organisational structure of VJU (established 2014), which opened eight master's programmes in 2016. With the aim of developing a foundation for integrated education from undergraduate to postgraduate studies, the project continues to support the development of sustainable cooperation with Japanese universities, the enhancement of personnel and education and research systems, and collaboration with industry. In addition, a yen loan project to build a new campus is under preparation.

(v) Human Resource Development Scholarship Program (JDS)

The number of Vietnamese administrators studying at Japanese universities through JDS has reached a cumulative total of 763 in the 20 years since the programme began in 2001. The number reflects the development of Viet Nam–Japan relations and is the largest in the programme (5,410 in total from 21 countries).

³² A collaborative programme of the Japan Science and Technology Agency, the Japan Agency for Medical Research and Development, and JICA, the purpose of which is to promote science and technology cooperation with developing countries through collaboration between Japan's science and technology and ODA. Target projects are selected from amongst proposals of universities.

6.3.3. Industrial Human Resources

Technical cooperation with Ha Noi and Ho Chi Minh City University of Industry has introduced Japanese-style vocational training system to support the development of human resources as the basis of Vietnamese industrial development, including in the supporting industries, and has met the human resource needs of Japanese companies. The Vietnam–Japan Institute for Human Resources Development (VJCC) has been contributing to the development of industrial human resources, particularly those who will serve as a bridge between the two countries, for 20 years since its establishment in 2002.

- (i) Ha Noi University of Industry (technical cooperation: 3 phases, 2000–2016): More than 15 years of technical cooperation has helped improve vocational training education (electronic, electrical, mechanical, moulds, etc.) by utilising Japanese know-how such as '5S' and 'Kaizen', as well as providing matching support for employment, thereby becoming a valuable source of human resources for Japanese companies.
- (ii) Ho Chi Minh City University of Industry (technical cooperation: 2013–2018): The know-how of Japanese technical colleges has supported the university's Thanh Hoa branch in training chemical personnel for the Nghi Son Oil Refinery and Petrochemical Project (which started operations in 2018) in the same province in which Japanese companies are participating.
- (iii) Vietnam–Japan Institute for Human Resources Development (VJCC) (grant ¥780 million and technical cooperation: 6 phases, 2000–2025): As part of the Japan Centre Project, which has been implemented in 10 countries, mainly in those in transition, including Viet Nam, training centres were built at the University of Foreign Trade in Ha Noi and Ho Chi Minh City (completed in 2002) to provide Japanese-language and business training, as well as a keiei juku (management school) to teach Japanese-style management. The alumni group of more than 800 graduates of keiei juku has become a network of Vietnamese managers, providing good models for young entrepreneurs and managers.

6.4. Governance

Based on the deepening of the strategic partnership between Japan and Viet Nam, the governance sector has been positioned as a pillar of technical cooperation since the early 2010s, with the core organs of the Vietnamese government and Party as counterparts. Cooperation has been focused on administrative reform and development of next-generation leaders, as well as strengthening the legislative function of the National Assembly, which has become increasingly important in recent years.

- (i) Training for the Prime Minister's Office: Based on the Memorandum of Cooperation (2011) between JICA Viet Nam and the Prime Minister's Office, training visits to Japan for Vietnamese senior officials have been organised on themes requested to improve their policy capacity.
- (ii) Strategic cadre development training (2021–2025): Following the Training Course for Candidates for National Leadership (2013–2016), which was conducted with the cooperation of the Japanese National Personnel Authority, the new training course was organised in cooperation

with the Central Organisation Committee of the Communist Party and the Ho Chi Minh National Political Academy, with the aim of developing human resources for cadres (about 500 officials) in the Communist Party, central government, and provinces. The programme is contributing to high-level networks between Japan and Viet Nam, with Japanese leading intellectuals (from government, business, and academia) introducing Japan's experience in modernisation and economic development and exchanging views on Viet Nam's development strategy and other issues.

- (iii) Capacity building of the Office of National Assembly (training visit to Japan, 2010–2012; technical cooperation, 2 phases, 2014–2021): Following the Constitutional Research Mission (2013), the project has supported the improvement of Parliament's legislative assistant capacity, the promotion of National Assembly Library including e-library services, and the strengthening of public relations activities, using the Legislative Bureau of the House of Representatives and National Diet Library in Japan as a model. It is expected to serve as a model for cooperation with parliamentary libraries in other Asian countries.

6.5. ODA in collaboration with a wide range of partners (small and medium-sized enterprises (SMEs), local authorities, and universities, etc.)

In line with the expanding role of the private sector in developing countries, JICA has been strengthening its support through private sector partnership projects, in which the technology of Japanese companies (especially SMEs) is used to solve development issues, and through the PSIF scheme for private sector projects with high economic cooperation potential. In addition, in rural areas of Japan, in recent years, there has been growing interest in cooperation with developing countries to revitalise the region. JICA's grassroots technical cooperation has been increased, proposed by Japanese local authorities, universities, and non-governmental organisations (NGOs) in various regions. The expansion of the relationship between ODA and the regions has meant that JICA's 13 international cooperation centres across Japan (from Hokkaido to Okinawa), in addition to being hubs for training programmes that utilise the characteristics and strengths of their respective regions, now play an even greater role as a bridge between the regions of Japan and developing countries. In particular, Viet Nam, with its proximity to Japan and pro-Japanese character, has been the focus of interest of SMEs and local authorities across the country in recent years.

6.5.1. Support for Overseas Expansion of SMEs

JICA selects projects that can feasibly contribute greatly to solving problems of developing countries, based on applications from SMEs, and supports projects that conduct preparatory studies to advance into the local market and disseminate and demonstrate technologies and products. Since the start of the programme in 2010, Viet Nam has attracted the greatest interest, accounting for about 250 of the about 1,400 applications received so far by JICA (covering water treatment, environment, agriculture, human resource development, and others). It is the country with the highest number of applications and the highest level of competition.

6.5.2. Cooperation with Local Authorities, Universities, and NGOs (Grassroots Technical Cooperation)

Exchanges between Japanese and Vietnamese local authorities and universities have become more active in recent years, driven by Japan's expectations of receiving Vietnamese human resources, with 75 memoranda of cooperation between Japanese local authorities and Vietnamese provinces and 22 between local authorities and the Vietnamese government (end of March 2020) (Umeda,

2021). As municipalities such as Yokohama, Osaka, Shiga, Fukuoka, and Kitakyushu have cooperated in the environmental sector in various parts of Viet Nam, the experience of Japanese municipalities in overcoming pollution, preventing disasters, and dealing with the ageing population can be a useful reference for Viet Nam, whilst cooperation with Viet Nam will help revitalise Japanese municipalities. Japanese universities are also increasingly active in accepting foreign students as the number of students declines due to the falling birth rate, and expectations are particularly high for Viet Nam as a country with many hard-working and excellent students.



Conclusion: Towards New Cooperation

ODA cooperation between Japan and Viet Nam has contributed to Viet Nam's rapid development and deepened the broad partnership and friendship between the two countries. Viet Nam aims to break out of the trap of middle-income countries through sustained growth and become a developed country by 2045. Prime Minister Pham Minh Chinh, during his first visit to Japan as prime minister in November 2021, called for a 'new era of cooperation'. He announced in the joint statement with the Japanese Prime Minister that their countries should focus on 'four areas of cooperation' for post-COVID-19 economic recovery: (i) transport infrastructure, (ii) infrastructure responding to climate change, (iii) healthcare, and (iv) digital transformation. In implementing the programme, they should take into account the importance of concessionality, simplified procedures, and flexibility (Joint Statement of Japan and Vietnam) (Ministry of Foreign Affairs, 2021). The current world situation has been greatly affected by the counter-movement to globalisation and the competition between the US and China, as well as the prolonged Russian invasion of Ukraine. The Japanese government has revised the Development Cooperation Charter (2015) to review its ODA policy.³⁴ The cooperation between Japan and Viet Nam is increasingly important for peace and stability in Asia and for the realisation of a 'Free and Open Indo-Pacific'. The ability to create new cooperation is required on both sides. Whilst hoping that the circle of cooperation and trust that has spread between the two countries through ODA will continue to develop for many years to come, I would like to raise the following three issues for consideration. Looking back, immediately after the start of Japanese ODA to Viet Nam, leading experts from both countries conducted a joint study on policies for a market economy and discussed development strategies and the direction of Japanese support. On the occasion of the 30th anniversary of ODA, it would be worthwhile to once again establish a consultative forum that brings together the wisdom of the two countries for the early materialisation of a new era of cooperation (Thien, 2022).

(1) Circular cooperation that contributes to mutual growth between Japan and Viet Nam

The Japanese government has led the international standardisation of 'quality infrastructure' through Group of 7 (G7) and Group of 20 (G20) meetings to meet global demand for infrastructure and achieve high-quality growth.³⁵ In Viet Nam, it is essential to further upgrade infrastructure, human resources, and institutions for sustainable development, and there are many areas where

³⁴ The Expert Group established by the Ministry of Foreign Affairs recommended in December 2022 that future development cooperation should (i) pursue the solution of global human challenges and Japan's national interests, (ii) accelerate efforts towards the Sustainable Development Goals, and (iii) strategically utilise ODA and strengthen cooperation with domestic and foreign partners, amongst others. To expand ODA, the group called for the clarification of a concrete path towards achieving the international target of 0.7% of gross national income (GNI) (0.34% for Japan) (Round Table of Experts, 2022). More emphasis is being placed on the strategic nature of ODA, such as strengthening supply chains from an economic security perspective, international standardisation and dissemination of transparent and fair development finance and quality infrastructure, and a more attractive support menu and offer-type support that utilises Japan's strengths, which is expected to be materialised through further discussions.

³⁵ The principle of quality infrastructure investment was proposed and agreed by Japan at the G7 Ise-Shima Summit (May 2016) and has since been confirmed at a number of international meetings, with the G20 Principles on Quality Infrastructure Investment, including for emerging donor countries, approved at the G20 Osaka Summit (June 2019) (Ministry of Foreign Affairs).

Japan's experience, technology, know-how, and financial resources can contribute. In recent years, the ODA policy has emphasised promoting Japan's own national interests, but what is aimed for is mutual benefit on an equal footing, a 'circular cooperation' that will help Viet Nam break out of the middle-income country trap and at the same time contribute to the re-energisation of Japan, making use of the extensive partnership built by ODA. It is hoped that a comprehensive joint Japan–Viet Nam —strategy will be put into practice as soon as possible, including utilisation of yen loans and JICA's support for the private sector as financing under sound debt management policy, cooperation in key national strategic projects such as the high-speed rail and urban transport system, and sharing of experience and knowledge through enhanced collaboration between local authorities and universities.

(2) Mekong regional cooperation and South–South cooperation

Following its cooperation in the GMS programme, the Japanese government has emphasised cooperation in the Mekong region through international frameworks such as the Japan–Mekong Summit (Shiraishi, 2011). Starting with the strengthening of connectivity represented by the Indochina East–West and Southern Economic Corridors, it has expanded to include industrial development, private sector promotion, rule of law, and cooperation on maritime issues in the region. In contrast, China is promoting integration with Mekong countries through transport infrastructure projects as part of its One Belt, One Road initiative, raising concerns about its expanding political and economic influence, including the 'debt trap' caused by its large-scale loans. Therefore, it is highly significant for Japan, together with Viet Nam, which has become a major country in the ASEAN–Mekong region, to share mutual experience in ODA through various Japan–Mekong frameworks and contribute to the development of the region by presenting better cooperation approaches.

On the other hand, the achievements of Japan–Viet Nam cooperation in the Mekong region can serve as a model for other regions, particularly in Africa, where a number of cross-border corridor plans have been implemented, and based on historical friendship, many African countries are interested in the Vietnamese experience in economic growth and poverty reduction.³⁶ The potential for Japan–Viet Nam–Mekong–Africa 'triangular cooperation' is also to be expected. As Viet Nam has evolved into a central player in the ASEAN and Mekong regions, there is a growing anticipation that, similar to Thailand's establishment of the Thai International Cooperation Agency (TICA) nearly 2 decades ago, Viet Nam, in partnership with Japan, will make a global impact by creating 'VICA' – the Vietnam International Cooperation Agency.

³⁶ Japan–Viet Nam–Africa Triangle Cooperation: In Mozambique in Southern Africa, to promote the Nacala Economic Corridor project, which connects the country to Zambia via inland Malawi, in addition to the mutual study visits by government officials, local seminars in Mozambique (Maputo and Nacala) were organised to share experiences in infrastructure and industrial development in the Indochina East–West Economic Corridor, where Japanese development economists and Vietnamese experts jointly participated (2007). In the mid-2010s, Vietnamese agricultural experts participated in JICA technical cooperation for irrigated rice cultivation in Mozambique, at the suggestion of the Japanese side, and provided technical guidance together with Japanese experts. There is a long-standing friendship between the two countries, which share a difficult history of independence, as symbolised by the presence of 'Ho Chi Minh Boulevard' in Maputo, the capital of Mozambique.

(3) Japan–Viet Nam human resource cooperation

More than 450,000 Vietnamese work in Japan, accounting for about 26% of all foreign workers, the largest number by country (end of October 2021) (Ministry of Health, Labour and Welfare, 2022). Many local authorities in Japan, where the birth rate is declining and the population is ageing, are increasingly interested in young and highly skilled Vietnamese human resources. Whilst Japan's technical internship system to date has produced many positive results for trainees and companies, it has also caused serious problems, such as a large financial burden on trainees, inadequate prior Japanese language training, and poor working conditions. JICA has been supporting the platform for the exchange of information between companies that employ foreign workers, and shares lessons learnt and improvement measures.³⁷ In Viet Nam, cooperation in high-level human resource development through Japanese ODA has been successful, and exchanges with energetic Vietnamese students and young human resources have been a great stimulus for Japanese youth. For the future of both countries, better cooperation in human resources is expected.

'Wise human resources are the mutual vigour of Japan and Viet Nam'.



³⁷ [Japan Platform for Migrant Workers towards Responsible and Inclusive Society \(JP-MIRAI\)](#): Established in 2022, based on JICA's proposal, as a platform for companies and related organisations to exchange information and solve problems, with the aim of improving the working and living conditions of foreign workers and realising 'Japan trusted and chosen by workers around the world'.

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Chapter 4

Viet Nam: Transition to a Socialist-Oriented Market Economy

Vo Tri Thanh



Introduction

To have a deep and thorough understanding of development is always a challenge to economists. While competition and efficiency are essential for development, 'market failure' is just as common as 'state failure.' That is why economists and other social researchers have worked to explain economic reform and development using institutional economics and generalised models.

The centrally planned economies (CPEs) have been facing serious problems in transition, in particular, dealing with three sets of reforms: liberalisation and stabilisation; institutional changes that support market exchange and shape ownership; and the establishment of social programmes to ease the pain of transition (World Bank, 1996). This does not, however, reflect the complexity of the transition process, as showed by the experience of several transition economies. Jeffries (1993) mentioned, 'The rejection of central planning by so many countries in 1989 represents one of the truly extraordinary events in the history of economics. But the transition to the market also presents economists with formidable challenges because the path has never been trod before.'

The 35 years of Viet Nam's Doi Moi (Renovation) that started in 1986 have been bumpy, with successes and failures that have marked its transition to becoming a more prosperous country. Viet Nam's inherent political, social and economic characteristics have made it a potential model for transitional and developing economies to reach their development goals.

This chapter attempts to explore the transition of Viet Nam to the so-called socialist-oriented market economy (SOME). The first section describes the performance of Viet Nam's economy since Doi Moi and the reforms that have characterised it. The second section answers two questions: What lessons can be learned from the Doi Moi process and is there really a 'Viet Nam model'? The latter will be reviewed from both official and more practical angles. The last section looks at the challenges for Viet Nam to go develop further. Several necessary policies and reforms are also recommended.

1. Doi Moi: Development Achievements and Reform Milestones

1.1. Development Achievements

With Doi Moi, Viet Nam has seen four major transformations in its economic development.

First, from a poor and low-income country, Viet Nam emerged to be a middle-income country in 2009. It is also amongst the top countries in implementing the United Nations' Millennium Development Goals of hunger eradication and poverty reduction. The middle class in Viet Nam over the last 10 years has developed rapidly, spurring consumption and national economic development. Viet Nam has also set targets of becoming a high middle-income country by 2030 and high-income by 2045.

Second, from having been an agriculture-based economy, Viet Nam became much more geared towards industry, especially manufacturing and services. In the late 1980s, agriculture contributed the most to the gross domestic product (GDP), at about 50%, but in 2021 the rate was just above 12%.

Third, from being a closed economy, Viet Nam has become one of the most open economies in the world in terms of trade and foreign direct investment (FDI). Currently, the value of total trade is about 200% of GDP, with FDI contributing about 20%, along with 20% of total annual investment, and 70% of merchandise exports.

Fourth, from being a CPE, Viet Nam has since adopted a market-oriented economy. The institutional changes in favour of market rules have been ongoing with the development of the private sector. At present, about 850,000 enterprises and nearly 5 million household businesses are operating. Several big corporations have also established brands in the country and reached the world stage.

Though Viet Nam's development achievements are impressive, it could not reach its target of becoming a modern industrialised country by 2020. More generally, the quality of growth in Viet Nam is still in question. Growth has been largely driven by comparative advantages but not by productivity gains and innovation. Inefficiency of the public investment and state-owned enterprise (SOE) sectors, high costs of doing business, existing distortions of production factor markets, limited spill-over from FDI, and a weak position in global supply/value chains (GSCs/GVCs) are all significant concerns.

In general, the risk of falling into the 'middle-income trap' is still high. Moreover, the income/asset gap seems to be widening. Viet Nam has also paid an environmentally significant price for growth. Resource degradation, pollution, and deterioration, especially in big cities, has become much more serious. It is imperative to note that Viet Nam is amongst the top five countries most vulnerable to climate change.

1.2. Reform Milestones

Several studies have examined the economic development, policy changes, and reforms in Viet Nam since reunification in 1975 (see Fforde and De Vylder, 1988; Griffin, 1998; Riedel and Turley, 1999; Van Akardie and Mallon, 2003; Dapice, 2003; Vo Tri Thanh and Pham Hoang Ha, 2004; Vo Tri Thanh and Nguyen Anh Duong, 2010; Vo Tri Thanh, 2009, 2020; Vanham, 2018). These can be characterised by three periods. Prior to the 1980s, Viet Nam's economy was centrally planned. Between 1980 and 1987, the economy was a modified planned economy where some micro-reforms were undertaken, but without any significant changes in macroeconomic management. From 1988–89 onward, the economy has been in transition, striving for industrialisation and international integration.

Before the 1980s, Viet Nam was relatively autarkic, trading mostly only with the former socialist countries. With the poor incentives and restricted information flows characteristic of a CPE, resource allocation was heavily distorted. The problems were further compounded by an unfavourable geopolitical context because of the military conflict with Cambodia in 1978 and China in 1979. As a result, Viet Nam's economy suffered from persistent shortages, with low levels of per capita consumption; industrial production had stagnated; and food production had fallen to very low levels, forcing Viet Nam to import large amounts of rice, worsening its balance of payments position. The failure of the centrally planned system had become apparent and pressures for economic reforms increased substantially.

During 1980–87, the CPE was modified to respond to depletion of the economy. Fforde and De Vylder (1988) have described the reform process as 'bottom up'. It was first initiated through partial, unofficial relaxation of constraints on private activity and spontaneous moves towards production and trade outside of official channels (for example, 'illicit contracting' in agriculture and 'fence breaking' in the manufacturing sector), leading to eventual Party recognition of the role of the household sector in agriculture, handicrafts, and retail trading. In 1979, the Council of Ministers issued a decree providing scope for local state enterprises to operate outside the central plan once targets had been realised. In January 1981, a contract system was introduced in the agricultural sector, <http://epress.anu.edu.au/vietnam/ch4-notes.htm> and the government issued a decision providing limited autonomy to SOEs. The decision reduced the number of mandatory targets that enterprises had to meet and introduced the 'Three Plan System'. Under Plan One, both the input (at subsidised prices) and output (at set prices) were strictly determined by the State. Under Plan Two, the enterprises could produce beyond the amount specified in Plan One and use revenues to buy additional inputs. Plan Three allowed enterprises to engage in sideline activities on a free/parallel market basis. Up to 85% of the profits from activities outside Plan One could be retained by the enterprises, and some of this could be allocated to workers as bonuses.



These micro-reforms enhanced voluntary and decentralised interactions between individual agents and created new incentives for producers in raising outputs during 1982–85. The economy became more dynamic and, as a result, Viet Nam enjoyed a rather high rate of economic growth in the first half of the 1980s.

However, those micro-reforms in 1979–85 exhibited a trend towards liberalisation and an undermining of the state planning system, and were not a true transition. The Fifth Party Congress in 1982 attempted to recentralise the economy and, in 1983, administrative changes were made to control 'anarchy' in the market; the freedom of state enterprises to trade outside of official/plan channels was narrowed. These moves reflected considerable internal debate within the Party about future policy. Such an uncertain environment checked the growth of non-state economic activity as it discouraged long-term investments.

The improved economic growth was not sustainable. In September 1985, in an attempt to solve the problem of high free-market prices, the authorities increased state prices, and introduced a new currency and the so-called 'price-salary-money' reforms. These reforms were implemented without changing fundamental problems of resource misallocation, trade restrictions, and macroeconomic imbalances in the economy. As a result, these reforms failed to cut inflation. In the mid-1980s, the inflation rate accelerated to several hundred percent.

1986 is the beginning of the transition because it represented an irreversible change in ideology. The Sixth Party Congress in December 1986 publicly rejected the central planning model, and instead declared its intention to move towards some form of mixed market economy (a multi-ownership structure). This included agreements on the need for reducing macroeconomic instability and accelerating economic growth, and that all 'economic levers' (price, wages, fiscal and monetary policies) were to be used to achieve these objectives.

However, significant changes in this direction occurred only sometimes after the approval of the Doi Moi programme by the Congress. During 1988 and in early 1989, Viet Nam adopted a radical and comprehensive reform package aimed at stabilising and opening the economy, and enhancing freedom of choice for economic units and competition so as to change its economic management system. The reforms included:

- Almost complete price liberalisation;
- Large devaluation and unification of the exchange rate;
- Increases in interest rates to positive levels in real terms;
- Substantial reduction in subsidies to the SOE sector;
- Agricultural reforms through replacement of cooperatives by households as the basic decision-making unit in production and security of tenure for farm families;
- Encouragement of the domestic private sector and FDI; and
- Removal of domestic trade barriers and creation of a more open economy.

Macroeconomic stabilisation was successful in conjunction with price liberalisation, changes in the interest rate, and exchange rate policies, and, at the same time, the imposition of harder budget constraints on SOEs. The improvement of monetary policy and the better use of monetary instruments played a key role in cutting inflation.

Since 1989, structural reforms, such as the SOE and banking system reform and private sector promotion, have also been carried out, though the process has not been smooth.

In parallel with the domestic reforms, the acceleration of the opening of the economy and international economic integration has played a key role in enhancing efficiency and promoting economic growth. The trade regime has gradually liberalised (though it did not achieve neutrality in the incentive structure). In 1992, Viet Nam signed a trade agreement with the European Union (EVFTA), and in 1995, Viet Nam officially normalised relation with the United States (US) and joined the Association of Southeast Asian Nations (ASEAN). Viet Nam applied for World Trade Organization (WTO) membership in 1995. In 1998, Viet Nam became a member of Asia Pacific Economic Cooperation (APEC). In 2000, Viet Nam signed a bilateral trade agreement with the US (VN-US BTA) and the agreement became effective in December 2001.

Yet, after the Asian financial crisis in 1997, domestic reform slowed. However, the approval of the Law of Enterprises in 1999 and the realisation of VN-US BTA since 2001 became the catalyst and foundation for reforms and prompted more confidence in international economic integration. Since 2002, Viet Nam has also joined regional integration clubs such as ASEAN +1 free trade agreements (FTAs). 2006 marked Viet Nam becoming a WTO member and fulfilling its agreements under the ASEAN Free Trade Area. Through 2005, Viet Nam entered into 87 bilateral trade arrangements and 48 investment protection agreements, and had trade relations with 224 countries/territories. All these moves have required Viet Nam to change several laws and related legal frameworks in compliance with international commitments and market-oriented institutions. Because of macroeconomic instability in 2007–08 and in 2010–11 due to mismanagement, along with external shocks such as the Global Financial Crisis, domestic reforms have been unevenly implemented.

Since 2011, efforts have been aimed at macroeconomic stabilisation, further institutional reforms, economic restructuring, and comprehensive deepening of international integration (not just economic integration). Three pillars of Viet Nam's development strategy include institutional reform, infrastructure development, and improvement of human resource quality. The focus of economic restructuring has been not only on public investment, SOEs, and the banking-financial sector but also on development of the private sector and those areas in which Viet Nam has advantages, such as some industrial clusters, agriculture, and tourism. Viet Nam has joined many regional and bilateral FTAs (17 in total, including high-





quality ones such as Trans-Pacific Partnership [TPP]/ Comprehensive and Progressive Agreement for Trans-Pacific Partnership [CPTPP]; Vietnam-European Union FTA; and the Regional Comprehensive Economic Partnership [RCEP]). At the same time, Viet Nam has established comprehensive/strategic/comprehensive strategic partnerships with several countries, most of whom are also members of FTAs Viet Nam joined. Moreover, there has been a growing emphasis on the role of innovation, particularly in the context of the Fourth Industrial Revolution and digital transformation, since 2017. All dimensions of reforms were expressed clearly in the Eleventh Party Congress in 2011, the Twelfth Party Congress in 2016, and especially the Thirteenth Party Congress in 2021.

While some reforms were made, in general, the realisation of the three pillars and economic restructuring has not been as expected. The reforms increasingly became more comprehensive and complicated. Moreover, the economy needed time for stabilisation, and it has suffered from the various external shocks such as the US-China trade war, the global COVID-19 pandemic, and the Russia-Ukraine war.

1.3. Key Issues of Transition

With Doi Moi, Viet Nam substantially changed its way of thinking, and fundamental institutions for a market economy (prices, a legal framework for ownership and commercial transactions, a two-tier banking system, capital markets, a tax system, etc.) have been established. But Doi Moi has sometimes been characterised by inconsistency with market-oriented reforms and by 'stop-and-go' policies. Its complexity can be explained by several factors.

The effective reforms require political will, but decision-making is still somehow rooted in the legacy of the CPE, especially in ways of directing and controlling resources such as land and capital, and dealing with the SOE sector (see Box 4.1). The administrative way of managing the economy has created close, mutually beneficial connections between the line ministries and the SOE sector as a whole, and the State general corporations in particular. SOE reform is still far from completion.



Box 4.1. Pathway of the SOE Reform Process

- In the early 1990s: Harder budget constraints were imposed on SOEs. Several (small) SOEs were liquidated. During 1993–94, several State general corporations (17 in 1991 and about 70 in 1990) were established. In the second half of the 1990s, SOE reforms somehow stagnated.
- 1994–2001: Leasing/contracting/selling of (small) SOEs was realised, together with implementing pilots and then expanding SOE equitisation (not privatisation).
- 2002–06 (before WTO accession): Equitisation was accelerated and a list of SOE classifications was approved (100% state-owned; shareholding companies with more than 50% state-owned; ‘Rule of Law’; mergers and acquisitions; consolidations; bankruptcy, etc.).
- Since 2007: Reform has been basically dealing with the big SOEs: (i) to equitise large SOEs and some general corporations, including those in the financial and banking sector; (ii) to get strategic investors for SOEs in equitisation; (iii) to transform all SOEs to be Liability Limited firms, with a state owner or share-holding companies; (iv) to cement the equitisation of SOEs and to list them in stock market; (v) to ask them to apply the best practices of governance-OECD principles; (vi) to transform the large SOEs and State general corporations into the holding-subsidiary, and to establish the State Business Groups (now Viet Nam has 19 State Business Groups and State General Corporations); and (vii) to separate the functions of the State as the owner of SOEs and as a manager and supervisor for the whole economy (establishment of State Capital Investment Corporation in 2005 and Commission for Management of State Capital at Enterprises in 2018).

Source: Compiled by the author.

The explanation can also be seen in other ideological, economic, and social factors. The Communist Party leadership has been considered the most decisive factor for guiding Doi Moi and ensuring its success. The Party has seen the need to have a new approach, so that its leadership can effectively adapt to a new environment of a more open-market economy. This could only evolve gradually and, naturally, has had a complex impact on the economic reform process. For instance, there has been a lot of debate about the concept of 'socialism orientation', 'a leading role of the state economy and/or SOE sector'.

Finally, there is the problem of asymmetry in incentives for those supporting or opposing reforms, depending on whether they will be winners or losers. For instance, in general, most people will benefit from the reduction of trade barriers, while inefficient and highly protected enterprises will have difficulties surviving in the new market environment. A complex package of reforms means the involvement of many participants with different motives. Benefits for the many are merely potential gains without certainty and, therefore, reactions might not be concerted and strong. By contrast, for those with vested interests, who are still able to influence the decision, the loss of benefits through reduced protection and limited public advantages is real. The problem of conflict of interests is difficult to attack since the vested groups can use the same political and social arguments just mentioned to justify the *de facto* status.



2. Lessons and the ‘Viet Nam Model’

2.1. Lessons Learned

Achievements from Doi Moi, though an important fulcrum, are not enough to ensure the success of Viet Nam’s development process in the future (Ministry of Planning and Investment [MPI] and World Bank, 2016). It is imperative for the country to accelerate reforms. To realise this, it is vital that the country learns from its past.

There are several interrelated lessons that can be drawn from Viet Nam’s experience:

- First, the effective reforms require both political will and changes in the way of thinking that reflects the dynamics of real life. As mentioned, the microeconomic reforms introduced in the early 1980s recognised and legalised people’s spontaneous measures to operate outside the plan. The failure of the efforts to stabilise the economy up until 1989 and of the last attempts to control the free market during 1985–88, as well as the drying up of aid from the former Soviet Union, created immense pressure on reform. The slogans ‘Let markets be untied’ and ‘Rescue yourself’ reflected the nature of the radical reform package in 1989.
- Second, since Viet Nam is an agrarian economy in transition, where economic policies and implementation procedures are still a legacy of the CPE, the approach to and way of reform implementation are essential for ensuring success, while keeping social and political stability. In general, economic reform in Viet Nam has been a process of learning by doing and characterised by gradualism. This approach has several advantages since it can avoid the crisis/collapse of the economy, while gradually gaining the confidence in and the support for reform as people see the successful outcomes.
- Third, pursuing gradualism does not mean that the focus should be, at first, solely on microeconomic reforms. Viet Nam’s experience has shown that the partial and sectoral reform measures could be good but are not good enough. They should be undertaken within more comprehensive reforms, especially in conjunction with macroeconomic reforms and the opening of the economy. Macroeconomic stability and ‘getting the prices right’ are as essential as ensuring ownership, the rights of doing business, and creating business opportunities. Equally important for development of an efficient private sector are administrative reforms, a level playing field that is closely associated with the structural reforms, and factor markets development. The government should not only prioritise hunger elimination and poverty reduction and support the most vulnerable groups, but also interact with the market and create a legal foundation to facilitate business operation.
- Fourth, Viet Nam could not succeed without having appropriate trade liberalisation and international integration (see Box 4.2). The pressure for more decisive and comprehensive reforms has been strengthened as Viet Nam’s process of international integration become more deeply embedded. The integration is, though essential, only a necessary condition for success. Opening the economy poses certain risks. Therefore, it should be undertaken within a comprehensive reform framework and in line with institutional reforms to provide an impetus for development, as well as to make the economy resilient to various kinds of risks.

Box 4.2. Features of Viet Nam's International Integration

- It is a continuous process and becomes more comprehensive over time (ASEAN; APEC; VN-US BTA; WTO; FTAs, etc.). Since 2013, the scope of international integration has covered all areas and dimensions, not just economic activities, though economic integration is at the centre.
- Viet Nam has strived to balance relations with the powers/partners and to be a proactive and responsible member of international institutions for peace, stability, and development.
 - To be a friend of all countries and territories for peace and sustainable development.
 - To respect and to support multilateral institutions and frameworks (United Nations, WTO, APEC, ASEAN, etc.).
 - To establish comprehensive/strategic/comprehensive strategic partnerships with several key partners.
- Viet Nam has built a security policy based on the 'four No's' principles: No military alliances; No aligning with one country against another; No foreign military bases on Vietnamese soil; and No using force or threatening to use force in international relations. The key policy objective is to ensure peace and a favourable environment for sustainable development. At the same time, Viet Nam has also extended security cooperation with partners to improve its defence capacity and address common security issues.

Source: Vo Tri Thanh and Nguyen Anh Duong (2021).

- Fifth, it is not possible to understand economic reform in Viet Nam without examining the 'turning points' associated with the significant institutional changes. Viet Nam's radical reform package, launched in 1989, was an exception within the context of gradualism, but its outcome was very impressive and different in comparison with the experiences of many transitional economies in Eastern Europe, although the liberalisation and stabilisation measures used were similar to these economies (Riedel and Comer, 1997). Although the reform package was implemented without the assistance of international institutions such as the IMF and World Bank, it is considered successful since the basic conditions were created for the transformation into a market-oriented economy.
- Sixth, as reform has deepened and living standards improved, the economic growth must increasingly go in hand with social stability, environmental protection, and quality development. The focus should be on policy harmony and that is also a challenge.

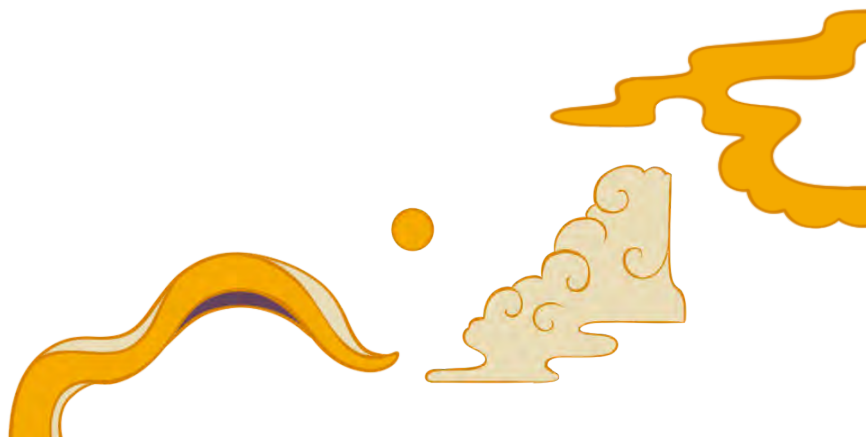
2.2. 'Viet Nam Model': Evolution of Official Opinions

Reforms are basically political economics that 'mirror' changes in the thoughts of policymakers, and which are embedded in the resolutions of the Party Congresses, especially from the Sixth in 1986 to the Thirteenth in 2021. There were several key terms characterising the economy that Viet Nam has recognised and/or would like to use moving towards.

Before Doi Moi, the economy was seen as a subsidised and bureaucratic CPE. In reality, during 1980–89, it became a modified CPE, with some notable microeconomic reforms. 'Building a multi-component commodity production economy', a form of economy with a multi-ownership structure, was laid down by the Sixth Party Congress in 1986. During 1990s, Viet Nam used the term 'market-oriented economy under state management' as a goal for its institutional reforms, emphasising both the importance of market mechanisms and the role of the SOE sector and the state as a whole. The term 'socialist-oriented market economy (SOME)' was officially announced by the Ninth Party Congress in 2001. It is considered a general economic model in transition to socialism and determined as 'a multi-component commodity production economy operated by market mechanisms under state management with a socialism orientation'. The content of a SOME has been developed in the following Party Congresses, from the Tenth in 2006 to the Thirteenth in 2021 (see, for example, Nguyen Minh Phong, 2021).

In particular, the model of Viet Nam's SOME was clarified in detail in the article on 'Some Theoretical and Practical Issues on Socialism and the Path towards Socialism in Viet Nam' by General Secretary of the Communist Party of Viet Nam (CPV) Nguyen Phu Trong (2021). The SOME concept is seen as 'a particularly fundamental and creative theoretical breakthrough of our Party'. It is a mode of economic organisation that abides by the laws of an open and market economy, but is also built on and guided by the principles and nature of socialism under the leadership of the CPV and by a rule-of-law socialist state.

The SOME recognises the central role of healthy competition and the importance of all sectors (state, collective, private, and FDI), while noting the key role of the state economy (a broader concept than the SOE sector). It should be for people-centred development in three aspects. The first is to ensure economic growth is wed with environmental protection, social progress, and equality in every stage, every policy, and throughout the development process. The second is to develop human resources in a close tie with technology cultivation and innovation. The last is about the political model and its mode of operation with the involvement of Party leadership, State management, and people's mastery (see Box 4.3).



Box 4.3. Major Characteristics of Viet Nam's SOME

- 'A SOME is a modern market economy well integrated with the world. It is an economy that operates fully and cohesively in line with the laws of a market economy. It is regulated by a rule-of-law socialist state under the leadership of the CPV.'
- 'A SOME encompasses multiple forms of ownership and multiple economic sectors. They are equal under the law in the interest of long-term development, cooperation and healthy competition. In this system, the state economy plays a key role; the collective economy is constantly consolidated and developed; the private sector is an important engine of the economy; the FDI sector is encouraged to develop consistently with the socio-economic development strategies and plans.'
- 'A fundamental characteristic and important feature of the socialist orientation ...is the combination of economics and society, the coordination of economic and social policies. It also ensures that economic growth would be accompanied by social progress and equality in every stage, every policy, and throughout the development process.'
- 'We place the people at the heart of our development strategies. Cultural and human development are both the target and the momentum of Doi Moi. Cultivation of education - training and science - technology constitute our top national policy. Environmental protection is an existential issue and a criterion for sustainable development.'
- 'Every Party guideline, every government policy, law and action, aims to serve the interest and happiness of the people. The political model and its overall mode of operation involves the leadership of the Party, the management by the State, and the mastery by the people. Democracy is the nature of the socialist regime.'

Source: Nguyen Phu Trong (2021)

2.3. Viet Nam Model: More Practical Views

Another interesting way to look at the Viet Nam model is with more practical views: (i) the goals of transition and reforms; (ii) the nature of economic reform and key directions; and (iii) the way of reform realisation/implementation.

Doi Moi and reform processes are not self-generated. Viet Nam's development objectives, for people, by people and serving people, are consistent with its sustainable, inclusive, and widely acknowledged goals. Moreover, for Viet Nam, '... we will not wait until the economy has reached a high level of development to begin exercising social progress and equality. We also shall certainly not 'sacrifice' social progress and equality in pursuit of mere economic growth' (Nguyen Phu Trong, 2021). Not surprisingly, Viet Nam is amongst the top countries in achieving United Nations Millennium Development Goals and is now strongly committed to implementation of the Sustainable Development Goals, as well as net-zero emissions by 2050.

The challenge is how Viet Nam can achieve its development goals. The most important is to grant rights and to enlarge opportunity spaces for people in choosing and deciding the directions and forms of their production and business activities. This is the nature of Doi Moi and economic reform in Viet Nam, and they have been realised thanks to four key directions:

- 1) Acknowledgment of the right of private business;
- 2) Market-oriented reforms;
- 3) Opening and integrating into the world economy; and
- 4) Keeping macroeconomic and social stability.

These directions have adopted 'traditional' approaches of the decisive role of the market (in efficient resource allocation) and the state (in macroeconomic management, formation of market institutions, and income distribution). Simultaneously, they have brought about a necessary interaction between domestic reform and international (economic) integration, while considering domestic resources as the most decisive and external resources as essential. They have motivated behaviour changes; once they are locked in, it is very difficult for the economy to return to the previous economic management system.

Ensuring rights of doing business and enlarging opportunities is essential, but not enough. Equally important is to have good people and institutional capability so the choices are right and the policy creation and implementation is effective and efficient. It is even now a big problem for Viet Nam, though the quality of human resources and institutions has been improving.

What is the way of reform? In the case of Viet Nam, the reform issues, problems, and lessons have showed that it is about the choice/decision between 'two sides of one coin':

- 1) **Between principles and flexibility.** A traditional Viet Nam slogan is to be 'firm in principles, flexible in response to the multi-unexpected changes (đĩ bất biến, ứng vạn biến).' Party leadership, the role of the state economy in the market, recognition of the role of all economic components, the way of integration, etc.: they all are of 'principle'. 'Flexibility' is more or less in compliance with gradualism, as is 'learning by doing', even 'trial and error.'
- 2) **Between gradualism and 'turning points'.** As mentioned, gradualism has several advantages. This approach is not only driven by the reform targets, but is also based on the structure of existing institutions, meaning that the changes can take time. Top-down approaches with gradualism can be also seen in Viet Nam's integration process (ASEAN, APEC, EVFTA, VN-US BTA, WTO, FTAs, and comprehensive/strategic/comprehensive strategic partnership). But gradualism also has some disadvantages that could lead to a 'stop and go' policy, and even the possibility of missing opportunities. Note again that the gradual approach did not work well until 1989. Radical reform packages in 1989 were one of the most successful reforms in Viet Nam.
- 3) **Between 'bottom up' and 'top down' approaches.** Microeconomic reforms, for example, by the end 1970s and early 1980s, in many ways have been introduced as recognition and legalisation of what already happened. International integration and several reforms require political will and decisions to overcome the inertia of a CPE legacy. But in any case, an appropriate combination of both approaches is needed. In Viet Nam, there have been regular dialogues between policymakers, leaders, and business community/people, and the role of the so-called 'grassroots democracy' has been strengthened.



Experience in Viet Nam shows that there are two important factors in a good policy- and regulation-making process. The first is the establishment of a reviewing body satisfying three principles: (i) regulatory independence and professionalism; (ii) overall vision of the economy; and (iii) transparency. The second is a compulsory regulatory impact statement.

Also, evolving public institutions, such as in transitional economies, work because they can achieve two objectives at the same time: improving economic efficiency, and making the reform a win-win game compatible for those in power. Balancing the benefits amongst three groups, i.e. people, entrepreneurs, and the state budget, is a requirement. However, having proper, transparent, and accountable incentives for public servants is also very important. In Viet Nam, this is still a big problem to be solved.

3. New Context and Challenges for the Way Forward

3.1. Viet Nam's Aspirations and Challenges

After more than 35 years of Doi Moi, Viet Nam is now at a decisive juncture for transforming development. Interaction between domestic reforms and international integration becomes much more profound. With the ambitious aspiration to become a high middle-income economy by 2030 and a developed country by 2045, Viet Nam is on the way to realising the objectives set out in its constitution: 'A prosperous people and a strong, democratic, equitable and civilized country'. Basically, Viet Nam needs to get out of the low-cost labour trap and simultaneously lay down foundations for overcoming the middle-income trap. In other words, Viet Nam needs to have a long-term high economic growth while ensuring social and environmental sustainability.

There are a lot of questions of how Viet Nam can not only improve economic growth, but also promote sustainable and inclusive development. Establishment of modern market mechanisms with transparent and accountable institutions in a rule-of-law socialist state is still pending. At the same time, the world has changed significantly with many new mega-trends (see Box 4.4), and many things, such as the digital economy, are not well understood. Another consequence is the shift of GSCs/GVCs that rely not only on comparative advantages, degrees of trade and investment liberalisation, and smart service-link optimisation, but also on the geo-political consideration and sovereign value of the core technologies/strategic products. In general, there are both opportunities and challenges in the new world context. Viet Nam is a very open economy; the challenge is to adapt to and cope with mega-trends so that it can leverage all they bring about, while minimising risk. Obviously, Viet Nam's achievements, although important, are not adequate to ensure further reform and development.

Box 4.4. New World Mega-trends

- Geo-political tension intensifies due to competition and power struggles amongst superpowers/big countries.
- Globalisation/Integration slows due to emerging protectionism and risks of geo-political and geo-economic fragmentation.
- The consumption revolution is driven by the behaviour of the middle class and the younger generation in favour of greener, safer, and more humane consumption.
- Technology progress and disruption (the Fourth Industrial Revolution; digital transformation; new energy technology) creates challenging breakthroughs for productive and smart production and all fields of human life.
- Finance innovations help to reduce business transaction costs and to improve efficiency of monetary and capital markets, while also imposing several problems vis-à-vis appropriate regulations and prudential supervision.
- Both uncertainty and risks (geo-political conflicts; trade and/or technology wars; financial crises, climate change and natural disasters; transnational disease) are on the rise in terms of frequency and intensity.

Source: Compiled by the author.



3.2. Policy Options and Recommendations

This is the time for Viet Nam to rethink, redesign, and rebuild in a changing world. The key is to realise Viet Nam's advantages, institutional reforms, and potentials. As underlined in MPI and World Bank (2016), 'procrastination and indecision in reforming will result in the fact that Viet Nam will not be able to capture the opportunities and overcome the challenges, and the risk of falling into low middle income trap and further lagging behind will be unavoidable'. Viet Nam must act, and it has a good foundation to do that.

Viet Nam's Socioeconomic Development Strategy 2021–30 sets out three strategic breakthroughs regarding institutional reforms, infrastructure, and human resource development and 10 major policy directions and tasks to be carried out.

MPI and World Bank (2016) emphasised six key breakthroughs for Viet Nam development, including: (i) enabling economic modernisation and private sector development; (ii) building national innovation capacity; (iii) managing urbanisations for greater efficiency; (iv) achieving sustainable and climate-resilient growth; (v) promoting equity and social inclusion; and (vi) building modern institutions for an effective state. Later on, the report on 'Vietnam 2035: from Strategy to Action' by Australia-World Bank Group (2020) showed a more practical way for Viet Nam to realise a productivity-focused development strategy, i.e. creation of dynamic firms, development of efficient infrastructure, enlargement of the pool of skilled workers as well as opportunities for all, promotion of green economy, and establishment of Government's new growth strategy.

The SOME can be considered both a goal to be achieved and a guide for continuous Doi Moi. In that sense, the policy recommendations and their implementation can be also seen as a way to improve Viet Nam's model of SOME. In light of this, we emphasise four interrelated policy actions.

The first policy action addresses strengthening public capacity. This is crucial as Nguyen Phu Trong (2021) noted: 'We pay special attention to party building and rectification. This task is critical to the survival of the Party and the socialist system'. It includes building a modern rule-of-law State and



adopting guiding principles for new governance. Inherent to building a modern rule-of-law State is developing a coherent, disciplined, and meritocratic bureaucracy that adheres to market rationality in policymaking. This shall be supported by the implementation of a more effective mechanism for coordinating, checking, and balancing the three branches of power, and a mechanism to ensure broad public participation in decision-making. Meanwhile, a core guiding principle is governance that is fast, agile, experimental, iterative, inclusive, and multistakeholder-based, as well as open to collaboration. This is quite different from traditional governance approaches, i.e. linear, time-consuming, and top-down.

The second policy action relates to the improvement of the legal framework where innovation and green growth promotion are added to the current agenda that focuses on efficient resource allocation. The former includes laws needing revision such as the Land Law, laws on financial markets, the law on property taxes, the labour code, etc. The new agenda could comprise frameworks related to intellectual property rights and data, high-skill labour movements, startups ('sandboxes'), standards and circular economies for green growth, etc. Most important is to create an environment to nurture and develop innovation. The government's policies should focus on building the national innovation system, cultivating debate, establishing merit-based mechanisms, renovating education, and attracting talent (MPI and World Bank, 2016).

Also, central to the second policy pillar is ensuring equity and social inclusion. This can be achieved by continuing the implementation of programmes that support equal opportunities for everyone irrespective of age, disability, gender and other categories previously seen as impediments for people's participation. It can also be achieved via the implementation of the agenda on aging populations and the middle class through expansion of pension systems, establishment of effective representative organisations for workers, and universal health care.

The third policy action suggests that Viet Nam accelerate its structural reforms in compliance with new development trends and the shifts in GSCs/GVCs, as well as take advantage of the FTAs. In this regard, all policy and reform directions were already set out during 2011–22 (see Box 4.5). Again, Viet Nam needs more decisive actions. It is also crucial for Viet Nam to pay attention to risks and uncertainties in order to ensure economic resilience.



Box 4.5. Policy and Reform Directions Set Out during 2011–22

- Macroeconomic stabilisation and consolidation (since 2011) while ensuring resilience of the economy.
- Business environment improvement and administrative reforms (esp. since 2014), and building e-government/digital government (since 2018).
- Restructuring of the economy, especially SOEs, financial and banking sector, and public investment (since 2012). The focus is also on private sector development and restructuring of the agricultural sector, tourism, and some industrial clusters.
- Deeper international integration (TPP/CPTPP, EVFTA, APEC, RCEP, some bilateral FTAs, etc.); a more effective realisation of FTAs (CPTPP since January 2019; EVFTA since August 2020; RCEP since January 2022); and attraction of quality FDI, especially the leading firms, thanks to the shifts of GSCs/GVCs.
- Promotion of productivity and innovation/startups (e.g. mobile money, fintech, etc.); approval of the Program of National Digital Transformation (2020) and the Artificial Intelligence Strategy (2021); establishment of new innovation centres and possibly international financial centres.
- Approval of the new green growth strategy (2021), the circular economy strategy (2022) and starting implementation.

Source: Compiled by the author.



The fourth policy action emphasises human resources development. The main road towards Viet Nam's prosperity is to change its institutions into efficiency-enhancing ones. This shall involve ensuring universal upper secondary education, radical reform of the vocational and training system, and higher education system. To catch up with the knowledge frontier, Viet Nam should also seek to have its universities be amongst the top 500 or even top 200 in the world. Improvement of business environments and ecosystems for startups, alongside the effort to reinforce intellectual property rights, will also contribute greatly to the development of human resources. Finally, strengthening the National Innovation System is also important so that enterprises can become a focal point, and approaches that put focus on merit-based, idea-exchange, and renovation of educational system can take centre stage.

Conclusion

Viet Nam has recorded impressive development achievements since Doi Moi launched in 1986. The major challenge for Viet Nam now is how it can escape the middle-income trap to achieve its ambition of becoming a developed and high-income country by 2045. Viet Nam has no choice but to continue Doi Moi.

Viet Nam's SOME model has been formed with various political, economic, and social dimensions. The model of SOME can be seen as a goal to be achieved and also as a guide for continuous Doi Moi. It has been the outcome of a whole process of changing mindsets and reforming experiences in a transitional economy increasingly integrated in the world. It is not complete and requires further reforms.

Realisation of SOME for development and prosperity centres around strengthening Party leadership, public capacity, and public capability. Successful reforms are dependent on the will, determination, and accountability of the party/government's leaders and policymakers who need to recognise trends and know-how to combine resources and manage risks and take aggressive action. Moreover, the economic, administrative, and political reforms need to be implemented in a synchronous manner, with a wider participation of people and relevant stakeholders.

The SOME itself may have some certain incompatible aspects (e.g. the role of SOE/state economy, public land ownership, and market mechanisms); therefore, improvement of legal frameworks and structural reforms are crucial. They are becoming increasingly essential in a rapidly changing world, where Viet Nam must align with various mega-trends. In any case, the reforms should be consistent with the process of building a market economy and international integration.

By pursuing a path of reform implementation characterised by adherence to principles while maintaining flexibility, following a step-by-step approach with the determination to make decisive changes when necessary, and employing a combination of both bottom-up and top-down approaches, Viet Nam can make significant strides in enhancing its socio-economic development and expediting reforms. These efforts are in line with the nation's ambitious development objectives and Ho Chi Minh's vision of Viet Nam as a nation capable of standing on equal footing with powerful nations across the five continents.

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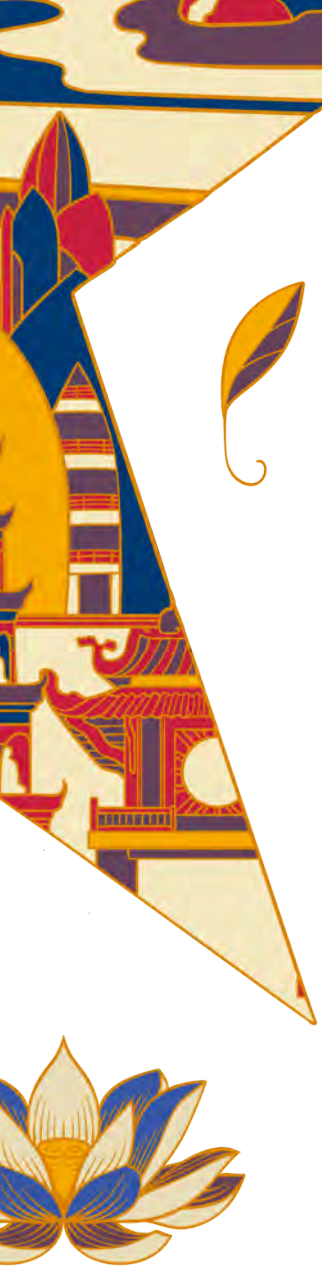




Chapter 5

Foreign Direct Investment and the Industrialisation of Viet Nam

Ryo Ikebe



1. Introduction

This chapter considers the history of foreign direct investment (FDI)¹ in Viet Nam and how FDI has influenced the industrialisation of Viet Nam.

Johnson (1972) said that the essence of FDI is the 'transmission to the 'host' country of a 'package' of capital, managerial skill, and technical knowledge'. These benefits are not limited to developing countries but will be affected in various ways by high-productivity FDI, even in developed countries. Kimura and Kiyota (2007) showed the high productivity levels and growth of FDI firms in Japan in the late 1990s and pointed out the direct effect of FDI on host countries in beneficial assets, such as technology, management capabilities, and corporate governance.

In this way, it has been noted that FDI has a beneficial effect on host countries. Since the 1980s, Southeast Asian countries have focused on attracting FDI, including Japanese companies, because FDI complements the scarce capital and technology of developing countries (Blomstrom and Kokko, 1998). Since the early 1990s, when Viet Nam began to work on full-fledged reform and opening-up policies, it has been working to attract FDI in order to achieve stable and sustainable economic growth.

The acceptance of FDI has allowed Viet Nam to achieve direct effects, such as job creation and export expansion. In addition, the opening of the home market to high-productivity FDI also had an indirect effect on the modification of old economic structures, such as state-owned enterprise reform. The opening of the home market to FDI has required old-type companies that have been guaranteed activities through subsidies and monopolies to make further management efforts, such as improving management efficiency and diversification and developing new markets by expanding overseas. This is a change that can be an advantage for reform promotion, whilst it is a disadvantage for the defending old faction that the efficiency improvement of the home country's economy is promoted by accepting FDI.

Again, when developing economies accept FDI from developed countries, host countries can accept capital and high-technological capabilities. If this direct effect is the first effect, the second effect is the indirect effects, also known as spillover effects, such as the transfer of know-how to local companies and encouraging the productivity improvement of other companies in the industry through competition (MacDougall, 1960). As a third effect, FDI has the effect of promoting structural reforms, such as the deregulation of the host country (Blomstrom and Kokko, 1998), which is expected to bring the economic system closer to international standards.

¹ Unless otherwise noted in this chapter, FDI refers to inward direct investment from abroad to Viet Nam.

In this chapter, Section 2 presents an analytical viewpoint for observing the intra- and inter-industrial spillover effects of FDI on the Vietnamese economy. Section 3 explains that Viet Nam's FDI initially started with an import substitution industry and then moved to export-oriented FDI after Viet Nam joined the World Trade Organization (WTO). Furthermore, the section outlines the characteristics of FDI by country, region, and industry, and outlines the existence of the direct impact of FDI through the composition ratio of FDI in major economic indicators. In Section 4, we discuss intra-industrial spillovers using the capital equipment ratio and discuss whether or not there is a backward linkage effect on inter-industrial spillovers from the trade data by the production process. Section 5 focuses on the role of FDI in the industrialisation of Viet Nam as a conclusion, and discusses the steps needed for future industrialisation.

2. Analytical Perspective

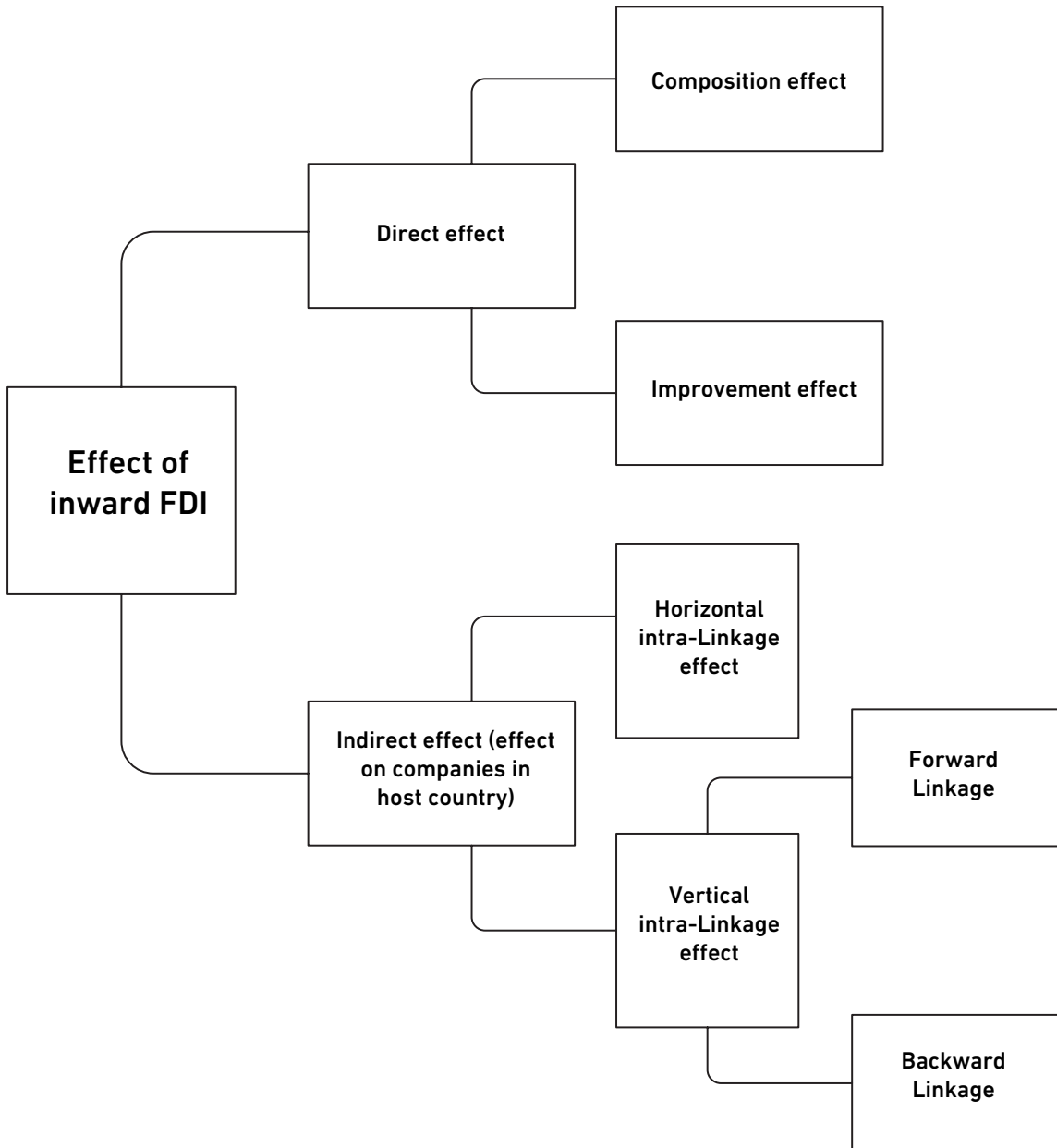
2.1. Impact on FDI Host Countries

Figure 5.1 is a conceptual diagram by Iwasaki (2013), it shows how FDI affects a host country. The effect on the host country is divided into direct and indirect effects. The direct effect is that it increases the productivity ratio in the capital of the host country through the investment of the highly productive FDI, so macro productivity also increases if there is a 'composition effect'. If FDI enters the host country through a joint venture with a local company, it will also bring 'improvement effects' in the traditional management of the local company through the participation of FDI as a partner.

On the other hand, the indirect effect is that the addition of highly productive FDI to a specific industry has a positive impact on surrounding industries through the market. This effect is called the spillover effect, and it can be divided into the spillover effect within the horizontal intra-industry and the spillover effect between vertical inter-industries. Horizontally, the incentive to improve productivity works for other companies in the same industry in the host country, and consequently leads to productivity improvement in the entire industry. However, according to Caves (1974), analysis of the spillover effect of FDI from developed countries to Canada and Australia in the 1960s shows that FDI in developed countries ended up dominating the market. The reason for this is that companies in developing countries have poor technological capabilities and there is a big difference in competitiveness compared to developed countries. Further, a case study of Venezuela by Aitken and Harrison (1999) also confirmed the negative effects.

On the other hand, vertical inter-industrial spillovers are due to the high-efficiency production activities of FDI companies spreading between industries through forward and backward linkage effects. In the manufacturing industry, the forward linkage is that if the production ratio of highly efficient FDI increases in the production process in the middle stream of the industry, the productivity of the production process in the downstream industry will also increase. Conversely, the backward linkage is a spillover effect from the middle stream to the upstream process. Previous research has shown positive and significant results of this vertical spillover effect in analysis of Lithuania by Javorcik (2004) and Blalock and Gertler (2008) in Indonesia. Iwasaki (2013) also revealed the forward linkage effect of FDI in Japan, which increased the productivity of manufacturing companies located downstream as the foreign capital ratio in the upstream process increased.

Figure 5.1. How FDI Affects a Host Country



Source: Iwasaki (2013, p.19).

2.2. Backward and Forward Linkage Effects

According to Hirschman (1958), 'The input-provision, derived demand, or backward linkage effect, i.e., every nonprimary economic activity, will induce attempts to supply through domestic production the inputs needed in the activity.' Conversely, the effect of expanding demand in expanding upstream industry production, and the effect of expanding the production of downstream industries, are called the forward linkage effect. As examples of the backward linkage, if clothing production explodes, it will induce the domestic production of intermediate materials, such as fabrics and yarns, in the middle stream of industry and more; also, the expansion of smartphone production will encourage the domestic production of modules and parts.

Figure 5.2 is a conceptual diagram that shows how FDI and local companies relate to the process of industrial production. The FDI of the advanced country enters the developing country for export-oriented production because there is a comparative advantage in the labour force in the host country. In addition, since domestic demand in the developing country is so small, FDI enters as an export-oriented type. The first step of FDI is the entry of labour-intensive and export-oriented types of FDI.

The main industries of the first step will be primarily triggered by FDI companies and will focus on the assembly process of final products, such as clothing, footwear, smartphones, personal computers, and so on. This is because local companies lack capital, technology, and marketing capabilities in the global market, and it is difficult for local companies to enter the final goods production processing of smartphones and personal computers.

In the second step, the large production scale of the final goods will encourage the entry of FDI in the field of intermediate goods, processing materials, and parts and components production by the backward linkage effect. Intermediate goods production is in the middle stream of the process and is a capital-intensive industry. In general, local companies do not have large-scale capital and advanced technology and will not be the main players in intermediate goods production.

The third step is the stage where local companies get business opportunities with FDI through contracting or sub-contracting processing for intermediate goods production. Such local base industries will internalise capital, make additional capital investments, and raise their technical level. Some local companies will become the primary suppliers who do business directly with the final goods manufacturers. Currently, Samsung Electronics of the Republic of Korea (hereafter, Korea) is

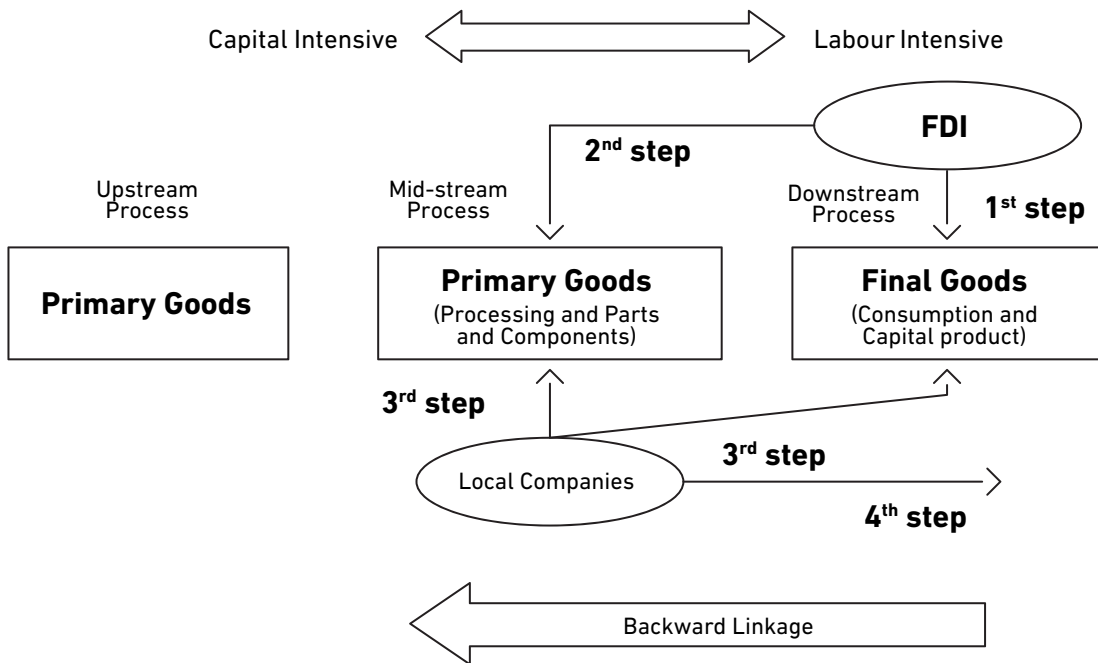


exporting and producing smartphones on a large scale in northern Viet Nam, but the Samsung group's companies responsible for module production, and its cooperative FDI companies, are also expanding investment into Viet Nam. It is said that 25 Vietnamese domestic companies are joining the supply chain as first suppliers and 190 as second suppliers (Viet Nam News, 2017). Looking at Viet Nam's smartphone supply chain, it can be said that the current industrialisation phase in Viet Nam is in the third step.

After that, as the fourth stage in the production of final goods, local companies will produce the final goods by themselves in addition to contract production such as original equipment manufacturing (OEM) and original design manufacturing (ODM). In Viet Nam today, the local manufacturing industry has not established a world-class brand, and Viet Nam's industrialisation has yet to reach the fourth step.

However, Vingroup, a local, private Vietnamese conglomerate that has grown rapidly due to the real estate development business, manufactures vehicles and sells them under its own brand to the global market, and can be said to be taking on the challenge of the fourth step. It has also announced plans to start exporting to the world market, invest in building its own factory in North Carolina in the United States, and start producing electric vehicles in 2024 (Nikkei Asia, 2022).

Figure 5.2. Progress in Industrialisation and the Relationship Between FDI and Local Companies



Source: Author.

2.3. Summary of Analytical Viewpoints

This chapter considers the effect of FDI on industrialisation in Viet Nam and the inter-industry and intra-industry spillovers. First, for intra-industry, it will examine specific industries with a high FDI ratio amongst manufacturing industries and focus on the changes in the capital equipment ratio per worker in those industries. The capital equipment ratio is the amount of fixed assets (equipment, land, buildings, etc.) divided by the number of employees in the industry. The progress of the mechanisation of individual industries can be seen. If it is at a low level, it can be said that it is labour-intensive, and if it is at a high level, it is capital-intensive. In addition, the increase in the capital equipment ratio over a certain period of time can be considered to lead to new capital investment and an improvement in productivity. On the other hand, a decline in the capital equipment ratio indicates that new business fixed investment has not progressed, and labour has been consolidated.

Marukawa (2003) conducted a study of industrialisation in Viet Nam using the capital equipment ratio. The study showed that from the capital equipment ratio, the country's machinery-related industries were not capital-intensive in 1999. In terms of ownership, it was derived that industries with frequent entry of FDI were capital-intensive and relatively productive. In addition, Tho (2010) analysed and found that the export ratio and capital equipment ratio in 23 manufacturing sectors in 2002 were inversely correlated. In other words, it was found that the capital equipment ratio of industries that had a high export ratio, such as manufacturers of leather, furniture, wood, and clothing was low, and the capital equipment ratio of industries with a low export ratio, such as non-metallics and steel, was high.

Next, the inter-industrial spillovers will be observed from the import and export statistics of industries with high FDI ratios by the trade specialisation coefficient (TSC), and the inter-industry spillover effects will be derived from the trade structure of the final goods and parts. If the host country receiving the FDI assembles and exports labour-intensive final goods on a large scale, it will also need and receive new FDI involved in the manufacture of parts and components by the backward linkage effect. It is thought that intermediate goods exports also increase because the intermediate goods production is done on a large scale for final goods production, and these intermediate goods are used also in the final goods production in another country. If it is possible to confirm that there is an export expansion of these intermediate goods, parts and components, and processed goods that also follows the export expansion of the final goods, it is possible to think that the industrialisation advances and suggests the existence of inter-industry spillover effects.

3. Entry into the International Economy and FDI

3.1. Omnidirectional Diplomacy and the Progress of Free Trade Agreements

At the end of the 1980s, Viet Nam decided to implement the Doi Moi policy, which was a reform and opening-up policy. In October 1991, the Comprehensive Cambodian Peace Agreements (Paris Peace Agreements) were concluded, and Viet Nam began to improve its foreign relations through omnidirectional diplomacy. At the end of 1991, relations with China were normalised, and in 1995 Viet Nam established diplomatic relations with the United States (US), and joined the Association of Southeast Asian Nations (ASEAN). In 1998, Viet Nam joined the Asia-Pacific Economic Cooperation (APEC), and at the end of 2001, entered into force a bilateral trade agreement with the US and gained the most-favoured nation (MFN) treatment from the US. In 2007, Viet Nam joined the World Trade Organization (WTO) as the 150th member state, developing a global standard trade environment about 15 years after it began Doi Moi. With MFN treatment from the world's major countries, export-oriented FDI accelerated for Viet Nam.

Viet Nam's first free trade agreement (FTA) was the ASEAN Free Trade Agreement (AFTA) in 1995, and the first bilateral FTA was the Japan-Viet Nam Economic Partnership Agreement (JVEPA) in 2008. In addition, FTA relationships also expanded as a member of ASEAN, such as ASEAN-China, ASEAN-India, and the Regional Comprehensive Economic Partnership (RCEP), and as of September 2022, Viet Nam has entered into force 15 FTAs.² As a result, Viet Nam's FTA coverage rate has risen to 63% for exports, 81% for imports, and 73% as a whole. The reason why the FTA coverage rate for exports is low is that it does not have an FTA with the US, which is the largest export destination for Viet Nam. Singapore has the highest FTA coverage rate in Asia at 91%, followed by Viet Nam.³ Viet Nam was late in becoming a member of the WTO amongst Asian countries, and although it has been only a short time since it obtained a world-standard trade environment, it has now become a country that provides the best trade environment as a production location for export-oriented FDI in Asia.

3.2. Changes in FDI and the Investment Environment

Viet Nam's FDI reached US\$176.9 billion at the end of 2020. Compared to major Southeast Asian countries, this level is 74% of Indonesia's, 65% of Thailand's, 1.6% above Malaysia, and 71% above the Philippines'.⁴ Moreover, Viet Nam's FDI balance had 51.9% of gross domestic product (GDP), roughly the same as Thailand (53.4%) and Malaysia (51.8%), which is higher than China (12.9%), Indonesia (22.1%) and the Philippines (28.1%).⁵

² See JETRO, 'Global FTA Database' (accessed 26 September 2022).

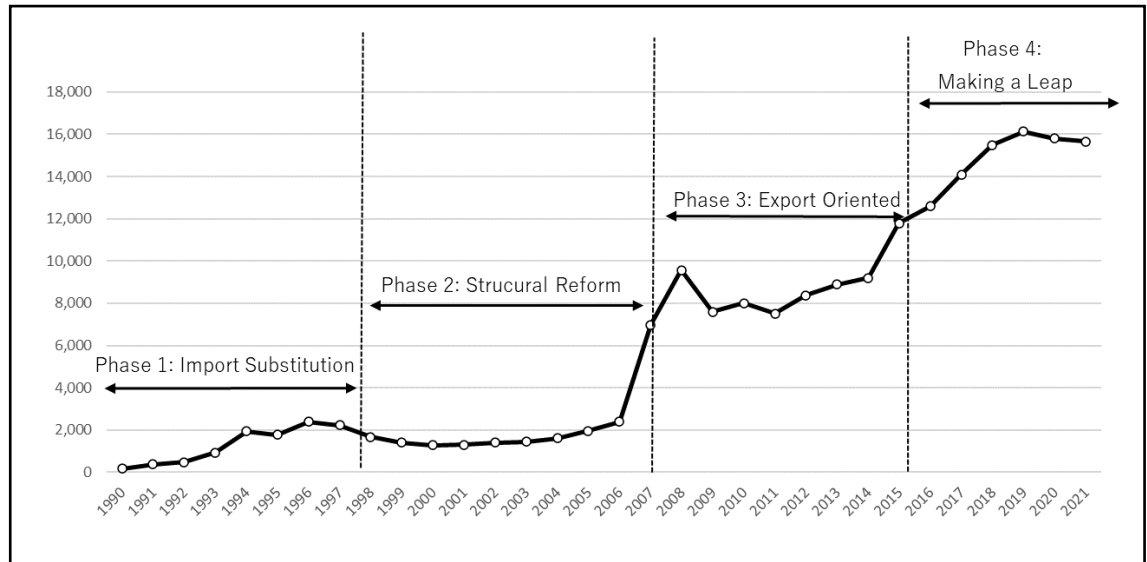
³ Calculated using IMF statistics based on JETRO's 2020 World Trade and Investment Report. The FTA coverage rate is the ratio of total trade value with countries/regions with FTAs in force as of the end of March 2022, and was calculated based on the 2019 trade statistics.

⁴ UNCTAD Stat. database (accessed 27 February 2022).

⁵ GDP is based on IMF 'World Economic Outlook' (accessed 27 February 2022).

Figure 5.3 shows the annual flows of FDI in Viet Nam since 1990 divided into four periods based on the characteristics, such as the historical background.

Figure 5.3. Viet Nam’s FDI (Flow) Trends in Four Periods (US\$ million)



Source: UNCTAD Stat.

(1) Phase 1: Import substitution (1990–1997)

In phase 1, Viet Nam started Doi Moi and opened its doors to FDI. It was a time that could be called the flowering period. The FDI of Viet Nam was very small before Doi Moi and came from the former Soviet Union and Eastern European nations. According to *Far Eastern Economic Review* (FEER, 1993a), when Viet Nam launched the Doi Moi policy and started to improve foreign relations, it attracted worldwide attention as an untouched market of more than 70 million people. However, the actual FDI expansion had to wait until the lifting of the US economic sanctions against Viet Nam in 1994 (The Economist, 1994). FDI in the mid-1990s was preceded by large-scale investment in crude oil prospecting and mining rights, and import-substitution-type investment in the manufacturing industry began on a small scale.

The main investment countries and regions in Viet Nam were from Asia, such as Japan, Korea, Singapore, and Taiwan, and in addition to resource development and import substitutional manufacturing, there were real estate investments, such as hotels, apartments, and office buildings. The import substitution type of manufacturing investment preceded this because Viet Nam at that time was not granted MFN treatment from the US, and the export market was limited. Therefore, the FDI enterprises for durable consumer goods, such as cars, televisions, and motorcycles, came to invest under the import substitution industrialisation policy on the condition of import protection.

However, import substitution industrialisation policies are generally said to have a negative effect on the host country's economy, e.g., Encarnation and Wells (1986) and Wells (1993). This is because the import substitution industry is an industry without international competitiveness protected by import barriers, and in markets with small domestic demand and a lack of economies of scale, products will continue to be supplied at high prices to domestic markets. In addition, many previous studies have pointed out that FDI policy attracts more FDI by adopting an export-oriented, open trade policy rather than a protectionist policy, e.g., McCulloch (1993) and Ohno (1998).

Let us take a look at the history of import substitution industries in Viet Nam. FDI started television (TV) production in Viet Nam from China, Japan, and Korea in the 1990s. In the case of Japanese companies, there were already TV factories of affiliated companies in ASEAN countries, such as Thailand, Malaysia, and Indonesia. If ASEAN is integrated into the economy in the future, it will be essential to reorganise by optimal production, and TV production in Viet Nam has become difficult. In addition, since the 2000s, Japanese brand TVs have been pushed out by Korean and Chinese brand TVs in the global market, and many Japanese manufacturers have withdrawn from in-house production of LCD panels. Currently, TV production in Viet Nam is doing well as an export-oriented industry, such as Samsung Electronics and LG from South Korea and TCL from China.

Next, according to the Vietnam Automotive Manufacturers' Association (VAMA), 17 companies are currently assembling and processing automotive production for the domestic market, including global manufacturers, such as Toyota, Ford, and Honda, as well as local commercial vehicle production companies. In 2021, the market size for new vehicles sold in Viet Nam was quite small, at 277,203 units.

According to FEER (1993b), in the early 1990s, the Vietnamese government said it would approve only seven manufacturers (three for commercial vehicles, two for heavy commercial vehicles such as trucks and buses, and two for passenger cars), but ultimately 14 FDI companies were approved. Although the size of the vehicle market in Viet Nam has gradually expanded, Viet Nam's automobile production volume in 1995 was 3,500 units per year, reaching 10,000 units in 2000 and exceeding 100,000 units in 2008. Even Toyota, with the largest market share in Viet Nam, sold just under 70,000 units in 2021. Furthermore, most of them were imported from Thailand and Indonesia; there were only a few locally assembled vehicles. Because of the small market size in Viet Nam, there are few FDI companies in the parts industry, and although more than a quarter of a century has passed since the start of operations, international competitiveness cannot be acquired.

On the other hand, since the 1980s, the motorcycle industry has had a history of an influx of finished vehicles and assembly parts kits from neighbouring countries, such as Thailand and China, both officially and informally. In the 1990s, Japanese manufacturers Honda, Suzuki, and Yamaha and other manufacturers from Taiwan and Korea entered Viet Nam's market as import substitution and domestic production began. However, unlike the automotive industry, import restrictions on motorcycles were not strictly enforced, and in 2000, a large number of assembly kits were imported from China, and the import substitution industry policy of the motorcycle industry practically did not work. On the other hand, it can be said that the imperfection of such import restrictions has consequently strengthened the competitiveness of the domestic motorcycle industry (Ikebe, 2020). Ohno (1996) said Viet Nam should promote free trade whilst still pursuing maximum transitional measures to foster domestic industries. In other words, rather than developing local companies

protected by import barriers until they can withstand international competitiveness, it is a strategy of attracting labour-intensive and export-oriented FDI so that local enterprises can gradually acquire industrialisation from the intra-industry and inter-industry spillovers.

Viet Nam during the import substitution period attracted attention from all over the world for its reform and opening-up policy and the improvement of foreign relations through omnidirectional diplomacy. However, the business environment was insufficient, including the FDI-related legal system, hard infrastructure, and the trade environment necessary for export-oriented FDI to enter the market. Further improvement of the conditions for accepting FDI was urgently needed.

(2) Phase 2: Structural reform (1998–2006)

Phase 2 was a period of implementation of domestic institutional reforms for bilateral trade agreements with the US and the WTO accession, whilst FDI was sluggish due to the recession caused by the Asian currency crisis. Viet Nam enacted as many as 500 laws, including the revision and abolition of existing legal systems, in order to join the WTO (OECD, 2018). During this period, Viet Nam implemented reforms, such as free trade and open market policy from import substitution protectionism, the reorganisation of state-owned enterprises, and the improvement of the global standard business environment for FDI.

In 2000, bilateral trade negotiations with the US, which were a prerequisite for joining the WTO, were finalised, and the US-Viet Nam Trade Agreement entered into force at the end of 2001. This gave Viet Nam MFN treatment from the US, and US import duties on Viet Nam were significantly reduced from the previous average of 40% to less than 3%. Meanwhile, Viet Nam had promised to open up the service market and protect intellectual property rights (Manyin, 2002). Although Viet Nam's exports to the US increased significantly due to entry into force of the US-Viet Nam Trade Agreement, it did not trigger FDI inflows into Viet Nam. One factor was that Viet Nam's exports to the US were mainly consignment processing industries, such as clothing, footwear, and processed fishery products, and it was possible to implement these in a form other than FDI.

Viet Nam's negotiations to join the WTO faced a number of challenges, including improved market access offers in goods and services, agriculture, domestic support and export subsidies, phasing out of dual prices, progress in phasing out local content policies, efforts in complying with the intellectual property (TRIPS) agreement, and restructuring state enterprises, etc. (WTO 2003). In 2005, the Investment Law and the Enterprise Law, which aimed to meet the WTO's national treatment, trade-related investment measures (TRIMs), and TRIPs standards came into force (The American Lawyer, 2009).



In 2003, the Ministry of Planning and Investment (MPI) of Viet Nam, the Japanese government, and the Federation of Economic Organizations co-chaired the Japan-Viet Nam Joint Initiative to evaluate requests, action plans, and progress to improve the investment environment. Until now, dialogue has been held on a wide range of investment environment improvements, including the development of supporting industries, the development of legal systems, human resource development, transportation and customs clearance, intellectual property rights protection, the improvement of living environments around industrial parks, and food safety, etc. In October 2021, Phase 8 of the joint initiative began.⁸ Implementing the joint initiative will improve the business environment and ensure the international competitiveness of FDI companies, structural reforms to promote investment for Viet Nam, and, if necessary, also lead to the possibility of official development assistance (ODA) being implemented.

In this way, Phase 2 was a period of stagnation for FDI, but at the same time, it was also a period when Viet Nam implemented policy efforts to attract FDI. As Blomstrom and Kokko (1998) point out, FDI promotes structural reforms in the country. In Viet Nam, reforms for deregulation and trade liberalisation to attract FDI were promoted.

(3) Phase 3: Export-oriented FDI (2007–2014)

Phase 3 was triggered by the accession to the WTO in 2007, and export-oriented FDI expanded rapidly. FDI expanded sharply in 2007 and 2008 and remained as high as US\$7 billion–US\$9 billion. By joining the WTO, Viet Nam was granted MFN treatment from the world's major markets, gaining a trade environment for export-oriented FDI expansion. Due to the increase in export-oriented FDI, Viet Nam's share of FDI in exports rose to 67.4% in 2014 from 57.7% in 2007 (General Statistics Office of Vietnam (GSOV)).

Viet Nam has since participated in negotiations new FTA, including participation in the Trans-Pacific Economic Partnership (TPP) Agreement in 2010 and the start of FTA negotiations with the European Union (EU) in 2012. From the viewpoint of economic security, the diversification of trading partners was urgently needed for Viet Nam, and it was important to acquire a higher-level and wide-ranging free trade environment to accumulate export-oriented FDI. In particular, the US and EU countries, which have not signed FTAs with Viet Nam, were large export destination markets, and further expansion can be expected if FTAs are realised. In this way, Viet Nam, which wants to promote the diversification of its trade structure, has shown its willingness to actively engage in free trade even after joining the WTO, and it has become an increasingly attractive investment destination for export-oriented FDI.

The representative FDI for Phase 3 was Samsung Electronics of Korea, which began the production and export of smartphones in northern Viet Nam in 2009. Samsung's large-scale smartphone exports eliminated the trade deficit in 2014, the first time since the 1990s. In 2020, Viet Nam's exports of smartphones accounted for 22.0% of the country's exports (UN Comtrade).

⁸ According to the website of the Embassy of Japan in Vietnam, in Japanese (https://www.vn.emb-japan.go.jp/itpr_ja/20211021VJJ18_ja.htm; https://www.vn.emb-japan.go.jp/itpr_ja/Jp_Initiative.html).

(4) Phase 4: Making a leap (2015–present)

2015, the starting point of Phase 4, was the year when Viet Nam's trade environment and liberalisation leapt ahead, with a broad agreement on the TPP negotiations in Atlanta (US), reaching the final agreement on the EVFTA, the inauguration of the ASEAN Economic Community (AEC), and the expected acceleration of RCEP negotiations. More and more export-oriented FDI accumulated in Viet Nam, becoming an FTA power.

The US then left the TPP, and a new Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP) was signed by 11 countries, excluding the US. In Viet Nam, the CPTPP came into force in 2019, the EVFTA in 2020, and RCEP in 2022. These new-era mega-FTAs are expected to increase Viet Nam's exports further (Viet Nam News, 2022).

Meanwhile, from around 2018, the US-China conflict became apparent, and the movement to transfer China's export production to the US to Viet Nam accelerated due to trade conversion (Nikkei Asia, 2020a). According to UN Comtrade, In 2020, Viet Nam's exports to the US increased significantly, and items such as smartphones, tablet PCs, furniture, plastic products, toys, and exercise equipment increased by 2–4 times compared to 2017. According to IMF

“Direction of Trade Statistics (DOTS), Viet Nam's exports to the US in 2020 jumped 1.9 times from 2017, and its trade surplus with the US nearly doubled from US\$32.2 billion in 2017 to US\$63.4 billion in 2020. Despite Viet Nam's diversification of its trading partners, its dependence on US exports rose from 19.5% to 27.8% over the same period, and its dependence on imports from China rose from 26.0% to 32.6%. The trade conversion effect caused the transfer of manufacturing and processing industries, including FDI, from China to Viet Nam.

3.3. FDI in Viet Nam

(1) Overview of FDI

Figure 5.4 shows the developments in FDI in terms of each year-end balance in Viet Nam. A breakdown by region shows that in 1996, at 52.8%, more than half of the total FDI was concentrated in southern Viet Nam. According to GSOV Web site and Statistical Yearbook of Hochiminh city, Ho Chi Minh City, the core city of the southern region of Viet Nam, is the largest economic city amongst the municipalities under the direct control of the central government, and in 2000, the city's population share was 6.7% of the national population and 17.2% of GDP. The economic scale of the southern part of the city, including the surrounding provinces of Ho Chi Minh City, is larger than the northern region centred on Hanoi City, and this structure has continued to this day.



In the mid-1990s, Viet Nam's national income was low, the service industry market was immature, and the entry restrictions on FDI were strict, making it difficult for FDI to enter the market in areas such as retail, food and beverages, finance, and transportation (logistics in the domestic market). For this reason, although manufacturing accounted for most of the FDI, infrastructure development, such as industrial parks, stable power supply, airports and seaport facilities, was necessary to attract more manufacturers. In this regard, the southern region provided a relatively better investment environment than the northern region. In addition, export-oriented FDI was not a joint venture with a local company but aimed to enter the market with 100% foreign capital. However, in Viet Nam in the 1990s, it was difficult for FDI to lease land in general areas, and only industrial parks and export processing zones could receive FDI by 100% foreign capital.

In southern Viet Nam, according to the Hochiminh city Export Processing and Industrial Zones Authority (HEPZA), the Tan Thuan Export Processing Zone, built with Taiwanese investment in 1991, and the Linh Trung Export Processing Zone, opened by Chinese investment in 1992, attracted FDI in the manufacturing sector. On the other hand, in northern Viet Nam, the delayed development of industrial parks led FDI to enter the country through joint ventures with state-owned state-owned enterprises, facilitated by leasehold financing. This particular type of FDI was characterised by import substitution industries such as automotive, motorcycle, and television manufacturing. In this way, Toyota, Honda, and Yamaha of Japan, Ford of the US, and LG Electronics of Korea entered the northern part of Viet Nam in the 1990s.

The development of the northern industrial parks included the opening of the Nomura-Haiphong Industrial Zone in the port city of Haiphong in 1994 and the Tang Long Industrial Park on the outskirts of Hanoi in 1997.⁹ However, due to the delay in developing infrastructure around industrial parks, including roads and ports in the north, and the economy's deterioration due to the Asian financial crisis, the amount of FDI in the manufacturing sector was small and remained sluggish until the early 2000s.

In the 2000s, Canon, a major Japanese printing machinery company, entered the Tang Long Industrial Park and began the large-scale export production of inkjet printers (FEER, 2003a). Canon's entry into the region triggered a large number of export-oriented FDI companies to enter the northern region. However, China coming to be called the world's factory because of the concentration of export industries, the spread of the infectious disease SARS, the introduction of the renminbi management floating exchange rate system, anti-Japanese demonstrations, and the Sichuan Earthquake occurred one after another in the mid-2000s. In order to deal with the risk of overconcentration in China, a movement called 'China Plus One' began to be recognised amongst Japanese companies (Harney, 2008; Ikebe, 2012). This was to diversify risks by allocating production bases concentrated in China to countries other than China. An excellent opportunity to accept diversified investments from China, Viet Nam, and other Southeast Asian countries also intensified the movement to attract FDI (FEER, 2003b). Viet Nam attracted attention as a risk diversification platform. It was easy to build a supply

⁹ According to each company's website (accessed 3 April 2022): <https://sumitomocorp-indpark.com/en/>
<http://www.hpnomura.com/en/index.html>



chain because it is adjacent to China and the wage level was cheap. In this way, a large number of export-oriented FDIs, such as in printing machines and smartphones, entered the Red River Delta in northern Viet Nam. Figure 5.4 shows in a breakdown by region that the FDI situation until around 2010 was concentrated in the south, but currently, it has become dispersed at 27.3% in the north and 39.1% in the south due to progress in infrastructure development.

Looking at the FDI by industry in Table 5.1, the manufacturing industry, which is the largest industry, has almost doubled its share from 29.7% in 1996 to 59.2 % in 2020. Next to the manufacturing industry, the real estate industry, the supply of electricity and gas, the hotel and restaurant industry, and the construction industry accounted for a large proportion of the composition. Until 2000, the share of the manufacturing sector remained at about 30% because there was little large-scale export-oriented FDI at that time. In addition, FDI in other industries was relatively large. Although detailed figures at the time were unknown, it is thought that the ratio of large-scale FDI in the non-manufacturing industry was large, such as the telecommunications network development, crude oil and natural gas development, and petroleum refining and the real estate field. In particular, Singaporean-affiliated companies have been actively investing in the real estate field (FEER, 1993c) and industrial park development and urban development by Semcorp, a government-affiliated conglomerate, have been promoted in various places all over Viet Nam, and real estate development companies such as CapitaLand, Keppel, Fraser's and Mapletree have also actively invested in Viet Nam. Amongst Japanese companies, conglomerates led by Sumitomo Corporation are developing smart cities in Hanoi (Nikkei Asia, 2020b).

In the 2000s, the number of export-oriented manufacturing companies producing in Viet Nam and selling in the world market in fields such as printing machinery and mobile phones increased. In the 2010s, FDI in service sectors increased due to the expansion of domestic demand and the deregulation of the service market, such as hotels/food and beverages, retail/wholesale, transportation/warehousing, and banking and insurance.

The power and gas supply business, which currently ranks third in terms of balance, is mainly through build-operate-transfer (BOT), which uses the funds and technology of FDI to develop infrastructure and will be transferred to Viet Nam after a period of operation. FDI in the form of BOT plays a role in taking over part of Viet Nam's public works.

Looking at FDI by country and region, the country with the largest outstanding balance at the end of 2020 was Korea, followed by Japan, and FDI in these two countries was mainly in the manufacturing industry. As mentioned above, Singapore, which ranks third, has a large number of investments in the real estate field, whilst Taiwan, which ranks fourth, has a large amount

of investment in the real estate field, such as hotels and office buildings, in addition to small and medium-sized manufacturing industries. Hong Kong, which ranks fifth, is a tax haven like Singapore, and FDI from around the world, including China, is often invested in Viet Nam via Hong Kong.

Table 5.1. Overview of FDI on a Year-end Balance Base in Viet Nam (%)

	FDI by region		FDI by industry					FDI by country and region				
	North	South	Manufacturing	Real estate	Supply business, electricity and gas	Hotel and restaurant	Construction	Taiwan	Korea	Hong Kong	Japan	Singapore
1996	35.9	52.8	29.7	na	na	13.7	11.1	14.5	8.4	11.6	8.9	16.0
2000	33.1	51.2	30.4	na	na	12.4	11.8	12.5	8.2	9.3	8.8	15.1
2005	28.9	56.3	50.1	9.4	2.9	7.8	7.8	13.1	9.3	7.1	10.4	14.1
2010	20.4	46.1	48.9	24.7	2.5	5.9	6.0	11.8	11.5	4.0	10.8	11.3
2015	25.9	43.9	57.7	18.1	4.5	4.2	3.9	11.0	16.0	5.5	13.8	12.5
2020	27.3	39.1	59.2	15.6	7.4	3.2	2.8	9.3	18.2	6.7	15.7	14.7

Note: By region, the north is the Red River Delta of 11 city provinces, including Hanoi, Haiphong, Bac Ninh and Han Nam Provinces, etc., and the south is defined as six cities and provinces, including Ho Chi Minh City, Dong Nai, Baia Vung Tau, and Binh Duong, etc.

Source: GSOV website and the Statistical Yearbook of Viet Nam (each year's edition).

(2) Direct effects of FDI

Table 5.2 shows the direct impact of FDI in Viet Nam on the country's economy since 1995. FDI's contribution to GDP nearly tripled from 6.3% in 1995 to 19.5% in 2020, and FDI's share of industrial production reached 40% in 2010 (when figures were available). The share of FDI in Viet Nam's economy is increasing yearly, and it is also shown that FDI is driving Viet Nam's industrialization.

Although not shown in Table 5.2, the number of domestic enterprises in 2019 was 668,503, with state-owned enterprises accounting for 0.3%, non-state-owned enterprises accounting for 96.9%, and FDI companies accounting for 2.8%. Of these FDI companies, 85.7% were 100% foreign-owned.

Meanwhile, the share of employees working in FDI companies increased to 19.6% in 2005 and 32.8% in 2019. FDI, which accounts for only 2.8% of the total number of companies, accounts for 32.8% of employment, indicating that it has a large job creation effect.

In addition, in terms of domestic investment, FDI increased by 30.4% in 1995. FDI was the second-largest player after the state-owned sector, but as of 2020, the state-owned sector accounted for 33.7%, the private sector 44.9%, and FDI 21.4%, indicating that Viet Nam's private sector has grown. Viet Nam's state-owned sector accounts for key industries such as energy, aviation, and chemicals, whilst the private sector mostly comprises small and medium-sized enterprises (SMEs). Transactions through the market with FDI companies also provide potential receptacles for inter-industry spillovers in the private sector, which accounts for about 97% of companies.

FDI's share of trade has been rising over the years, accounting for 72.3% of exports and 64.3% of imports in 2020. This is because export-oriented and labour-intensive FDI, such as smartphones and tablet PCs, is carrying out large-scale production for the global market in Viet Nam, and imports of the parts and materials necessary for export production have increased. Viet Nam occupies a part of the global supply chain for these ICT-related products, indicating that Viet Nam has become a production area responsible for the horizontal division of labour within the industry.

We have seen how FDI has had a direct impact on Viet Nam's economy and confirmed that the presence of FDI in Viet Nam's employment, industrial production, and trade has been rising year by year. If Viet Nam continues to develop economically in the future, its cheap and high-quality labour force may lose its comparative advantage, and FDI in industries with high wage rates, such as clothing, footwear, and furniture, may be transferred to other countries. However, if it is possible to achieve the internationally competitive production of intermediate goods, it will be possible to further sustain and upgrade industrialisation. To this end, local Vietnamese enterprises must find opportunities to trade with FDI and engage in the production of FDI, which produces intermediate goods, and to make progress to the third and fourth steps, as shown in Figure 5.2. The time has come to move forward with industrialisation through the backward linkage from the labour-intensive production of final goods to consolidating equipment and technology-intensive intermediate goods.





Table 5.2. Changes in the Ratio of FDI to Viet Nam's Major Economic Indicators (%)

	GDP	Industrial production	No. of enterprises	Employees	Domestic Investment	Net income	Export	Import
1995	6.3	25.1	0.1	na	30.4	na	27.0	18.0
2000	13.3	35.9	3.6	na	18.0	na	47.0	27.8
2005	15.2	37.3	3.3	19.6	14.9	na	57.2	37.1
2010	15.2	41.2	2.6	21.4	25.8	35.2	54.2	43.6
2015	17.0	na	2.7	29.3	23.3	44.4	70.6	58.6
2020	19.5	na	2.8(*)	32.8(*)	21.4	45.6(*)	72.3	64.3

Note: Note: Figures marked with an asterisk (*) are for 2019.

Source: GSOV website and the Statistical Yearbook of Viet Nam (each year's edition).

4. FDI and Industrialisation in Viet Nam

4.1 Intra-industry Spillovers

The rise in the capital equipment ratio of the Vietnamese manufacturing industry, which had an advantage in the labour force amongst the comparative production costs, indicates that there are labour savings and improvements in production efficiency due to mechanisation.

Table 5.3 shows the ratio of FDI to the value of industrial production in Viet Nam and the rate of increase in the capital equipment ratio. The capital equipment ratio is the fixed asset amount for each industry divided by the number of employees, and it shows the rate of change over the 10 years between 2005 and 2015.

FDI's share of manufacturing output rose from 36.1% in 2005 to 42.8% in 2010. Industries with a high ratio of FDI were ICT-related products (93.6%), automobiles (77.1%), leather goods (72.5%), and motorcycles (71.9%). Looking at changes in the capital equipment ratio in these industries, ICT-related products increased by 9.6%, automobiles decreased by 19.6%, leather goods increased by 11.9%, and motorcycles increased by 36.7%. Compared to a growth rate of 53.7% in the manufacturing industry as a whole, capital consolidation in industries with a high ratio of FDI was relatively sluggish, and some industries were negative. Intra-industry spillovers have not had a positive effect on capital equipment ratios. On the other hand, the capital equipment ratio rose significantly in industries with a low FDI production ratio, such as base metals, tobacco, and wood products.

Table 5.3. FDI/Industrial Production and the Growth Rate of Capital Equipment Ratio (%)

	FDI/Industrial production		Growth of capital equipment ratio
	2005	2010	2015/2005
Manufacturing	36.1	42.8	53.7
Food products	24.4	32.5	77.8
Beverages	38.7	34.5	78.6
Tobacco products	0.8	2.1	143.8
Textiles	30.6	36.6	33.8
Wearing apparel	36.9	54.3	4.2
Leather and related products	59.4	72.5	▲ 11.9
Wood and products of wood and cork	17.8	11.2	139.8
Paper and paper products	18.4	30.3	63.4
Chemicals and chemical products	46.3	58.9	85.7
Pharmaceuticals, medicinal chemical and botanical products	19.9	42.6	88.9
Rubber and plastics products	29.0	39.4	34.9
Other non-metallic mineral products	23.9	26.9	61.4
Basic metals	34.2	29.5	653.6
Fabricated metal products	35.6	40.4	27.9
ICT-related products	86.6	93.6	9.6
Electrical equipment	42.2	46.2	7.6
Autmobiles	79.2	77.1	▲ 19.6
Other transport equipment	63.7	71.9	36.7
Furniture	35.9	35.3	17.8

Notes:

1. The capital equipment ratio is set at 100 (baseline) in 2005, and the Consumer Price Index increase rate up to 2015 is set at 237.61 as a deflator to make the prices real.
2. The item name 'computers, electronics, and optical equipment' is described as ICT-related products, and 'other transportation equipment' is described as motorcycles.

Source: GSOV Statistical Yearbook of Viet Nam 2005, 2011, and 2016.

4.2. Inter-industry Spillovers

We examine the effects that have resulted from the backward and forward linkages with industries that have embraced FDI. First of all, in the process of industrialisation, supporting industries are needed and nurtured only with the development of the downstream industries that utilise them. For this reason, in the export-oriented manufacturing sector with a high FDI ratio, it is considered that the backward linkage has a greater effect than the forward linkage effect.

Table 5.4 shows changes in Viet Nam's trade structure by production process, classified based on the input-output table. In 2000, the total value of consumption goods and primary goods accounted for 87.0% of the total export value, and processed goods accounted for 53.8% of imports. According to customs statistics, Viet Nam's exports in 2000 were mainly light industrial goods such as clothing and footwear, as well as primary products such as crude oil, marine products, coffee, tea, spices, and rice. The main imports were petroleum products, such as gasoline, steel, plastics, and textiles. At that time, the import-substitution type of FDI was the mainstream in Viet Nam. The trade conditions for exports were not yet developed, and FDI, which plays a part in the global supply chain of multinational companies, had not yet entered Viet Nam. Therefore, in the trade structure, primary products and light industrial products (consumer goods) such as clothing and footwear were the main export products, and processed products (intermediate goods) were the main import products.

Subsequently, the export structure in 2020 showed a decline in the share of primary goods and consumption goods, and an increase in exports of capital goods and intermediate goods (parts and components, and processed goods). On the other hand, the share of parts and components in imports more than doubled, indicating an increase in imports of intermediate goods for export production. It is probable that the increase in imports and exports of intermediate goods was attributable to the horizontal progress of the international division of labour. In Viet Nam's industrial production, the industries with a high ratio of FDI were ICT-related products, automobiles, leather goods, and motorcycles, etc. Viet Nam's automobile industry is an import substitution industry with almost no exports.¹⁰ In addition, the manufacture of leather products comprises importing raw hides, processing them in Viet Nam, and exporting them, and the supply chain has a relatively simple structure. Therefore, using the trade specialisation coefficient (TSC), we will consider smartphones, which have a large export share amongst ICT-related products, and motorcycles, which started as an import substitution industry but whose import restrictions did not work.

¹⁰ According to UN Comtrade, the value of exports of passenger cars, commercial vehicles, and other finished vehicles in 2019 was US\$55.3 million, and the export volume was 2,879 units, whilst the import value was US\$3,216.25 million, and the import volume was 147,385 units.

Table 5.5 shows the TSC of the final goods and parts of these two items. The TSC is an index of the trade balance, where 1.0 indicates export specialisation, -1.0 indicates import specialisation, and 0 indicates the export-import equilibrium or lack of trade. According to Table 5.5, the TSC of both finished products of motorcycles and parts of motorcycles were at a level close to import specialisation in 2000. Later, however, as the TSC of the finished products increased, the TSC of the parts also increased. In 2020, Viet Nam became a net exporter with international competitiveness in both finished motorcycles and parts for motorcycles.

As for smartphones, since 2015, finished products have almost reached the level of export specialisation, and the TSC of parts has risen from a negative level to turn positive in 2020. In the case of motorcycles and smartphones, along with the expansion of exports of finished products, the export of domestically produced parts has also begun, and it has been found that the trade balance has become profitable. These industries suggest that the backward linkage effect of FDI, which produces final goods on a large scale, has led to the industrialisation of parts production in the previous process.

Table 5.4. Changes in Viet Nam's Trade Structure

		Exports			Imports		
		2000	2010	2020	2000	2010	2020
Final goods	Capital goods	2.1	9.7	26.0	13.1	15.7	12.8
	Consumption goods	54.0	53.7	35.8	17.6	9.4	10.8
Intermediate goods	Parts & components	4.5	8.2	21.3	11.9	11.2	29.0
	Processed goods	6.4	12.5	13.1	53.8	57.7	39.5
Primary goods	Primary goods	33.0	15.9	3.8	3.6	5.9	7.9

Source: RIETI-TID 2020.

Table 5.5. Changes in the Trade Specialisation Coefficient (%)

	Motorcycles					Smartphones				
	2000	2005	2010	2015	2020	2000	2005	2010	2015	2020
Finished products	▲ 1.0	▲ 0.3	▲ 0.3	0.7	0.4	-	-	0.3	0.9	0.9
Parts	▲ 0.8	▲ 0.6	▲ 0.1	0.3	0.3	-	-	▲ 0.5	▲ 0.3	0.1

Source: UN Comtrade.

5. Conclusion

5.1. The Role of FDI in Industrialisation

This study has discussed the role that FDI played in Viet Nam's economic development. With regard to the horizontal intra-industry spillover effect from the perspective of indirect effects, it was confirmed that the capital equipment ratio stagnated in industries with a high FDI ratio and became relatively labour-intensive. The reasons why capital concentration has not progressed in the industries in which FDI has entered are: (1) labour-intensive assembly processes still have a comparative advantage; (2) new capital investment is stagnant in import substitution industries, such as automobiles; and (3) it is possible that there are no local companies in the industry that compete with FDI, or that technical disparities are large and they are not subject to spillovers.

If so, for Viet Nam's industrial spillover, we must wait for the fourth step shown in Figure 5.2, i.e., the emergence of local companies that have international competitiveness and compete with FDI in Viet Nam. In order to enhance the competitiveness of final goods, it is necessary to accumulate a wide range of intermediate goods. This requires a further deepening of the third step, in which local companies are involved in the production of intermediate goods with international competitiveness.

Next, with regard to inter-industry spillovers, domestic demand industries could not be considered because trade data was used. However, with regard to external demand industries, it was confirmed that Viet Nam is actively promoting the horizontal division of labour amongst intermediate goods. In the smartphone and motorcycle industries, which are representative items, exports of intermediate goods increased as if chasing the export of final goods. It was suggested that industrialisation spread from labour-intensive processes to capital- and technology-intensive intermediate goods production processes due to backward linkage effects.

5.2. The Role of Japan's FDI in Viet Nam's Development

I would like to consider the role played by Japan's FDI in Viet Nam's industrialisation. According to Japan's balance of payments statistics, the amount of outward FDI from Japan was ¥190.4 trillion at the end of 2020, with the manufacturing sector accounting for 41%. These investment destinations were North America (32%), Asia (29%), and Europe (27%). The breakdown of Asia was China (33%), Thailand (17%), Singapore (9%), India, Korea, and Indonesia (7% each), and Viet Nam (4%). Viet Nam opened its markets to foreign capital later than other Asian countries. However, in terms of the scale of Japanese FDI, it exceeds that of the Philippines and Malaysia. In addition, 61% of Japan's investment in Viet Nam was in the manufacturing sector.

Now, I would like to express my personal opinion on the role Japan's FDI played in Viet Nam's industrialisation. First, as already mentioned, Viet Nam's acceptance of FDI in the manufacturing sector from the mid-1990s to the mid-2000s was preceded by import-substitution industries, such as automobiles, televisions, and motorcycles. The import and substitution type FDI of these durable consumer goods was mainly in the manufacturing industry of Japan, with firms such as Toyota, Honda, Suzuki, Yamaha, Matsushita Electric, Sony, and JVC. The substitution of imports through protectionism may not have been a desirable policy, but it is also true that it brought about

certain results in Viet Nam at a time when the trade environment through free trade had not yet been acquired. For example, it should have had positive direct effects, such as job creation, the utilisation of the management resources of unprofitable state-owned enterprises, and the transfer of corporate management know-how, international marketing skills, and production and mass production technologies to the Vietnamese side.

Secondly, FDI by Japanese companies in the field of industrial park development was carried out in northern Viet Nam in the mid-1990s ahead of other countries. As mentioned, the Thang Long Industrial Park in Hanoi and the Nomura Haiphong Industrial Park in Haiphong were opened in the late 1990s. At that time, southern Viet Nam was preferred to northern Viet Nam due to disparities in the economic level, number of private companies, and infrastructure development, etc., and there was little FDI for manufacturing in the north, except for import substitution companies. Although there was a need for a production site for the FDI manufacturing industry in northern Viet Nam, few foreign-invested companies wanted to proceed with the development of industrial parks. Under these circumstances, it is significant that Japan was able to develop an industrial park with a long-term vision in cooperation with highway development and port development through official development assistance. At the time of the Asian currency crisis and recession, Canon, a major Japanese precision equipment manufacturer, was able to expand into northern Viet Nam because there was an industrial park that could accept large-scale export-oriented manufacturing. Viet Nam's subsequent rush to enter export-oriented FDI has continued to this day, in step with the expansion of Viet Nam's free trade environment.

The role played by Japanese FDI in the 'import substitution period' and the 'structural reform period' shown in Figure 5.3 was significant, and by going through this phase, Viet Nam was able to develop into the 'export-oriented period' and the 'making a leap period'.



5.3. Policy Recommendations

Finally, I would like to try to make policy proposals to link the economic activities of FDI in Viet Nam to the country's further industrialisation. Viet Nam's steady economic development has gradually reduced the comparative advantage of its workforce, and it is necessary to transform its leading industries from labour-intensive industries, such as assembly, to industries that require capital and technology. As confirmed in this chapter, Viet Nam has acquired the intermediate goods production process due to the backward linkage effect from the large-scale production process of final goods by FDI. At present, it is important to diversify the production of intermediate goods and develop them into competitive industries.

(1) Development of Supporting Industries

As shown in Figure 5.2, in the third step, in which local firms enter the production of intermediate goods, the production of intermediate goods needed the supporting industries with fundamental technologies, such as molds, castings, surface treatment, sheet metal, welding, and heat treatment. Since it is also FDI companies that produce the parts and components required for the production of final products, local companies will participate in the supply chain in collaboration with these FDI companies. How to encourage this will be an urgent issue.

The Vietnamese government also seems to have sufficient awareness of these issues, and, in fact, it is showing active measures to foster local companies. For example, the SME Support Act, which came into effect in 2018, clarified the responsibilities of the supporter (administrative side) and attracted attention as a foundation law for effective support for SMEs. Article 19 of the Act stipulates support measures for Vietnamese SMEs to participate in the value chain, including consulting, information provision, brand development support, the issuance of prototype and inspection certificates, and interest subsidies. In August 2020, the government enacted Resolution No. 115 (115/NQ-CP), which set out stronger support measures than before for measures to foster supporting industries. According to the Resolution, the target fields are electronics, automobiles, textiles and sewing, leather, and high-tech industries, etc., and by 2025, the target is to achieve an increase in domestic procurement to 45%, 11% of industrial production value, and 300 local enterprises to participate in the global supply chain of multinational corporations. In addition, the Resolution stipulates that five supporting industrial technical support centres in major regions of Viet Nam will be established, interest rate subsidies will be provided to supporting industrial enterprises, large-scale FDI will be attracted, and opportunities for local companies to enter the market will be created (Chinhphu.vn).

(2) Matching Support

In addition to such progress in the development of legislation, events have been held to provide opportunities for business negotiations between companies as a concrete support measure. For example, since 2010, Japan has been holding parts procurement exhibition business meetings in Viet Nam, called the Japan-Viet Nam Supporting Industry Show, providing opportunities for matching local companies in Viet Nam with Japanese companies. In September 2021, the ninth exhibition and business meeting was held in an online format, with 20 Japanese companies and

35 Vietnamese companies participating from industries including automobile and motorcycle-related parts, electrical and electronic parts, mechanical parts, metal and resin processing (casting, forging, injection molding, molding, sheet metal, press processing, plastic processing, and plating treatment, etc.), and packaging materials, etc.

In addition, in 2020, the Vietnam International Supporting Industry & Manufacturing Exhibition (VIMEXPO), organised by the Ministry of Industry and Trade of Viet Nam, was held, and in December 2021, the second time the exhibition was held, 170 companies including major Vietnamese companies and FDI participated. In this way, the Vietnamese government is also actively providing opportunities for exchange and matching between FDI and local companies. In other words, these support measures are in the third step of industrialisation as shown in Figure 5.2, and they are important in supporting the internalisation of internationally competitive intermediate goods production. In fact, the production of a wide variety of intermediate goods through FDI has already begun in Viet Nam, and the conditions are being prepared for local companies to enter the production of intermediate goods.

In addition, equipment for producing parts and materials for large-scale FDI is often a related specific investment. For Vietnamese SMEs, such special investment is a risk, and they have no choice but to hesitate to make capital investments. In order to enable firms to make such capital investments with peace of mind, it is desirable to reduce the investment risks of Vietnamese companies by subsidising not only low-interest loans but also capital investment itself.

3) Support for Building Vietnamese Brands

With regard to support for the fourth step of Figure 5.2, large firms with financial resources will basically be the first players amongst local firms. Vingroup has already made new entries into the fields of ICT-related products, automobiles, and electric vehicles. Although it is premature to judge the success or failure of Vingroup's entry into the electric vehicle market, it is necessary for the government to support the emergence of other companies similar to Vingroup and establish a local brand in Viet Nam that will launch itself in the global market. This is because it is the strong production of final goods that will enhance the production of intermediate goods through the backward linkage effect and strongly drive Viet Nam's industrialisation.

Although the target of the support may be large enterprises with financial power in Viet Nam, the required capital investment, market research, and building of dealerships to challenge the global market are enormous and will require public backing in addition to funding from the stock market. In addition to providing financial support, such as low-interest loans and interest rate subsidies, to companies that are taking on challenges in the global market, the introduction of a trade insurance system that provides a certain degree of guarantee for export and local production for markets with high country risk will be effective support measures.

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http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=en

UN Comtrade

<https://comtrade.un.org/data/>

Vietnam Automobile Manufacturers Association: VAMA

<http://vama.org.vn/en/sales-report.html>





Chapter 6

Viet Nam's Conditions for Sustained Growth to Become a High-Income Country: How to Escape from the Middle-Income Trap?*

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Introduction

The concept of the middle-income trap (MIT) was coined by Gill and Kharas (2007). This term refers to countries that have developed to a certain level of per capita income but remain stagnant after that stage. In fact, in the world's economic history, only a small number of countries have been successful in escaping the MIT. For this reason, the issue has stimulated theoretical research and policy-oriented studies.¹

Based on the classification of the World Bank, Viet Nam reached the *lower middle-income* level around 2008. Given the subsequent growth in the pre-coronavirus disease (COVID-19) period, and since the impact of the current pandemic has been relatively light, Viet Nam may reach the *upper middle-income* level in the mid-2020s.

According to the World Bank, in 2021, lower-middle-income economies are defined as those with a gross national income (GNI) per capita between \$1,086 and \$4,255; upper-middle-income economies are those with a GNI per capita between \$4,256 and \$13,205; and high-income economies are those with a GNI per capita of \$13,206 or more. In 2021, Viet Nam's gross domestic product (GDP) per capita was \$3,694, and its GNI per capita was \$3,560. If, in the next 4 or 5 years, the per capita GNI average annual growth is 5%, Viet Nam will reach the upper middle-income level (approximately \$4,300) in 2025 (if there is 4% growth, the year is 2027). Thus, moving from lower middle-income to upper middle-income will take 17 to 19 years for Viet Nam. For both Republic of Korea (henceforth, 'Korea') and Taiwan, it took 18 years; for China, it took 15 years (Tran and Karikomi, 2019).

The problem is whether Viet Nam will shift from the upper middle-income stage to high-income status by 2045. What are the conditions for Viet Nam to escape from the MIT and achieve sustained growth in the next 2 decades? This issue will be addressed in this chapter.

This chapter is composed of three sections.

The first section provides a theoretical framework for analysing the topic. The keywords will be sustained growth of productivity, structural transformation and international competitiveness. The second section will analyse the current structure and point out the problems of the Vietnamese economy. The third section will recommend policies essential for Viet Nam to avoid the MIT and achieve sustained growth towards 2045. The experience of Japan in the high-growth period (1955–73) and some other East Asian economies will be referred to in Sections 1 and 3.

¹ For example, Ohno, 2009; Tran, 2013; Hutchinson and Das, eds., 2016; Tran and Karikomi, 2019; amongst others.

1. Analytical Framework

This Section focuses on two theoretical issues which suggest a middle-income country adopt policies for sustained growth to a high-income country. These two issues are insights from development economics. This Section focuses on two theoretical issues which suggest a middle-income country adopt policies for sustained growth to a high-income country. These two issues are insights from development economics.

1.1. Input-Driven Growth vs TFP-Led Growth and the Middle-Income Trap

One of the most important theoretical points regarding the long-term slowdown of growth of a country is the difference between input-driven growth (or factor-driven growth) and total factor productivity (TFP)-led growth (sometimes, the terms investment-driven growth and innovation-led growth are used in place of these). This difference in the growth pattern has been applied to the argument on the MIT issue. It has been argued that a country falls into an MIT if it is not able to shift from input-driven growth to a TFP-led growth pattern. Gill and Kharas (2007:17) also pointed out that 'Strategies based on factor accumulation are likely to deliver steadily worse results, which is a natural occurrence as the marginal productivity declines.'

Economic development is the long-term growth of per capita income, which is reflected in the labour productivity growth. If, in the meantime, the quality of labour is supposed to be unchanged, its productivity is determined by the increase in the capital stock per worker (the capital deepening) and the rise of TFP. In earlier stages of development, the role of capital deepening or accumulation is more important, but in later stages, the growth of income per capita is increasingly attributed to TFP. The Solow growth model theoretically supports this.² It has also been empirically shown by the experience of advanced countries. For example, according to the estimates of the Japan Centre for Economic Research (1990), in the case of the US, the contribution of TFP to growth in 1889–1929 was 33% but rose to 78% in 1929–57. In the case of Japan, the contribution of TFP rose from 14% in 1889–1929 to 65% in 1955–75.

Given this theoretical argument and empirical facts, there has been a hypothesis that capital deepening or accumulation characterises the early stages of development, and the transition from such input-driven to TFP-led growth is essential for a country to grow to a higher level of development. In other words, the accumulation is attributed to the growth to a middle-income level. Still, without the transition to TFP-led growth based on innovation, the country may fall into an MIT. In this context, the argument of Krugman (1994) is famous. He asserts that the rapid growth of East Asian economies was not miraculous and may slow since the growth pattern was input-driven, not TFP-led.

² The Solow growth model is developed in Tran and Karikomi (2019), Ch. 2.

Though most economists and policymakers have supported this standing point in Viet Nam since the 2010s when many people called forth the change in the growth model,³ this chapter adopts a different view. First, the sources of TFP-led growth are not necessarily related only to innovation; institutional reforms also have a role. Reforms on factor markets, particularly capital markets, will contribute to the efficient use of capital and other factors and thus result in the rise of productivity. In fact, due to rapid institutional reforms, i.e. the transition from economic planning to a market system, in China and Viet Nam, the contribution of TFP was very large in the early stage of economic development (Perkins, 2013:62–3; Vu, 2013:147–9). The efficient work of factor markets is also important in the later stages of economic development.

Second, capital and technology are difficult to separate since, in most cases, technology is embodied in capital. The Japanese experience in the high-growth era (1955–73) showed that capital accumulation and innovation had been mutually stimulated and contributed to an average annual growth of 10% for nearly 20 years. This miraculous performance has transformed Japan from the upper middle-income level to a high-income industrialised country.⁴

In this regard, Perkins is insightful: 'In a sense, it is arbitrary to separate the contribution of productivity from the contribution of capital because *many sources of productivity increase typically require capital investment in new equipment.*' (Perkins, 2013:57, italics mine). Moreover, product and process innovations, in most cases, are realised only along with investment in new equipment.

The core point is the continued rise in productivity, which is attributed to the efficient use of capital and other factors, as well as technological progress. Misallocation of resources is the main factor for the small contribution of TFP. In the growth process of middle-income countries to high-income status, both accumulation and innovation are important. Institutional reforms on capital and other factor markets, therefore, are essential for increasing productivity.

1.2. Structural Transformation and the Middle-Income Trap

Another view on the MIT is the failure of countries facing the Lewis turning point in economic development. In the early phase, characterised as labour surplus, along with the move of low-wage labour from agriculture to the manufacturing sector, developing countries export labour-intensive products and reach a middle-income level. At the turning point, no cheaper labour is available, and the countries have to upgrade the industrial structure to higher value-added products. Without performing such structural transformation from labour-intensive industries to capital-, technology-, and skill-intensive products, the countries may fall into an MIT. In the context of international specialisation, such countries are in a position where they are unable to compete with low-cost countries but yet do not possess new and higher value-added industries that can compete with advanced countries.

³ See, for example, Dang Kim Son (2021, 2022).

⁴ In that period, Japanese firms were encouraged to invest in new equipment using the technology imported from Western advanced countries. The behaviour of firms was so active and impressive that the Economic White Paper in 1956 used the term 'investment called forth investment' to encapsulate it. Capital accumulation and product and process innovations were major factors accounting for the high growth of Japan in 1955–73. See, for example, Tran and Karikomi (2019, Ch. 6), Tran (2022).

To escape from the MIT, then, developing countries at the turning point should have industrial policies that encourage firms to invest in the higher value-added sector and invest in educational training for skilled human resources. In the context of international competitiveness, the structure of comparative advantage must be changed over time from labour-intensive industries (or low-skill-intensive) to capital-intensive (or medium-skill-intensive) and to technology-intensive (or high-skill-intensive) industries. This dynamic change can be illustrated in Figure 6.1, where the vertical axis shows the international competitiveness index (ICI) of an industry. The ICI (i) is defined as

$$i = (X-M)/(X+M)$$

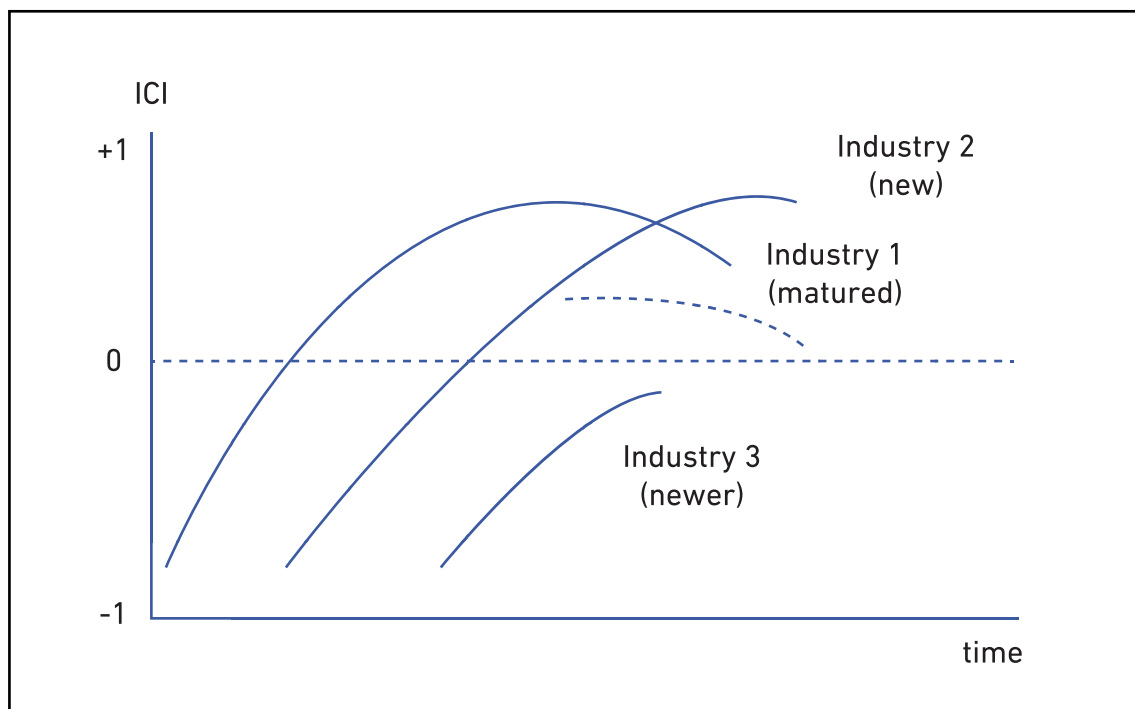
where X and M stand for the export and import values, respectively, of a product.

We can observe the development process of a manufacturing industry by examining the changes in its ICI. The typical trend of that index is traced in Figure 6.1. In the early stage of development, there are almost no exports and the domestic market is supplied mainly by imports, so the index is minus 1. With increasing import substitution, the index approaches 0, where there are almost no more imports, but exports do not start yet. If the international competitiveness of the industry is further strengthened, exports will continuously expand, and the index approaches 1, where there are almost no imports. In the case of deep intra-industry trade, the index is near the zero line.

Figure 6.1 also shows a successive catching-up process of many industries that have different factor intensities (a newer industry tends to be more skill-, capital-, or technology-intensive). The sustained growth of a country is realised if it can successfully shift the comparative advantage from a mature industry (Industry 1) to a new industry that is more skill-intensive (Industry 2) and prepare conditions to move to a newer industry (Industry 3). In cases where the country fails to continue that process, Industry 2 stands to lose comparative advantage earlier than anticipated (shown by the dotted line in Figure 6.1) due to the catching-up by later participants or other changes in the international markets, and the country is not able to generate newer industry (Industry 3).



Figure 6.1. Pattern of International Competitiveness of a Sustained Growing Economy



ICI = international competitiveness index.
Source: Author.

In the context of the increasing presence of global supply chains (GSCs) and global value chains (GVCs), the structural transformation is to upgrade to higher value-added parts of the value chain and/or to higher chains.

Since the 1990s, GSCs and GVCs have had an increasingly important role in economic development and international specialisation. As pointed out by Baldwin (2016:242), before 1990 or so, successful industrialisation meant building a supply chain at home. Still, today's developing countries can 'join international supply chains to gain competitiveness and grow rapidly because offshore production brings capabilities that would otherwise take decades to develop domestically.' In other words, instead of the sector level, developing countries may industrialise at the stage level, which is easier to gain international competitiveness.

Thus, developing countries may grow rapidly if participating in international supply chains. Success depends on the supply of qualified labour, the quality of soft and hard infrastructure, and the stability of the policy framework. In particular, in addition to the location advantage provided to attract foreign investment for participation in GSCs, improvement in the logistics to minimise transportation costs and to ensure timely delivery of parts and components is essential. The service-link cost (SLC), i.e. the cost of the connection amongst production units, domestic or international, is the main factor that determines the attractiveness for multinational firms to include a country in the GSCs. The

SLC includes not only monetary cost but also the cost of time delivery and the reliability of logistics (Kimura 2016:18). Inomata (2019) also emphasised that, in the era of GVCs, not only factor costs but transaction costs and organisation costs are also important in the determination of the location of parts of GVCs.

In the context of a successful transition from middle income to high income, it is necessary to emphasise one more point: in order to escape from the MIT, a developing country must expand and strengthen the capacity of participation in higher stages of the GSCs to produce higher value-added parts and components, and gradually participate in higher stages of GVCs such as R&D, design, and marketing. Continuing to offer better infrastructure, more skilled labour, and technological capabilities of local firms is essential for sustained growth. In that process, rapid changes in world technology and environment merit quick policy reactions.


In sum, three key terms are: productivity, structural transformation, and international competitiveness. Sustained productivity growth is essential for middle-income countries to transition to high-income levels. The way out of the MIT is increased *productivity* growth. The forces behind productivity growth are *structural transformation* to higher value-added sectors and/or to parts and components in the GSCs. Structural transformation is the result of many factors, such as the development of the factor markets, continuing improvement of infrastructure, supply of high-skill labour, promotion of R&D and proactive industrial policy to promote foreign direct investment (FDI), and local firms to invest in new industries and/or parts and components. Structural change results in a change of comparative advantage, which enhances the international competitiveness of a country over time. Innovation will be more important in a later stage of development when there is little room left for increasing productivity by structural transformation or inter-sector movement of production factors. Since it takes time for an innovation-related investment to generate results, policies on R&D activities should be emphasised from the middle-income levels.

2. Current Structure and Problems of the Vietnamese Economy

2.1. Growth Performance and Structural Changes

Thanks to the *Doi Moi* policy, after several years of trial and error, the Vietnamese economy has grown at a high rate since the early 1990s. During the period of about 30 years until 2019, the year before the impact of the pandemic, Viet Nam recorded an annual average growth of 6.5%. From 1990 to 2021, amongst major countries in Asia, Viet Nam's economic growth ranked second only to China with respect to purchasing power parity-based per capita GDP at constant prices.⁵ As noted earlier, Viet Nam attained a lower middle-income level around 2008.

⁵ In 1990–2019, the average growth rate of purchasing power parity-based per capita real GDP of Viet Nam was 5.4%, much lower than China (8.4%) but higher than major members of the Association of Southeast Asian Nations (ASEAN) and India (calculated from the World Bank World Development Indicators).



Major factors accounting for the relatively high growth have been the steady rise in capital accumulation, i.e. the increase in the capital stock per labour, which raises productivity, and the structural changes of the economy, which shift the production factors from low to high productivity sectors.

Capital formation has been promoted by institutional reforms, which stimulated investment by private local and foreign firms. As a result, the investment/GDP ratio increased rapidly, from about 15% on average from 1986 to 1992 to about 26% on average in the 1990s and to more than 30% since the early 2000s. In that process, the state sector has rapidly declined, and the role of the private sector and FDI have been increasingly important. By the 2010s, the state sector, the private sector, and FDI accounted for roughly 30%, 50%, and 20% of total investment, respectively.

Capital formation has been undertaken mainly in the industry and service sectors. Consequently, labour has moved there from agriculture, and the structure of GDP has changed accordingly. The share of the agriculture, forestry, and fishery sectors in total employment declined from 73% in 1990 to 49.5% in 2010 and 34.5% in 2019. During that period, the share of the secondary sector (mainly industry and construction) increased from 11.2% to 20.9% and 29.1%.

In this context, an important question is whether Viet Nam already passed or is approaching the Lewis turning point. In order to answer that question, we have to show whether and when the labour market tightens and workers' real wages begin to rise; so far, there are no studies on that issue. As noted, by 2019, the share of agriculture (including forestry and fisheries) in total employment had declined to 35%. From the experience of Japan, we may guess Viet Nam is approaching a turning point. In Japan, the share of agriculture in total employment in 1960 was 33% (Tran, 2022:63), and Minami (1970) empirically showed that the turning point in Japan happened in the early 1960s.

According to Ohno et al. (2021), in Viet Nam, wages are rising, and labour shortages have emerged in large cities, while workers still are plentiful in rural villages and remote areas; Hanoi and Ho Chi Minh City may have already crossed the turning point, but the rest of Viet Nam seems to still have a labour surplus. In fact, in industrial parks or export processing zones in Ho Chi Minh City, Hanoi, and their adjacent areas, firms encounter difficulties in recruiting workers. Problems include increasing wage pressure on low-skill workers and, at the same time, increasing difficulties in recruiting high-skill workers. This phenomenon stems from the distortion in the labour market and the supply shortage of skilled workers.

Finally, even though Viet Nam has shown a fairly good performance since the 1990s, unlike many East Asian economies that have been successful in economic development, the Vietnamese economy has not yet experienced a high-growth period defined as an annual average growth of about 10% over a period of more than 10 years. The absence of such a high-growth era may be mainly attributed to the manufacturing sector, which was not strong enough to trigger a more dynamic transformation for pushing the growth of the economy as a whole. This point will be discussed below.⁶

2.2. The Characteristics of the Current Stage of Industrialisation

Manufacturing is the most important and dynamic sector in any country in the development process from the low- to high-income stage. Compared to other sectors, such as agriculture and services, manufacturing is more productive and dynamic. The high growth of productivity in manufacturing can be achieved by raising capital stock by workers, introducing technology and expanding production to exploit economies of scale. Many manufactured goods also have high-income elasticities of demand. Moreover, moving labour from agriculture to manufacturing also enhances incentives for workers to acquire skills adapted to new tasks.

Capital accumulation starts in the manufacturing sector, which itself can transform by diversifying and upgrading, and the process will spur greater capital accumulation. That phenomenon appeared in Japan in the mid-1950s and was expressed by the term 'investment called forth investment' (see footnote 4). The process of capital deepening results in the rapid rise of labour productivity. Technological advances are more common in the manufacturing sector and have become one of the major sources of productivity growth.

In other words, manufacturing is the engine of growth of the economy in the catching-up process. The manufacturing sector's important role in economic development has been widely emphasised (ADB, 2020:94–96; Dinh Hinh, 2017:29–30, amongst others). As pointed out by ADB (2020:94), a key part of the success of East Asia is the rapid structural transformation of industry and manufacturing.

Looking at the case of Viet Nam, however, the manufacturing sector so far does not seem to have played a dynamic role. Several characteristics of Viet Nam's industrialisation at the current stage are summarised in the following subsections.



⁶ Focusing on productivity, Ohno, et al. (2021: xix) also noted that 'Viet Nam has not experienced a period of very rapid productivity increase that allows an economic take-off to high income....On an annual average, the labour productivity growth was 4.65% from 1991 to 2019. Any rapidly industrializing economy is expected to attain higher labour productivity growth than this within a quarter century. China, which had labour productivity similar to Viet Nam in 1990, raised it by 8.98% annually or 9.4 times by 2017. Thus, Viet Nam's past productivity performance was good but not spectacular.'

2.2.1. The Relatively Low level of Industrialisation

In post-*Doi Moi* Viet Nam, the manufacturing sector has also expanded, accounting for an increasing share in GDP and employment. The share of manufacturing value added in GDP rose from 12% in 1990 to 19% in 2005 and about 22% in 2019.⁷ In employment, the share of the manufacturing sector rose from 12% in 2005 to 13% in 2010 and 21% in 2019.

However, the manufacturing sector in Viet Nam so far has not shown a rapid expansion as experienced in other East Asian countries. In the case of countries that incurred successful economic development, the manufacturing sector as a share of GDP rose to more than 30% in the first half of the demographic dividend.⁸ It tended to decline in the latter half (Figure 6.2). But in the case of Viet Nam, as shown in Figure 6.2, the demographic dividend will terminate soon (in the 2020s). Still, the ratio of manufacturing value-added in GDP is much lower than the same ratio of other Asian countries in the corresponding period. Let us look at another indicator of the level of industrialisation. The manufacturing value-added per capita of Viet Nam has expanded since 1990, but in 2020, it was still much lower than the Philippines, a country which has incurred slow growth, and it was only one-fourth that of Thailand (Table 6.1).

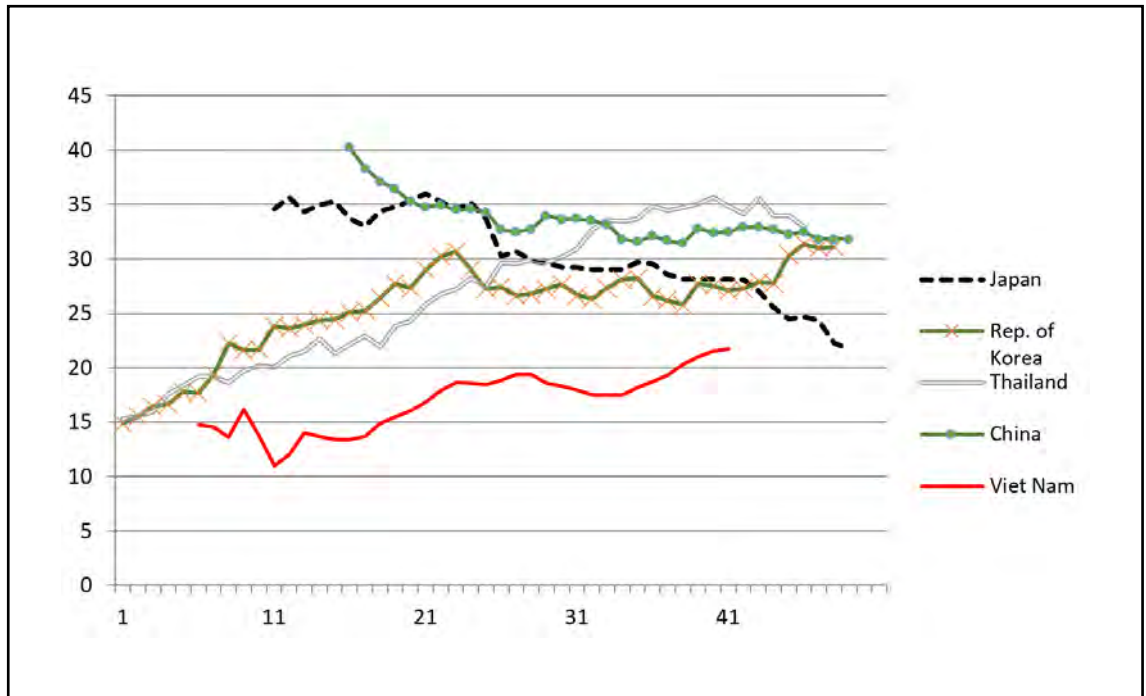
The low level of industrialisation is a major source of low productivity in the economy. According to Ohno et al. (2021), as noted earlier, China and Viet Nam had similar labour productivity in 1990, but by 2017 that of the former rose 9% annually, while Viet Nam's labour productivity growth was only 4.7% from 1991 to 2019. The productivity gap can be explained by the difference in the development of the manufacturing sector. In fact, China's ratio of manufacturing value added to GDP has been the highest amongst East Asian economies (ADB, 2020:96).



⁷ In 2010, the General Statistics Office of Viet Nam made an upward revision on the value of the real estate business, resulting in the expansion of the value-added of the service sector. Consequently, the share of the manufacturing sector (and agriculture) is smaller than the case without such revision. In 2010, the gap between the two cases in the manufacturing sector was 5 percentage points. Under the presumption that the gap has been almost unchanged in subsequent years, we have made an upward revision of the share of the manufacturing value added by 5 percentage points compared to the data in the Statistics Yearbook.

⁸Demographic dividend is a long stage in which the ratio of working people in total population continues to rise. This period lasts about 50 years. In the case of Viet Nam, that period starts in the early 1970s and ends in the first half of the 2020s (see Ozumi, 2007).

Figure 6.2. Ratio of Manufacturing Value Added/GDP in the Period of Demographic Dividend
 (% in vertical axis)



Notes: Japan 1960-92, Rep. of Korea 1965-2013, Thailand 1968-2013, China 1980-2010, Viet Nam 1980-2020. Horizontal axis shows the number of years of demographic dividend.

Sources: Demographic dividend: Oizumi (2007), manufacturing value added/GDP: World B.

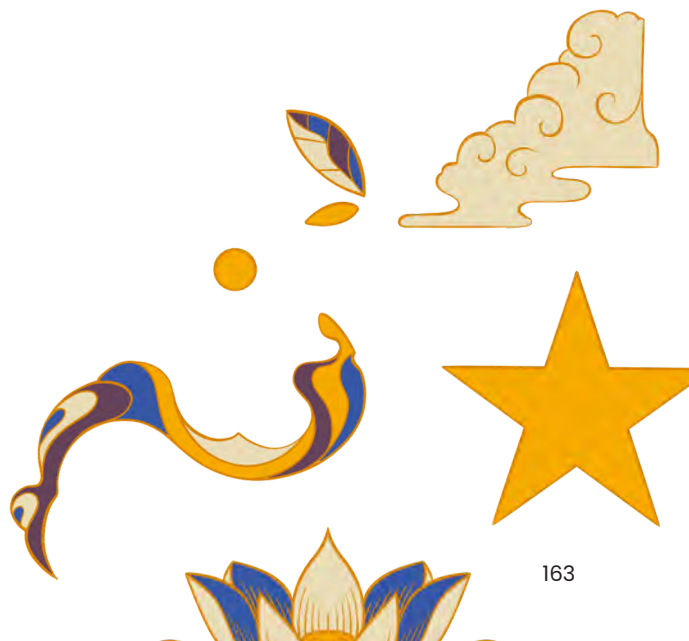


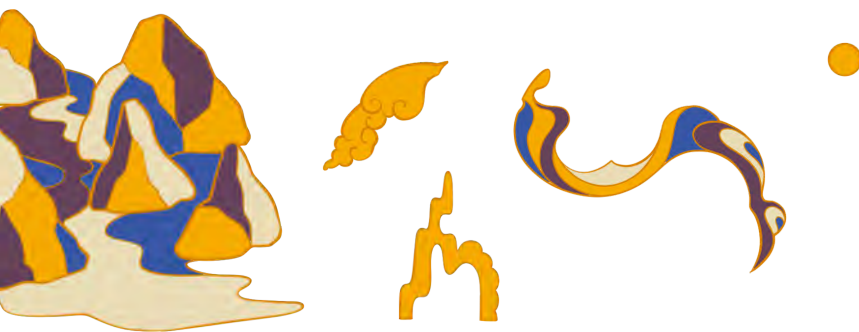
Table 6.1. Manufacturing Value Added per Capita in ASEAN and China (US\$)

	1990	2000	2010	2015	2020
Viet Nam	12	72	171	286	465
Philippines	221	271	486	598	583
Indonesia	151	205	688	699	769
Thailand	423	570	1,570	1,599	1,814
China	124	305	1,439	2,321	2,731

Note: ASEAN: Association of Southeast Asian Nations.

Source: Calculated from UNCTAD (United Nations Conference for Trade and Development) data.

The low level of industrialisation can be attributed mainly to the politically and economically unstable environment in the first half of the demographic dividend. Such a period of lost development, from the early 1970s to the early 1990s, stemmed from the war and the post-war socialist system, as well as the disadvantaged international environment.⁹ For these reasons, industrialisation actually started as late as the early 1990s. The share of manufactured value-added in GDP started to rise at around the 20th year of the demographic dividend (See Figure 6.2).



⁹ *Doi moi* started in December 1986, but the macroeconomic instability and adverse international conditions continued to the mid-1990s.

2.2.2. Increasing Participation in Global Value Chains as a Simple Assembly Factory

The Vietnamese economy has been increasingly integrated into the world since *Doi Moi*, particularly from around 2000. The trade dependence (ratio of the sum of exports and imports to GDP) rose from 60% in 1995 to 100% in 2006 and 180% in 2021. One more point is the increasing role of FDI in industrialisation. In recent years, FDI accounted for about 50% of industrial output and approximately 70% of exports. Consequently, Viet Nam's manufactured products have been increasingly knitted in GVCs. However, the quality of Viet Nam's participation in GVCs has been low so far.

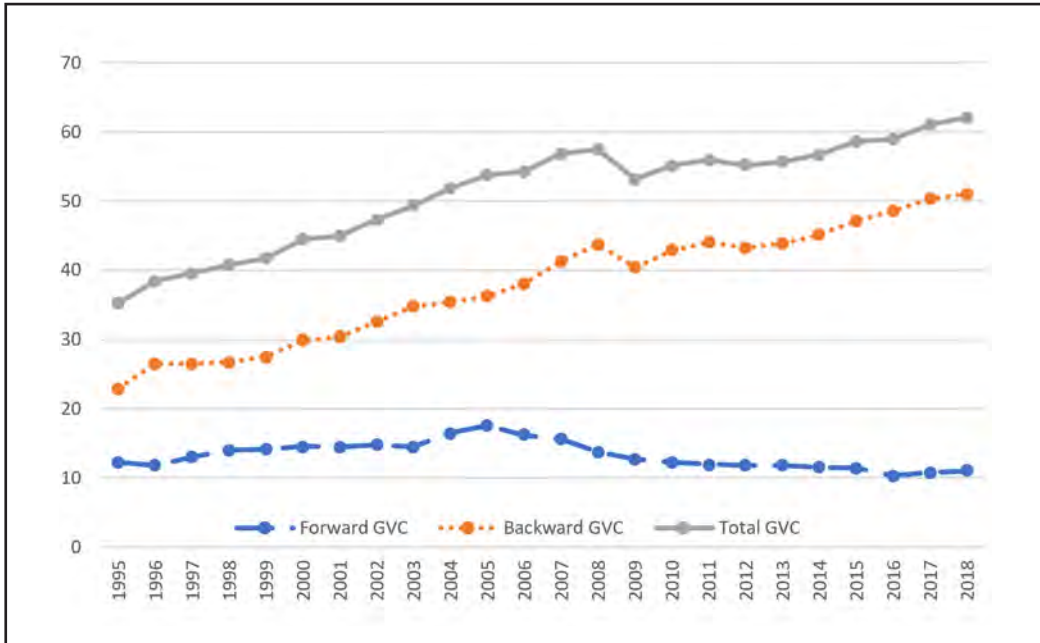
In Figure 6.3, the 'backward participation' in GVCs is the ratio of intermediate imports embodied in a nation's total exports, i.e. the participation via intermediate goods imported for the production of export products. 'Forward participation' is the ratio of value-added earned abroad in a nation's total exports. 'Participation in global value chains' is the sum of these two ratios.

Figure 6.3 exhibits a surprising trend regarding Viet Nam's participation in GVCs. Along with the progress in industrialisation, Viet Nam increasingly relied on the imports of intermediate goods such as parts, components, and semi-fabricated products. This has been reflected in the upward trends in backward participation. The low ratio of the forward participation suggests the weak ability of Viet Nam to supply value added to products made in foreign countries.

The rise in backward participation is strange but understandable. The development of the manufacturing sector and the increasing role of FDI have been inclined to machinery such as smartphones, which has been characterised as final processing and highly import-intensive. Such final processing is also labour-intensive. That is why, as shown in Figure 6.5, which appears later, the productivity of the FDI sector has declined since the mid-2010s.



Figure 6.3. Viet Nam's Participation in GVCs



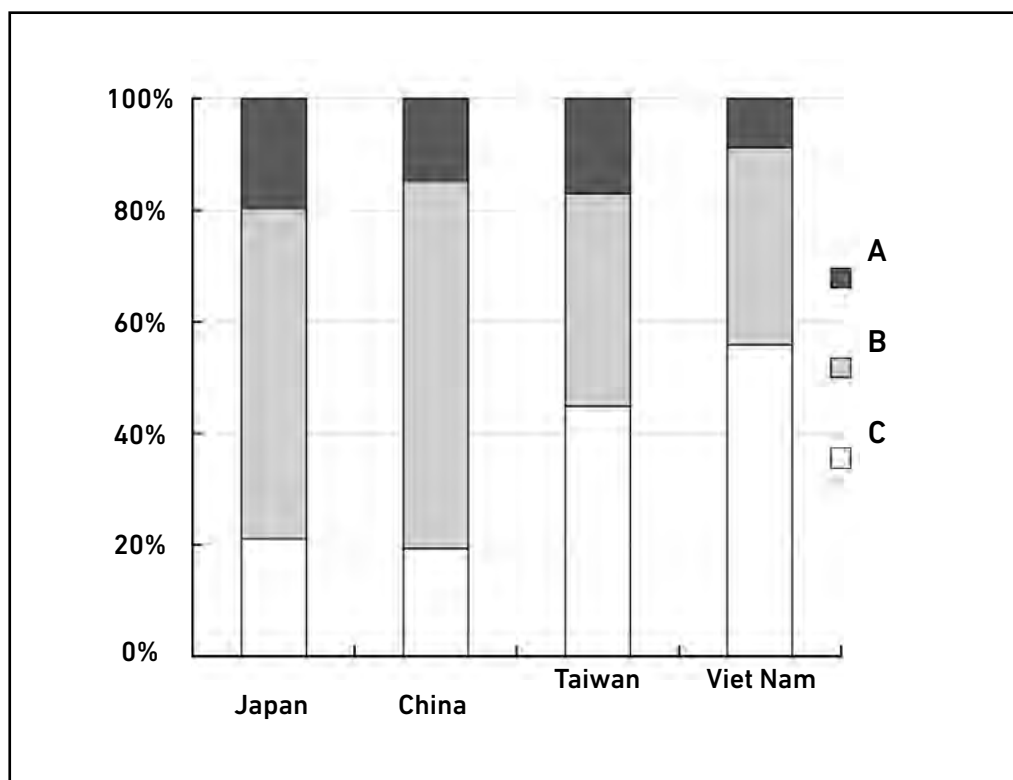
GVCs = Global Value Chains.

Source: Calculated from Organisation for Economic Co-operation and Development (OECD), Trade in Value Added Database.

Similar trends can be observed in Figure 6.4. Total exports of manufactured products are composed of three parts: immediate imported goods (C), domestically made intermediate goods, i.e. local contents (B), and value-added exported as inputs of the manufactured goods of importing countries (A). The case of Viet Nam in 2018 is compared with China, Taiwan, and Japan. In Viet Nam, the high share of imported intermediate goods and low share of value-added used in importing countries are noteworthy. These data again confirm the current characteristics of Viet Nam's industrialisation.



Figure 6.4. Structure of Value Added in Viet Nam's Manufactured Exports (2018)



Notes: A is share of value-added exported as inputs of the manufactured goods of importing countries. B is share of local contents of Viet Nam's exports. C is share of foreign inputs imported for production of export goods.

Source: Calculated from Organisation for Economic Co-operation and Development (OECD), Trade in Value Added Database.

In fact, in addition to the expansion in terms of output per capita (Table 6.1) and export value,¹⁰ Viet Nam's industrialisation has also largely changed in structure. For example, from 2000 to 2021, the share of information and communications technology (ICT)-related products in total exports rose from 4% to 40%. FDI by Samsung of Korea in the smartphone industry has played a leading role in such structural change. However, most ICT-related products made in Viet Nam so far are assembled of parts and components imported from Korea and China. This point can be confirmed by the changes in the structure of imports. ICT-related parts and components accounted for 35% of the total imports of Viet Nam in 2021, a substantial rise from 9% in 2000.

Looking at the trade pattern, we found out that Viet Nam relies on the US as an export destination, representing about 27% of total exports and nearly 40% of final consumer goods exports in 2020; further, the trade surplus with the US rose rapidly in recent years. On the other hand, Viet Nam is highly dependent on imports of intermediate goods such as parts, components, and semi-processed products from China and Korea, resulting in large trade deficits with these countries. In 2020, China

accounted for 32% of semi-processed industrial goods, 27% of parts, and 38% of capital goods imported into Viet Nam. Korea's shares were 16%, 36%, and 21%, respectively.

The two characteristics of industrialisation, i.e. the low share of manufacturing value added in GDP and the assembly structure, show that there has been so far limited growth of productivity and suggest a way to expand productivity for rapid growth in the future. The empirical study of Viet Nam's productivity from 1991 to 2019 by Ohno et al. (2021) showed that the productivity of the manufacturing sector rose substantially in the 1990s but turned stagnant in the 2000s and 2010s. This trend is strange but can be explained by the second characteristic noted above. We will return to this issue in Section 3.

The relatively low productivity of the manufacturing sector in Viet Nam is reflected in the small gap between its share of GDP and its share in total employment. The experience of East Asian economies showed that the share of 'industry' (which includes mostly the manufacturing sector) in GDP was much higher than that in total employment due to the high productivity of this category. For instance, in 1990–99, East Asia as a whole, the share of the industry (including manufacturing, mining, utilities and construction) in total employment was 24% and in GDP was 39% which was much higher (ADB, 2020:89–90). In contrast, the respective figures for Viet Nam in 2019 were 34.4% of GDP and 30.2% of employment. The gap was small. Looking only at the manufacturing sector of Viet Nam, we found that, in the same year, the GDP share was 21.5% and the employment share 20.7%.¹¹ Again the gap was negligible.

2.3. The Large Informal Sector and the Abundance of Micro and Small Firms

The Vietnamese economy is composed of three sectors, depending on the pattern of ownership: the state, non-state, and FDI. In 2019, the non-state sector accounted for 83.5% of total employment but only 42.7% of GDP (Table 6.2). These two figures suggest the low productivity of this sector. Figure 6.5 also confirms how low the productivity of the non-state sector is compared with FDI and the state sectors. Let us find the factors attributing to the low productivity of the non-state sector.

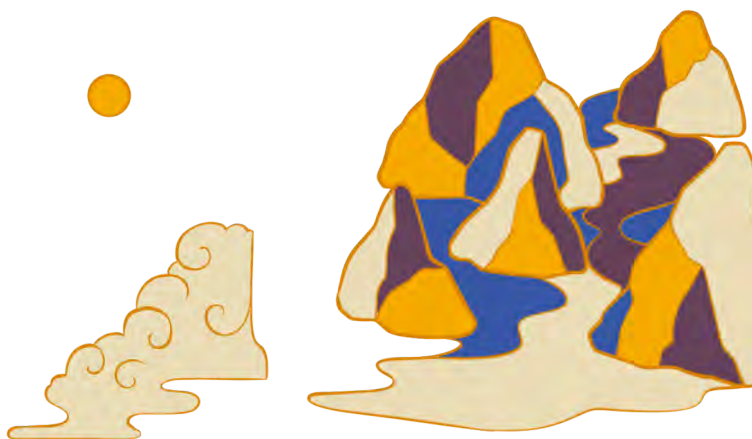
The non-state sector includes agriculture, which is characterised as the lowest sector in terms of productivity,¹² and the private local activities in manufacturing, service and other non-agriculture businesses (hereafter, these activities are shortly called the private group). As shown below, most parts of these private groups are characterised as informal, fragmented, and micro, small, and medium-sized operations.

¹⁰ Viet Nam has risen to become the largest exporter of ASEAN in 2021, and the share of manufactured products in total exports has risen from 21% in 1993 to 82% in 2011 and 95% in 2020.

¹¹ Based on the data in Statistical Yearbooks (Viet Nam).

Table 6.2 summarises the process and results of our estimates of the non-agriculture informal sector of the Vietnamese economy. On the left-hand side of the table (share in GDP), the non-state sector, as noted above, is composed of agriculture and the private sector group. Agriculture value-added is covered in 'collectives' and partially included in 'household'. By using the information on the GDP structure by activity, we have the share of agriculture (14.1%). Thus the share of the non-agriculture informal sector in GDP is estimated. On the right-hand side of Table 6.2 (share in labour), all firm sectors surveyed by the Ministry of Planning and Investment, reported in the *White Book on Vietnam Enterprises*, are considered formal businesses. By excluding agriculture and formal businesses, minus the share of state firms from total employment (2%, since it was already counted in the state sector), we get the share of the non-agriculture informal sector. Here are some additional notes on this estimate. First, the 'collectives' are entirely considered as those in agriculture, i.e. there are almost no collectives in service and other non-agriculture sectors. But this point does not influence the estimates of GDP share since collectives as a whole account for only a small share. Second, the state sector covers only non-agriculture. In agriculture, there are state farming organisations. If this point is adjusted, the labour share of the non-agriculture informal sector would be higher than 28.1%. In that sense, our result is somewhat underestimated.

According to this estimate, in 2019, the (non-agriculture) informal sector accounted for 28% of total employment and 19% of GDP. However, the ILOSTAT data from the International Labour Organization (ILO) show a much larger share of the informal sector in total employment. In 2021, the non-agriculture informal sector absorbed 23.5 million, which accounted for as much as 60% of total non-agriculture employment.



¹² According to the International Labour Organization, in 2021, 95% of farmers engaged in informal farming. Calculated from <https://ilostat.ilo.org/topics/informality>.

Table 6.2. The Estimated Informal Sector in Viet Nam (2019)

Share in GDP (%)			Share in GDP (%)	1,000	Share (%)
			Total (T)	54,659	100
Agriculture (A)	14.1		Agriculture (A)	18,831	34.5
Industry/construction	34.5		Industry/construction	16,452	30.1
Services	41.6		Services	19,349	35.4
State sector	27.1		State sector (S)	4,226	7.7
Non-state sector	42.7		Non-State sector	45,664	83.5
Collectives) (C)	3.6		FDI	4,768	8.7
(Private)	9.7				
(Household) (H)	29.4		Formal businesses (F)	15,152	27.7
FDI Firms	20.4		(State firms) (SF)	1,108	2
			(Non-state firms)	9,075	16.6
			(FDI firms)	4,969	9.1
Informal sector (I)	19		Informal sector (I)	16,450	28.1
$I = (H+C)-A$			$I = T-(A+S+F-SF)$		

GDP = gross domestic product, FDI = foreign direct investment.

Notes: Agriculture includes forestry and fishery. Informal sector excludes agriculture, forestry and fishery. See the text for more explanations.

Another component of GDP is 'product tax less subsidy', accounting for 9.9%.

Sources: Estimates basing on the data of Vietnam Statistics Yearbooks and The White Book on Vietnam Enterprises 2021.

Our data in Table 6.2 are underestimated, but the reason for the large share of ILO data may stem from a broad range that is covered in the non-agriculture informal sector. For example, it included formal employment with partial informal activities, unpaid trainees and volunteer workers.

The non-state firms within the formal businesses (the right-hand side of Table 6.2) are mainly composed of stock companies and limited liability firms. According to the *White Book of Vietnam Enterprises 2021*, from 2016 to 2019, on an annual average, micro, small, and medium-sized firms hired 1.7 million, 2.7 million, and 1.4 million employees, respectively.¹³ All these three types of firms hired 5.8 million employees, accounting for 10.6% of total employment. In a word, the share of the informal sector and the micro, small, and medium-sized firms in total employment rose to approximately 38.7% in 2019.

The analysis so far has shown that one of the striking characteristics of Viet Nam's economy is the existence of a large informal sector and a considerable number of micro, small, and medium-sized firms. Due to the very small scale of operations, they are poorly capitalised and consequently are not able to be equipped with new technology.¹⁴ According to the *White Book on Vietnam Enterprises 2021*, in 2019, capital stock by a worker in large firms was Vietnamese Dong (D) 470 million, while in micro firms and small firms, it was only D137 million and D220 million, respectively.

Because of the low level of capital accumulation, small firms are usually low in productivity. The study by Nguyen et al. (2022, Ch. 6) on the foodstuffs industry and electronics industry from 2011 to 2018 showed that the TFP of large firms was always greater than that of medium-sized firms, and the latter recorded a higher level of TFP than small firms.

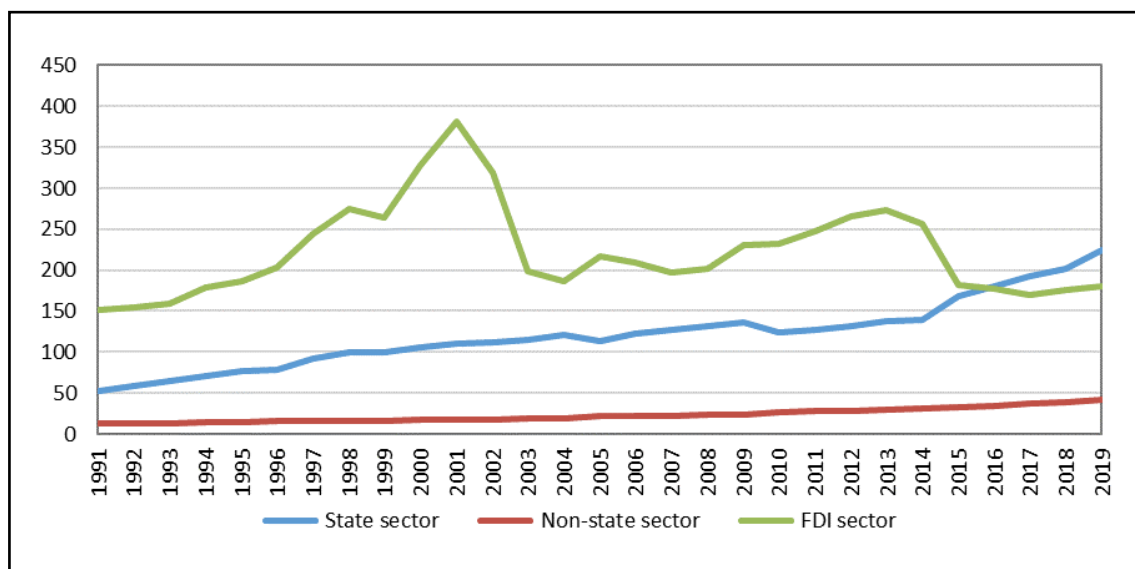


¹³ Micro, small, and medium-sized firms are defined as those that hire fewer than 10, from 10 to less than 100, and from 100 to less than 200 employees, respectively.

¹⁴ This point has been emphasised by Dinh Hinh (2013:27).

A substantial portion of the informal sector (28%) and of small and medium-sized enterprises (10.6%), combined with a large share of the agriculture, forestry, and fishery (34.5%) in total employment, resulted in Viet Nam's low productivity.¹⁵ The combined share of these three areas amounts to 73.1%, a dominating portion of the non-state sector (83.5%, Table 6.2). That is why the productivity of the non-state sector remains very low, and its growth has been low, as illustrated in Figure 6.5.

Figure 6.5. Viet Nam's Productivity by Ownership
(D million per worker at constant 2010 prices)



D = Vietnamese dong, FDI = foreign direct investment.
Source: Ohno et al., 2021.

The low level of industrialisation, the low grade of the participation in GVCs, and the structural characteristics of the Vietnamese economy suggest the directions of policies for raising labor productivity to achieve sustained growth.

3. Recommendations for Viet Nam's Escape from the Middle-Income Trap

This section will recommend policies for Viet Nam to escape from the MIT and achieve sustained growth to high income by 2045. Five major policies are necessary. Amongst these five policies, the first is the most fundamental and aims at expanding, deepening, and upgrading industrialisation. The remaining four policies are to enable the first policy.

¹⁵ The productivity of the agriculture sector (including forestry and fishery) is much lower than the industry and service sectors, as shown in Ohno, et al. (2021:16) and also reflected in its low share in GDP and very high share in employment (Table 6.2).

3.1. The New Stage of Industrialisation: Expanding, Deepening, and Upgrading

As noted, Viet Nam's industrialisation is still at a low level and has been characterised as concentrating on low value-added products, and highly reliant on imports of intermediate goods from China and Korea. Viet Nam also still participates in the low levels of GSCs.

Viet Nam should deepen and upgrade its industrial structure by substituting imports from China and Korea. In addition, the government should adopt a policy to facilitate the start-up of businesses so that local firms, including small and medium-sized enterprises (SMEs), can exploit opportunities of market and technology to invest in industrial production. In this context, a new FDI strategy, which has two elements, should be emphasised.

First, the government should introduce new FDI projects on a case-by-case basis, improve infrastructure, and offer incentives to encourage import substitution for high-tech components and other intermediate industrial products. In August 2019, the Political Bureau of the Communist Party of Viet Nam issued a resolution calling for a new FDI policy. The resolution emphasised the introduction of high-quality projects that produce high-skill, high-technology-intensive products. This resolution is timely but has not actually been implemented. Although Viet Nam's lack of a new FDI framework is partly due to the pandemic, more proactive policy and concrete initiatives are necessary to achieve the goals of new industrialisation.

Second, the policy should also encourage local firms to actively participate in the operation of FDI firms. In particular, vertical linkages between FDI operations and local firms are still weak, even though the problem was pointed out by observers many years ago (Dinh Hinh, 2013:9, amongst others).

This point is reflected in the weakness of supporting industries. In Viet Nam, the number of manufacturing firms amounted to about 110,000, which encompasses more than 35,000 SMEs,¹⁶ but, as shown in Table 6.3, at the end of 2018, there were fewer than 5,000 firms in supporting industries. Moreover, in electronics, the number of firms has been accounted for mostly by FDI. In a word, there is a large room for local firms to invest in supporting industries to participate in the GSCs of foreign firms investing in Viet Nam.

¹⁶ According to the *Statistical Yearbook 2020*, in Viet Nam there were 109,917 manufacturing enterprises (accounting for 16.4% of total 668,553 firms) which had business outcomes as of 31 December 2019. In manufacturing, the number of small firms (10 to 49 employees) was 26,343, and that of medium firms (50 to 199 employees) was 9,114.

Table 6.3. Number of Firms in Viet Nam's Supporting Industries (2018)

	Apparel and footwear	Plastics	Machinery	Electronics	Total
State-owned firms	9	7	14	1	31
Non-state firms	729	124	2,437	101	3,391
FDI	347	91	576	404	1,418
Total	1,085	222	3,027	506	4,840

Note: FDI = foreign direct investment.

Source: Viet Nam's Ministry of Industry and Trade (2022).

3.2. The Creative Destruction of the Informal Sector and Promotion of the Development of SMEs

According to the Law of Enterprises 2014, a household is a family-based business unit that has fewer than 10 workers and bears responsibility for business activities with their own assets. At the end of 2019, Viet Nam had nearly 5.4 million non-farm household establishments, which absorbed nearly 9.1 million workers. The respective figures for the manufacturing sector are 841,689 establishments and nearly 1.7 million workers.¹⁷ The average number of workers per establishment for all non-farm sectors was only 1.7 persons, and for the manufacturing sector, it was 2 persons.

Such a small scale of operation does not allow household enterprises to introduce technology and invest in more productive areas. Household enterprises also encounter various institutional barriers and disadvantages in access to capital and policies which are adopted for supporting SMEs. To raise the productivity of the economy as a whole, it is essential to transform household-based units into formal enterprises. In fact, the government has also adopted several policies for such purposes. The aim of such policies, however, has not been attained so far. Government Decision No. 35 in May 2016, for instance, be aimed at generating many new firms so that the country will have 1 million enterprises by 2020 (and 1.5 million by 2030), compared to 442,485 at the end of 2015, but the number at the end of December 2020 was only 811,535.

¹⁷ Data are from the *Statistical Yearbook 2020*. In Table 6.2, we estimated the workforce in the non-agriculture informal sector amounted to about 16 million. The non-farm business establishments mentioned above absorbed about 9 million. The rest of about 7 million can be viewed partially as those working in the establishments that were not covered in the survey, and partially as those who are individual street vendors, etc.

There are at least two problems hampering the transition of informal units into organised enterprises. First, the procedures for such a transition are complicated, and most individuals or family-based business units do not have the resources for the application. The complicated procedures are also aggravated by incapable and bureaucratic officials of local governments. Second, many household enterprises worry about the possibility of paying more tax as a result of modern and transparent accountancy after becoming a formal enterprise. According to the current system, a tax levied on the household is decided on the basis of a poll tax without considering the annual performance of business units. In addition, household entrepreneurs usually negotiate with local tax officials and share with the latter the part they can save by negotiation.¹⁸

To solve those problems, several policies are necessary. First, a policy is needed to simplify administrative procedures as well as to impose appropriate guidance and instruction upon local officials on the national policies that encourage the transformation of the household business to the company model. Second, a policy is needed to convince the household entrepreneurs of the advantages they will have after becoming formal companies and the benefit they will get would surpass the additional tax which may accrue. Third, effective policies to support SMEs, which will be discussed below, will have a demonstration effect on the household business units, which may recognise the benefits of becoming SMEs.

A process of creative destruction may be seen in these policies. Some informal business units which can access capital and support policies will hire more employees and procure capital to expand their businesses. Others will be merged to become SMEs. Finally, a part of household business units may be dissolved, and related people will look for new jobs offered by a growing number of emerging firms.

According to the *White Book of Enterprises 2021*, at the end of 2019, total SMEs (10 to fewer than 200 persons) absorbed 4 million of the workforce. If about half the informal business units (which have 9 million workers) are transformed into formal enterprises, the number of SMEs will expand fast. Combined with the existing 4 million, in total, about 8.5 million of labour will be absorbed by SMEs, accounting for about 24% of the non-agriculture working force in 2019. Effective policies for SMEs will therefore make substantial changes in Viet Nam's economy.

The reforms in the factor markets, which will be discussed below, will have positive impacts on the activities of SMEs. In addition, several policies which directly address SMEs should include the following:

First, the central and local government agencies in charge of SMEs should be more proactive to help them access capital, leased land, and technology for investment, as well as to help them to link with foreign firms. Second, the central government agency should have a research unit responsible for studying domestic and world markets and technology and the issues surrounding SMEs. The results

¹⁸ See Nguyen (2021) for details of the legal problems relating to the transition of household business units to formal enterprises. According to Dinh Hinh (2013: 27–28), the unclear government policy towards large private enterprises has also been amongst the reasons that discouraged household and small firms from growing.

of this research should be published in the form of a White Paper. The annual White Paper for SMEs is useful for these firms to cope with changes in markets and technology as well as in policies.

For firms which aim at higher value-added, and higher productivity, their activities require more capital intensity and a larger scale than the levels of micro and household enterprises. Along with the greater scale of the firms, which enables larger investment and easier technology adoption, combined with the support of policies, a substantial part of SMEs will be integrated into the GSCs and GVCs of FDI firms.¹⁹ Consequently, they can participate in the supporting industries and the GSCs/GVCs of multinational corporations. As a result, they will contribute to the expansion of the manufacturing sector and to the growth of productivity. The point that should be emphasised here is that both central and local governments should make clear the fundamental objective of industrialisation is not to create more SMEs but to make small enterprises become medium and to make medium enterprises become large in order to acquire more capital, knowledge, and skills to connect to and compete with foreign enterprises.

3.3. Reforms of the Factor Markets

As shown in Table 6.2, the agriculture sector and the informal sector still account for a share as large as 35% and 28%, respectively, of the total workforce of the economy. Institutional market reforms for smoothing the migration of labour from agriculture to the manufacturing sector and on the capital market for helping SMEs (including those shifted from the informal sector) to access investment are essential.

3.3.1. Reforms of the Labour Market

As noted, in large cities, wages are rising, and a labour shortage has emerged, while workers are plentiful in rural villages and remote areas. Hanoi and Ho Chi Minh City may have already crossed the Lewis turning point, but the rest of Viet Nam seems to still have a labour surplus. Two factors behind that phenomenon are the insufficient supply of skilled labour and the distortion in the labour market. Along with the expansion of industrialisation, as discussed earlier, the demand for labour will rise further. If the current situation remains unchanged, the dualistic market structure, i.e. the shortage in the cities and surrounding areas and the surplus in rural areas, will be more serious. To solve this problem, in addition to the efforts in education and training, which will be discussed in the next subsection, reform in the labour market is essential. The most important point is to change the household registration (*ho khau*) system and to improve the living conditions of workers in industrial parks and other factories in urban areas. Under the household registration system, many workers

¹⁹ Many FDI firms have pointed out that they want to raise the local content of operations in Viet Nam and tried to find local suppliers but only a limited number of firms is qualified. Recently (July 2022), information from Panasonic Vietnam and Samsung Vietnam also confirmed that problem. Panasonic, operating seven factories in Viet Nam that assemble electronic consumer goods, still relies on 65% of imported parts and components. Samsung so far has set up six factories for assembling smartphones, and has tried to select potential local suppliers for providing them management and technical guidance. So far, 379 firms have been selected and offered guidance but only 51 firms have been able to participate into the supply chain of Samsung. Information was reported in *Tuoi tre*, 18 July 2022.

migrate from rural to urban areas to work, but they are still officially considered citizens in rural areas and thus do not benefit from urban services (education, medicine, etc.). The government should revise the household registration system to protect the right of those migrant workers.

On the living conditions of workers, the housing service should be emphasised. Apart from a number of workers living in dormitories provided by employers, most workers migrating from rural areas have to rent apartments in the villages adjacent to factories. Due to high living costs in the cities and surrounding areas, the real wages are low, so many workers tend to share a small apartment that has been designed for one or two persons. The housing conditions are thus very poor and not appropriate for keeping healthy. Local governments and firms should work together to improve the living conditions of migrant workers by building a sufficient number of dormitories or low-income houses for them.

The household registration system and housing problems tended to discourage rural labour from migrating to work in urban areas. In fact, every year, a substantial part of workers going home for New Year's holidays did not return to work and that accrued costs for firms to recruit new employees. The same problem happened during the pandemic in Ho Chi Minh City and its vicinity in mid-2021. If these two problems are solved, we can expect a smooth labour migration across geographic locations.



3.3.2. The Capital Market and SMEs' Access to Capital

In developing countries, limited access to financial institutions, mainly commercial banks, is usually a structural problem for SMEs because of the asymmetric information between banks and borrowers. This leads to high collateral and guarantee requirements and adds to transaction costs. For SMEs, poor access to finance is often a critical constraint to their growth.

The capital market in Viet Nam has developed gradually since the 1990s, but there is still much room for further reforms. In particular, SMEs are in a disadvantageous position in the access to capital needed for their investment, as reflected in many surveys. The most recent survey, conducted by the State Bank of Viet Nam in 2022,²⁰ also revealed that SMEs still encountered the following problems. First, commercial banks tended to prefer to lend to large firms, including state-owned enterprises (SOEs) and FDI firms, and disregard SMEs. Second, the procedures of application for borrowing are so complicated that many SMEs usually give up. Third, the funds that SMEs are able to borrow usually bears higher lending rates compared to funds provided to large firms.

From the experience of Japan, we may suggest the following measures. First, the government should set up a fund or a bank specialising in SMEs. This fund or bank should have professional staff that have a high capacity to review investment projects. The fund or bank should also have a department in charge of advisory and consultant services offered to SMEs in order to assist them in increasing the feasibility of an investment project. Second, Viet Nam should establish a system to offer certificates for consultants who can advise SMEs to improve their management and plan for investment projects as well as to help them prepare applications for borrowing funds.

3.4. Policy to Expand the Supply of Skilled Labour

Viet Nam has an abundant workforce and a young labour structure, but the human resources are still weak in quality. As reflected in the surveys on the activities of FDI firms or opinions of employers in both domestic and foreign firms, there has been a chronic and serious shortage of skilled workers.

According to a recent survey by JICA (2022), in 2020, the labour force that had 9 years or fewer of education accounts for as much as 61.2% of the total workforce. The workers who graduated from upper secondary school and those having technical and professional qualifications account for only 15.2% and 23.6%, respectively. It is also surprising that the share of workers that have not graduated from elementary school was 11.6%, a large figure.²¹

In addition, as pointed out by World Bank (2022), there is a lack of alignment between the skills of graduates and the skills that the market is demanding. While firms report difficulty in securing

²⁰ The results of the survey were documented in Can Van Luc ed. (2022).

²¹ For example, according to the recent survey conducted by the Viet Nam Chamber of Commerce and Industry and introduced at a forum in Hanoi on 15 July 2022, about 60% of the firms interviewed in the electronic industry replied that they are experiencing a shortage of skilled workers (*Saigon Giai Phong Online*, 15 July 2022).

employees with skills, the supply of most jobs is for unskilled or skilled manual workers. Insufficient public funding and a weak tertiary education system are also noticeable. Viet Nam spends less than many Asian countries on higher education; in 2019, Viet Nam allocated 0.6% of its GDP to higher and vocational training, compared to 0.86% in Malaysia. The poor quality of education in most private colleges and universities has also been widely recognised.

The expansion of the supply of skilled labour in order to push industrialisation and upgrade the industrial structure is thus an urgent task for Viet Nam. Viet Nam needs to allocate more resources for vocational and higher education and to reform its education system to improve quality.

On July 2020, the government announced a policy to revise the system of education and training, which included the expansion of immediate vocational courses, vocational elementary courses and specialised technical colleges. That policy is appropriate even though it was too late. The problem is how to quickly implement the policy to meet the rising demand for skilled workers. In addition, the expansion of science and technology faculties in major universities is also important for increasing the supply of engineers and managerial levels of human resources.

The efforts cited above, however, take time. The concurrent and quicker response is to connect the Vietnamese technical intern trainees efficiently in advanced countries, mainly Japan, with foreign and local firms which have plans to invest in higher value-added industrial products in Viet Nam. The number of Viet Nam's skilled labourers with internships in Japan amounted to 202,365 at the end of June 2021 (JICA, 2022). In addition, in Japan, there has been an increasing number of Vietnamese-specified skill workers who have an intermediate level of the Japanese language and passed exams in specific engineering fields. At the end of 2020, the number of specified skilled labourers amounted to nearly 15,700.

3.5. Strengthening Innovation Capability

In the next decade or so, the supply of skilled labour and institutional reforms for efficient allocation of resources will be major sources of productivity growth of Viet Nam's economy. At the same time, Viet Nam has to prepare for innovation-led growth for the 2030s and beyond. The development of science and technology requires much time to generate results. Therefore, efforts in R&D and promotion of science and technology should be emphasised from the present stage.

The Vietnamese government has reconsigned the importance of innovation for economic growth, but so far, the effort has not been sufficient. The R&D expenditure as a ratio to GDP rose from 0.44% in 2016 to 0.53% in 2019 (MOST 2021). Out of total R&D expenditure in 2019, the state sector, the local private sector, and FDI firms accounted for 47%, 40%, and 13%, respectively. Data from 2015 showed that the share of the local private sector rose substantially while that of the state sector declined. This trend is confirmed by the experience of advanced countries, such as Japan and Korea, in their development process. The government's major role turned from direct R&D activities to create institutions which encourage private firms to increasingly invest in R&D. In fact, the Viet Nam National Innovation Center was set up in October 2019 as a unit under the Ministry of Planning and Investment for supporting firms to undertake innovative start-ups.

Viet Nam's government appears to have set the right direction, and the policies so far can be recognised. However, to prepare an innovation-led economy for sustained growth in a high-income country, Viet Nam should scale up the level of R&D expenditure and other innovation-related indicators. The current level of R&D expenditure as a ratio to GDP is lower than most Asian countries in their lower middle-income development stage.²²

Viet Nam's ranking in the Global Innovation Index (GII) is quite high and has improved in recent years (WIPO, 2021), but the components of GI have a large room for improvement. In 2021, the ranking was 44 amongst 132 economies, higher than India (ranked 46) and the Philippines (51) and only one rank lower than Thailand (43). Viet Nam also ranked top in the group of lower-middle-income economies. These facts give the impression that Viet Nam's innovation capability is relatively strong. A closer look at the components of the GI, however, show a different picture. The GI is broken down into seven sub-indices, and each sub-index is composed of many elements. Viet Nam ranked high in high-tech exports (ranked 1), creative goods exports (11), and trade, diversification, and market scale (15), but such indicators do not necessarily reflect innovation capability. Many export products, such as smartphones, are considered high-tech, but as analysed in Section II, most of them are in the low levels of the GVCs. The high trade dependence and large market scale also do not directly relate to the innovation capability.

On the contrary, Viet Nam's low rankings in some critical components should be considered problematic. For example, Viet Nam ranked 79th in human capital and research, 90th in tertiary education, and 79th in the infrastructure of information and communication technologies. Substantial improvement in such fields should be the focus of innovation-related policies.

Amongst the five policies discussed above, the second and the third are important for the next 10 years or so in order to push the transformation of resources from low to highly productive areas. The fourth policy is the presumption for facilitating the rural workforce to move to the industrial sector on the one hand and to upgrade the industrial structure itself on the other. The fifth policy is essential to prepare for sustained growth in a later stage, e.g. from the 2030s, when there is little room left for structural transformation as a source of rising productivity.

²² For example, the R&D expenditure/GDP ratio for Korea in 1977 and China in 1996 was 0.6% when they were in lower middle-income level. The figure for Korea rose to 2.4% in 1996 and that for China rose to 1.4% in 2004 and 2% in 2011. Figures are taken from Tran (1986) for Korea in 1977, and from Huang (2016) for other cases.



3.6. Upgrading the Structure of Comparative Advantage

If five groups of policies previously recommended in this section are adopted and implemented, the structural transformation in the manufacturing sector, the formalisation of the informal sector, the efficient allocation of capital and labour, the upgrade of the quality of labour, and the innovation capability of Viet Nam will be progressed and strengthened. As a result, capital accumulation will be expanded in a more efficient direction and will stimulate the adaptation of technology. The capital deepening and the efficiency created by structural transformation and by institutional reforms in the factor markets will result in rising productivity.

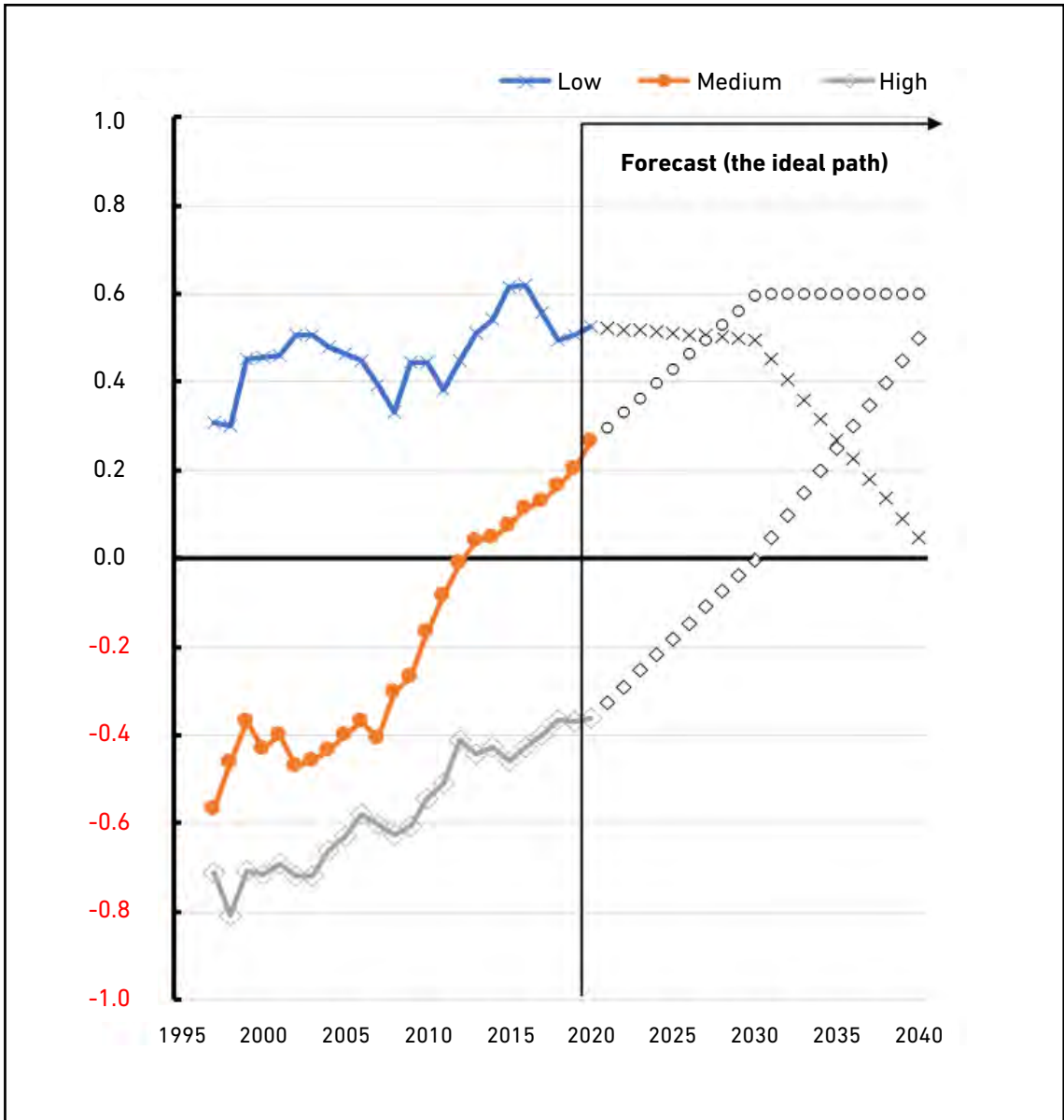
From a global perspective, the structural transformation and sustained growth of productivity will keep Viet Nam competitive in international markets. This is a condition for Viet Nam to avoid the position, discussed in Section 1, where the country is unable to compete with low-cost countries yet is not able to compete with advanced countries. That condition is illustrated in Figure 6.6. The concept of the ICI is the same with Figure 6.1. The definition of low-, medium-, and high-skill-intensive products is based on the structure of revealed comparative advantage (RCA) of manufactured trading products of advanced countries. The products that have an RCA of less than 0.5 are considered a low skill, and products that have RCA from 0.5 to less than 1 are medium. Products that have an RCA of 1 and greater are highly skill-intensive.²³

In Figure 6.6, by 2020, Viet Nam has gained a comparative advantage in low-skill-intensive products and has been increasingly competitive in medium-skill-intensive goods, while recording a large deficit in the trade of high-skill-intensive fields. Figure 6.6 also shows the ideal path of Viet Nam's structure of comparative advantage for the next 2 decades. The dynamic changes in the direction to continue to upgrade the structure of international competitiveness are essential. In the first 10 years or so, i.e. the period until the early 2030s, the competitiveness of medium-skill-intensive products should be increasingly strengthened and gradually replace the position of low-skill products. In that process, the position of high-skill-intensive products will be improved, and the trade balance will turn into a surplus. In the 2030s, the low-skill-intensive products began to lose the comparative advantage, and the competitiveness of the products using medium-skill labour entered the matured phase. In that process, the high-skill-intensive products must be increasingly the leading exporting sector.

The ideal path for the future, illustrated in Figure 6.6, is the condition for Viet Nam in the international context to escape from the MIT and continue to achieve sustained growth in a high-income economy. The policies suggested in this chapter are expected to bring about such an ideal path.

²³ See Tran and Karikomi (2019) Ch. 8 for detailed explanations.

Figure 6.6. Changes in the Structure of International Competitiveness and Scenario for the Future Path



Notes: The curves show international competitiveness index (ICI) of low, medium, and high skilled intensive products. For definition of ICI see the explanation in Figure 6.1.

For definition of low, medium, and high skilled intensive products see the text.

Sources: Until 2015: Tran and Karikomi (2019), updated for 2020 by Karikomi, using UN *Comtrade Database*. Forecast by the author.

4. Concluding Remarks

Sustained productivity growth is the key factor in escaping from the MIT. Structural transformation, or the shift of resources from low- to high-productivity sectors, is the driving force behind the enhancement of productivity and the long-term preservation of international competitiveness. In that process, capital accumulation and technological progress are both important, even though their relative role may be different, depending on the phase of development. Growth of productivity is also promoted by the creative destruction in the structure of firms and business units, which results in expanding the scale of firms that can adopt technology and undertake efficient capital accumulation. Institutional reforms in the factor markets to enhance the efficient allocation of capital and labour, emphasis on the supply of highly skilled labour, and strengthening of innovation capabilities are essential for enabling the structural transformation process.

Viet Nam has enormous room for increasing productivity, given the current low industrialisation level and its low value-added final assembly production, the surplus labour in agriculture, and the existence of a large informal sector. This chapter suggests five major policies to exploit the current potential for sustained growth of productivity: (a) scaling up the industrialisation along with upgrading and deepening the industrial structure; (b) facilitating creative destruction of the informal sector and promotion of the development of SMEs; (c) undertaking institutional reforms to improve the factor markets so that capital and labour can easily move to higher productivity sectors; (d) strengthening education and training for increasingly supplying high-skilled labour to meet the demand for a high level of industrialisation; and (e) strengthening R&D activities both at the government and firm levels, including policies to encourage FDI and local firms to invest in process and product innovations. From an international perspective, the structural transformation and sustained growth of productivity will keep Viet Nam always competitive in international markets.

With the policy recommendations outlined in this chapter, we anticipate that Viet Nam will have the potential to break free from the MIT and achieve continuous growth on its path to becoming a high-income country by 2045.



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Chapter 7

Economic Integration in East Asia and Viet Nam

Nguyen Anh Duong and Ha Thi Thanh Doan*

* The views and opinions in this chapter are solely of the authors.

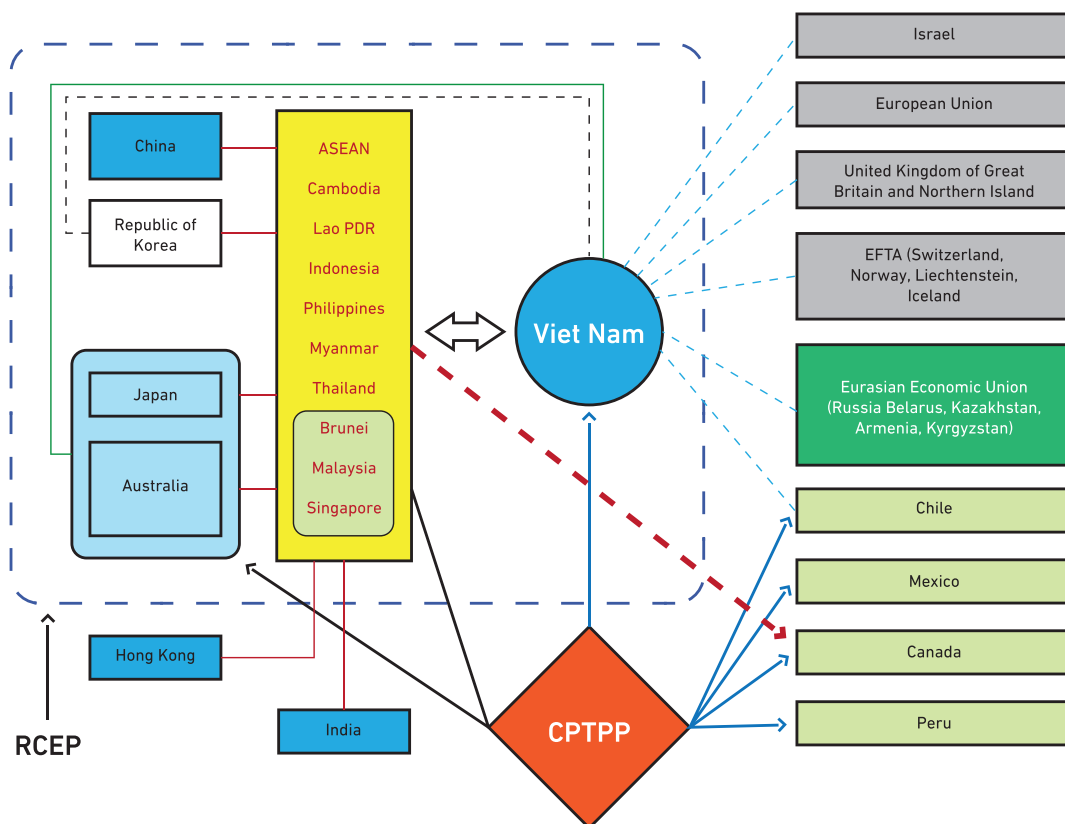


1. Introduction

Viet Nam has undertaken ambitious and extensive economic reforms since the start of Doi Moi (Renovation) in 1986. Reducing at-the-border and behind-the-border barriers to trade and investment has been one of the main pillars of reforms. Viet Nam had its mindset about trade and investment liberalisation changed gradually, from an open-door policy before 2000 to economic integration between 2000 and 2015, and then to successful economic integration since 2016. A vast literature (e.g. Vo, Nguyen, and Do (2021) and CIEM (2021a)) has shown that economic integration efforts have facilitated Viet Nam's broader engagement in global value chains and enhanced access to foreign markets and investments and adaptation to international trade governance.

By 2022, Viet Nam's economic integration process had had four important milestones (CIEM, 2021a). The first milestone was its accession to the Association of Southeast Asian Nations (ASEAN) in 1995 and accordingly the ASEAN Free Trade Area (AFTA). The second milestone was the signing of the bilateral trade agreement (BTA) with the United States (US) in 2000. Until 2000, the BTA with the US was the most comprehensive and closest to the 'standard' of the World Trade Organization (WTO) that Viet Nam had signed. The third milestone was Viet Nam's accession to the WTO in 2007. Accordingly, Viet Nam was treated equally to other member countries in the WTO. After joining the WTO, Viet Nam's integration process transited to a new phase, from horizontal integration to deeper integration. The fourth milestone came when Viet Nam started implementing the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European Union–Viet Nam Free Trade Agreement (EVFTA) in 2019 and 2020, respectively. In that context, Viet Nam enhanced its strategic partnerships, comprehensive strategic partnerships, and comprehensive partnerships with free trade agreements (FTAs). As of December 2022, Viet Nam had negotiated, signed, and implemented 18 FTAs (Figure 7.1).

Figure 7.1. Viet Nam's FTAs as of December 2022



FTA = free trade agreement; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EFTA = European Free Trade Association.

Source: Authors' update based on CIEM (2021a).

Centring on ASEAN has been a remarkable feature of Viet Nam's economic integration. ASEAN was the first 'playground' that facilitated practices and adaption for Viet Nam before its WTO accession (Vo, 2015). Together, ASEAN member states worked incrementally towards a single production base (i.e. the ASEAN way), which appealed to and was further concretised by supply-chain-led investors from Japan, the Republic of Korea (henceforth, Korea), and the European Union (EU), etc. Open regionalism also enables ASEAN member states to pursue FTAs with external partners, especially those in Northeast Asia. Building upon its long experiences of harmonising the ASEAN community-building process and open regionalism, ASEAN could contribute to harmonising the integration tracks in East Asia.

Looking forward, economic integration still plays an important role in Viet Nam's integration strategy. According to the World Bank and the Ministry of Planning and Investment (2016), by 2035, Viet Nam aspires to become the following: *'A responsible member of the global community of nations will build global alliances and fulfill global responsibilities for peace and security while proactively*

seeking regional and global opportunities for economic integration’ (p. 14). The Communist Party of Viet Nam (CPV, 2021) has also set out viewpoints for achieving dynamic, rapid, and sustainable economic development, economic independence and economic autonomy on the basis of scientific and technological progress, innovation, and more effective diplomatic and international integration efforts. The CPV (2021) has also set the target for Viet Nam to become a high-income developed country by 2045. Within that broad approach to economic integration, envisioning future East Asian economic integration and the implications for Viet Nam will be essential.

This chapter attempts to discuss possible pathways of economic integration in East Asia until 2045. In doing so, it also reviews the importance of East Asian economic integration for Viet Nam in the past decades. On that basis, the chapter presents some policy implications and options for Viet Nam.

The remainder of the chapter is structured in four sections. Section 2 elaborates on the past experiences of East Asian economic integration to show how the process has been beneficial for Viet Nam. Section 3 sketches the possible pathways of East Asian economic integration towards 2045. Section 4 looks into some key issues for Viet Nam in harmonising East Asian economic integration with other integration tracks. Section 5 concludes with some recommendations.

2. Importance of East Asian Economic Integration for Viet Nam: Past Experiences

2.1. Trade Performance

Over the past decades, economic integration efforts with East Asian partners – both under the ASEAN-plus framework and bilaterally – have been crucial for Viet Nam. After the US embargo was lifted in 1994, Viet Nam made swift efforts to become a member of ASEAN in 1995. Being in the early stages of market-oriented economic reform and regional economic integration, Viet Nam finds the ASEAN integration process to be of vital importance in various aspects (Vo, 2015). First, notwithstanding the gradualism approach, ASEAN integration could well be seen as an important prerequisite for favourable conditions, including regional stability, for socioeconomic development and prosperity in the region. Second, ASEAN integration serves as the first important step for proceeding to wider and deeper economic integration. After joining ASEAN and its agreements, Viet Nam became a member of APEC and the WTO and a signatory in various agreements, such as the Viet Nam–US BTA, ASEAN–China Free Trade Area (ACFTA), and ASEAN–Korea Free Trade Area (AKFTA), etc. Third, being a member of ASEAN strengthens Viet Nam’s bargaining power, particularly in negotiations with other major trading and investment partners. Finally, ASEAN has proved itself to be a key trading and investment partner of Viet Nam.²

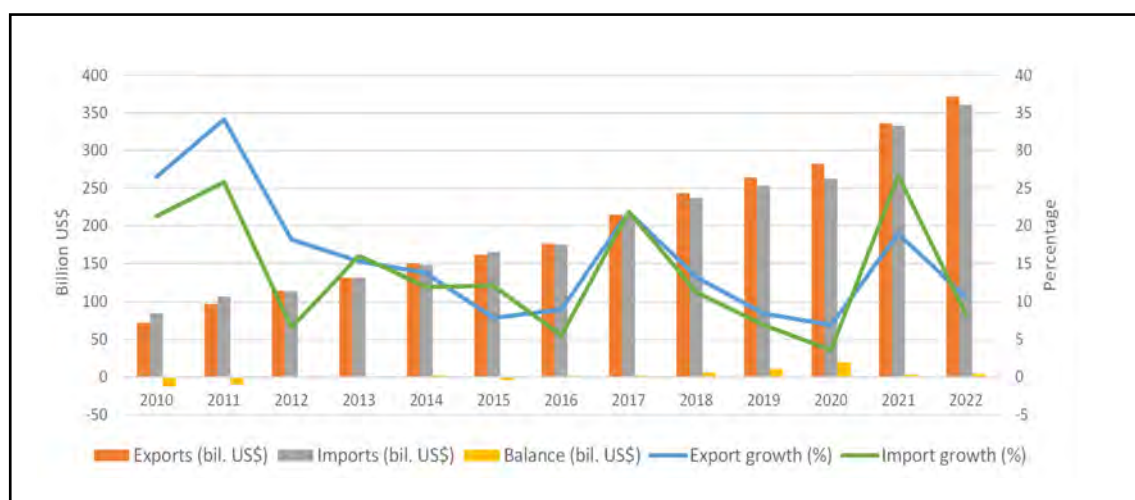
In this process, engagement in the Regional Comprehensive Economic Partnership (RCEP) came neither automatically nor by chance. Instead, participation in the agreement came as a result of

²To be discussed in Section 3.

consistent efforts, not only at the policy level but also in economic structural adjustment. More crucially, Viet Nam had to put a lot of effort into the simultaneous negotiation of the three highest-quality and/or largest FTAs (i.e., RCEP, TPP/CPTPP, and EVFTA). CIEM (2021a) argues that had there not been a TPP/CPTPP or EVFTA, Viet Nam's institutional preparations might have been different, and the country's consideration of RCEP's content and the potential implications might have taken alternative paths. Arguably, TPP/CPTPP and EVFTA appear to have had the most significant effects on Viet Nam's economic institutions and the economy. Thanks to parallel efforts for coordinating the negotiations of the three major FTAs, even whilst RCEP receives relatively more adverse comments, reaching a consensus on the TPP/CPTPP and EVFTA increased the possibility that RCEP would be adopted in Viet Nam.

Engaging in and deepening trade relations with ASEAN and East Asia helped boost Viet Nam's trade performance for decades. Viet Nam's trade quickly recovered after the global financial crisis in 2008. In particular, both imports and exports continued to expand in the period 2010–2021 (Figure 7.2). In 2010–2015, amid the domestic and world economic recovery after the 2008–2009 financial crisis, imports and exports grew relatively quickly. Exports increased from US\$72.2 billion in 2010 to US\$162.0 billion in 2015, with an average annual growth rate of 17.5%. Imports grew more slowly by 14.3% p.a. on average, up from US\$84.8 billion to US\$165.6 billion in the 2010–2015 period. During 2016–2019, both exports and imports maintained positive growth rates, albeit slower than the previous period. Specifically, exports increased on average by 13.0% p.a., and imports increased by 11.2% p.a. on average. In the period 2010–2019 as a whole, imports rose on average by 12.9% p.a., slower than exports (15.5% p.a.). Hence, the overall trade balance was gradually reversed from a deficit to surplus expansion. Even during the COVID-19 context in 2020–2022, Viet Nam managed to attain relatively high export and import growth and a significant trade surplus.

Figure 7.2. Viet Nam's Imports and Exports, 2010–2022



Source: General Statistics Office.

Viet Nam's imports and exports became more resilient in the 2018–2022 period. In this period, the economy was being affected by the complicated impacts of the US–China trade war (from mid-2018), the COVID-19 pandemic and associated policy responses to the pandemic in many markets (from early 2020), and the Russia–Ukraine conflict (from February 2022). Besides the adaptive efforts of the business community, especially domestic businesses, the enhanced resilience of the economy in this period partly derived from the consistent measures to improve the business environment and enhance competitiveness, especially in terms of FTA implementation, trade facilitation, and e-commerce development.

Table 7.1. Share and Growth Rate of Viet Nam's Exports by Country and FTA Partner, 2010–2020

	Share (%)											Growth Rate (%)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2010-2015	2016-2020
ASEAN	14.3	14.1	15.2	14.1	12.7	11.2	9.9	10.1	10.1	9.4	8.2	13.7	5.3
RCEP	44.0	45.4	45.7	42.2	40.1	37.7	38.9	43.0	44.1	41.8	40.7	16.7	13.9
China	10.7	12.0	11.2	10.0	9.9	10.2	12.4	16.5	17.0	15.7	17.4	21.8	25.7
Rep. of Korea	4.3	5.0	4.9	5.1	4.8	5.5	6.5	6.9	7.5	7.5	6.8	28.7	16.7
Japan	10.7	11.4	11.4	10.3	9.8	8.7	8.3	7.8	7.7	7.7	6.8	15.2	6.5
CPTPP	22.4	21.2	22.2	21.0	19.8	17.9	16.6	15.9	15.1	15.0	13.7	13.7	6.0
EU27	15.8	17.1	17.7	18.4	18.6	19.0	19.2	17.8	17.2	15.6	12.5	22.3	5.9
United Stated	19.7	17.5	17.2	1.1	19.1	20.7	21.8	19.3	19.5	23.2	27.4	19.7	18.3

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.

Source: Figures until 2019 are from CIEM (2021a). Figures for 2020 are the authors' calculations from World Integrated Trade Solution data.



Table 7.2. Share and Growth Rate of Viet Nam’s Imports by Country and FTA partner, 2010–2020

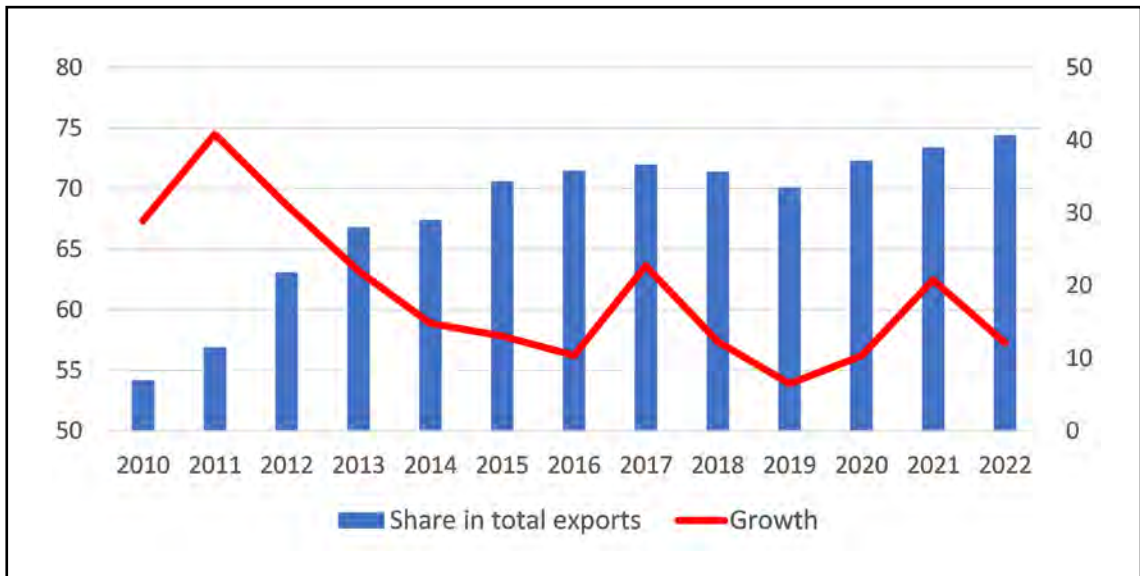
	Share (%)											Growth Rate (%)	
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2010–2015	2016–2020
ASEAN	19.3	19.6	18.3	16.1	15.5	14.3	13.8	13.3	13.4	12.7	13.8	9.9	5.5
RCEP	67.4	67.3	69.6	70.0	70.1	70.8	71.0	72.4	71.0	70.7	76.6	16.9	10.6
China	23.8	23.3	25.5	27.9	29.5	29.8	28.6	27.5	27.7	29.8	40.4	19.9	12.4
Rep. of Korea	11.5	12.3	13.7	15.7	14.7	16.6	18.4	22.0	20.1	18.5	17.2	26.3	12.5
Japan	10.6	9.7	10.2	8.8	8.7	8.6	8.6	7.9	8.0	7.7	6.1	11.5	7.5
CPTPP	22.6	22.7	22.4	18.8	18.7	17.0	16.6	15.9	15.9	15.0	14.8	10.1	5.8
EU27	7.5	7.3	7.7	7.1	6.0	6.2	6.4	5.7	5.8	5.9	3.4	10.3	2.9
United States	4.5	4.3	4.3	4.0	4.3	4.7	5.0	4.4	5.4	5.7	3.0	17.4	11.2

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.

Source: Figures until 2019 are from CIEM (2021a). Figures for 2020 are the authors’ calculations from World Integrated Trade Solution data.

Foreign-invested enterprises (FIEs) still accounted for the lion’s share in total exports, but this share tended to decrease during 2017–2019 before rising again in the years 2020–2022 (Figure 7.3). During 2010–2015, exports of FIEs continued to increase faster than the country’s export growth. Notably, the average export growth rates of the FIEs and the whole country were 23.9%/year and 17.5%/year, respectively. From 2016, domestic enterprises increased their exports more rapidly, thereby contributing more to the country’s export growth. In particular, Viet Nam’s export growth during 2018–2020 was mainly contributed by the domestic business sector. Meanwhile, the FIEs attained slower export growth from 2018, even reaching negative growth in the first 10 months of 2020. However, trade surplus and exports in absolute terms were still largely from FIEs. As Viet Nam started to recover from COVID-19, exports of FIEs rose on average by 16.3% p.a. during 2021–2022. As an implication, economic integration in East Asia – the key area of production networks – will continue to significantly affect the operations of FIEs in Viet Nam.

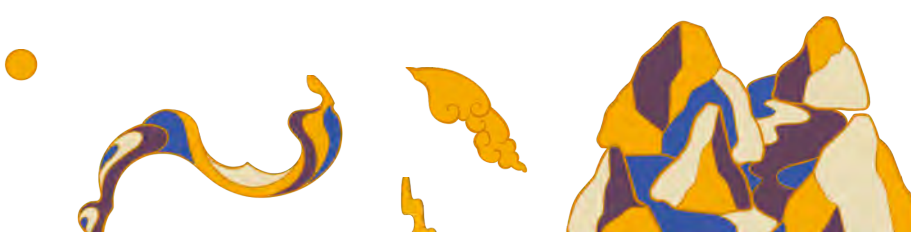
Figure 7.3. Exports of Foreign-invested Enterprises, 2010–2022 (%)



Note: The share of total exports is measured on the left-hand axis; the growth rate is measured on the right-hand axis.
Source: General Statistics Office.

In the period 2010–2020, whilst the US and EU27 remained the largest export markets, Viet Nam’s export structure gradually shifted towards smaller shares for ASEAN countries and higher shares for China and Korea. This shift mainly resulted from the different growth rates of exports to various markets, not because of Viet Nam’s export decrease in absolute terms. Exports to China increased faster, on average by 21.8% p.a. in the 2010–2015 period and 25.7% p.a. in the 2016–2020 period. Exports to Korea increased on average by 28.7% p.a. in the period 2010–2015, then slowed in the 2016–2020 period to 16.7% p.a.

China, Korea, and ASEAN were also the main import markets of Viet Nam, with their respective shares in Viet Nam’s imports in 2020 of 40.4%, 17.2%, and 13.8%. Import growth from China reached an average of 19.9% p.a. during 2011–2015 and decelerated to 12.4% p.a. in 2016–2020. The import growth rate from Korea averaged 26.3% p.a. in the period 2010–2015 and decreased to 12.5% p.a. in the 2016–2020 period. The import share of Japan decreased gradually to 6.1% in 2020 (compared to 10.6% in 2010).



As illustrated by the Export Similarity Index (ES),³ Viet Nam's export structure had a relatively high similarity compared to other RCEP member countries. Also, this similarity increased rapidly, especially in the period 2012–2018. Accordingly, Viet Nam's export similarity index with RCEP increased from 37.5 in 2001 to 52.8 in 2010 and 61.1 in 2018. The figure then fluctuated to 58.9 in 2019 and 60.2 in 2020 (Table 7.3). Compared with the group of CPTPP partners, Viet Nam's export similarity index with RCEP was significantly higher, and its pace of change was also faster. As an implication, whilst acknowledging the possible intra-industry trade across countries, Viet Nam's exporters may face more competition in RCEP than in CPTPP because RCEP has ASEAN and China with highly similar export structures as Viet Nam.

Table 7.3. Export Similarity Index of Viet Nam Compared to Selected Partners, 2001–2020

	Share (%)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
RCEP	37.5	35.7	35.8	36.5	37.5	39.8	42.1	47.6	48.6	52.8
CPTPP	33.3	31.5	32.8	34.1	36.0	37.5	40.3	47.2	46.7	48.8

	Share (%)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RCEP	58.7	63.9	64.7	63.9	62.8	60.7	60.4	61.1	58.9	60.2
CPTPP	52.9	52.3	50.6	49.7	47.8	45.9	45.9	46.0	43.4	43.7

RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

Source: Figures until 2018 are from CIEM (2021a). Figures for 2019–2020 are the authors' calculations from World Integrated Trade Solution data.

³ The ES is based on the comparison of export structure between Viet Nam and its trading partners. This index ranges from 0 to 100, where 0 represents a completely different export structure and 100 represents complete similarity. When an economy has a low export similarity with a trading partner, it means that the economy has the potential to export to the partner's market in the future. Conversely, if the export similarity index between the economy and its partner is high, i.e. the structure of exports is the same, then the ability of that economy to export to its partner market is limited.

Table 7.4 shows the improvement in the Trade Complementarity (TC) Index⁴ of Viet Nam with selected partners in the period 2001–2018. Over time, Viet Nam’s exports generally better met the import needs of main partners such as ASEAN, China, Japan, Korea, RCEP, the US, the EU, and the CPTPP (i.e. both inside and outside RCEP). The TC index of Vietnamese exports to Japan remained above 50 but tended to decrease gradually during the period 2001–2018, from 56.1 in 2001 to 51.4, before recovering to 57.5 in 2020. Meanwhile, the TC index of Viet Nam’s exports with ASEAN also improved significantly, from about 34 to 37 in the period before 2005 to over 50 in the period 2012–2020 (except 2019). Viet Nam had a rapid improvement in the TC with China during 2001–2018, before a drop during 2019–2020. Meanwhile, the level of trade complementarity between Vietnamese exports and Korea was relatively modest, with scores mostly below 50. As another note, the level of trade complementarity of Vietnamese exports with key partners in ASEAN and East Asia (such as China, Japan, and Korea) all tended to decrease in the period 2018–2020. This trend implies more intense competition that Vietnamese businesses face in these markets and perhaps the vulnerability of its exports to ASEAN and East Asia during the COVID-19 pandemic. Thus, without an adaptive approach, Viet Nam may have its ability to meet the import demand of the RCEP market weakened and/or become relatively less resilient.



⁴The TC provides information on the prospects of international trade based on the relevance of import and export structures between two partner countries. The trade complementarity index ranges in value from 0 to 100, with a greater value indicating a higher degree of relevance between goods imported from its partner. Note that the index only compares the export structure of one country with the import structure of another, regardless of the size of the trade of those two partners.

Table 7.4. Viet Nam's Trade Complementarity Index with Selected Partners, 2001–2020

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASEAN	34.7	34.2	35.0	36.7	39.7	42.3	45.2	51.4	47.6	48.5	53.4	57.0	55.0	54.3	54.7	53.9	52.3	51.9	49.6	51.6
RCEP	43.9	41.2	41.3	42.6	44.6	47.6	49.7	53.1	50.0	50.1	53.9	54.3	53.4	52.4	53.1	52.5	51.7	50.9	48.2	48.8
CPTPP	42.2	40.3	41.7	42.9	44.9	47.0	50.1	55.0	52.6	52.0	56.3	55.7	54.7	53.7	52.8	52.0	51.5	51.3	49.5	51.4
EU27	41.0	39.5	39.8	40.5	43.0	45.2	46.8	52.9	52.4	54.1	54.6	52.7	51.2	51.0	49.4	48.1	47.7	47.1	47.8	50.6
United States	41.6	41.2	44.0	46.0	48.7	50.5	53.4	55.9	54.5	54.2	57.0	55.1	54.2	53.9	52.8	51.5	51.5	51.1	53.5	56.1
China	29.3	27.2	27.8	30.2	31.3	34.7	36.3	42.1	40.4	43.5	47.4	52.9	54.0	52.4	54.2	52.9	52.0	51.4	40.8	42.1
Japan	56.1	54.4	55.2	56.5	58.9	58.0	55.9	55.7	55.4	53.7	55.0	53.3	52.7	52.2	53.1	52.8	51.9	50.7	55.1	57.5
Rep. of Korea	47.9	45.6	45.0	47.2	50.0	50.2	49.2	50.6	46.0	46.3	50.3	49.6	49.4	49.3	51.2	51.0	49.5	47.2	49.3	50.4

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.
Source: Figures until 2018 are from CIEM (2021 a). Figures for 2019–2020 are the authors' calculations from World Integrated Trade Solution data.

Meanwhile, exports of major trading partners seemed to better meet Viet Nam's import needs: the TC index of most partners' exports to Viet Nam had very high scores (ranging between 55 and 75 in the 2001–2020 period) (Table 7.5). The TC index of goods imported from Korea to Viet Nam increased continuously in the period 2001–2018 (up by 12.6) and stayed above 70 during 2012–2020. The TC indices of ASEAN and China with Viet Nam also exhibited significant improvement, especially during 2018–2020. Nevertheless, in the period 2010–2020, the TC indices of markets such as the EU, Japan, and the US – often perceived to have higher production and technology levels – decreased (for example, the US' TC decreased from 67.4 in 2010 to 60.4 in 2018 and 55.7 in 2020).



Table 7.5. Trade Complementarity Index of Selected Partners with Viet Nam, 2001–2020

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASEAN	56.9	57.8	60.0	59.5	61.1	63.1	66.9	67.7	66.1	64.2	66.9	69.1	68.2	69.3	71.9	53.9	69.2	70.2	73.5	75.5
RCEP	64.3	62.6	62.4	59.9	60.2	60.0	63.9	65.9	66.9	66.6	69.1	70.4	70.4	71.2	73.3	52.5	70.8	71.9	76.6	77.0
CPTPP	62.4	62.1	64.3	62.2	63.7	64.0	68.4	71.3	69.3	67.7	70.8	66.4	63.9	64.4	66.2	52.0	63.1	63.4	65.5	65.2
EU27	67.2	66.4	67.9	64.5	64.2	64.2	66.9	66.7	68.0	69.3	67.7	65.4	64.4	64.2	65.4	48.1	62.2	61.2	63.9	62.8
United States	59.7	59.8	62.5	59.8	59.5	59.1	61.8	64.6	66.2	67.4	67.9	64.1	62.4	62.5	63.3	51.5	60.8	60.4	56.4	55.7
China	55.1	55.0	55.0	51.8	51.0	52.0	55.2	55.0	55.7	56.3	57.6	60.6	64.2	65.8	69.4	52.9	68.4	67.3	69.2	71.3
Japan	50.7	50.4	50.5	47.2	48.3	48.9	53.2	55.0	59.8	58.1	58.9	56.9	56.7	57.5	59.4	52.8	56.1	55.6	58.9	57.2
Rep. of Korea	62.8	60.5	61.5	57.6	57.7	57.6	58.8	60.4	61.4	61.5	65.2	70.5	71.1	71.3	72.7	51.0	74.9	75.4	73.1	73.2

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.
 Source: Figures until 2018 are from CIEM (2021 a). Figures for 2019–2020 are the authors' calculations from World Integrated Trade Solution data.

Notably, the TC of RCEP countries with Viet Nam was generally high and steadily increased (from 64.3 in 2001 to 66.6 in 2010, 71.9 in 2018, and 75.5 in 2020). Viet Nam could therefore rely more on imports from the RCEP partners (in a relative sense compared to other trading partners) after the Agreement entered into force. Whilst this trend may bring ambiguous benefits depending on traders' capacity to meet rules of origin (RoO) and enjoy preferential tariffs, challenges will mount on the domestic manufacturing sector.

Table 7.6 shows Viet Nam's Trade Intensity Index (TII)⁵ with key partners. Accordingly, the TII of Viet Nam with Japan, Korea, China, the US, CPTPP, ASEAN, and RCEP all received values of greater than 1. That is, these markets were important in trade with Viet Nam. Amongst them, the TII of Viet Nam with Japan remained relatively stable at over 2 during the period 2001–2018. The Korean market was becoming more and more attractive: the TII increased from less than 1 to above 1 since 2007 and continued to climb throughout the period 2008–2018. The increase was more apparent since the signing of the VKFTA in 2015. In the period 2016–2020, the TII of Viet Nam with Korea was above 2.5, the highest amongst all major partners under consideration. Viet Nam's TII with ASEAN decreased relatively rapidly, from 3.3 in 2001 to only 1.4 in 2020. Similarly, the trade intensity of Viet Nam with both RCEP and CPTPP decreased, reflecting that exports quickly reached their full potential; as such, the room for further penetration – given Viet Nam's existing export capacity – is very limited.

⁵The TII is used to determine the amount of trade between two countries that is greater or less than expected based on their importance in world trade. The index is calculated based on the share of a country's exports to a partner divided by the share of the world's exports to that partner. Accordingly, if $TI > 1$, the bilateral trade flow is larger than expected; on the contrary, $TI < 1$ implies that the bilateral trade flow is smaller than expected.

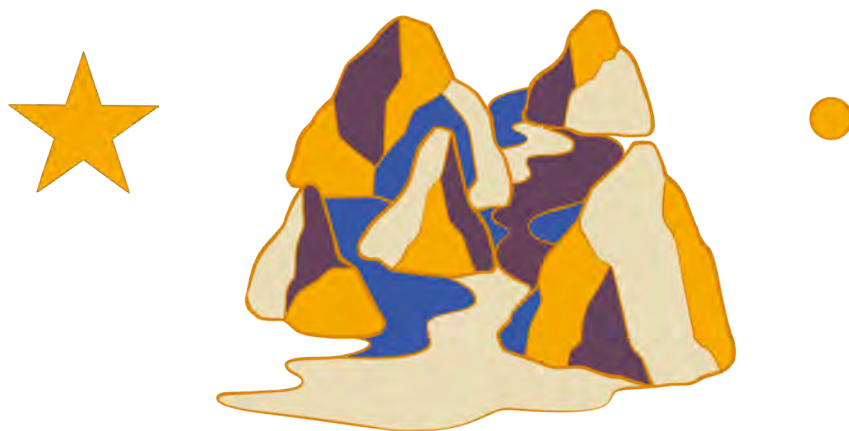
**Table 7.6. Viet Nam's Trade Intensity Index with Selected Partners,
2001–2020**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASEAN	3.3	2.7	2.9	3.0	3.4	3.1	3.3	3.1	2.9	2.5	2.4	2.5	2.4	2.2	2.0	1.8	1.7	1.7	1.6	1.4
RCEP	2.8	2.5	2.4	2.3	2.4	2.2	2.2	2.1	1.8	1.7	1.7	1.7	1.6	1.5	1.5	1.6	1.7	1.7	1.6	1.6
CPTPP	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.1	1.7	1.5	1.5	1.5	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.0
EU27	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4
United States	0.4	0.8	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.6	1.4	1.5	1.8	2.0
China	2.4	2.0	1.7	1.8	1.6	1.2	1.1	1.1	1.2	1.2	1.2	1.1	1.0	1.0	1.0	1.3	1.6	1.5	1.7	1.7
Japan	2.9	2.8	2.8	2.7	2.7	2.7	2.8	2.8	2.5	2.3	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.0	2.4	2.1
Rep. of Korea	1.2	1.2	1.0	0.9	0.8	0.8	1.0	1.0	1.4	1.5	1.7	1.7	1.9	1.7	2.1	2.6	2.5	2.7	3.1	2.7

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.
Source: Figures until 2018 are from CIEM (2021a). Figures for 2019–2020 are the authors' calculations from World Integrated Trade Solution data.

In the opposite direction, the analysis of the TII of some major partners with Viet Nam is presented in Table 7.7. Viet Nam was a very attractive market for Korea, Japan, China, ASEAN, and RCEP with a TII greater than 1 and relatively high. The index was the highest for Korea – consistently above 3 for the entire study period, rising fast and maintaining above 5 since 2013, and peaking at 6.9 in 2017. China’s trade intensity with Viet Nam also increased during 2001–2014, before decreasing until 2020. ASEAN’s TII with Viet Nam decreased relatively rapidly, from above 4 in the period 2004–2008 down to only 3.0–3.6 in the period 2009–2016, and further to about 2.1 in 2020.

Notably, except for Japan, the TII scores of most East Asian partners (such as Korea, China, and ASEAN) were higher than Viet Nam’s TII with those partners. As an implication, Viet Nam gained net benefits in trade with Japan and the EU, whilst benefits from trade with other partners were not as large as expected.



**Table 7.7. Trade Intensity Index of Selected Partners with Viet Nam,
2001–2020**

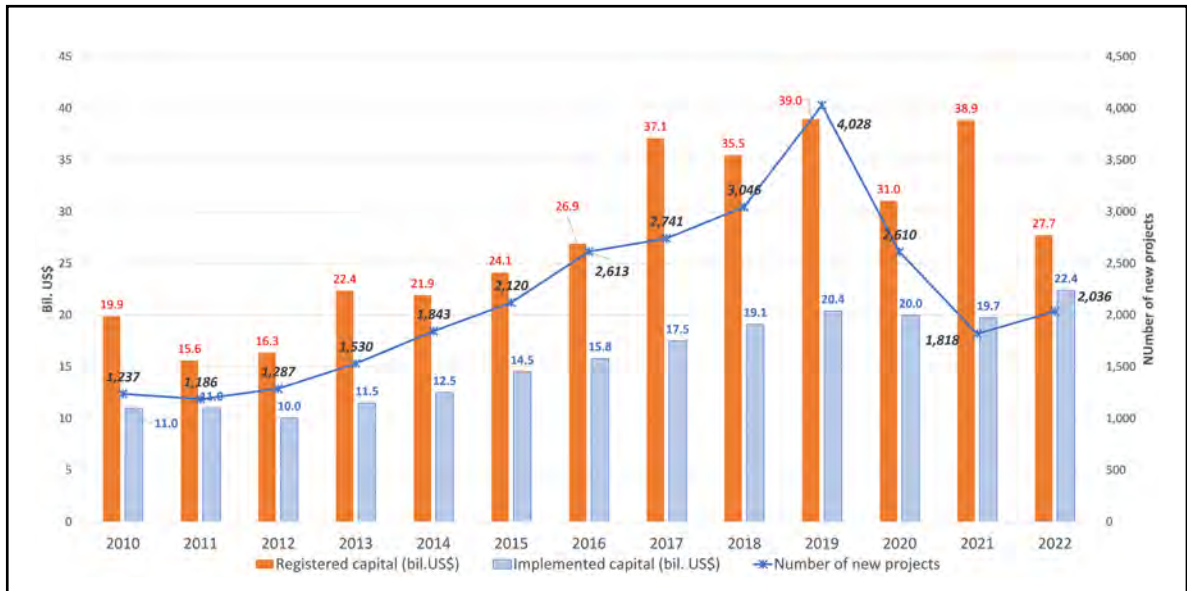
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASEAN	3.9	3.6	3.4	4.0	4.1	4.3	4.0	4.0	3.8	3.6	3.6	3.5	3.2	3.1	3.0	3.0	2.7	2.8	2.4	2.1
RCEP	2.8	2.6	2.5	2.6	2.6	2.7	2.6	2.7	2.7	2.7	2.8	2.9	3.1	3.2	2.9	2.9	2.9	2.9	2.7	2.6
CPTPP	1.6	1.5	1.4	1.5	1.6	1.8	1.7	1.7	1.7	1.6	1.7	1.7	1.6	1.6	1.4	1.4	1.3	1.3	1.1	1.1
EU27	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
United States	0.2	0.3	0.5	0.4	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.4
China	2.6	2.1	2.2	2.0	2.1	2.1	2.1	2.1	2.4	2.6	2.6	2.7	3.1	3.5	2.9	2.7	2.6	2.8	2.6	2.6
Japan	1.7	1.7	1.6	1.6	1.7	1.7	1.7	2.0	2.0	1.9	2.0	2.2	2.1	2.2	2.0	1.8	1.8	1.8	1.6	1.6
Rep. of Korea	4.3	4.5	3.9	3.7	3.4	3.2	3.4	3.7	3.5	3.7	4.1	4.7	5.4	5.0	5.3	6.0	6.9	6.6	5.9	5.6

ASEAN = Association of Southeast Asian Nations; RCEP = Regional Comprehensive Economic Partnership; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; EU = European Union.
Source: Figures until 2018 are from CIEM (2021a). Figures for 2019–2020 are the authors' calculations from World Integrated Trade Solution data.

2.2. Foreign Direct Investment

Viet Nam recorded a rapid increase in foreign direct investment (FDI) in terms of registered capital, implemented capital, and the number of new projects (Figure 7.4). In particular, registered capital increased sharply in the period 2017–2019 before fluctuating in 2020–2022. Implemented capital meanwhile showed a clear upward trend from 2012 onwards, except for some contraction during 2020–2021 due to the COVID-19 pandemic.

Figure 7.4. Foreign Direct Investment Inflows to Viet Nam, 2010–2021



Note: Registered capital including newly registered capital, supplementary capital of existing projects. Since 2016: including contributing capital and purchase shares of foreign investors.
Source: General Statistics Office.

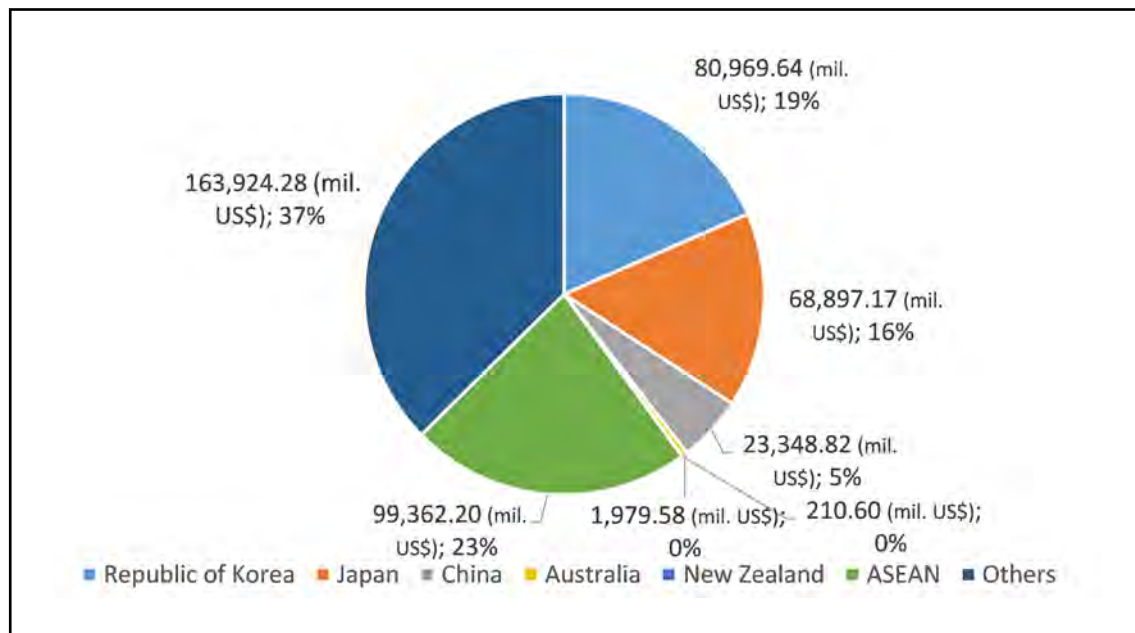
By partner, Viet Nam has the presence of investors from over 160 countries and territories. However, most of them are small. FDI capital was mainly sourced by investors from 15 countries and territories, altogether accounting for about 93.2% of the registered capital by 2022. Those countries and territories were mainly concentrated in Asia. It should be noted that 6 out of the 10 largest investment partners in Viet Nam are East Asian countries, namely Korea, Japan, Singapore, China, Malaysia, and Thailand.

In the period 2010–2022, Viet Nam attracted a total registered capital of about US\$438.7 billion, of which the five dialogue partners under RCEP⁶ accounted for about two-fifths of total capital, and ASEAN countries accounted for 22.7% of total capital (Figure 7.5). It should be noted that various EU and US investors invested in Viet Nam through a third country, including East Asian ones. Along with the process of joining FTAs + 1, Viet Nam’s FDI inflows grew rapidly in the second half of 2010–2019,

⁶ RCEP-5 here refers to the five non-ASEAN RCEP countries of Japan, Korea, China, Australia, and New Zealand.

especially from the RCEP-5 group and ASEAN countries. Registered capital from the RCEP-5 group increased by 90% in the period 2015–2019 compared to the period 2010–2014. FDI inflows from ASEAN increased by 46% in the same period (CIEM, 2021a).

Figure 7.5. Foreign Direct Investment Inflows by Partner, by End of 2022

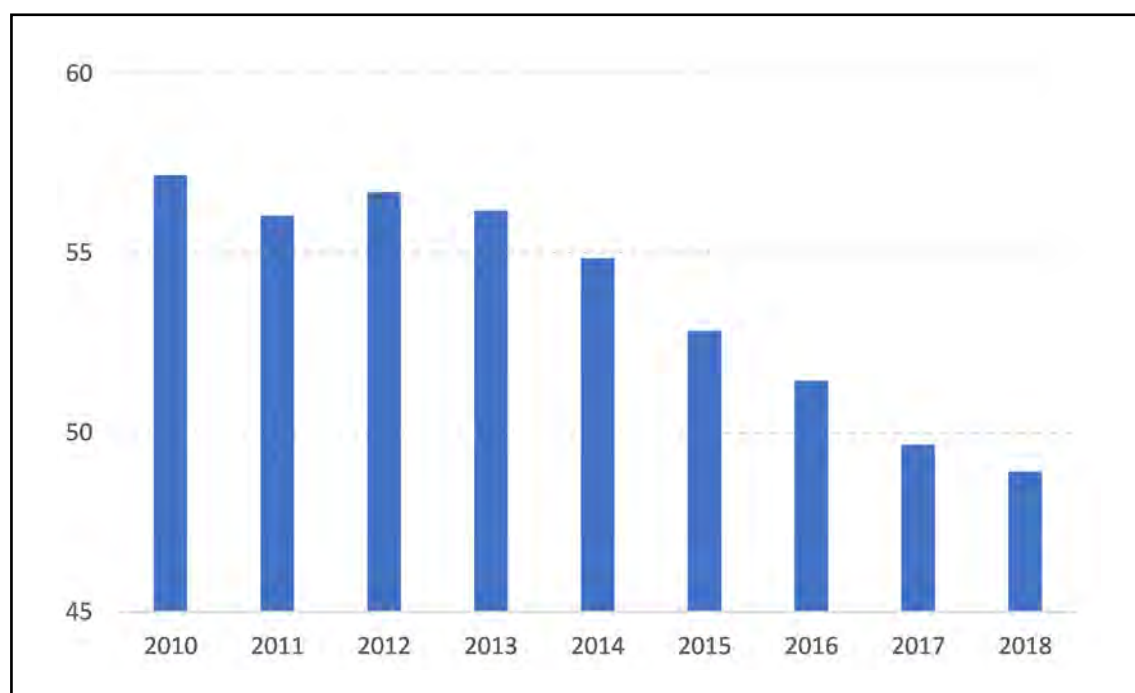


ASEAN = Association of Southeast Asian Nations.

Source: Ministry of Planning and Investment.

The greater presence of FDI had impacts on the pattern of Viet Nam’s trade. According to Organisation for Economic Co-operation and Development’s Trade in Value-added database (TiVA–OECD), the share of domestic value added in Viet Nam’s gross exports decreased gradually, from 57.2% in 2010 to only 52.8% in 2015 and 48.9% in 2018 (Figure 7.6). However, in absolute terms, domestic value added acquired from export activities rose on average by 13.3% per annum during 2010–2015, and by 11.2% during 2015–2018. This shows that Viet Nam still benefited from participating in global value chains. Besides, the share of value added from East Asian countries went up on average by 19.4% p.a. and 14.6% p.a. during 2010–2015 and 2015–2018, respectively. As of 2018, East Asian countries together accounted for 30.7% of value added in Viet Nam’s gross exports, of which China had the largest share (14.4%).

Figure 7.6. Share of Domestic Value-added in Total Exports of Viet Nam (%)



Source: OECD-TiVA.

Another aspect concerns the linkage between FDI and local firms. Exports have increased thanks to foreign investment, both directly and indirectly. Nguyen, Vo, and Do (2018) and Vo and Nguyen (2011) demonstrate using macroeconomic data and error-correction models that an increase in implemented FDI tends to enhance exports, with the gain being bigger in the long term than the short term. The effects of FDI spillovers on the exports of other domestic businesses account for the bigger long-term impact. In a similar vein, an even higher contribution of FDI to total employment may be expected when additional employment generated indirectly by FDI in domestic enterprises is taken into account.

Linkages between FDI and domestic companies are still inadequate. An approximate number of 1,500 Vietnamese businesses received only a small amount of technology and knowledge transfer from FDI on a sectoral level (UNIDO, 2012). The primary sources of supply for FDI businesses are imported raw materials and intermediary commodities, with no established connections to domestic supply chains (MUTRAP, 2015; Ministry of Planning and Investment, 2022). Nguyen and Truong (2022) argue further that in many manufacturing industries, Viet Nam only engages in the lowest midstream activities of global value chains, such as subassemblies and finished products.

2.3. Key Lessons

The past decades of engaging in FTAs with ASEAN and East Asian partners have provided some important lessons. *First*, maintaining support for ASEAN centrality plays a crucial role in the FTA process, especially in the pathfinding process for new ideas for trade and investment liberalisation. *Second*, continuous efforts are required for inclusive, innovative, and resilient supply chains with East Asian investors. *Third*, Viet Nam needs to popularise good practices in promoting positive spillovers of FDI to local firms. Instead of focusing only on business-to-business (B2B) efforts, Viet Nam should work with partners to deepen government-to-government (G2G) and government-to-business (G2B) approaches. *Finally*, Viet Nam needs to build further capacity at both the institutional and firm levels to ensure the effective implementation of FTAs, including those with ASEAN and East Asian partners. In this process, Viet Nam should try to make the best use of development cooperation provisions – a peculiar characteristic of FTAs in East Asia.

To complement economic integration, domestic reforms continue to be of importance. Various studies (CIEM, 2021a; Vo et al., 2021; CIEM, 2013; Dinh, Trinh, and Nguyen, 2009; etc.) have argued that Viet Nam's economic integration has interacted closely with domestic reforms and that the past periods with drastic integration efforts (e.g. 1989–1996, 2000–2007, and 2016–2019) also witnessed significant reforms of regulations and policy conduct. More importantly, the key essence lies not only in the number and quality of regulatory changes but also in the process through which Viet Nam engages with stakeholders to collect inputs, constructive comments, and consensus. As in the recent case during the COVID-19 pandemic, frequent dialogues with the business community, including FIEs, enabled Viet Nam to swiftly change the policy approach from zero-COVID-19 to safe adaptation whilst foreign business associations also worked with Vietnamese authorities in vaccine diplomacy efforts.

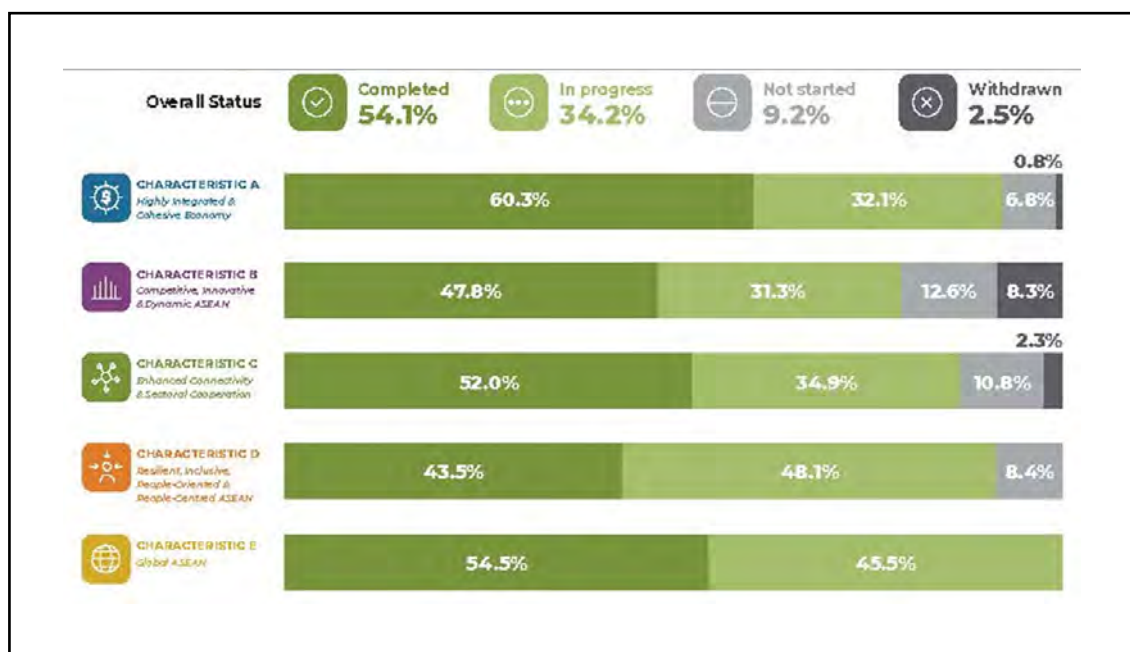
3. East Asian Economic Integration: Possible Pathway Towards 2045

This section elaborates on the possible pathways of East Asian economic integration by 2045. These include ASEAN integration, ASEAN cooperation with a partner(s), the Free Trade Area of the Asia-Pacific (FTAAP), and new issues of economic integration.

First, ASEAN economic integration will likely be deepened further in the period until 2045. There are several reasons for this projection. ASEAN is on track for implementing its ASEAN Economic Community Blueprint 2025 (AEC 2025), which builds upon five interrelated and mutually reinforcing characteristics, namely: (i) a Highly Integrated and Cohesive Economy; (ii) a Competitive, Innovative, and Dynamic ASEAN; (iii) Enhanced Connectivity and Sectoral Cooperation; (iv) a Resilient, Inclusive, People-Oriented, and People-Centred ASEAN; and (v) a Global ASEAN (Figure 7.7). Notably, the overall vision under the AEC 2015 is still relevant for the AEC 2025, reflecting the consistency of economic community-building efforts by ASEAN. Its economic integration efforts are simultaneously

complemented by efforts to narrow the development gap and improve the inclusiveness of stakeholders in ASEAN. Thus, ASEAN integration is not only about competition but also about cooperation for building capacity and attaining shared prosperity.

Figure 7.7. Progress of Implementing the AEC 2025



Source: ASEAN (2021).

The room for further meaningful integration efforts of ASEAN remains ample. ERIA (2021) assesses the impact of the ASEAN Trade in Goods Agreements (ATIGA) on intra-ASEAN trade and finds that a large proportion of trade takes place in products where the most-favoured-nation tariff is zero or the margin of preferences is very small. At the same time, there is strong evidence that tariff reduction under ATIGA did stimulate FTA utilisation. As an implication, further reductions of ATIGA tariffs – under the existing roadmap and/or under a newly agreed schedule in the future – may further promote intra-ASEAN trade. Specifically, for such reductions to be meaningful, econometric analysis by ERIA (2021) shows that firms may need a tariff margin of at least 3% so as to consider using ATIGA. In the context that various ASEAN-plus FTAs are under negotiation for upgrading or research for upgrading, this also implies that a new round of negotiations for upgrading ATIGA would be of potential benefit.

The current context has several factors that may affect further economic integration efforts of ASEAN in the near term, such as the Myanmar situation, the COVID-19 context and the facilitation of trade in essential products, and geopolitical tensions in various regions of the world, etc. As contended by ERIA (2019), the global and regional context by 2040 will be vastly different from the past 5 decades. In terms of purchasing power parity, ASEAN, China, and India will be amongst the

top four economies in the world by 2040. Asia will increasingly dominate the world economy. However, a lesson from the past also shows that ASEAN member states have leveraged efforts to forge regional economic cooperation during times of difficulty (such as the Asian monetary crisis in 1997 and the COVID-19 outbreak in 2020). In this respect, the so-called 'ASEAN way' may enable pathfinding efforts by ASEAN, especially via incremental steps and some flexibility in roadmaps depending on the development level for implementation by ASEAN member states.

In another aspect, the trade and investment linkages in Southeast Asia will remain strong, if not deepened further. As foreign investors progressively shift their investment location (during reshoring, nearshoring, or friendshoring), various ASEAN member states may become more attractive and gain potential. Each ASEAN member state on its own, nevertheless, may not meet all the diverse needs of foreign investors, nor would it be big enough to host all or substantial parts of the global value chains. In this regard, whilst competing for FDI, ASEAN member states may still perceive the need to collaborate and work together to form a single, interconnected investment destination for the whole region.

Second, ASEAN will deepen economic integration with each dialogue partner in the 'extended' East Asia region (including China, Japan, Korea, Australia, and New Zealand). ASEAN has implemented FTAs with China, Korea, Japan, India, Australia, and New Zealand under the ASEAN-plus framework. Induced by various factors (such as the entry into force of RCEP), further negotiations to upgrade existing ASEAN+1 FTAs are already ongoing or will take place in the future. As of December 2022, the AANZFTA is under negotiation for upgrading, whilst the AKFTA is under research for upgrading.

The East Asian economies have gradually built up their distinctive industrial network over the last few decades. The development of this manufacturing network can be attributed to the Japanese industrial boom, with significant spillover effects on neighbouring economies, particularly the first generation of newly industrialised economies like Hong Kong, Korea, and Singapore. After that, the second generation, comprised of Malaysia, China, Thailand, and Viet Nam, began to emerge. As more developed economies rose in the East Asian production network, some manufacturing stages were gradually relocated there to take advantage of the low labour costs and accommodative investment policies, etc.

The agglomeration and fragmentation of industrial processes in East Asia have also been pushed by the trend of ASEAN-plus economic integration. Agglomeration may be further developed when businesses seek to



recognise and seize economies of scale. Digitalisation may help in accelerating this trend, even during times of crisis. Using survey data on firms in ASEAN and India in 2020 with the outbreak of COVID-19, Oikawa et al. (2021) show that the firms implementing supply chain digitalisation also tend to have implemented both supply chain optimisation and remote operations. However, there may emerge risks associated with this approach as well. These include excessive investment over the optimal level, and the congestion effect from agglomeration. For instance, Vo (2020) reports that most technology firms claim that a physical presence in the industrial zones is neither necessary nor financially viable in the context of digitalisation. Still, addressing such risks depends upon the enterprises' future efforts towards specialisation, which in turn depend upon comparative advantages and service-link costs.⁷

The ASEAN-centred East Asian integration process may be further institutionalised. The joint statement issued in 1999 by China, Korea, Japan, and ASEAN members reflects the political commitment of East Asian economic leaders to regional integration. A community for East Asians has been proposed. As noted above, ASEAN integration will likely progress, including with the renewal of the AEC Blueprint. In a different approach, ASEAN has worked together and expressed official views on a number of initiatives proposed by external partners, such as the ASEAN Outlook on the Indo-Pacific, etc. Similarly, a number of ASEAN member states have also joined the negotiations for the Indo-Pacific Economic Framework, which may help shape future economic cooperation.

Third, RCEP will play a crucial role in the future of ASEAN. A vast literature already shows that RCEP also has a trade creation effect, rather than just trade diversion effects. Other studies (such as Petri and Plummer (2020)) assert that RCEP could help compensate for the adverse impacts of the US-China trade war on regional trade. In the face of complicated challenges and opportunities for regional trade and investment after COVID-19 (e.g. see Kimura et al. (2022)), the entry into force of RCEP in 2022 was timely. More importantly, the signing and entry into force of RCEP already show that ASEAN can assume centrality in working with external partners to overcome difficulties.

Induced by RCEP, East Asian economies may deepen efforts to build and improve their socioeconomic infrastructure, particularly economic infrastructure. This makes way for private economic activities, whilst making the regional economies more appealing to flows of FDI. This process of regional infrastructure development (e.g. the Greater Mekong Subregion) has seen numerous joint efforts by Japan, Korea, China, and ASEAN member countries, and this has been amongst the key factors contributing to expanding regional trade and investment and, ultimately, promoting economic growth.

Likewise, cooperation may be further enhanced in the development of human resources and of institutional capacities in both the public and private sectors. Such cooperation has been in various forms, including capacity building and technical assistance, etc. Various country assistance strategies of regional and international donors have included cooperation along these lines, and they boast strong relevance to the needs of the recipient countries. A significant example is Viet

⁷ Transportation, customs processes, warehouse charges, shipping costs, and telecommunication costs, etc. are a few examples of service-link costs.

Nam, which has long recognised that a fundamental obstacle to long-term prosperity is a lack of human capability and has actively worked with donors to solve this issue. This helps explain the peculiar characteristic of ASEAN FTAs of incorporating a development cooperation provision, and this characteristic may likely be preserved in future arrangements.

Fourth, there may be a renewed possibility of realising FTAAP. Annex 1 of the APEC Economic Leaders' Statement in 2016 already refers to the direction of work towards realising FTAAP. However, the Annex explicitly elaborates on FTAAP via pathways of RCEP and the TPP. Given that both RCEP and the CPTPP have entered into force, the future of FTAAP deviates farther from impossibility. Material incentives may emerge for East Asian countries to participate in the FTAAP process. On the one hand, the Asia-Pacific region is still an economically dynamic region, which makes trade and investment liberalisation beneficial for members. On the other hand, the strategic US–China rivalry, which will arguably continue for decades into the future, also creates room for joint pathfinding efforts by East Asian countries.

Finally, sectoral agreements may emerge as a new trend in East Asian economic integration. New issues such as labour standards and the digital economy, etc. have already been incorporated in FTAs involving East Asian countries, such as the CPTPP, and bilateral FTAs with the EU, etc. These have formed the substance of initiatives that are ongoing, such as the Indo–Pacific Economic Framework. However, some stakeholders perceive merits in having an early harvest via quickly formalising cooperation in potential sectors, rather than following a single-undertaking approach which may take a lengthy process (and even domestic political complications) to conclude. Indeed, the ACFTA already showcases that such an early harvest approach can be viable. In particular, such sectoral agreements may produce quick outcomes that can help encourage various stakeholders to pursue deeper collaboration.

4. Harmonising East Asian Economic Integration and Other Integration Tracks: Key Issues for Viet Nam

Being a member of various economic integration tracks (Figure 7.1), Viet Nam also needs to address various key issues. First, the country needs to minimise the trade diversion costs from the existing and future integration tracks. UNCTAD (2021) assessed the impacts of tariff reductions under RCEP and already documents its significant trade diversion effects for Viet Nam. In addition, new initiatives such as the Indo–Pacific Economic Framework – whether leading to binding commitments related to trade liberalisation and trade standard setting or not – may work just to promote trade and investment diversion towards the Indo–Pacific region.

Avoiding such trade diversion effects should not be based on keeping the existing modest utilisation of FTAs. Instead, it should be built upon improving domestic capacity and working with regional partners to harmonise the integration tracks. As Viet Nam's experience with the RCEP negotiations already shows, negotiating for this agreement alongside the EVFTA and TPP/CPTPP helps strengthen domestic consensus and preparation for mega-FTA issues whilst injecting the new issues under

new-generation FTAs into RCEP. Besides, promoting ASEAN centrality whilst preserving open regionalism is no easy task, as each ASEAN member state may have different calculations in various integration tracks (FTAAP, CPTPP, RCEP, and the Indo–Pacific Economic Framework). In this regard, fostering further dynamism would be possible after RCEP by reiterating efforts to consider negotiating upgrades to the existing ASEAN-plus FTAs – upon which RCEP was established.

Second, fostering linkages between FDI and local firms remains problematic. On the one hand, whilst Resolution 50-NQ/TW of the Politburo in 2019 already set out the direction to screen and enforce high standards over FDI inflows, Viet Nam cannot compel FIEs to procure inputs and materials from domestic firms. Nor would regulatory requirements to transfer technology make sense. It should be noted that the country still has to consider the impacts of the global minimum tax mechanism and how to continue appealing to foreign investors, rather than merely applying more requirements on them.

On the other hand, Viet Nam also needs to quickly upgrade the capacity of Vietnamese companies in order to join the FDI-led supply chains. The inadequate capacity of Vietnamese capacity is often reflected in the aspects of product price, product quality, the ability for large-volume production, and just-in-time delivery. More recently and into the future, increasing attention is being dedicated to green transition and decarbonisation efforts. The survey results of JETRO (2022) showed that decarbonisation efforts of Japanese firms in Viet Nam had already been ongoing but were mostly directed by headquarters. As an implication, decarbonisation was yet to be driven by the evolving perception, regulation, and cooperation needs of Vietnamese enterprises.

Third, whilst being open to considering new areas of integration arrangements, Viet Nam needs to be able to harmonise standards of commitments. Such areas may include intellectual property, trade and sustainable development, services, and paperless trading, etc. For instance, harmonising commitments in paperless trading is currently not an issue from the perspective of existing FTAs (CPTPP and RCEP) as the language still embodies significant flexibility. In light of this, Viet Nam may need to work together with ASEAN member states to promote the collective role of ASEAN as a pathfinder. Such a pathfinding role is still possible, given that the ASEAN way and emphasis on capacity building still enable patient (and even repetitive) efforts to progress in specific areas. In addition, ASEAN has concretised ASEAN centrality, and this centrality has also been supported by dialogue partners. The essence then lies in open dialogues and a credible work plan of ASEAN and between ASEAN and partners to ensure better viability of such a pathfinding process.

Finally, Viet Nam needs to sustain momentum for unilateral economic reforms. Over the past decades, Viet Nam has leveraged the doctrine of using pressures from integration commitments to boost domestic reforms. Examples of specific areas include reforms of state-owned enterprises, customs reforms, price liberalisation, and the simplification of business entry conditions, etc. However, there remain areas of reforms that can be leveraged further, such as regulatory coherence, cross-border data flows, and competitive neutrality. As the FTA process may be bumpy at times, ensuring that the economic reforms are self-sustained and pertain to the fundamental needs of Viet Nam is critical.

5. Conclusions and Recommendations

This chapter looks into the possible pathways of East Asian economic integration until 2045. Despite uncertainty, such pathways can be diverse and mutually reinforcing. ASEAN centrality may be a crucial precondition and, at the same time, a target that needs further contribution by ASEAN member states and external dialogue partners. Further engagement in shaping such pathways would be beneficial for Viet Nam, as already reflected in past experiences with trade and investment liberalisation. Still, Viet Nam has to address some key issues in harmonising East Asian economic integration and other integration tracks. These issues include: (i) minimisation of trade diversion costs; (ii) strengthening linkages between FDI and domestic enterprises; (iii) harmonising commitments in specific new issues; and (iv) sustaining domestic reforms.

Looking forward, Viet Nam needs to consider the following recommendations.

First, Viet Nam should deepen structural reforms to foster economic opportunities and reduce the costs of doing business. Priority areas for such structural reforms may include the markets for production factor markets, business environment, competition policy, innovation, and the digital economy. These reforms must fit within a policy framework for strengthening macroeconomic stability and enhancing economic resilience. Even these seemingly domestic efforts could still build upon the collaboration with partners. For instance, Shrestha and Doan (2021) elaborate that the ASEAN approach of consultation can help deal with difficult issues, though progress can be slow.

Second, trade policy should be in line with investment policy in order to help manage the trade deficit and imports of intermediate goods more effectively and harmoniously. It should also be in line with the gradual engagement of domestic businesses in the East Asian value chain in a way that can convince FIEs about improving supply chain resilience via such engagement. Realising this may require more than just B2B efforts but also G2B and G2G approaches.

Third, Viet Nam should make more efforts in working with ASEAN and East Asian partners to promote ASEAN centrality. Such centrality should be further enhanced in the areas relevant to economic cooperation, including new FTAs and their



harmonisation, cooperating with external partners in major projects (such as the Indo-Pacific Economic Framework), and capacity building. In doing so, promoting an early harvest approach in some priority sectors, such as digital transformation in export promotion⁸ and trade facilitation,⁹ etc. may become ASEAN's signature approach.

Finally, Viet Nam should further support multilateralism. It should be borne in mind that FTAs are considered an alternative pathfinding effort whilst the WTO fails to make timely and decent progress. Thus, Viet Nam needs to actively engage in dialogues with partners, including at multilateral fora, about the need and initiatives for WTO reforms. In this process, contributing to and making use of the collective voice of ASEAN may be essential.



⁸ For instance, see CIEM (2021b).

⁹ For instance, see Doan and Le (2021).

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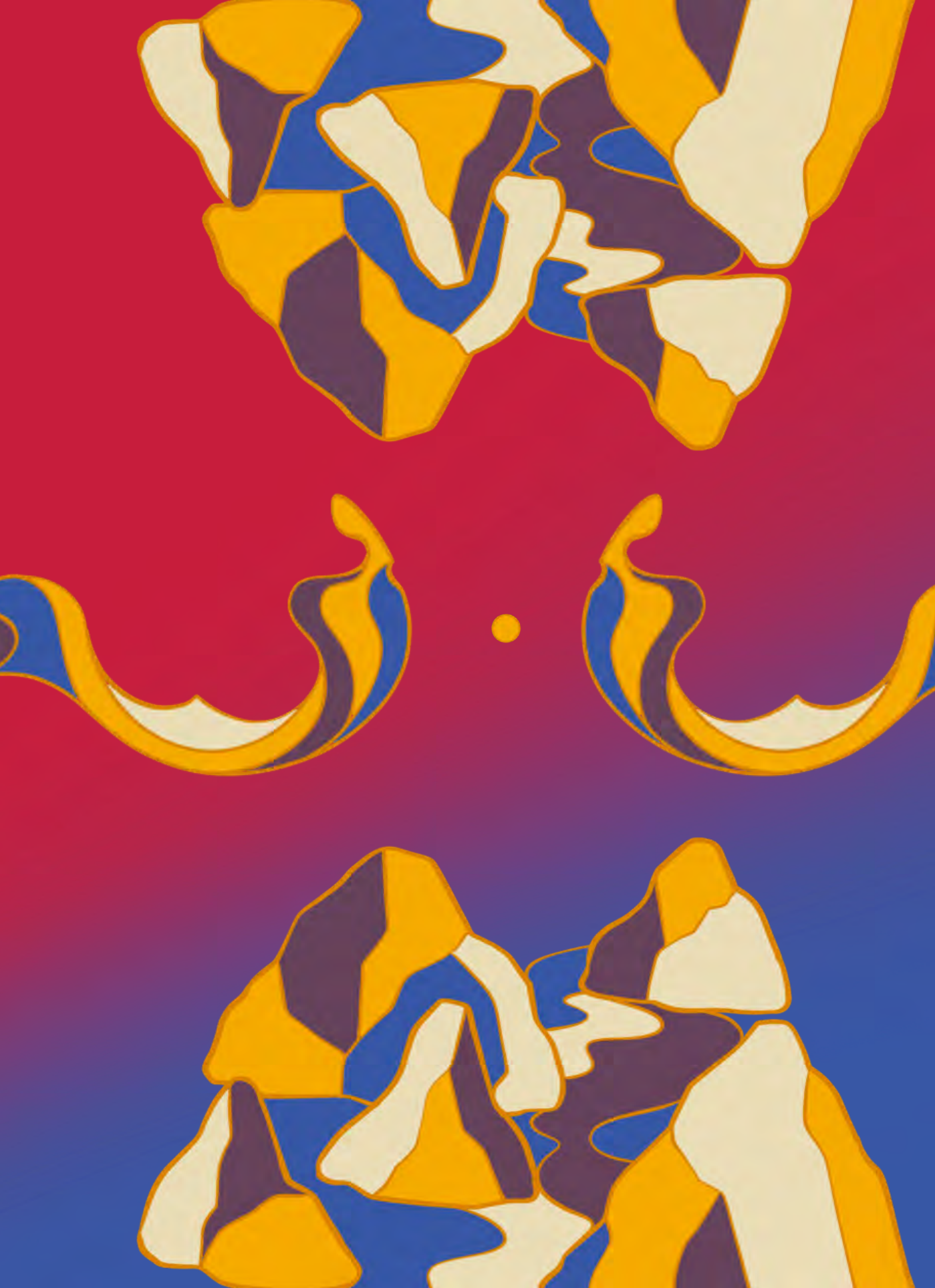
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Part II:
**Industries as the Driving
Force for Growth**







Chapter 8

New Wave of Digital Transformation, Industry 4.0, and Innovation

Nguyen Anh Duong and Fukunari Kimura



1. Introduction

Viet Nam has been one of the most successful countries in aggressively utilising the mechanics of international production networks (IPNs) (Ando and Kimura, 2005) or the second unbundling (Baldwin 2016), and accelerating its industrialisation. Although the country started with low-income status, it abandoned the old import-substitution development strategies in the 2000s and boldly engaged in freer trade and investment to fully utilise the forces of globalisation. As a result, it has become an important player in global value chains (GVCs). The next step will be challenging, though. While the links with the world economy have become very tight, the formation of domestic industrial agglomeration is delayed, and ample room remains for the enhancement of innovative capabilities to graduate from simple labour-intensive operations. It is now crucial to think of the accelerated deployment of new technologies, particularly digital, to upgrade the development path of industries.

Over the past decade, the world has witnessed rapid progress of the Fourth Industrial Revolution (4IR), which has brought breakthroughs in various fields – from biotechnology to 3D printing and digitalisation. The application of 4IR technologies has fundamentally changed people's lives, consumption patterns, and business and production methods across the globe. Typical examples include production lines assumed by robots, artificial intelligence (AI) replacing humans in handling simple to complex tasks, chatbots advising consumers before making purchases, or the Internet of Things (IoT) connecting people and machine systems in factories. 4IR progressively transforms the source of competitive advantage from business size to speed of innovation.

Digital transformation plays a crucial role in 4IR. Indeed, digital transformation has become a new priority for all countries. The already vast literature has shown the potential of the digital economy and digital transformation (e.g. Google, Temasek, and Bain, 2021; 2022; Cameron et al., 2019; Alpha Beta, 2021; APEC, 2019). Well before 2020, digital transformation had started in various business areas. The coronavirus disease (COVID-19) outbreak in 2020 compelled all economies to accelerate the pace of digital transformation. Rather than limiting their actions to domestic policy efforts, economies promoted international cooperation on the digital economy. Various economies have embarked on digital economy partnership agreements. Meanwhile, a range of cooperation initiatives has proliferated in areas such as online dispute resolution of cross-border business-to-business disputes, e-commerce, and paperless trading.

Since 2016, long-term economic growth in Viet Nam has been slowing, as its traditional growth paradigm – relying on expanding production factors (such as land, labour, and capital) – almost reached capacity. Searching for new drivers of growth thus becomes imperative. Viet Nam has promoted innovation and digital transformation to boost economic growth. By 2020, it had attempted to popularise various information technology (IT) applications such as e-commerce platforms, ride-hailing apps, and e-wallets linked with domestic banks. Viet Nam also started deploying 5G networks, and licensed two telecom companies – Viettel and MobiFone – to pilot-test the 5G networks commercially.

Vietnamese policymakers acknowledge the potential to develop the digital economy. Notwithstanding its developing economy status, Viet Nam may not necessarily lag in the growth of the digital economy (CIEM, 2020). With the determination to digitise the economy, the Government of Viet Nam issued Resolution No. 01/NQ-CP dated 1 January 2020 'to research and establish legal frameworks, pilot mechanisms and policies, aiming to effectively address problems arising in practice in order to develop the digital economy'. Resolution No. 01/NQ-CP dated 8 January 2022 of the Government of Viet Nam set out the direction to 'promote development of e-commerce, digital economy and new IT- and digitally enabled business models'.

Even the COVID-19 pandemic could not divert Viet Nam's policy focus away from 4IR, digital transformation, and innovation. Instead, the disruptions of various economic activities based on traditional modalities compelled Vietnamese enterprises and government agencies to deepen efforts towards 4IR, digital transformation, and innovation. Along with the efforts of businesses, the government quickly issued various policy documents to strengthen institutional support for the digital economy and the digitisation of public service delivery. These initiatives started prior to 2020 but intensified during 2020–2022. The Prime Minister's decisions, such as No. 645/QD-TTg in 2020 on a master plan to develop e-commerce in 2021–2025; No. 749/QD-TTg in 2020 on a national digital transformation program to 2025, vision to 2030; No. 942/QD-TTg in 2021 on a development strategy for e-government moving towards digital government in 2021–2025, vision to 2030; and No. 411/QD-TTg in 2022 approving a national development strategy for the digital economy and digital society, are examples of such concerted efforts.

This chapter attempts to provide an overview of the new waves of digital transformation, 4IR, and innovation, as well as implications for Viet Nam. In doing so, it mainly adopts a qualitative approach, reviewing the traditional growth model led by the manufacturing



subsector, recent policies, and progress in promoting digital transformation, 4IR, and innovation. On that basis, the chapter makes some recommendations for accelerating digital transformation, 4IR, and innovation in Viet Nam.

The remainder of the chapter is structured as follows. Section 2 reviews the traditional manufacturing-led growth model in Viet Nam. Section 3 elaborates on the emerging trends of digital transformation, 4IR, and innovation as future drivers of growth. Section 4 summarises the key policies for selected sectors. Section 5 concludes with some recommendations.

2. Industrial Policy within Traditional Manufacturing-Led Growth Model in Viet Nam During 2000–2022

Viet Nam embarked on industrialisation policy decades ago. While the emphasis on industrialisation began even before the Doi Moi (Renovation), it was only since 2000 that the country's industrialisation policy became more focused on the manufacturing sector. It should be noted that the country also started phasing out trade barriers progressively in the 2000s. Viet Nam promoted economic restructuring between 2001 and 2005, with the goal of laying the foundation for industrialisation and modernisation. The policies, which were introduced by the Socio-Economic Development Strategy (SEDS), 2001–2010, primarily promoted the growth of the industrial sector. To help retain the domestic market, Viet Nam adopted a protection strategy with a focus on a range of industrial subsectors, such as the mining and oil industries, cement, metalworking, manufacturing, electronics, and the main chemical industries. Within domestic policy consideration, Viet Nam also made attempts to reform state-owned enterprises in key industrial sectors, including via such measures as sale, lease, assignment, and equitization, to make their operations more commercially competitive. The Socio-Economic Development Plan (SEDP), 2001–2005 also amended the industrial policy towards more emphasis on the growth of small and medium-sized enterprises (SMEs).

During this period, tariff policy changed considerably. On the one hand, Viet Nam started to include more products under its tariff schedule. Dinh and Nguyen (2006) showed that the number of tariff lines rose from 6,316 in 2000 to 10,682 in 2004. On the other hand, Viet Nam began to implement various tariff schemes under the most-favoured nation (MFN) track and the Association of Southeast Asian Nations (ASEAN) framework (Truong et al., 2011). As Viet Nam negotiated various free trade agreements (FTAs) under the ASEAN framework, its tariff levels decreased, but not drastically. The average MFN tariff on manufacturing products appeared to increase slightly during 2001–2005, though the effectively applied rate steadily decreased (Figure 8.1).

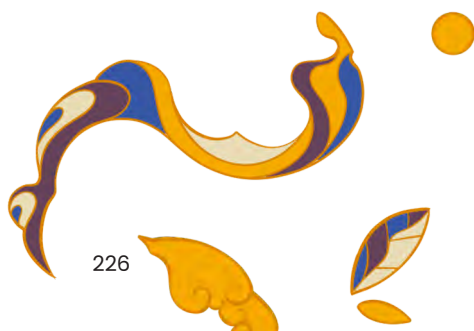
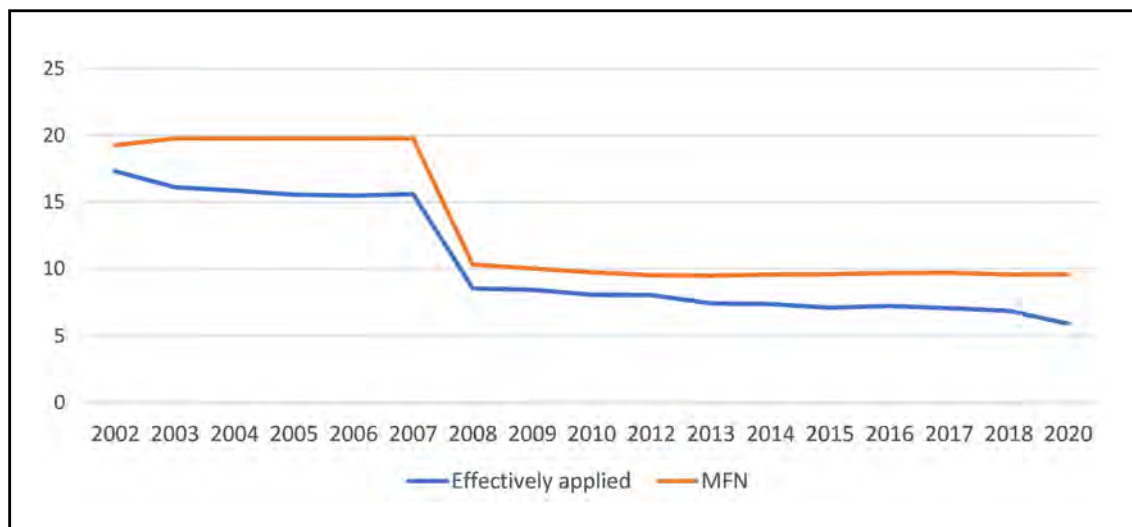


Figure 8.1. Viet Nam's Tariff on Manufacturing Products, 2002–2020



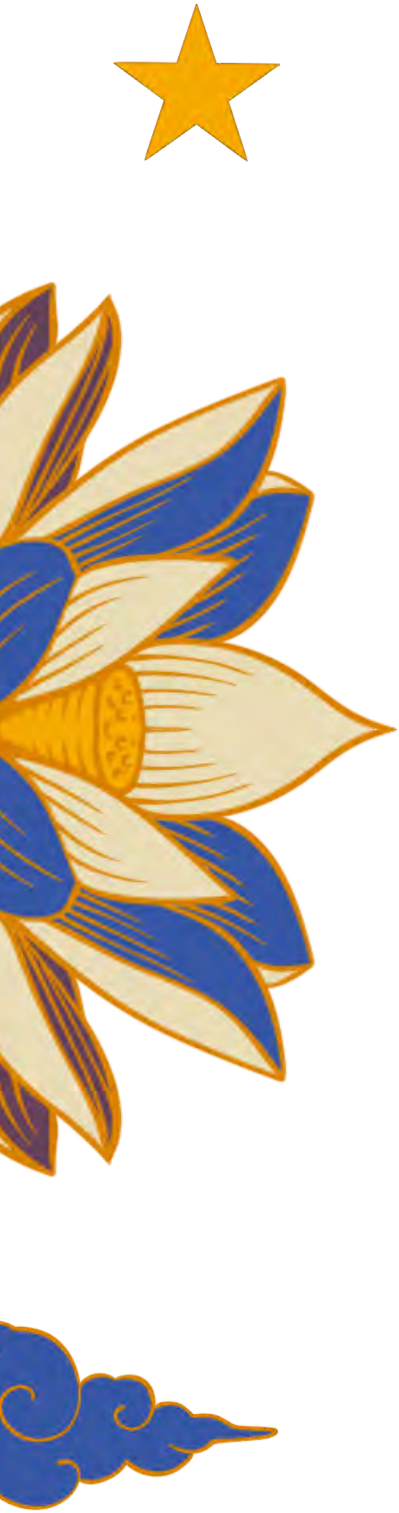
MFN = most-favoured nation.

Source: World Bank (n.d.), World Integrated Trade Solution (WITS). <https://wits.worldbank.org/> (accessed 28 February 2023).

The subsequent period (2006–2010) followed with Viet Nam's accession to the World Trade Organization (WTO) in 2007 – a major milestone in the country's economic integration process. Following the WTO accession, Viet Nam started to update or issue dozens of new development strategies for various industrial sectors, though the number of key identified sectors appeared to be overwhelming (CIEM, 2012). The mining industries started to grow more slowly during this period because the country shifted its policy focus towards protecting the environment and conserving natural resources. In contrast, despite increased competition following Viet Nam's WTO membership, the manufacturing sector continued to benefit from exploiting cheap labour. As a result, some labour-intensive businesses in subsectors such as textiles and garments, and leather shoes began to export more, albeit sourcing intermediate inputs and materials largely from imports rather than from domestic firms (Vo and Nguyen, 2006; Truong et al., 2011).

Additionally, Viet Nam started to pay attention, albeit to a modest extent, to policies and mechanisms that would improve service links for the supply chain, such as competition in the telecommunication sector, improvement of logistic services, and development of economic infrastructure. This enabled Viet Nam to take advantage of IPNs or the second unbundling. With a view to providing favourable location advantages for investment and for promoting agglomeration, the country made numerous attempts to modernise and enhance its industrial estates. As of 2010, Viet Nam had 260 industrial zones and 15 economic zones. Again, the number of economic zones was overwhelming, reflecting inadequate attention to promoting cooperation across provinces to attain economies of scale.

The tariff system has undergone substantial changes because of the more active economic integration efforts during 2006–2010. Following the adoption of FTAs such as the ASEAN–Korea Free Trade Area, ASEAN–China Free Trade Area, and Viet Nam–Japan Economic Partnership Agreement, and especially with the WTO accession, the applied tariff decreased sharply (Truong



et al., 2011). The MFN tariff was also lowered significantly from mid-2006. In general, Viet Nam is committed to lowering tariffs on a wide variety of goods, with some exceptions under the Exclusion List and Sensitive List. However, there are significant differences in the levels of tariff reductions across integration tracks and product categories. In general, the drop in tariffs for manufacturing products has been significant (Figure 8.1).

Other policy changes related to industrial development were also in place during 2001–2010. First, to facilitate trade and implement administrative changes, customs procedures were simplified and modernised with the goal of streamlining and eliminating intermediary steps and promoting automation (CIEM, 2012). In 2004, the Japan International Cooperation Agency began supporting Viet Nam’s customs reform and modernisation by implementing the Vietnam Automated Cargo Clearance and Port Consolidated System and the Vietnam Customs Information System. Second, to boost export competitiveness, the national currency was gradually depreciated, albeit to varying degrees over time. However, given the high dependence on imported inputs, exporters sometimes found it very stressful to have access to foreign exchange for their import needs. Furthermore, according to an empirical analysis by Truong et al. (2011), the nominal dong–United States dollar depreciation had negligible impacts on promoting exports. Third, Viet Nam offered preferential credits for exports, both in terms of the total amount and the interest rate, which were discontinued after the WTO accession. Fourth, Viet Nam worked on a few high-tech policies to encourage technological development and technology transfer from foreign direct investment (FDI). However, government expenditure on research and development (R&D) remained modest; the share of budget expenditure on science and technology decreased from 1.9% to 1.6% during 2006–2010 (Vo, Nguyen, and Dinh, 2018). Meanwhile, the spillover effects of FDI via technology transfer appeared to be less significant than forward and backward linkages (Nguyen, 2005; 2015). Fifth, Viet Nam started enforcing standards for food safety and environmental protection, aiming to promote more environmentally friendly products but at the cost of higher costs for industrial businesses. Finally, frequent increases in the minimum wage had a major impact on industrial firms’ payroll costs, especially those of labour-intensive businesses. Such salary increases, however, were not followed by a significant increase in labour productivity.

During 2011–2021, Viet Nam showed more serious attempts to renew industrial policy. In 2011, the government instructed different ministries to collaborate with the Embassy of Japan in Hanoi and Japanese business associations to develop a joint industrialisation strategy in the context of Viet Nam–Japan cooperation until 2020,

with a vision to 2030. Such a Joint Industrialisation Strategy, published in 2013, helped innovate the policymaking process in Viet Nam by following concrete steps, including a review of potential manufacturing subsectors in Viet Nam that attracted investment interest from Japanese investors. The process entailed the first formal effort to shorten the overwhelming list of key industrial sectors in Viet Nam. The participation of Japanese and Vietnamese business representatives at the meetings of the joint working group also contributed to improving the practices of consulting the private sector in Viet Nam's policymaking process. The Joint Industrialisation Strategy led to Prime Minister's decisions in 2014–2015 to approve the respective action plans to develop six sectors: food processing, agricultural machinery, electronics, shipbuilding, automotive, environmental, and energy-saving industry. Despite a good design and innovative process, these action plans did not receive much attention at the implementation level – nor was a rigorous review conducted to assess the progress (if any) of the approved action plans by the end of 2021.

Likewise, Viet Nam developed the Strategy and Master Plan for Industrial Development by 2025, with a vision to 2035 under Decisions No. 879/QĐ-TTg and No. 880/QĐ-TTg in 2014. The development of these policy documents was in parallel to the Joint Industrialisation Strategy, so it also benefited from inputs on key sectors. These decisions aimed for more focused industrial development towards higher productivity and value added, innovation, and exports. As an example, the Strategy for Industrial Development under Decision No. 879/QĐ-TTg set out the directions to (i) gradually alter the manufacturing growth model from being based mainly on quantity to being based on productivity, quality, and efficiency; (ii) accelerate the development of manufacturing subsectors and products with high added value and exports, to link manufacturing with the development of industrial services; and (iii) focus on the development of supporting industries, especially mechanical, chemical, electronic, and telecommunications products, to serve industrial production, and concurrently participate in the global production network, amongst others. Nevertheless, these decisions suffered from various shortcomings: (i) failure to secure resources for identified tasks; (ii) lack of adaptation to new contextual changes, especially since 2017 with evolving trends such as 4IR, digitalisation, and shifting of FDI; and (iii) failure to shorten the list of priority sectors.¹

While promoting targeted industrial development, Viet Nam no longer had tariff-based trade protection as in the previous decade. During 2011–2020, import tariffs decreased as Viet Nam engaged in various integration tracks. While the average MFN tariff on manufacturing products remained relatively stable, the

¹ CIEM's review in 2011 showed that 40 industrial subsectors were prioritised or targeted. Even the Politburo's Resolution No. 23-NQ/TW in 2019 approved the direction to develop national industrial policy, rather than the focused and enforceable industrial policy itself.





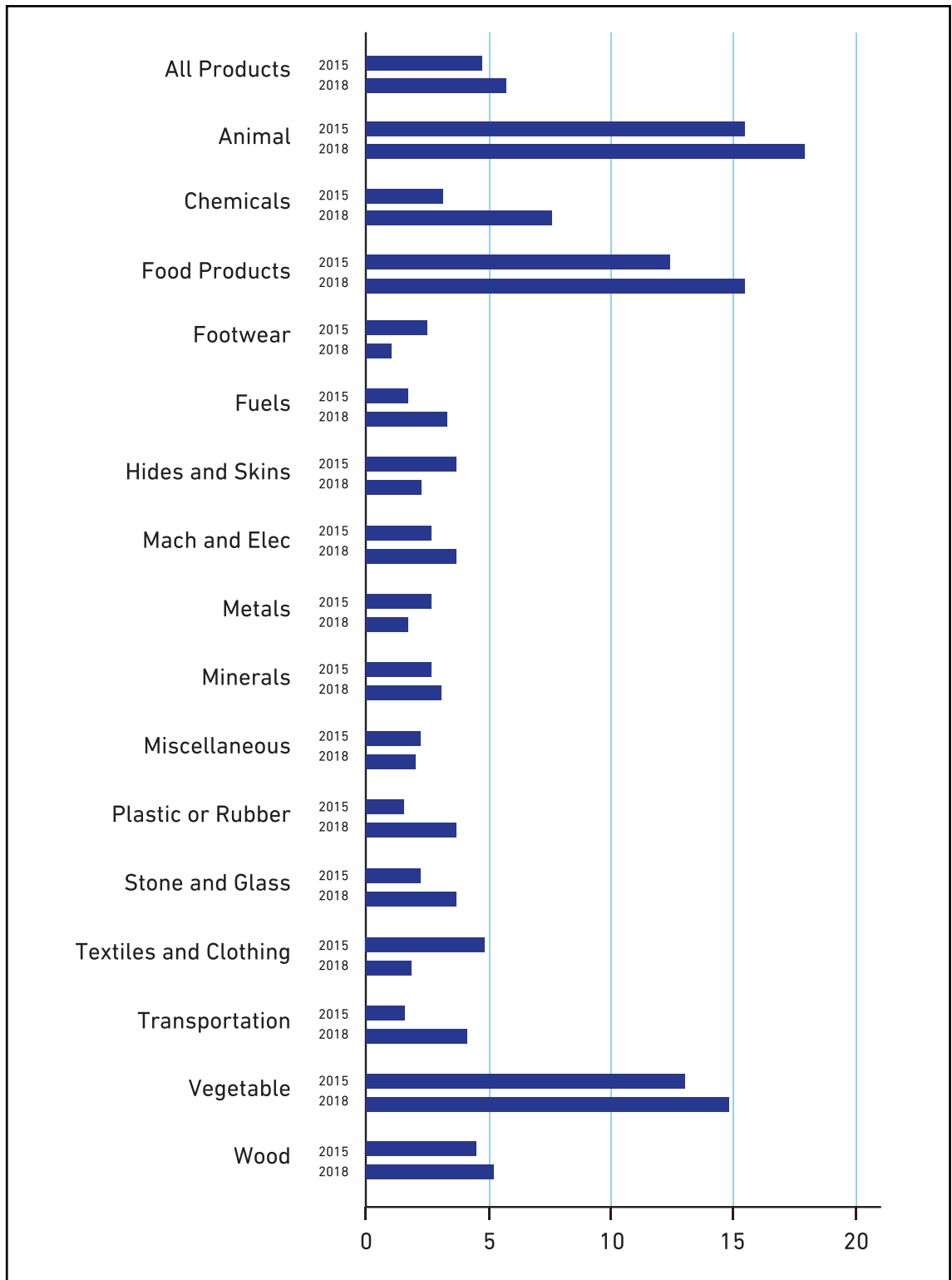
effectively applied tariff decreased further from the level after the WTO accession (Figure 8.1). The tariff reduction was even more drastic from 2019, as various tariff schemes were put in place under new-generation FTAs such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the European Union–Viet Nam FTA, as well as the Regional Comprehensive Economic Partnership in 2022. This was accompanied by trade facilitation efforts incorporated under Viet Nam’s business environment reforms via the series of Resolution 19 (during 2014–2018) and Resolution 02 (since 2019) of the Government of Viet Nam. Specialised inspections were simplified to facilitate imports of inputs and materials for export-oriented production in Viet Nam. The Authorised Economic Operator program also started in June 2013, enabling large manufacturing enterprises to cut down on trade costs.

These trends did not imply that Viet Nam fully liberalised its industrial sector during 2011–2020. Indeed, various studies have shown that Viet Nam increased the use of non-tariff measures since 2011 (Vo, Nguyen, and Tran, 2016; Nguyen et al., 2019) though most of them were presented as justifiable regulations for enhancing safety and other public policy purposes. The prevalence score appeared to rise in 2015–2018 on imports of selected manufacturing products, such as food products, machinery, and electronics (Figure 8.2). The most notable non-tariff measures were related to automotive imports, which arguably create some competitive advantages for domestic automotive assemblers vis-à-vis automotive importers.

Viet Nam also made more policy efforts to promote innovation in manufacturing. The country quickly issued development policies for 4IR from 2019 (with Resolution No. 52-NQ/TW of the Politburo).² In 2015, the government issued the first decree ever on promoting supporting industries, with explicit wording about ‘supporting industries’ and specific incentives for firms. The revised Law on Science and Technology, 2013 made way for science and technology firms to conduct business (Vo, Nguyen, and Dinh, 2018). Viet Nam also worked with major multinational corporations in the electric and electronics industries (e.g. Canon and Samsung) to establish and increase their presence in Viet Nam during 2011–2020.

² To be discussed in section 4.

Figure 8.2. Prevalence Score of Imports in Viet Nam, 2015 and 2018

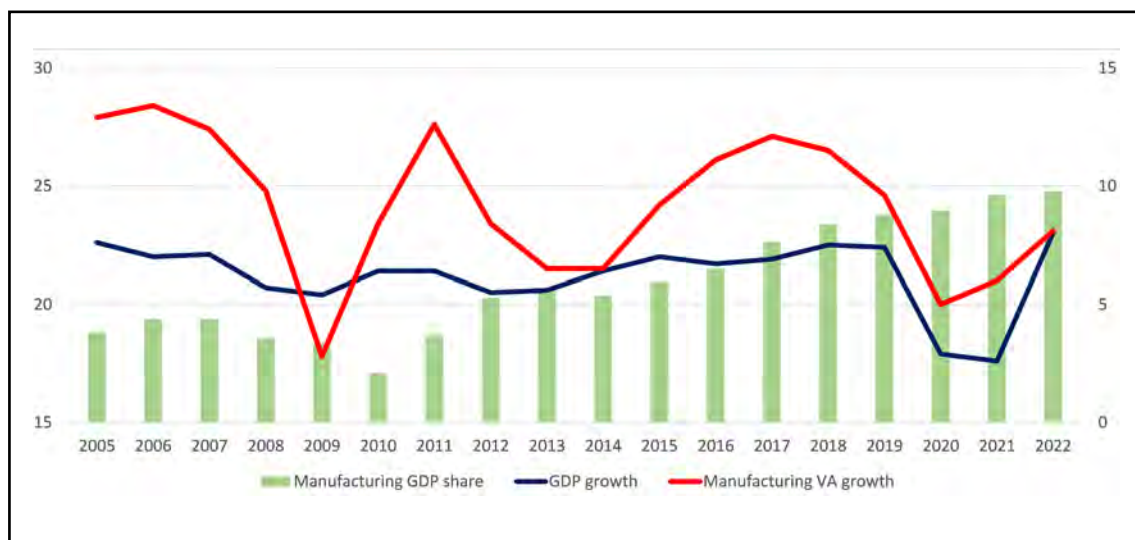


Source: Nguyen et al. (2019).

The manufacturing sector experienced almost continuous improvement in its gross domestic product (GDP) share during 2010–2022 (Figure 8.3). Manufacturing value added accordingly grew faster than the GDP growth rate. However, the technical capacity (and more broadly, innovative capacity) of Viet Nam’s manufacturing sector failed to be quickly upgraded. The sub-indicators of the Global Competitiveness Index show that Viet Nam’s capacity for innovation and companies’ spending on R&D failed to be significantly improved over time and vis-à-vis other countries (Table 8.1). The manufacturing enterprises were largely in positions with low value added in GVCs, seeking to exploit cheap labour and/or natural resources. This led to only steady growth of manufacturing value added, while the share of manufacturing in overall GDP failed to leapfrog (Figure 8.3).

More importantly, labour productivity in the manufacturing sector did not register a breakthrough during 2011–2020. Labour productivity growth decelerated from 11.4% per year on average in 2010–2015 to 6.4% per year on average in 2016–2020. A more recent survey showed that Vietnamese firms remain in the incipient stage of adopting 4IR technology, such as cloud computing for business tasks (by 6.9% of surveyed firms), robots (1.8%), and 3D printing (5.9%) (Cicera et al., 2021). Another survey-based assessment by the United States Agency for International Development (USAID) and Agency for Enterprise Development (2023) showed that only 2.2% of surveyed firms have mastered technology and management software for data analysis, while 48.8% of firms discontinued a digital application they once deployed during the COVID-19 period.

Figure 8.3. Performance of Manufacturing Sector, 2005–2022 (%)



GDP = gross domestic product, VA = value added.

Note: Growth rates are indicated on the right-hand axis.

Source: General Statistics Office. <https://www.gso.gov.vn>. (accessed 28 February 2023)

Table 8.1. Innovation Sub-Index of Viet Nam in the Global Competitiveness Index, 2010–2018

Item	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Ranking out of	139	142	144	148	144	140	138	137
12th pillar: Innovation	49	66	81	76	87	73	73	71
Capacity for innovation	32	58	78	86	95	81	79	79
Company spending on R&D	33	52	75	59	63	57	49	46
Score (1–7)								
12th pillar: Innovation	3.4	3.2	3.1	3.1	3.1	3.2	3.3	3.3
Capacity for innovation	3.6	3.2	3.0	3.4	3.5	3.8	4.0	4.0
Company spending on R&D	3.6	3.2	3.1	3.2	3.2	3.3	3.5	3.6

R&D = research and development.

Note: In 2018, the World Economic Forum introduced the Global Competitiveness Index 4.0 with different methodology.

Source: World Economic Forum, Global Competitiveness Index database. https://www3.weforum.org/docs/GCR2017-2018/GCI_Dataset_2007-2017.xlsx (accessed 28 February 2023).

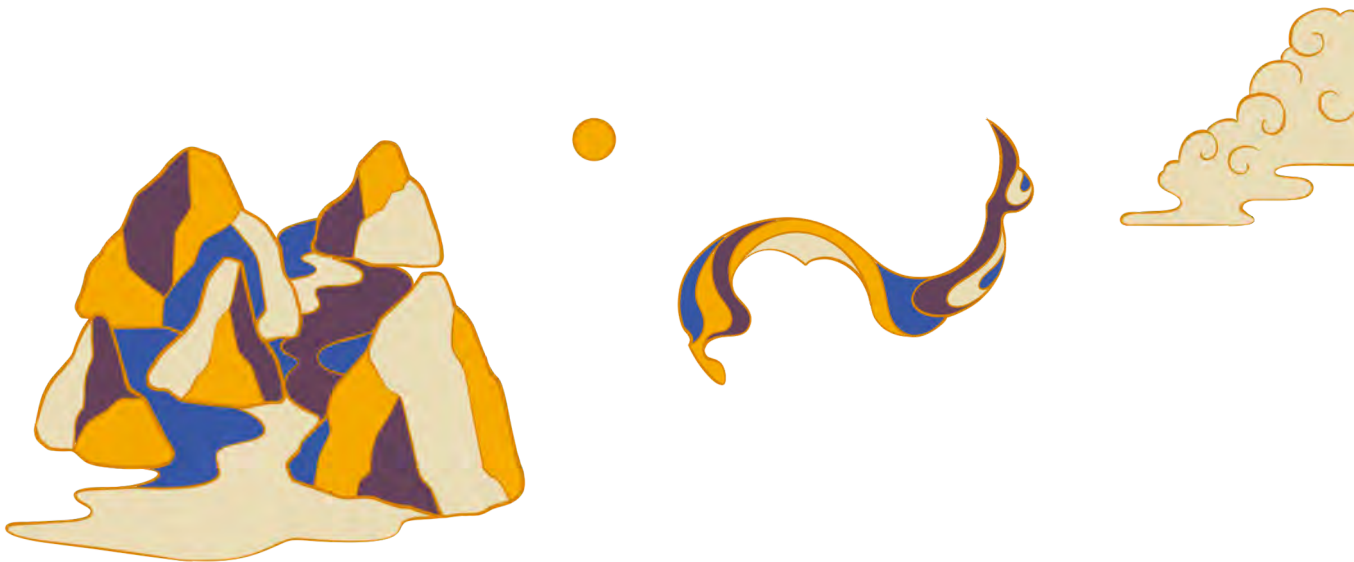
Various studies (Ohno, 2003; Dapice, 2003; National Economic University and Japan International Cooperation Agency, 2003; Vo and Nguyen, 2006) have shown Viet Nam's industrial dualism in recent decades. This could be attributed to the industrial and trade policies that Viet Nam had pursued for decades before the WTO accession. On the one hand, export manufacturing firms, especially foreign-invested enterprises (FIEs) and some domestic private firms, form the sectors that are globally competitive. Major large private corporations such as THACO and Vingroup have been making efforts to build up manufacturing capacity with export orientation. On the other hand, import-substituting firms, especially state-owned enterprises and some FIEs, are weak and protected.

No concrete microdata-based assessment of Viet Nam's industrialism has taken place since 2005. However, using data for 2006–2016, UNIDO (2019) showed that Viet Nam suffered from an almost fivefold increase in trade deficits in automotive, engines, and spare parts, reflecting inadequate participation of domestic producers in GVCs, and that the textile and garment, and shoe leather sectors still source significant inputs from imports for their export-oriented production. This led to the risk of disruption in the face of major economic health shocks. Indeed, during the



outbreak of the COVID-19 pandemic in the first half of 2020, various exporters in Viet Nam in such sectors as textiles and garments, and electronics encountered disruption of import activities.

Notwithstanding a range of FTAs that work to reduce various tariff and non-tariff barriers to trade, Viet Nam still considered the model of special economic zones (SEZs). This reflects an attempt to replicate the model of Shenzhen, China (Box). However, the proposal for a law on SEZs did not gather sufficient consensus for approval in 2018. Still, Viet Nam may have potential to promote agglomeration in manufacturing with the adoption of digitalisation. Such potential may be attributed to several factors. First, Viet Nam has been explicitly and progressively prioritising industrial upgrading and digitalisation.³ Second, Viet Nam continues to appeal as an investment destination to foreign investors, especially in high tech. Third, Vietnamese stakeholders became increasingly aware of the importance of digital transformation to mitigate supply chain disruptions. Indeed, Vietnamese firms need support in almost all stages of digital transformation (USAID and Agency for Enterprise Development, 2023). Finally, Viet Nam issued various policies at the Politburo and government levels in 2022 to promote subnational economic linkages, including for industrial agglomeration.



³ To be discussed in Section 4.

Development Policy of Shenzhen, China

In 1979, Shenzhen was established as China's first special economic zone (SEZ). Before this, the city was a traditional fishing village with rich land resources and a border with the advanced economy of Hong Kong. The ability to adopt new institutional changes was one of the reasons for selecting the city (Zeng, 2010).

Shenzhen quickly became a megacity thanks to easy access to finance from Hong Kong. The city enjoyed the fastest growth in the country and was frequently referred to as China's Silicon Valley (Upton and Huld, 2022). More importantly, innovation became a key source for sustaining growth. Shenzhen had the largest research and development in Guangdong, reaching RMB80 billion or 4.1% of gross domestic product (GDP) in 2016 (Lin et al., 2019). Shenzhen, behind Shanghai and Beijing, is China's third-largest city by GDP as of 2021 (Upton and Huld, 2022).

Shenzhen has been transforming towards digitalisation. The city has offered testing opportunities for new digital business models (Zeng, 2010; and Lazic, 2019). By the end of 2021, the digital economy industries in Shenzhen attained value of more than RMB900 billion (\$134.5 billion), accounting for 30.6% of the city's GDP. Shenzhen's 14th Five Year Plan, 2021–2025 targets the core digital economy industries reaching 31% by 2025 – considerably higher than the national target of 10% (Upton and Huld, 2022).

The manufacturing sector continues to be a significant economic pillar in Shenzhen. Like other major industrial estates, Shenzhen experienced a slowdown in 2020 due to the coronavirus disease (COVID-19) pandemic's effects on business. However, the sector quickly recovered in 2021, with several manufacturing industries experiencing tremendous expansion, including new energy vehicles (173.9% year on year), industrial robots (60.5%), mobile phones (40.9%), and 3D printing (21.2%) (Upton and Huld, 2022). In this regard, manufacturing and innovation have jointly forged economic recovery in the city.

Source: Compilations from various sources.

3. Emerging Trends of Digital Transformation, Industry 4.0, and Innovation as Future Drivers of Growth

As Viet Nam aims to promote digital transformation and 4IR, it should consider and adopt major progress in technology trends. Such trends are emerging fast. Within its limited scope, this section provides an overview of selected key technologies/trends, such as AI, IoT, robotics/automation, additive manufacturing, and digitalisation of government. This provides information on the depth of digital transformation in Viet Nam.

3.1. Artificial Intelligence

AI has been emerging with a more profound, if not critical, role. This trend is well grounded in the rapid development of machine learning technology. As different methods of machine learning train computers to learn from and analyse data, and make predictions and inferences, with significantly improved accuracy, AI has received increasing attention regarding its potential to transform production and business activities with incredibly accurate outcomes. As a result, more money will be spent on AI research and applications in the near future. According to Davies (2022), work on AI is currently in the stage of artificial narrow intelligence, in which AI systems can perform a limited set of defined tasks, while slowly approaching artificial general intelligence – AI capable of reasoning as well as human beings.

In manufacturing, as AI has advanced, complicated jobs have been automated and previously hidden patterns in manufacturing processes or workflows have been discovered. McKinsey (2020) found that companies using AI have benefited from cost savings and revenue growth. Some 16% of those surveyed noticed a 10%–19% decrease in costs, whereas 18% saw a 6%–10% increase in overall revenue. Sales platforms and websites are increasingly reverting to chatbots to help boost their revenue. However, as computer thinking and reasoning are unprecedented, the evolution of AI is accompanied by several issues, such as ethical standards and integrity related to the development and use of AI or the legitimacy of content provided by chatbots during sales processes.

As Viet Nam aims to upgrade its manufacturing capacity by 2045, appropriate use of AI may be beneficial. For example, AI could help scan industrial products quickly to identify those failing to meet production standards. In another instance, as Viet Nam embarks on the target of net zero emissions by 2050, promoting sustainable production plays a critical role. AI could then play an important role in helping businesses achieve sustainability standards through better measurement, data collection, and calculation of carbon emissions. AI also helps to improve predictability and achieve greater supply chain resilience for businesses, such as predicting demand and correcting receipts in warehousing and routing of goods in transit. Such applications can also help improve the linkages between foreign-invested enterprises and local firms in Viet Nam, which enables the latter to participate in GVCs.

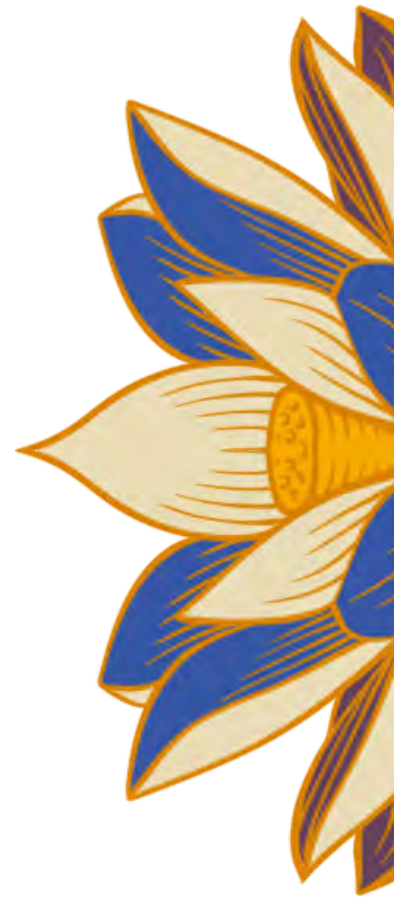
3.2. Internet of Things

IoT is defined as a network of connected computing devices, mechanical and digital machinery, items, animals, or people that may exchange data across a network without requiring human-to-human or human-to-computer interaction. The IoT ecosystem is made up of web-enabled smart devices that use embedded systems, such as processors, sensors, and communication gear. Such a system of devices gathers, sends, and acts on the data it receives from its surroundings. These gadgets communicate with other similar devices and act on the data they exchange. Although individuals can engage with the devices to set them up, give them instructions, or retrieve data, the gadgets can in principle accomplish most of the tasks in the absence of such support or instruction. IoT can also employ machine learning and AI to help make data collection processes simpler and more dynamic. As the number of connected devices grows, the IoT market value could rise at an exponential pace.⁴

Viet Nam's manufacturing sector could benefit from the IoT expansion. The IoT market in Viet Nam was valued at \$2.02 billion in 2019 and is projected to increase at an average annual growth rate of about 24.03% to \$7.3 billion by 2025 (Research and Markets, 2021). According to Cisco (2021), more than 50% of surveyed Vietnamese firms ranked IoT as one of the top three technologies that will have an impact on their organisations' digital future, and 36% of businesses have already started implementing IoT solutions. Areas that can benefit directly from IoT include supply chain optimisation, automatic remote management and surveillance of industrial devices, and predictive maintenance of industrial equipment.

3.3. Robotics/Automation

As 4IR technology emerges, the world is entering a new era of smart manufacturing. Such smart manufacturing can rely less on the physical labour force, as robots start to assume various activities in the traditional production system. The International Federation of Robotics estimated that 2.7 million industrial robots may have been working in industries around the world in 2020. Factories and industrial premises in North America ordered a record 29,000 robots during the first 9 months of 2021, rising by 37% year on year, due to challenges in recruiting staff (World Economic Forum, 2021). The use of industrial robots/automation may be enhanced by the parallel development of AI. Together, AI and robots/automation can allow manufacturers to



⁴ As of 2021, the number of connected devices had reached 12.2 billion (IoT Analytics, 2022, cited in Trong Dat, 2022).

cut labour costs dramatically while increasing overall manufacturing productivity and efficiency. Manufacturing processes, including difficult ones, may be automated. Such automation becomes more useful during health crises (such as COVID-19), reducing the risk of manufacturing disruption.

As Vietnamese manufacturers aim higher in GVCs, accommodating the rise of industrial robots becomes inevitable. Manufacturers in Viet Nam are increasingly aware that industrial robots not only assist industries to increase productivity but also address issues of worker safety and labour shortage. Manufacturing facilities can increase efficiency and product quality by using industrial robots. Some local firms have already started developing robot facilities. Further investment in robots is, however, constrained by such issues as limited infrastructure, underdeveloped supporting industries, and limited robot quality testing equipment (*Vietnam Investment Review*, 2020). More broadly, a key challenge for the country is how to adapt its labour skills to the future of work.

3.4. 3D Printing/Additive Manufacturing

Additive manufacturing is defined as the process of joining materials to make parts from 3D model data, usually layer upon layer, according to ISO/ASTM 52900-15. Although the first patents were registered in the late 1980s, additive manufacturing has only experienced rapid growth since 2010. Significant development of innovative techniques using a range of new materials and offering exceptional advantages has been taking place, thus expanding additive manufacturing opportunities. Thanks to the advantages of time and cost savings, which shorten the product development cycle, additive manufacturing could contribute to transforming sustainable business models (Elhazmiri et al., 2022).

In Viet Nam, additive manufacturing has been applied, albeit still in the early stages. The development of domestic 3D printing technology is enabled by the emergence of high-tech industrial complexes. The Vinfast – An Phat Plastic Auto Part Co., Ltd.; Samsung Vietnam electronic industry complex; fashion footwear companies; large enterprises in the plastic industry; and automobile production complexes of Truong Hai (Thaco), Vinfast, and others have all gradually modernised and transformed themselves to join the supply chain of technical plastic products over the past few years. Most of these businesses focus on industrial 3D printing applications. Various industrial products, such as automotive, motorcycle, and electronic parts, made of technical plastics could already be produced using 3D printing in Viet Nam. Ample room remains for further application of additive manufacturing. Indeed, Viet Nam is considered amongst the countries applying the third wave of 3D printing (Cameron et al., 2019).

3.5. Digitalisation of Government

Digital transformation has been progressive, not only amongst corporate entities but also in the public sector. Governments around the world have deepened efforts to digitalise the delivery of public services. A McKinsey study (Manyika et al., 2013) estimated that government digitisation, using current technology, could generate more than \$1 trillion annually worldwide. Services, procedures, decisions, and data exchange are the four capabilities on which governments often focus their digitisation initiatives.

Facing the scarcity of recurrent budget, Viet Nam has been making efforts to control the expansion of staff on the government payroll. To ensure the quality of public services and the productivity of the public sector, the government has attached importance to its own digitalisation process. Viet Nam has built databases on population, enterprise, social insurance, etc., which can be used across agencies. During the COVID-19 pandemic, Viet Nam experienced greater demand for digitalising government to complement the digital transformation efforts of firms. Given that several public services are not yet provided online with good quality and/or complementary online payment, significant room remains for further digitalisation of government activities.



4. Selected Development Policies for Innovation in Viet Nam

Viet Nam has issued broad development policies for innovation, including at the sectoral level. Resolution 52-NQ/TW on 4IR of the Politburo in 2019 set out the vision to 2045 that Viet Nam will become one of the leading smart manufacturing and service centres, start-ups, and innovation centres in Asia; have high labour productivity; and be capable of mastering and applying modern technologies in all socio-economic, environment, national defence, and security fields. The resolution identifies the key policies to realise this vision.

First, Viet Nam will increase attempts to develop key infrastructure for digital transformation. Specific areas mentioned in the policy include deploying high-quality broadband nationwide; encouraging capable private enterprises to participate in building telecommunications and other infrastructure for the national digital transformation; building and developing the national data infrastructure synchronously; forming a system of national, regional, and local data centres with a synchronous and unified connection; investing in equipment systems for collecting, storing, processing, and protecting public data; building the national digital payment infrastructure and using the telecommunications network infrastructure to deploy payment services to people at a low cost; improving mechanisms and policies to promote cashless payments; and upgrading technical infrastructure to ensure network safety and security.

Second, Viet Nam will upgrade innovative capability by building and developing national innovation centres, focusing on core 4IR technologies; improving the efficiency of public investment in scientific and technological research; applying special mechanisms and policies to innovation centres; developing a national innovation system centred on enterprises, universities, and research institutes; adopting a system of national standards and regulations as a foundation for the application and development of core 4IR technologies in production; and enforcing a legal framework and system of policies to deploy and develop new technologies.



Third, Viet Nam emphasises the development of human resources for innovation and digitalisation. Policy will focus on reviewing and renovating educational and training content and programs to facilitate the accommodation of and adaptability to the constantly changing and evolving technological environment; innovating the way of teaching and learning based on digital technology applications; taking enterprise assessments as a metric for training quality; encouraging new models of education and training based on digital platforms; incentivising organisations, individuals, and technology enterprises to participate directly in the education and training process, and to create products for the digital economy; and building a number of excellent education and training centres in technology in the form of public–private partnerships.

Following Resolution 52-NQ/TW, the Prime Minister issued Decision No. 2289/QĐ-TTg in 2020 on the National Strategy for Industrial Revolution 4.0 by 2030. This decision identifies specific tasks towards developing infrastructure for connection, building, and using databases; developing human resources; transforming e-government towards digital government; upgrading national innovation capacity; performing research and development of priority technologies to participate in 4IR, such as robotics, AI, IoT, big data, and blockchain.

The idea of promoting innovation has also been concretised at the sectoral level. As a flagship project, during 2021 and early 2022, the Ministry of Planning and Investment prepared a project on circular economy development in Viet Nam. This project makes a rigorous attempt to distinguish the new circular economy evolution, which uses innovation and digitalisation amongst other technological advance, from the traditional circular economy projects that have been discussed for decades. In the project report to the Prime Minister, the Ministry of Planning and Investment elaborated on the viewpoints, targets, and tasks involved in developing the circular economy, including a proposal for a quick pilot mechanism of the circular economy in priority sectors, while amending policies and regulations for the circular economy in the medium to long term. On that basis, the Prime Minister issued Decision No. 687/QĐ-TTg in June 2022 approving the Project to Develop Circular Economy in Viet Nam.

Digital transformation has been a major priority in Viet Nam, with a series of action plans and measures. The Prime Minister issued Decision No. 749/QĐ-TTg in 2020 on the National Digital Transformation Programme, which aims to transform Viet Nam into a prosperous digital country that leads the application of new technologies and models. The basic targets include the development of digital government with enhanced efficiency, digital economy

development, and digital society development and bridging of the digital divide. The decision then sets out various measures to develop digital infrastructure and a digital platform, and cyber safety and security.

Decision No. 942/QĐ-TTg of the Prime Minister in 2021 focused on promoting digital government. The decision envisions that by 2030, Viet Nam ranks in the top 30 countries on global e-government and digital government development indexes, and that digital government fundamentally changes how citizens and enterprises are served. More importantly, the decision perceives data as a new resource, and emphasises the importance of related tasks, such as developing national digital data, sharing data, and protecting cybersecurity and cyber information security.

The Prime Minister then issued Decision No. 1968/QĐ-TTg in 2021 on IT applications and digital transformation in trade promotion during 2021–2025. The decision aims to establish a digital trade promotion ecosystem by 2025, which is to be upgraded by 2030. It also covers increasing trade promotion activities and related procedures completed via the trade promotion platform, establishing a related database, and connecting them to support trade promotion. Specific tasks include the development of a digital trade promotion ecosystem; education and training to improve awareness and skills for digital trade promotion; and cybersecurity in trade promotion.

In 2022, the Prime Minister issued Decision No. 411/QĐ-TTg approving the National Strategy for Development of Digital Economy and Digital Society by 2025 and Orientation towards 2030. The decision sets out two important visions, amongst others. First, digital development, with the creation of growth based on digital technology and digital data inputs, has become one of the new mainstream development methods for Viet Nam. Second, digital economy development makes people richer, contributes to Viet Nam overcoming the low average income level by 2025, reaching the high average income level by 2030, and achieving the high income level by 2045. Accordingly, the objective for a digital economy is to use digital technology and digital data as the main inputs, use the digital environment as the main operating space, and use information and telecommunications technologies to increase productivity, innovate business models, and optimise the economic structure. Decision No. 411/QĐ-TTg set out the key tasks related to improving the related institutions; developing infrastructure and digital platforms; and others related to digital data, cyber information security and cybersecurity, digital workforce, digital skills, digital businesses, and digital payments.

In 2021, the Prime Minister also issued Decision No. 127/QĐ-TTg on National Strategy on AI. The decision aims to promote research, development, and application of AI, making AI an important technology field in Viet Nam in

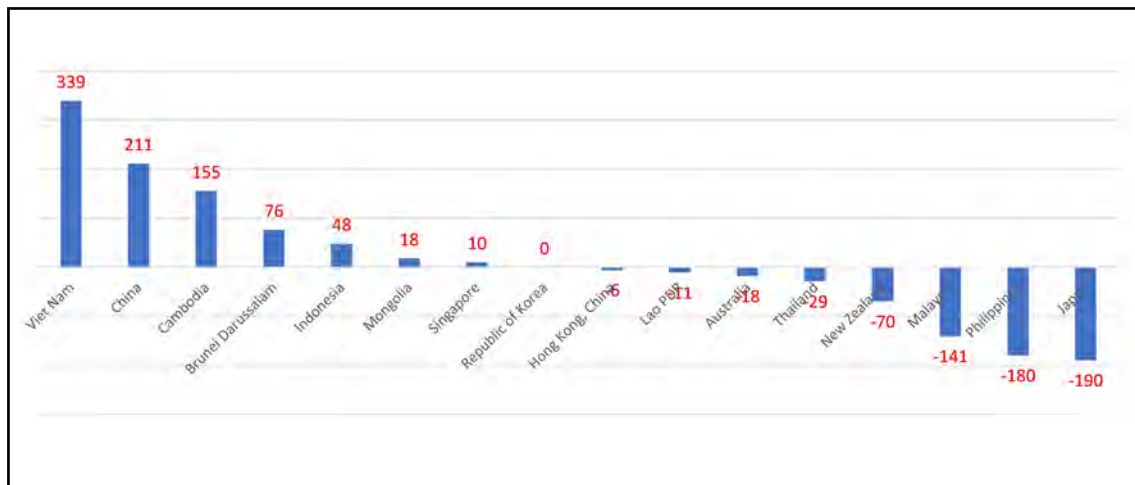


4IR. By 2030, the aspiration is for Viet Nam to become a centre of innovation and development of AI solutions and applications in the ASEAN region and around the world. The key tasks include improvement of specific regulations on AI, development of data and computing infrastructures for AI, and development of the AI ecosystem and applications.

Viet Nam also acknowledges the importance of building capacity for its enterprises to approach and benefit from innovation and digital transformation. The Law on Small- and Medium-sized Enterprises, and Decree No. 80/2021/ND-CP of the Government of Viet Nam in 2021 on the elaboration of some articles of the law, provide for different assistance to SMEs in terms of technology, information, counselling, and human resources development.

The above action plans and policies have improved Viet Nam's approach to adopting innovation and digital transformation. Ministries and provincial authorities have started to compete for higher rankings on the information and communication technology (ICT) index, e-government index, and digital transformation index, etc. This has been commended by the business community, especially during the COVID-19 pandemic. At another level, according to the European Center for Digital Competitiveness (2021), Viet Nam ranked first in East Asia and the Pacific in terms of the Digital Riser index (Figure 8.4). More importantly, when breaking down the result in the ecosystem and mindset dimensions, Viet Nam improved the most in both dimensions (compared with other economies in East Asia and the Pacific).

Figure 8.4. Digital Riser Index



Source: Redrawn from European Center for Digital Competitiveness (2021).



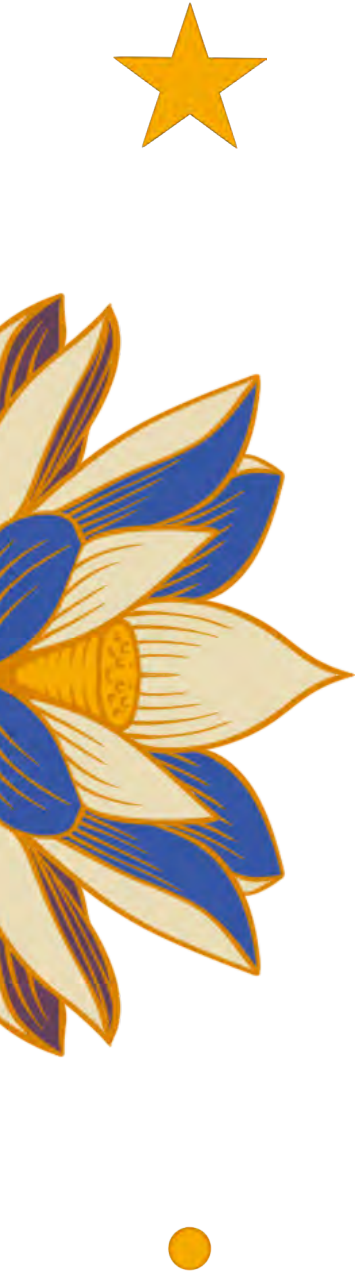
Still, Viet Nam needs to address several key issues/challenges in the future path to adopt 4IR, innovation, and digital transformation by 2045. First, the country needs to enhance policy consistency and coordination for both manufacturing and digital aspects. To do so, on the one hand, it needs to overcome the shortage of data, especially related to digital transformation of manufacturing activities. The Statistical Law was only amended in 2021 and, while adding indicators related to ICT, it does not touch upon the measurement of the digital economy. Besides, developing both manufacturing and digital aspects in targeted industrial estates (if any) must balance the need for adequate monitoring of and facilitation for business entities operating in those estates.

On the other hand, Viet Nam needs to adopt a whole-of-government approach in reviewing and amending policies related to 4IR and innovation. For instance, the development of electric vehicles could help induce digital transformation, including the development of digitally enabled platforms and services. However, long-term electric vehicle development may encounter a risk if government agencies do not identify/enforce complementary measures (e.g. the development of charging stations or retaining/increasing the environmental protection tax on the use of fossil fuels). Policy consistency by no means implies that innovation policies must remain unchanged over time. Instead, it is critical to ensure the adaptability of the legal framework to innovation, including new business models. In this respect, however, Viet Nam still ranks relatively low in the Asia-Pacific region, which affects its growth of innovative companies (Table 8.2).

Table 8.2. Adaptability of Legal Frameworks and Innovation Growth

Growth of Innovative Companies		Legal Framework's Adaptability to Digital Business Models	
APEC Economy	Score (out of 7)	APEC Economy	Score (out of 7)
United States	5.59	United States	5.68
Malaysia	5.19	Singapore	5.59
Singapore	4.98	Malaysia	5.20
Hong Kong, China	4.96	New Zealand	4.91
New Zealand	4.93	Hong Kong, China	4.69
Philippines	4.91	China	4.57
Indonesia	4.83	Canada	4.48
Taiwan	4.76	Indonesia	4.48
Canada	4.75	Australia	4.40
Australia	4.65	Republic of Korea	4.31
Japan	4.64	Japan	4.24
Thailand	4.56	Chile	4.09
Republic of Korea	4.54	Taiwan	3.93
China	4.43	Russia	3.89
Chile	4.18	Mexico	3.80
Viet Nam	4.09	Philippines	3.67
Mexico	4.00	Thailand	3.63
Russia	3.74	Viet Nam	3.59
Peru	3.65	Brunei Darussalam	3.15
Brunei Darussalam	3.60	Peru	3.04

Source: World Economic Forum (2019), compiled by TRPC (2020).



Second, Viet Nam may have to look seriously into the use of fiscal incentives to induce the adoption of 4IR, innovation, and digital transformation. Investing in innovation can be risky by nature; thus, fiscal incentives can help alleviate the difficulties for firms while promoting risk sharing between government agencies and firms in innovation. Moreover, Viet Nam must carefully weigh the impacts of a global minimum tax mechanism on attracting foreign big tech corporations. At the same time, the country needs to better justify the need to support IT companies, tech corporations, and start-ups in the new context, rather than exempting these entities from tax incentives just because they have made profits thanks to adaptation to times of volatility (e.g. the COVID-19 pandemic).

Third, developing a policy framework is just an intermediate step towards the goal of innovation. Indeed, government agencies do not follow through on the implementation of policies. For instance, hardly any actions were undertaken to promote IT application and digital transformation in export promotion activities in 2022 after Decision No. 1968/QĐ-TTg was issued in 2021. This could be attributed to poor ex ante impact assessments and public consultation related to the policy documents, and/or the inadequate allocation of resources to implement the tasks identified under such policy documents. In the absence of allocated resources, especially financial resources, a number of tasks may not be implemented.

Fourth, the policy content on international cooperation is still too general. Documents do not mention in sufficient detail the sectors and areas in which Viet Nam can cooperate with partners. Even regarding issues related to digital economy partnership agreements, cross-border data flows, and interaction between technology and security issues, the direction for international cooperation is yet to be clarified. Viet Nam should look back carefully to the experience of working with important partners in innovation-related issues. For instance, the experience of Viet Nam and Japan in developing the Joint Industrialisation Strategy during 2011–2015 shows that cooperation for innovation can take place at the process level (i.e. development of policy documents), the policy level (i.e. the policy documents), and the innovation activity level (i.e. the development of industries under the Joint Industrialisation Strategy).

Lastly, it is a smart move for newly developed countries such as Viet Nam to adopt a strategy for quickly exploiting the opportunities of disruptive innovation based on digital technology. In disruptive innovation, the deployment of technologies is relatively easy, and there is ample room for creative imitation with localisation, which enhances national welfare and provides opportunities for catching up or even leapfrogging. At the same time, in a longer perspective towards a fully developed economy,

Viet Nam should gradually but steadily build up its capabilities for incremental innovation that requires steady R&D investment in basic science and technology as well as raising up human capital in international collaboration.

5. Conclusions and Recommendations

This chapter is an attempt to provide an overview of how Viet Nam has been approaching 4IR, innovation, and digital transformation. The country embarked on industrialisation policy decades ago, emphasising the need to build manufacturing capacity alongside economic integration efforts. Nevertheless, its industrial policy under the traditional approach could not deliver breakthroughs as anticipated, due to the failure to secure resources for identified tasks, lack of adaptation to new contextual changes, and failure to shorten the list of priority sectors.

Given that background, Viet Nam appreciates the importance of new waves of 4IR, innovation, and digital transformation as inducement to renovate industrial policy. So far, the country has quickly issued various policy documents to ensure a timely approach to 4IR, innovation, and digital transformation, which has appealed to the business community. Still, Viet Nam needs further efforts to overcome challenges in its pathway to 2045, specifically related to policy consistency and coordination, appropriate use of fiscal incentives, momentum for policy implementation, and specific direction for international cooperation.

The chapter makes the following recommendations:

First, Viet Nam needs to improve the institutions for adopting 4IR, innovation, and digital transformation. This does not necessarily require the establishment of a focal agency responsible for all these issues; instead, a whole-of-government approach should apply to ensure policy consistency and synergy across innovation areas and those that can be transformed with innovation. More importantly, fostering public–private partnerships in innovation, including via proper acknowledgement of risk-sharing, would play a critical role.

Second, Viet Nam requires adequate attention to implementing the identified development policies for 4IR, innovation, and digital transformation, including by allocating sufficient time, personnel, and financial resources for implementation. A concrete long-term action plan, with specific regulations to be newly issued, amended, or abolished, is critical. Such an action plan must also be open to the possibilities of incorporating regulatory sandboxes in selected activities, such as fintech or the circular economy, as well as overhauling business entry conditions in innovation-related sectors.

Third, Viet Nam needs to review and popularise good domestic models at both the policy and business levels, for approaching and adopting 4IR, innovation, and digital transformation. Such models can serve as examples to convince stakeholders, including policymakers and potential investors, to work towards realising initiatives and taking advantage of opportunities from 4IR, innovation, and digital transformation.

Fourth, Viet Nam needs to invest in data collection and compilation to support the design, monitoring, and evaluation of innovation policy. Measurement of the digital economy, especially the digital transformation of traditional economic activities, should be an area of key effort. Measuring and assessing labour productivity in the digital economy presents another area of priority. Besides, Viet Nam requires research on readiness at the national, provincial, and sectoral levels for specific economically innovative models, those with potential to contribute to promoting subnational linkages; value chains; and innovation/digital transformation; and to improve labour productivity.

Finally, Viet Nam should closely monitor the digital divide between government and the business community, between large corporations and SMEs, between geographical regions, and between social groups. In doing so, Viet Nam may benefit from the shared experience of partners such as Japan. Only on that basis can Viet Nam identify and implement the necessary measures for inclusive and innovative growth.



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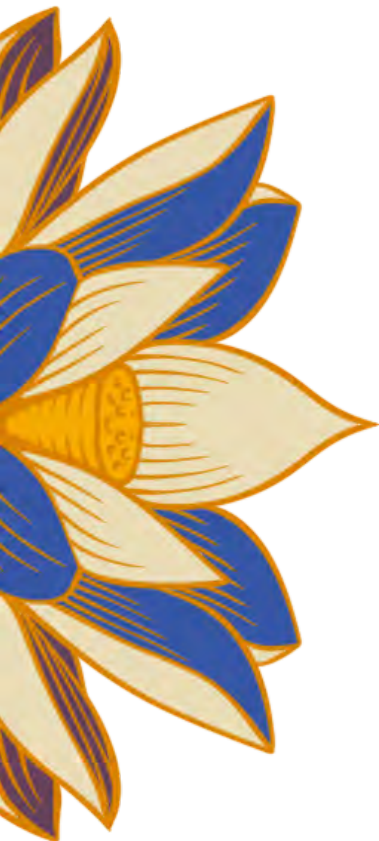




Chapter 9

Viet Nam 2045: Automobile Industry

Seio Nakajima, Hideo Kobayashi and Yasushi Ueki



1. Introduction

Annual automobile sales in Viet Nam surpassed the 300,000 threshold in 2019, with a total of 306,073 units (MarkLines, n.d.-a). Due to the coronavirus disease (COVID-19), 2020 and 2021 have seen decreases, but 2022 has presented a swift recovery in sales figures. More specifically, sales between January and September 2022 were 296,403, a 56.9% increase compared to the same period in 2021 (MarkLines, 2022). In the short run, the Vietnamese automobile industry seems to be back on track toward a steady annual increase in sales figures. In the long run, however, the future success of the Vietnamese automobile industrial sector is still not guaranteed. As will be detailed below, Viet Nam faces several challenges, not the least of which is the relatively small size of the domestic market at present.

On the other hand, challenges may provide potential opportunities for developing the automobile industry. For example, the currently small market size can be interpreted as a potential for the industry's rapid development. How, then, can the Vietnamese automobile industry overcome various challenges and seize the opportunities provided by the nascent automobile industry development? This chapter offers possible answers to this question.

The structure of the chapter is as follows. The second section provides a brief history of the automobile industry in Viet Nam. The third section introduces the two key existing actors in the sector: THACO and Thanh Cong. The fourth section examines the case of VinFast, an emerging automobile manufacturer in Viet Nam. Before analysing the conditions of the automobile parts sector, we provide some background information on the broader international trade environment in the fifth section. Building on the observations presented in the previous sections, the sixth section highlights the possibility of developing an auto parts and components industry in Viet Nam. The seventh section overviews the current status of the Vietnamese automobile industry from a comparative perspective with advanced countries in Southeast Asia. The final, eighth section concludes the chapter with policy implications.

2. A Brief History of the Automobile Industry in Viet Nam

As is well known, Viet Nam started its *Doi Moi* – meaning 'renovation' or 'innovation' – policy in 1986, when the move toward a more industrially based 'socialist-oriented market economy' was adopted as the key goal of national development. Like the Chinese policy of 'Reform and Opening,' *Doi Moi*

first began in rural areas, attempting to give more autonomy to individual agricultural households, but gradually spread to urban areas where industrial activities – including manufacturing – were concentrated.

The earliest attempt at automobile production was Mekong Auto in 1991, founded and headquartered in Ho Chi Minh City. It was the first joint-venture automobile industrial firm in Viet Nam, with a 51% share owned by Japan's Saelio Machinery Company Inc. (Mekong Auto, 2022a). Other shareholders include Sae Young International Inc. (Republic of Korea [henceforth, 'Korea'], 19%), Veam (Viet Nam, 18%), and Sakyno (Viet Nam, 12%). Mekong Auto Corporation opened its Cuu Long Factory in Ho Chi Minh City in May 1992 and produced Viet Nam's first Complete Knock Down (CKD) vehicle (Mekong Auto, 2022b). The firm opened Co Loa Factory in Hanoi in 1993, and technical collaborators include IVECO and Fiat from Italy, SsangYong Motor Company and PMC from Korea.

Other early investments and participations in Vietnamese automobile production by foreign manufacturers include Mazda and Kia in 1992.

With the deepening of the *Doi Moi* policy, the trend toward automobile production took off in the mid-1990s, with the establishment of joint ventures with General Motors (1993), Mitsubishi (1994), Ford (1995), Isuzu (1995), Mercedes (1995), Toyota (1995), and Hino (1996), expanding the CKD production and sales for the Vietnamese domestic market. The trend continued into the 2000s and beyond, with similar joint venture projects with Honda (2006) (Le, 2019: 3).

Prompted by the increasingly active participation of foreign firms in the Vietnamese automobile industry, Vinaxuki, aka Xuan Kien Auto JSC, was established in 2004 in Hanoi (Vinaxuki, n.d.). The firm produced passenger vehicles and trucks under its brand name and also under select Chinese brand names, but it eventually ceased operation in 2015 due to both technical and managerial problems.

As a result of these vigorous market entries into car production, 20 makers of passenger and commercial vehicles, including 16 that organised the Vietnam Automobile Manufacturers' Association, have built assembly capacity for 987,900 vehicles to compete for the domestic market of 300,000 to 400,000 units annually (Table 9.1). In this intense competition, the following three private companies are active in investing in automobile production to dominate the promising market. The first is Vin Group (i.e. VinFast) that has developed the annual capacity of 250,000 units to produce mostly electronic vehicles, remaining the space for doubling the capacity to 500,000 units. The second is Hyundai Thanh Cong Viet Nam (i.e. Thanh Cong), a joint venture between the Vietnamese Thanh Cong and Korean Hyundai Motor, expanded by the assembly capacity of 100,000 in 2022 to produce 180,000 units of Hyundai passenger cars. The third is Truong Hai Auto (THACO) a Vietnamese company specialising in commercial vehicles and having the capacity of 160,000 units to not only produce its own brand of buses and trucks but also to make CDK production of international brand cars such as Kia and Peugeot. In addition, this company has the production line to assemble maximum 100,000 units of Mazda cars.

The following two sections highlight these three leading vehicle makers.

Table 9.1. Vehicle Assembly Capacity in Viet Nam

Vehicle Makers	Capacity
Vingroup	250,000
Hyundai Thanh Cong Vietnam	180,000
Truong Hai Auto	160,000
THACO Mazda Automobile Manufacturing	100,000
Toyota Motor Vietnam	70,000
Ford Vietnam	40,000
Vietnam Engine and Agricultural Machinery (VEAM)	33,000
Hino Motors Vietnam	30,000
Honda Vietnam	23,000
Daehan Motors Vietnam	20,000
Vietnam Motors	20,000
TCIE Vietnam	14,400
Isuzu Vietnam	12,000
Mitsubishi Motors Vietnam	10,000
Mekong Auto	7,000
Mercedes-Benz Vietnam	6,000
Vietnam Suzuki	5,000
Giai Phong Motor	5,000
Vinacomin Motor Industry	1,500
Vietnam Daewoo Bus	1,000
	987,900

Source: Authors, based on MarkLines (accessed on 26 December 2022).

3. Existing Key Actors: THACO and Thanh Cong

3.1. THACO

One of the key successful players amongst Vietnamese automobile firms is Truong Hai Auto Corporation (THACO) (Truong Hai Group Corporation, n.d.-a). THACO was founded on 29 April 1997 in Dong Nai in Southern Viet Nam and has now established its reputation as the leading automobile

producer and distributor in Viet Nam. THACO AUTO 'lead[s] with a market share of 51.4% and sold 10,837 vehicles in total, including 8,570 passenger cars and 2,267 commercial vehicles' as of February 2021 (Truong Hai Group Corporation, 2022). According to the company website:

Its business model is built on a value chain from Manufacturing (in Chu Lai) to Trading (Distributing & Retailing) different types of vehicles, from passenger cars to buses, trucks, and specialised vehicles from global brands (KIA, Mazda, Peugeot, BMW, Foton, Mitsubishi Foton), or THACO brand (THACO Bus) and a network of over 383 branded showrooms/service centers across the country.

(Truong Hai Group Corporation, n.d.-a)

In addition to four-wheel automobile production, in 2021, THACO entered the motorcycle production market (Nguyen, 2020).

One of the notable directions THACO is moving toward is its attempt at becoming a conglomerate, diversifying its activities in various industrial areas beyond automobile production. The substantial restructuring happened in 2021, and THACO AUTO now operates as a sub-holding of Truong Hai Group Corporation. According to the 'ABOUT US' section of the company website:

After 25 years of development, from a company which traded and repaired second-hand vehicles, THACO has turned into a multi-industry holding corporation which has 2 sub-holdings, i.e. THACO AUTO (automobiles), THAGRICO (Agro-forestry production), and 4 subsidiaries – THACO INDUSTRIES (Mechanics & Supporting Industries), THADICO (Investment – Construction), THILOGI (Logistics) and THISO (Commerce – Service) in a highly integrated and complementary model.

(Truong Hai Group Corporation, n.d.-b)

3.2. Thanh Cong

Another important existing player is Thanh Cong Company, established in 1999, producing buses, trucks, tractors, and industrial cranes (MarkLines, n.d.-b). Hyundai Thanh Cong Viet Nam (Hyundai Thanh Cong Viet Nam, n.d.), a joint venture between Thanh Cong and Hyundai, now produces passenger and commercial vehicles under Hyundai's brands. Hyundai Thanh Cong Commercial Vehicle produces commercial vehicles, including buses.

Like THACO, Thanh Cong is now moving toward conglomeration, diversifying its products across various industrial fields. According to the webpage of the Vietnam Chamber of Commerce and Industry, Thanh Cong Group now operates in hotel and leisure (including a golf course), luxury residences, transportation infrastructure, and banking and finance (Vietnam Chamber of Commerce and Industry, 2021).



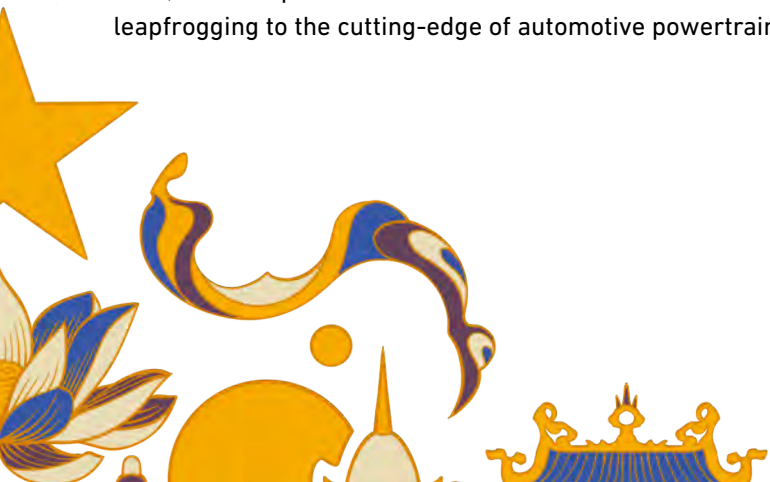
THACO and Thanh Cong could be called successful cases of Vietnamese local firms' participation in the automobile industry. However, they rely on foreign automobile companies in terms of core technology and brand reputation, as they mainly assemble vehicles under foreign brand names. However, this situation has begun to change with the emergence of VinFast, as described below.

4. A Potential Game Changer?: VinFast

On 2 September 2017, VinFast, a private automobile manufacturing company founded by Viet Nam's largest conglomerate Vingroup, broke ground the 335-hectare automobile production factory in an industrial park on Cat Hai Island – a rural district of Hai Phong, the third-largest city in Viet Nam. With the help of Siemens, '[t]he first fully digital automotive factory in South East Asia' was built only in 21 months, about half the time compared to similar projects (Siemens, n.d.). The following accomplishments can corroborate the extraordinary expansion of VinFast into automobile manufacturing since its entrance to the market in 2017.

- In the 2018 Paris Motor Show, VinFast unveiled two prototype cars – LUX SA2.0 and LUX A2.0 – designed with the help of world-leading car design firm Pininfarina (AirCar, 2018).
- In November 2018, VinFast launched Klara, its first electric motorcycle (An, 2018).
- On 21 March 2019, less than 2 years after the ground-breaking of the Cat Hai Island factory, VinFast sent out the first batch of 155 cars to Europe, Asia, Australia, Africa, and Viet Nam for field testing and qualification for a 5-star Association of Southeast Asian Nations (ASEAN) New Car Assessment Program for Southeast Asian Countries rating (Viet Nam News, 2019).
- Within only 3 years of the company's establishment, VinFast was reported to be the fifth best-selling brand of automobile in Viet Nam for the first quarter of 2020 (Lee, 2020).
- On 25 December 2021, VinFast delivered the first batch of its electric vehicle – VF e34 – to Vietnamese consumers (Doll, 2021); VF e34 is the first-ever electric vehicle manufactured and sold in Viet Nam, and it signals VinFast's leapfrogging strategy of jumping into the most advanced technologies, i.e. electric vehicle and autonomous driving in the age of carbon neutrality.
- In July 2022, VinFast 'has...decided to go all electric and depreciated its costly BMW combustion engine technology completely...' (ZoZoGo, 2022).
- Simultaneously with developing electric vehicles, VinFast is expanding its production of electric motorbikes and scooters (ZoZoGo, 2022).

In sum, VinFast shows the great potential of making automobiles truly a national industry in Viet Nam, with the production of both four-wheelers and two-wheelers using its own brand names and leapfrogging to the cutting-edge of automotive powertrains, i.e., electric vehicles.



5. Vietnamese Policies for Automobile Industry Development

Before delving into more detailed empirical analyses of the current situation of the Vietnamese auto industry, let us briefly describe the current policies for the automobile industry and the status of the international business environment surrounding Viet Nam, particularly concerning the automobile trade.

5.1. Policies for the Automobile Industry

The current situation of the Vietnamese automobile industry is the result of various factors including government policies for developing the automobile industry in addition to *Doi Moi* and other national economic and social development policies. The recent Vietnamese automobile policies are based mainly on Decision No. 1168/QĐ-TTg on approval of a strategy to develop automobile industry in Viet Nam by 2025, orientation toward 2035 and Decision No. 1211/QĐ-TTg on approval for development planning of Viet Nam automobile industry by 2020 with a vision to 2030, which were issued on 16 and 24 July 2014, respectively. These decisions specified the policy targets toward 2030 and policy orientations to realise the targets. The Vietnamese government expects annual average growth of 14.26% during 2021–30 in automobile productions, accompanied by domestic market growth, the development of automobile and parts manufacturing, import substitutions of these products, increasing exports of spare parts and components, and improvement in local content ratios. Decision 229 dated 2 April 2016 on the development of Viet Nam's automobile industry regulates the mechanism and policy for implementation of the strategy (Decision No. 1168) and plan (Decision No. 1211) for automobile industry development.



Table 9.2. Viet Nam's Policy Targets for 2025 and 2030

	2020	2025	2030
Domestic production			
(% of the total demand):			
Cars with up to nine seats	60	65	70
Cars with ≥ 10 seats	90	92	92
Trucks	78	78	80
Special-use vehicles	15	18	2
Domestic production (units)			
Total	227,496	466,375	862,761
Cars with up to nine seats	114,053	237,900	451,512
Cars with ≥ 10 seats	14,154	29,102	51,288
Trucks	97,952	197,017	356,115
Special-use vehicles	1,336	2,356	3,846
Export of vehicles (units)			
Total	20,000		60,000
Cars with up to nine seats	5,000		30,000
Cars with ≥ 10 seats	5,000		10,000
Trucks	10,000		20,000
Export of spare parts and components (million \$)	4,000		6,000
Domestic manufacturing value (%)			
Cars with up to nine seats	30–40	40–45	50–55
Cars with ≥ 10 seats	35–45	50–60	70–75
Trucks	30–40	45–55	65–70
Special-use vehicles	25–35	40–45	55–60

Source: Authors based on the Decision No. 1211.

5.2. International Trade Environment

These decisions to develop the automobile industry encouraged domestic companies to participate in the global supply chain in manufacturing and export of spare parts and vehicles, while reducing import taxes on automobiles from ASEAN members in accordance with the tariff reduction schedule of the ASEAN Trade in Goods Agreement committed to by the Government of Viet Nam. Viet Nam has also promoted a freer trade and investment system by signing other free trade agreements (FTAs) such as the Viet Nam–Japan Economic Partnership Agreement, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, the Viet Nam–European Union FTA, and the Regional Comprehensive Economic Partnership.

However, in parallel with these trade promotion measures, the Vietnamese government has enacted policies to protect the relatively weak local auto firms from international competition. For example, Decision No. 46/2001/QĐ-TTĐ, issued on 4 April 2001, prohibited the import of used parts and used under-16-seaters. New under-16-seaters could be imported only with special permission from the Ministry of Trade of the Socialist Republic of Vietnam (2001). The protective nature of Vietnamese government policy continued even after Viet Nam joined the World Trade Organisation in 2007. For example, import tariffs for automobiles remained high at an average of 70% in 2014 (Le, 2019: 4). With the accession of Viet Nam to the ASEAN Free Trade Agreement in 2015, import tariffs were removed, but the Vietnamese government took countermeasures such as Decree 116/2017, which ‘has tightened controls for imported automobiles in terms of origin, types, technical safety, and environment protection requirements’ (Vietnam Investment Review, 2018). More specifically, according to Decree 116/2017, ‘automobile importers will have to submit a number of dossiers, such as the registration certificates of imported cars for technical safety and security, and environmental inspection, certified copies of the types of tires, rear-view mirrors, and front lights issued by competent agencies or organizations, and the original certificates of automobile quality inspection issued by foreign automakers or automobile-assembling enterprises for each type of car’ (Vietnam Investment Review, 2018). According to a Japan External Trade Organization (JETRO) report, ‘[t]he Decree 116 lists strict conditions that are virtually impossible to meet’ (JETRO, 2018). Although Decree 116 was modified in 2020 with the additional issuance of Decree No. 17/2020/ND-CP, which relaxed some of the measures presented in Decree 116, the Vietnamese government continues to protect the nurturing of the domestic automobile industry (MarkLines, 2019).¹

In sum, the Vietnamese government and automobile firms are in the difficult position of increasing commitment to the general trend toward free trade and the need and desire to nurture a genuinely national automobile industry.

Given the above-described history of the Vietnamese automobile industry, how can Viet Nam develop a fully competitive automobile industry? Before providing policy suggestions, we will look at the auto parts industry in Viet Nam and the automobile industry in ASEAN in detail.

¹ For more detailed discussion and examination of the Decree No. 116/2017/ND-CP and the Decree No. 17/2020/ND-CP, as well as other related policy measures and their impacts, see Schröder (2021), pp.229–36.

6. How Can Viet Nam Develop a Fully Competitive Auto Parts Industry?

6.1. Development of the Auto Parts and Components Industry

As stated in Decisions No. 1168 and N. 1211, the Government of Viet Nam had decided to promote the auto parts and components industry. To realise this, the government issued Decree No. 111/2015/ND-CP on 3 November 2015 regarding the development of supporting industry and Decision No. 68/QĐ-TTg dated 18 January 2017 regarding approving the development of supporting industries during 2016–25, while these policies focus on supporting industries in general, which manufactures materials, accessories, components, and spare parts used for assembling not only vehicles but other finished goods.

Although more studies will be necessary to assess impacts of these policies on the automotive industry, several statistics suggest their impact on the development of the auto parts and components industry. According to the Statistical Yearbook of Vietnam (2021), 639 enterprises were active in the manufacturing of motor vehicles, trailers, and semi-trailers, which employed 150,335 people and generated net turnover of D336.7 billion in 2020. All these figures increased significantly from 2015, recording 435 establishments, 118,465 employees, and net turnover of D219.5 billion.

The MarkLines supplier database presents the current situation of the auto parts supplier development, although it does not contain all suppliers in the industry, as opposed to the official statistics. The number of auto parts suppliers listed in the database is 444 for Viet Nam, as of 24 January 2023. This figure, which is larger than that of the Philippines (362) but smaller than Malaysia (650), indicates the development of auto parts industry in parallel with the development of automobile production in Viet Nam.

6.2. Characteristics of the Vietnamese Auto Parts Industry

The entry of foreign auto companies into Viet Nam, the establishment of Vietnamese companies THACO and Thang Cong, and the emergence of Vinfast since the 1990s, have improved the basis for the development of the Vietnamese auto parts industry² and created the five characteristics as follows.

The first characteristic is that component companies are concentrated geographically in the northern region, mainly Hanoi and Hai Phong, where assembly plants operate, and the southern region, mainly Ho Chi Minh (Kobayashi, Ishioka, and Schröder, 2021). The central region, however, is THACO's production centre and its component companies are concentrated mainly in Quang Nam Province and Da Nang. Nevertheless, the production scale is still small compared to both the Northern and Southern regions.

² Previous research on Viet Nam's motorcycle and auto parts industry has been conducted by Fujita (2006), Mishima (2010), Tran Van Tho (2010), Deloitte Tohmatsu (2013), Kobayashi, H. (2015, 2016), Kobayashi, T. (2015), Jin (2016), and Schröder (2017).

The second characteristic is that components companies (Tier 1 companies) with relatively advanced technology are largely owned by Japan and other countries, while Vietnamese companies have low technological capabilities and serve Tier 1 as Tier 2 or Tier 3 components suppliers.

The third characteristic is the specialisation of Vietnamese auto parts suppliers in single production process such as casting, forging, or plastic moulding, and painting. Local suppliers have not developed enough capabilities to integrate multiple production processes ranging from material processing to machining processes, painting, assembly, and final inspection, differently from Tier 1 that integrate these processes to supply components and modules to car makers. The coverage of quality assurance is also different between multinational Tier 1 and local Tier 2/Tier 3 suppliers. Local suppliers can provide a 'spec guarantee' that assures the product dimensions are consistent with the blueprints (Table 9.3). Nonetheless, they do not have test instruments and therefore cannot offer a 'functional guarantee' that guarantees strength, durability, and other physical requirements as Tier 1 companies can do for vehicle producers or automotive original equipment manufacturers (OEMs).

The fourth characteristic is a common entry pathway to the Tier 1 automotive parts market. Those who have overcome these hindrances and satisfied rigorous technical requirements to becoming Tier 1 companies have entered the automotive parts market from the production of two-wheeler components with relatively low entry barriers that still require the capability of handling large orders. They have honed their motorcycle production skills in global supply chains and succeeded in expanding their market beyond Viet Nam to Japan, the US, Europe, and Mexico. Finally, they are starting to produce four-wheel parts based on the technical and marketing skills they have gained from two-wheel parts production.

6.3. Overcoming Weaknesses in Viet Nam's Auto Parts Industry

What is required for Viet Nam's auto parts industry to expand? We suggest the following four challenges, based on the past experiences in Viet Nam and other ASEAN countries, on-going structural change in the automotive industry, and findings from the field research we conducted in Hanoi and Ho Chi Minh in September 2022.

The first is to improve the technological capabilities of Viet Nam's auto parts industry. To assess their capabilities, Kobayashi, Ishioka, and Schroeder (2021) classified the 192 companies across Viet Nam listed in the FY 2018 reports issued by JETRO Hanoi and JETRO Ho Chi Minh Office into Tier 1, Tier 2, and Tier 3, based on their level of technology and business relationships (See Table 9.3). In Viet Nam, Tier 1 companies, which are high in technology and deal directly with OEMs, account for only 11 companies or 5.7% of the total (See Table 9.4). For parts companies to enhance their technological capabilities, the Vietnamese government must urgently promote measures to support parts companies, such as tax incentives for capital investment, improved working conditions, expanded skill education for skilled workers, and promotion of advanced technology education through industry-academia collaboration. These policies had already been in place in Japan since the 1960s.

The second is market expansion. The auto parts industry did not expect the domestic market to expand until the 2010s. Instead, exports were promising. To understand the current situation, we can look at the top 32 auto parts companies in Viet Nam, consisting of 11 Tier 1 companies and 21 Tier 2 companies eligible to become Tier 1 (See Table 9.4) and their market position. A common characteristic of the 32 companies is that they have used their global supply chains to expand into Japanese and Western markets. Since around 2020, they have been focusing on the expansion of the domestic market in Viet Nam and trying to seize the market to grow.

The third is the utilisation of Viet Nam's two-wheel parts industry. Most of Viet Nam's auto parts industry was started by two-wheel parts companies, which have mastered mass production techniques to meet growing domestic demand and have experience in exporting to two-wheelers' global supply chain. These technological and market-penetrating motorcycle parts suppliers (including the previous 32 auto parts companies) have begun to enter the four-wheel parts market. Only a few of the 192 Vietnamese component companies mentioned above produce products for both two- and four-wheeled vehicles, while 148 companies, or 77.1% of the total, supply two-wheeled, four-wheeled, and other (See Table 9.5) components. In other words, these 148 companies will move from two-wheel to four-wheel component production if they can obtain appropriate government technical guidance and financial support, tax incentives, and access to the domestic and foreign markets.

The fourth is the improvement of the parts supply system for the production of electric two- and four-wheeled vehicles, which has been already undertaken in Viet Nam on the auspices of the government's income growth target for 2045. By 2045, electrification is expected to be accelerated as charging facilities expand. Already in 2022, electric buses made by VinFast are running in Hanoi. Along with the promotion of vehicle electrification and the development of charging facilities and other social infrastructure, it will be necessary to foster the component industry. The development of motors, inverters, and the combined e-Axle and battery industries will be targeted. To nurture and develop these technologies, it is essential to utilise and collaborate with information and communications technologies. The formation and expansion of industry-academia collaboration for electrification is essential.



Table 9.3. Criteria for Classification as Tier 1, Tier 2, and Tier 3

	Classification Criteria	Tier 1	Tier 1 Candidate	Tier 2	Tier 3
Business Relationships	1 Business relationships	Transact directly with automotive manufacturers	Transact with Tier 1 and some manufacturers	Transact with Tier 1	Transact with Tier 2
	2 Existence of products designed and developed in-house	Yes	No (outsourced production)	No (outsourced production)	No (outsourced production)
	3 Membership or participation in manufacturers' associations	Member	Member	Voluntary participation	Not eligible
Technical Level	1 Existence of design and development systems	Yes	No (but future establishment possible)	No	No
	2 Quality assessment systems (personnel, equipment)	Capable of guarantee of strength, defects and other functions	Capable of guarantee of strength, dimensional accuracy and other specifications	Capable of guarantee of dimensional accuracy and other specifications	Capable of guarantee of dimensional accuracy and other specifications
	3 Product form	Unit assembly integrated production	Sub-assembly and/or parts production	Parts production	Small lot parts production

Reference	Classification Criteria	Tier 1	Tier 1 Candidate	Tier 2	Tier 3
	Annual sales	≥¥10bn	≥¥5bn	¥2–3bn	≤¥1bn
	Number of employees	≥3,000	500–1,000	100–500	50–100

Source: Compiled by the authors based on various materials.

Table 9.4. Breakdown of Local, Foreign-affiliated, and Japan-affiliated Enterprises into Tier 1, Tier 2, and Tier 3

	Local Enterprises		Foreign-affiliated Enterprises		Japan-affiliated Enterprises		Total	
Tier 1	4	2%	3	2%	4	2%	11	6%
Tier 2	28	15%	28	15%	13	7%	69	36%
(Tier 1 Candidates)	10	5%	7	4%	4	2%	21	11%
Tier 3	70	36%	23	12%	19	10%	112	58%
Total	102	53%	54	28%	36	19%	192	100%

Sources: JETRO Hanoi (September 2017, July 2018, October 2018), JETRO Ho Chi Minh (October 2018).

Table 9.5. Breakdown of Suppliers (Motorcycle and/or Automotive)

	Motorcycle		Motorcycle and Automotive		(Motorcycle, Automotive, and Other)		Automotive		Total	
Local Enterprises	17	9%	76	40%	(55)	(29%)	9	5%	102	53%
Foreign-affiliated Enterprises	6	3%	47	24%	(31)	(16%)	1	1%	54	28%
Japan-affiliated Enterprises	4	2%	25	13%	(19)	(10%)	7	4%	36	19%
Total	27	14%	148	77%	(105)	(55%)	17	9%	192	100%

Note: The 'motorcycle and automotive' category includes all enterprises in the 'motorcycle, automotive, and other' category.
Sources: JETRO Hanoi (September 2017, July 2018, October 2018), JETRO Ho Chi Minh (October 2018).



7. Vietnamese Automobile Industry in Southeast Asia

Although it is difficult to consider whether Viet Nam has an automobile market with growth potential only from an international comparison between Viet Nam and its competitors will aid understanding the Vietnamese automobile industry development potential. Table 9.6 presents that the vehicle market size in Viet Nam is moving toward that of the Philippines but still remains almost half that of Malaysia in 2019 before the COVID-19 outbreak. On the other hand, the estimated capacity of vehicle production that automotive OEMs have built in Viet Nam is almost six times larger than the Philippines and catching up to the vehicle assembly industry in Malaysia. These supply-size data, including Table 9.1, indicate that automotive OEMs, especially those owned by Vietnamese private firms, are so convinced of the potential of the domestic market that they have invested in vehicle assembly capacities ahead of their strong foreign-owned competitors, while Japanese major OEMs such as Toyota and Honda have placed Thailand and Indonesia as their main production sites in Southeast Asia.

Table 9.7 presents the potential of the Vietnamese automobile industry becoming a reality. The narrowly defined auto parts exports (classified as HS8708) in 2020 for Viet Nam surpassed the values for Malaysia and the Philippines, getting closer to the exports for Indonesia. When auto parts exports are defined more broadly, Viet Nam can be considered as a leading exporter of auto parts and components in Southeast Asia. The export value of auto parts defined according to the United States-Mexico-Canada Agreement for Viet Nam superseded that of Indonesia and Malaysia in 2020, reflecting Viet Nam's major role in wire harness production in the global automobile value chain.

Table 9.6. Sales and Production in 2019 and Estimated Annual Production Capacity (Units)

	Malaysia	Indonesia	Philippines	Thailand	Viet Nam
Sales (2019)	604,281	1,030,126	369,941	1,007,552	322,322
Production (2019)	571,632	1,286,848	95,094	2,013,710	176,203
Production capacity	1,291,265	2,106,840	158,200	3,099,200	987,900

Note: Production capacity does not include the capacities under planning.

Sources: Authors, based on MarkLines for production capacity and ASEAN Automotive Federation (<https://www.asean-autofed.com/index.html>) for production.

Table 9.7. Auto Parts and Components Export in 2020 (US\$ million)

	Malaysia	Indonesia	Philippines	Thailand	Viet Nam
HS8708	962	1,500	851	6,698	1,311
USMCA	6,513	6,477	4,537	19,547	10,400

USMCA = United States-Mexico-Canada Agreement.

Notes: Auto parts and components here are those narrowly classified in HS code 8708 (parts and accessories of motor vehicles) and broadly defined by USMCA.

Sources: Authors, based on UN Comtrade and USMCA.

8. Conclusion

8.1. Vietnamese Automobile Industry Development Strategies

The current status and on-going strategies for developing the automobile industry suggest that Viet Nam will be able to take advantage of the following two approaches to automobile industry development.

The first approach is to prioritise automobile assembling to make Viet Nam one of the three leading vehicle-producing countries in Southeast Asia. This approach pursues industrial clustering, utilising a governance mechanism of global value chains ruled by multinational lead firms (Gereffi, Humphrey, and Sturgeon, 2005) and agglomeration forces (Fujita and Thisse, 1996). By providing infrastructure and incentives to foreign direct investment, this policy introduces productive activities by automobile OEMs, expecting suppliers (i.e. Tier 1 suppliers) and suppliers of suppliers (i.e. Tier 2 and lower-tier suppliers) to develop a domestically integrated automobile industry (Kuchiki and Tsuji, 2008).

This strategy used to be a standard industrial policy adopted by the advanced ASEAN member states who could move from import substitution to export promotion for developing a domestically integrated automobile industry gradually. Viet Nam also considers making strategic use of industrial clustering to develop the automobile and related supporting industries, as mentioned in Decision No.1211. However, differently from the advanced member states, Viet Nam can expect that not only



multinational OEMs but also locally owned firms such as THACO, Thanh Cong, and VinFast will be able to take the leading role in developing domestic value chains.

The second approach emphasises export promotion of auto parts and components to develop internationally competitive suppliers that are indispensable to assemblers of any types of cars in the international market. This prioritisation of the auto parts industry is a realistic approach to nurturing a competitive vehicle-assembling industry, considering the present size of the domestic vehicle market in Viet Nam. This approach is more feasible in the free and open international/regional economic order that allows the better use of benefits from production fragmentation (Kimura and Ando, 2005). Viet Nam can take advantage of the second approach by using FTAs strategically in the current international political situation with the increasing economic nationalism to become a hub of auto parts production and export. In the short term, this approach will encourage automobile OEMs to import completely built units of vehicles to Viet Nam from their well-developed production bases in the advanced Southeast. However, in the middle and long term, exporting will boost Vietnamese suppliers' international competitiveness, allowing them to support the development of automobile OEMs in Viet Nam and the domestically integrated automobile industry to which the first approach aims.

We suggest that Viet Nam does not need to choose between the two approaches but can adopt both to accelerate the catch-up with major vehicle-producing countries in Southeast Asia.

We consider that Viet Nam has a high potential to become four-wheeler parts suppliers in various industries (e.g., motorcycle, electronics) to adopt the second approach. Collaboration with Japanese auto parts suppliers will be a realistic approach to turn the potential into reality. Some Japanese suppliers are finding increasing business opportunities in Viet Nam, reflecting active investments in automobile assembling by indigenous OEMs. Collaboration between Vietnamese and Japanese suppliers will be mutually beneficial and contribute to the development of supporting industries in Viet Nam. The resulting increase in parts and components will allow Japanese OEMs to build and export completely built units to Viet Nam from their factories in Southeast Asia mainly outside Viet Nam (e.g., Thailand). A competitive Viet Nam auto parts industry will challenge automotive OEMs in Thailand for Viet Nam's and other ASEAN vehicle markets in the future.

Viet Nam–Japan cooperation for developing automobile and auto parts industries will create business opportunities for Vietnamese and Japanese suppliers, which will lead to developing Japanese automobile OEMs. One of the challenges for Viet Nam–Japan cooperation will be to increase the awareness and belief of Viet Nam's potential as a production site of automobiles and auto parts.



8.2 Industrial Policy Orientations

To make use of the two approaches, Viet Nam will need to develop policies that accommodate the advantages and challenges for the Vietnamese automobile industry, the current status and future perspectives of the international market, international political economy, and international competition. We suggest that Viet Nam should design strategies and policies that tackle the following issues.

(1) Vehicle electrification and digitalisation to facilitate motorisation

Viet Nam is entering the period of motorisation, entailing an accelerated growth period in the automobile market in line with the Socio-Economic Development Plan for 2021–25. This predicts an annual average gross domestic product growth rate of 6.5%–7% to reach \$4,700–5,000 per capita by 2025, and the achievement of the government goal of making Viet Nam a high-income country by 2045. These business environments will be favourable to the development of automobile and parts manufacturing and related service industries. By identifying and bringing particular vehicle models attractive to Vietnamese consumers into the market, automobile OEMs will be the winners in the fast-growth market. On the other hand, the expected rapid increase of vehicle driving in daily life will also engender negative impacts on Viet Nam, such as air pollution, traffic jams, and traffic accidents. Electrified and digitalised vehicles will have more potential to mitigate these problems (Iwasaki and Ueki, 2022), and therefore be accepted by the Vietnamese societies.

Electrification and digitalisation of vehicles will provide Vietnamese suppliers with increasing opportunities for developing a broader scope of automobile-related businesses, including electric parts and components production and software development.

(2) Promotion of open trade and investment

Exports will help the Vietnamese auto parts industry increase production scale and decrease costs. This economy of scale will improve Vietnamese auto parts suppliers' competitiveness. The resulting closer linkages amongst automobile and parts producers will facilitate information and knowledge exchanges through the domestic and international value chains, further strengthening the basis of the Vietnamese automobile industry, and developing automobile assembling as an export industry. We consider open investment policies to be indispensable for Viet Nam to become an export-oriented auto parts production base.

(3) Digital opportunities

Digital technologies are an enabler of radical improvements in efficiency and flexibility in the entire ecosystem of automobile manufacturing. A direct impact of digital technologies, combined with electrification of automobile and parts manufacturing, will be the increased use of semiconductors, sensors, other electric parts and components, and software for cars. Automobile OEMs will allocate more budgets to the development of these elements. Traditional automobile suppliers can create more value-added products and services by focusing on these new opportunities, which also attract entrants into automobile-related businesses from different industries.

New opportunities for Viet Nam will also come from the digital transformation of the automobile industry, allowing it to become more customer-driven and service-oriented. Cars and services can be more customised and personalised by linking manufacturers and service providers, including car dealers, with drivers and other car users. Digital technologies allow car dealers to use physical and virtual spaces for receiving orders and feedback from customers and to provide more varieties of services, which can bring radical changes in the traditional car sales system based on dealer channels.

Digital technologies can be best used when high-speed, seamless, reliable communication and data exchanges are secured anytime and anywhere. Viet Nam needs to develop physical and institutional infrastructure to realise communications and freer data flows between vehicles and companies involved in any automobile-related activities along the value chains, including development, manufacturing, logistics, sales, and after-services. Connectivity will be one of the central policy concepts for making better use of digital technologies to address global, economic, political, social, and environmental challenges, entailing opportunities for developing new automobile hardware, software, system, engineering, and contents businesses.

(4) Capability building of local suppliers

Capable suppliers are indispensable to implement the policies for the above-described issues successfully. Although production of automobiles and exports of auto parts and components have been increasing, the development of competitive suppliers remains an important issue to increase and diversify auto parts and components production, improve their quality, and strengthen the automobile assembly sector in Viet Nam.

Human resource development (HRD) is always included as necessary actions in policy plans. Considering the current industrial development in Viet Nam, Vietnamese suppliers need to develop more skilled workers, engineers, and leaders to improve basic production and quality management to satisfy the high requirements for quality, cost, and delivery from the demanding automobile OEMs. In addition to these traditional HRD issues, urgent actions will be needed for the development of personnel specialised in computer sciences, robotics, statistics, and other scientific fields necessary for utilising artificial intelligence, simulation, and other digital technologies and techniques.

We should keep it in mind that the future automobile industry will require parts and components suppliers to make more investments in hardware including testing equipment, automated machines and sensors, and software to operate digital technologies. Firms should consider how to build a strong financial foundation in cooperation with the Government of Viet Nam and public and private financial institutions.

8.3. Viet Nam–Japan Cooperation

Viet Nam and Japan have developed closer cooperative relationships. To promote the bilateral cooperation for the industrial development issues, Viet Nam issued Decision 1043/QĐ-TTg dated 1 July 2013 on ratification of Viet Nam’s industrialisation strategy within the framework of Viet Nam–Japan cooperation toward 2020 and an orientation toward 2030. This was followed by Decision 1829 dated 28 October 2015 on ratification of the action plan for development of automotive industry in the framework of Viet Nam–Japan cooperation. We consider these industrial cooperation frameworks still useful but they can be updated by considering the following cooperation fields.

(1) Human resource development

The ongoing digital transformation of automobile manufacturing involves the adoption of digital technologies and upgrading of traditional managerial techniques (e.g., Kaizen, lean manufacturing, total quality management) complementary to digital techniques. These requirements necessitate initiatives for upskilling and reskilling of high-skilled Vietnamese engineers and workers.

Japan has experience in developing public-private initiatives in cooperation with the automobile OEMs and their Tier 1 suppliers to assist the improvement in traditional managerial techniques of local firms in Viet Nam and other ASEAN Member States (AMS). Japan can continue to expand this cooperation with Viet Nam to strengthen the basis of supplier capability upgrading.

More sectors will participate in promoting digital skill development in the automobile and related industries. Not only automobile OEMs and major suppliers but also private companies in factory automation, system integration, tech and educational tech sectors can also contribute to HRD. Digitalisation will increase the role of universities, especially in science and technology in Viet Nam, in automobile HRD. To transfer science-based knowledge and digital engineering skills from universities to employees at automobile suppliers, academic and private sectors need to cooperate to develop curricula, teaching materials, and certification/degree systems to give Vietnamese engineers and workers opportunities to learn advanced knowledge in a flexible manner.

The Government of Japan, in cooperation with industrial and educational sectors, will be able to transfer knowledge and experiences to assist Vietnamese efforts for digital transformation. Japan will be able to obtain benefits from cooperation for HRD with Viet Nam that will provide Vietnamese digital personnel and services with Japanese industries that are digitalising.



(2) Promotion of collaborations between Vietnamese and Japanese companies

Industrial HRD will help develop a basic capability necessary for Vietnamese suppliers to enter automobile value chains, which will increase opportunities to develop collaborative relationships between Vietnamese and Japanese firms in different ways.

The inter-firm transactional linkages will be important knowledge transfer channels between Vietnamese and Japanese automobile industries and create continuous improvements in the capabilities of Vietnamese suppliers. This effect is a main aim of the international cooperation projects for HRD.

Suppliers in the advanced AMS received technical assistance from Japanese Tier 1 suppliers. However, some Vietnamese firms may learn from Japanese Tier 2 and Tier 3 suppliers in ways that differ from the past experiences in the advanced AMS. Japanese small and medium-sized enterprises (SMEs) that are entering international markets at present are smaller than the advanced AMS SMEs and do not have sufficient resources to invest abroad on their own account but prefer exporting from Japan. Thus, Japanese SMEs can serve the Vietnamese automobile industry as Tier 2 and Tier 3 suppliers in the future, contrary to the current situation where most of the Vietnamese suppliers support Japanese Tier 1 suppliers in Japan and other countries.

Joint ventures are another way of transferring knowledge and supplier development on a commercial basis. As some local firms in advanced AMS have succeeded in becoming Tier 1 suppliers of Japanese OEMs, Vietnamese firms can take advantage of this collaboration mode in Viet Nam.

The current lack of successors in Japanese SMEs will make mergers and acquisitions (M&As) as an alternative strategy for Vietnamese firms to enter the Japanese auto parts market. Even if Japanese owners of SMEs do not prefer M&As by foreign firms, some of them will seek Vietnamese and other foreign managers as their successors.

To realise these opportunities for developing diversified Viet Nam–Japan relationships, international marketing and business matching will be a key issue to be overcome by international cooperation. It is necessary to develop a closer relationship between Viet Nam's and Japan's export and investment promotion agencies to promote necessary policies in cooperation with private business facilitating agents.

(3) Development of a common digital basis for supply chain collaboration and resilience

Industries have adopted web technologies to manage supply chains more efficiently. Regulations that force firms to satisfy requirements for traceability, especially those set by the European Union, (e.g., registration, evaluation, authorisation and restriction of chemicals, restriction of hazardous substances directive, etc.) have increased the development of technological standards and a common platform for efficient compliance. The increasing demands for product safety, environmental friendliness, and sustainability strengthen this trend.

In addition to this kind of interaction to exchange relatively simple data, firms are moving more complex business-to-business collaborations online. The automobile industry is no exception, although face-to-face interactions have been emphasised in collaborative relationships. A driving factor of this transition is the increase in technological choice. In addition to traditional data exchange, the virtual-real fusion by the advancement in digital engineering, including virtual engineering, virtual reality, augmented reality, and mixed reality, which more firms started using during the COVID-19 pandemic, enables more complex interactions amongst people online that used to be face-to-face communication.

Common technological standards and digital platforms to realise freer data flow with trust will be necessary to make supply chains more collaborative and resilient. Viet Nam and Japan can cooperate to develop an East Asian and global collaboration platform.

(4) Infrastructure development for construction of sustainable mobility systems

In parallel with these efforts for automobile industry promotion, the Government of Viet Nam will need to pay attention to worsening traffic accidents, traffic jams, air pollution, noise, parking shortages, and other expected negative impacts of fast motorisation. V2X, i.e. vehicle-to-road or vehicle-to-vehicle, communication infrastructure will mitigate these problems, in addition to the traditional countermeasures such as road infrastructure, automobile taxes, vehicle emission standards, and public transportation system development. The Government of Viet Nam, in cooperation with Japan, will be able to develop necessary infrastructure.

(5) Development of a comprehensive vision on mobility

Digital technologies are transforming not only vehicles but also the entire transportation system. Increased technological alternatives suggest the importance of making choices consistent with other social and environmental challenges (e.g., decarbonisation). Developing a common vision on mobility with involvement of different social interest groups will help Viet Nam prioritise select technologies. A common vision between Viet Nam and Japan will facilitate the automobile industry and develop a common vision amongst AMS and East Asian countries.



(6) Development of an organisation for Viet Nam–Japan public–private dialogue and follow-up cooperation on automobile industry development

The strong involvement of automobile and parts manufacturers operating in Viet Nam is indispensable for the development of a competitive automobile industry. Sharing the Vietnamese government's strong will to develop and implement an automobile industrial policy consistent with the open economic policy will help realise public–private cooperation. Cooperation for developing electrified vehicle manufacturing will be important given the current situation of Viet Nam's reliance on a single private initiative, the risks of national car projects, uncertainties in technological changes and mineral supplies, etc. Japanese automobile OEMs and suppliers can play important roles in manufacturing of not only traditional internal combustion engine-based but also electrified vehicles in the competitive environment with Vietnamese and non-Japanese OEMs. An organisation for Viet Nam–Japan public–private dialogue to develop a mutual understanding will cultivate the involvement of more Japanese firms. If such an organisation induces cooperation, the Government of Viet Nam will achieve Japanese commitment to the development of automobile industry in Viet Nam. International organisations will be able to contribute to this dialogue and mutual understanding from the perspective of a third party.

We believe that Viet Nam–Japan cooperation for the automobile industry will be more successful for the two countries when Japanese automobile OEMs recognise the huge potential of the Vietnamese automobile industry and make a strong commitment to the growth of their business in Viet Nam. Our recommendations on Viet Nam–Japan cooperation will help the development of competitive automobile parts and components industry in Viet Nam and the Vietnamese automobile industry. However, the cooperation can benefit non-Japanese automobile OEMs and contribute the development of competitors in the Vietnamese and other ASEAN markets if investments by the latter in Viet Nam keep lagging behind foreign OEMs.

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Chapter 10

Electronics as a Driving Force for Viet Nam's Economic Development

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The electronics industry emerged in the 20th century and is today one of the largest global industries. It comprises a variety of products, ranging from aerospace products; lamps and light fixtures, including light-emitting diodes; consumer electronics, such as television sets and electrical household appliances; electronic medical equipment; and microelectronic components; as well as automotive software and electrical and electronic components, such as on-board diagnostics (OBD), in-car touch screens, cameras, and navigation systems, which are used and applied in many economic and social activities, especially in the context of the fourth industrial revolution. Global electronic value chains have been led by a small number of multinational enterprises, but these have developed and expanded all over the world, with the involvement of both developed and developing countries.

In Viet Nam, the electronics industry has become an increasingly important sector of the country's economy and continues to grow despite the negative impact of the COVID-19 pandemic. The industry emerged about 3 decades ago but has grown rapidly, becoming the highest exporting industry in Viet Nam and positioning the country as one of the world's key electronics exporters. Viet Nam has made big steps into the global electronic value chain since 2010 through Samsung's investment in Viet Nam to produce smartphones for exporting all over the world. Viet Nam has participated in global electronic value chains mainly downstream, characterised by simple and labour-intensive assembling activities with lower added value. To take full advantage for further development of the industry, Viet Nam needs to solve the remaining issues in the industry. Comprising the largest share of the country's exports, however, the greater the increase in the export value of the industry, the lower the share of domestic value added. This essentially requires electronics enterprises to shift and undertake more capital, technology, and knowledge-intensive functions within the global electronic value chains. Another issue is to complete regulation and legislation to address issues on electronic waste and the related matters on labour safety and sustainable development.

1. Overview

1.1. Definitions, Scope, and Data of Electronics and ICT

According to the United Nations' International Standard Industrial Classification of All Economic Activities (ISIC) revision 4, the electronics and ICT sector has the definition: *'the production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display'*. This study uses this definition and scope of electronics and ICT to collect statistical data and conduct analysis, including the following ISIC 4-digit codes (Table 10.1).

**Table 10.1. Scope of the Electronics and ICT Sector Defined by ISIC
Rev. 4**

Electronics and ICT manufacturing industries	
2610	Manufacture of electronic components and boards
2620	Manufacture of computers and peripheral equipment
2630	Manufacture of communication equipment
2640	Manufacture of consumer electronics
2651	Manufacture of measuring, testing, navigating and control equipment
2652	Manufacture of watches and clocks
2660	Manufacture of irradiation, electromedical and electrotherapeutic equipment
2670	Manufacture of optical instruments and photographic equipment
2680	Manufacture of magnetic and optical media
Electronics and ICT services industries	
4651	Wholesale of computers, computer peripheral equipment and software
4652	Wholesale of electronic and telecommunications equipment and parts
5820	Software publishing
6110	Wired telecommunications activities
6120	Wireless telecommunications activities
6130	Satellite telecommunications activities
6190	Other telecommunications activities
6201	Computer programming activities
6202	Computer consultancy and computer facilities management activities
6209	Other information technology and computer service activities
6311	Data processing, hosting and related activities
6312	Web portals
9511	Repair of computers and peripheral equipment
9512	Repair of communication equipment

Source: ISIC Rev. 4 (2008).

Trade data for electronics and ICT are also separated between goods and services. To collect the data, this study uses a conversion key developed by the Organisation for Economic Co-operation and Development (OECD) to select HS codes for electronic goods/commodities that are equivalent to the above ISIC codes, including the HS 4-digit codes in Table 10.2. For data on services, this study uses BPM6, a classification system of services in international trade. The data may not cover all service activities with the ISIC codes listed above, because there is no conversion key between ISIC and BPM6, where electronic and ICT services are equivalent to telecommunications, computer, and information services (S9), including three sub-sectors: telecommunications services (9.1), computer services (9.2), and information services (9.3). These sub-sectors can be divided at the 3-digit level, however data for Viet Nam are only available at the 2-digit level.

Table 10.2. HS codes for Electronic Commodities

ISIC Codes	Equivalent HS Codes
261	8532 8533 8534 8540 8541 8542 8536
262	8469 8471 8473 9009 8443
263	8517 8525 8529 8531
264	8518 8519 8520 8521 8522 8527 8528 9504
265	8526 9012 9014 9015 9016 9017 9024 9025 9026 9027 9028 9029 9030 9031 9032 9033 9101 9102 9103 9104 9105 9106 9107 9108 9109 9110 9111 9112 9114
266	9018 9021 9022
267	9002 9005 9006 9007 9008 9010 9011 9013
268	8523

Source: OECD. HS to ISIC to End-use Conversion Key. <https://www.oecd.org/sti/ind/ConversionKeyBTDIx4PUB.xlsx> (accessed 20 June 2022).

1.2. Development Trends in Electronics and ICT in the Context of Industry 4.0

The electronics industry has been changing rapidly over the past few years thanks to the fourth industrial revolution (or Industry 4.0). A major feature of this change is the combination of physical manufacturing operations with Internet of Things (IoT), big data, artificial intelligence (AI), and machine learning, along with other technologies that support real-time automation and information gathering. Annual reports on the electronics industry have identified different development trends for each year depending on the situation and market demand. Some of the common trends in the sector that will occur throughout the next decade include: (i) IOTs that enable predicted maintenance, smart manufacturing, autonomous mobility, and real-time management; (ii) big data that require a new generation of data-processing devices and software; (iii) AI that initiates the development of

AI-based software and AI-powered platforms; (iv) advanced materials that require more efficient and environment-friendly uses; and all of these new trends lead to another one, (v) restructured supply chains that drive investment and cooperation with strategic partners in producing core parts, especially semiconductors, for more resilience, reliability, transparency, and responsibility. In the future, software and services in the electronics and ICT sector will play a major role because by linking and merging the virtual with the real world, manufacturers will ensure reaching their maximum production potential. As such, trade in services in the electronics and ICT sector will also accelerate accordingly.

1.3. Review of International Trade in Electronics and ICT

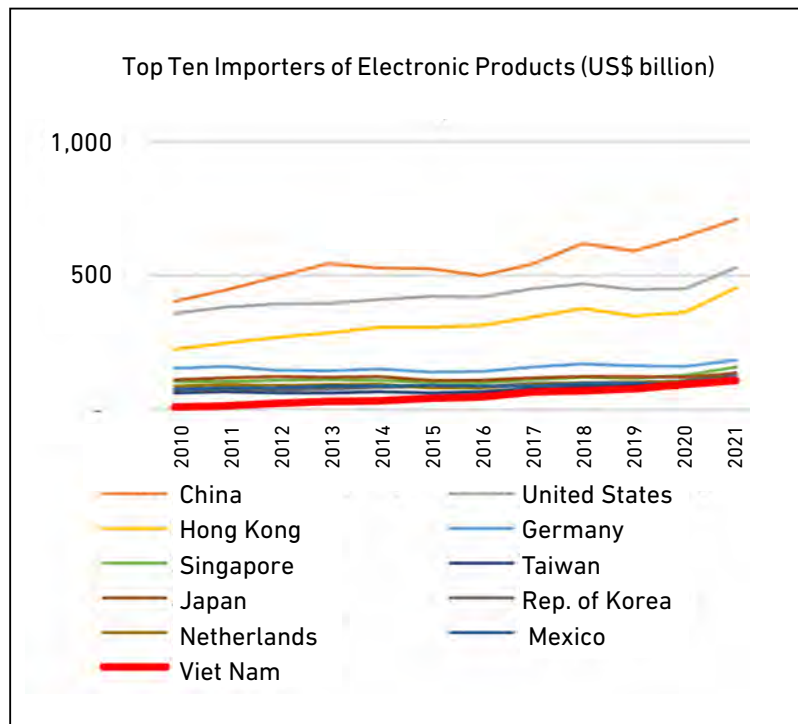
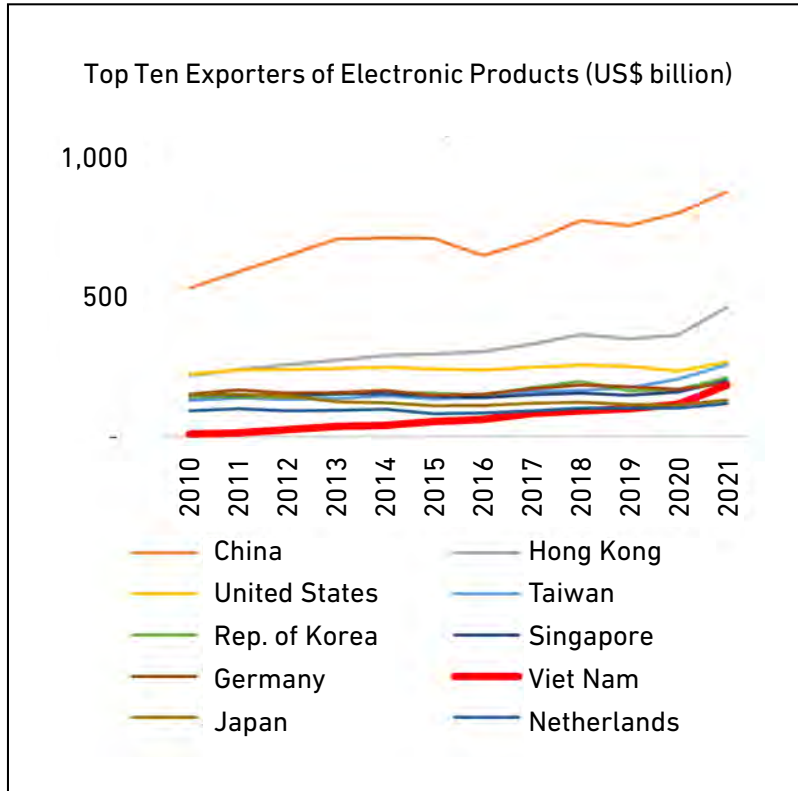
1.3.1. Trade in Commodities

According to the International Trade Centre's (ITC) 'Trade Map - Trade Statistics for International Business Development', since 10 years ago, electronics has been the largest exporting sector, with a share in the world's total export ranging from 14% to 18%. As illustrated in Figure 10.1, the export value of electronic commodities increased from US\$2,429 billion to US\$3,710 billion during 2010-2021, with an average growth rate of 4%. China has maintained its position as the largest exporter, with a share in the world's total electronic exports ranging from 22% to 26% during the last decade. Hong Kong and the United States (US) followed as the second and third largest exporters, but the share of the US fell from 9% to 7% in the same period. The Republic of Korea (hereafter, Korea), Singapore and Germany have kept their positions in the top 10 largest exporters and their shares of 5%–6%. Japan is still positioned in the top 10 largest exporters but dropped from fifth to ninth, and the country's export declined in terms of both share (from 6% to 3%) and value (from US\$149 billion to US\$129 billion). Viet Nam has become an emerging exporter of electronics. It has ranked amongst the top 10 largest exporters since 2019, with the world's fastest average growth rate of 31% and export value increasing from US\$7 billion to US\$129 billion.

As for imports, China, the US, and Hong Kong are also the top three players, with export values of US\$708 billion, US\$530 billion, and US\$456 billion, accounting for 18%, 13%, and 11% of the world's total imports in 2021, respectively. The list of top 10 electronics importers has not changed during the last decade, but the positions of Taiwan and Japan have. Whilst Taiwan climbed up from 10th to 6th, Japan dropped from 5th to 7th. Viet Nam ranked 11th in 2021 so was not on the list of the top 10 yet, but sooner or later will do so with the world's highest average growth rate of 24% in the period 2010–2021.



Figure 10.1. Top 10 Exporters and Importers of Electronics Products

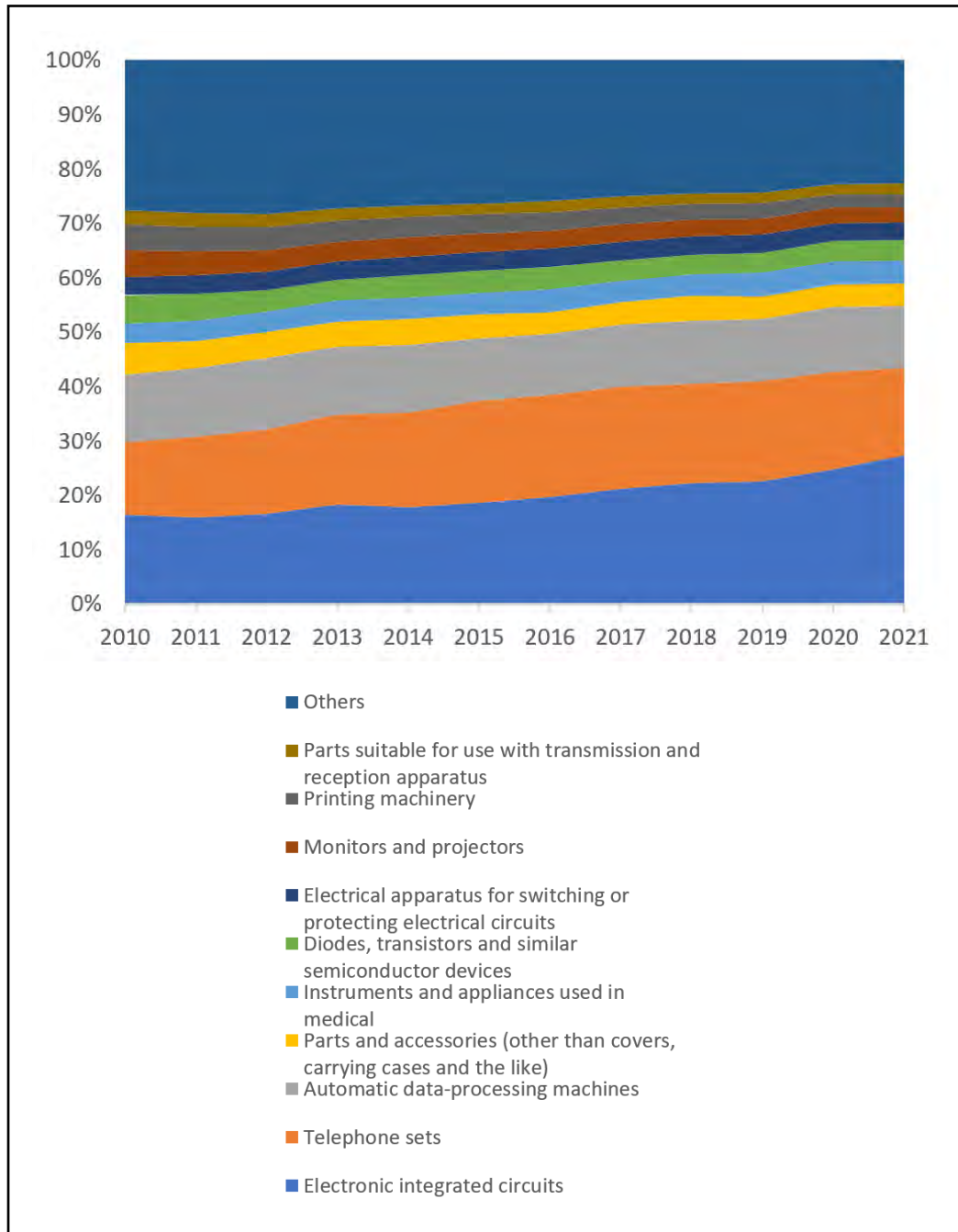


Source: ITC Trademap (www.trademap.org).

By product, the sector has high product intensity. As shown in Figure 10.2, the top three exported products, comprising electronic integrated circuits (EIC) (HS8542), telephone sets (HS8517), and automatic data-processing machines (HSD8471), have doubled their export values in the last decade, from US\$1,025 billion in 2010 to US\$2,032 billion in 2021, and increased their shares in the world's total electronics exports from 42% to 55% in the same period. Hong Kong, Taiwan, China, Singapore, and Korea are the top five exporters of EIC with export values exceeding US\$100 billion in 2021. For telephone sets, China is the champion, with more than one-third of the world's total exports. Two other key exporters include Viet Nam and Hong Kong, with export values in 2021 of US\$85.5 billion and US\$76.6 billion. China's exports of automatic data-processing machines in 2021 reached US\$204.5 billion, accounting for more than half of the world's total exports. China was followed by Mexico, Hong Kong, and the US, but their shares were only about one-sixth of China's. The international trade data illustrates China's dominance in all key electronics commodities.



Figure 10.2. Top Ten Traded Electronics Products

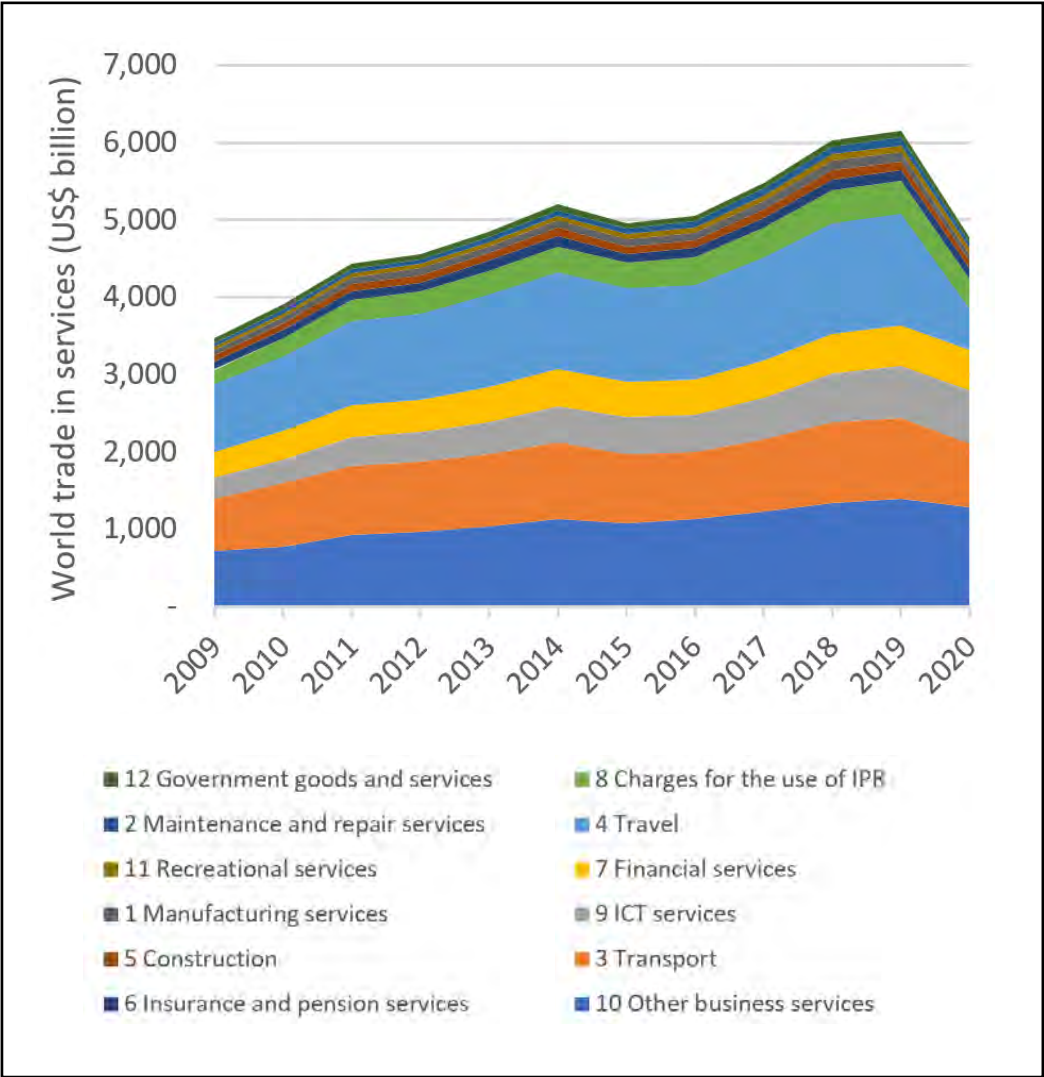


Source: ITC Trademap (www.trademap.org).

1.3.2. Trade in Services

Statistic data from the ITC shows that global trade in services is still small, with an annual export value of US\$5,000 billion, equivalent to about one-third of the annual trade in commodities. Trade in telecommunications, computers, and information services has grown fast in the last 10 years, with export values increasing from US\$311.6 billion in 2010 to US\$683.3 billion in 2020, and their share in the world's total services exports has also increased from 8% to 14% in the same period (Figure 10.3). Computer services comprise the majority of ICT services, accounting for more than two-thirds of total ICT services exports. By country, Ireland, India, China, the US, and Germany are the top five exporters of ICT services, whilst Germany, the US, China, France, and Japan are the top five importers of ICT services.

Figure 10.3. Trade in Services



Note: The number in the category label is the BPM6 2-digit code of the service.
 Source: ITC Trademap (www.trademap.org).

2. Industrialisation and the Electronics and ICT Industry in Viet Nam

2.1. Overview of Electronics and ICT in Viet Nam

Electronics is a late but fast-growing industry in Viet Nam. Ten years ago, the number of electronics enterprises was just over 500, but this increased five times by 2020 to nearly 2,500 enterprises. Nevertheless, this number is still modest, accounting for less than 0.5% of the total number of enterprises and about 2.5% of the manufacturing enterprises in Viet Nam. The number of employees in the sector has also grown fast, increasing almost seven times in the same period, accounting for 6% of total employees and about 12% of employees in the manufacturing sector (Figure 10.4). Comparing the development trend of employment and that of enterprises in the electronics sector, we can see that although the sector is supposed to be a high-tech, technology- and capital-intensive sector, in Viet Nam, it is rather a labour-intensive one.

Figure 10.4. Number of Enterprises and Employees in the Electronics Industry in Viet Nam

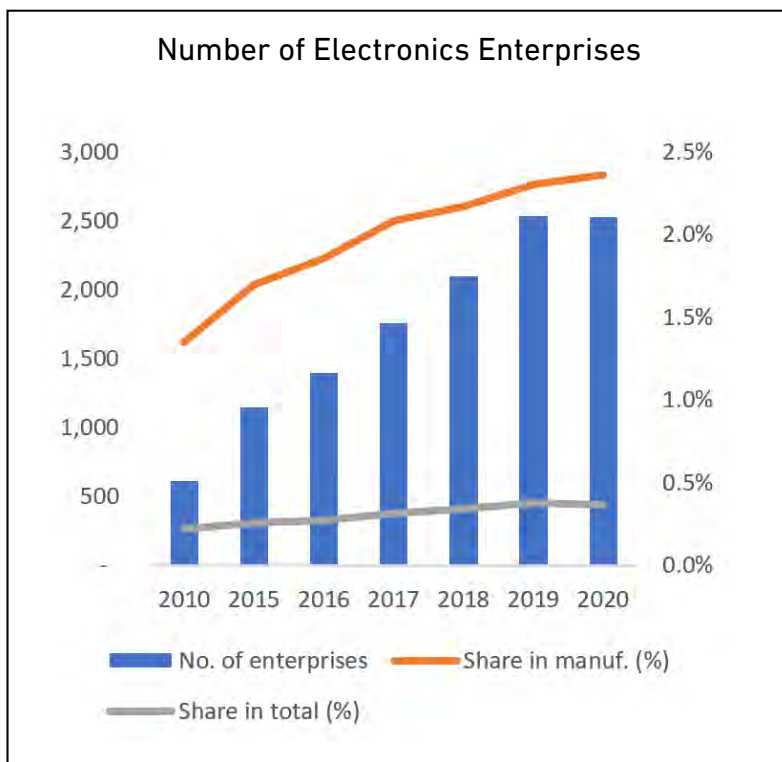
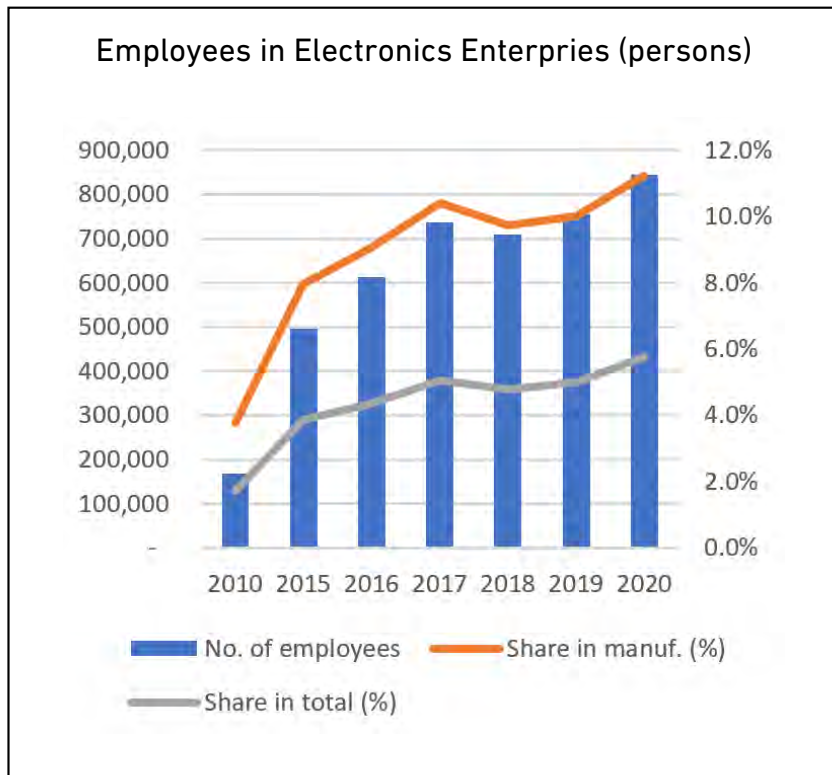


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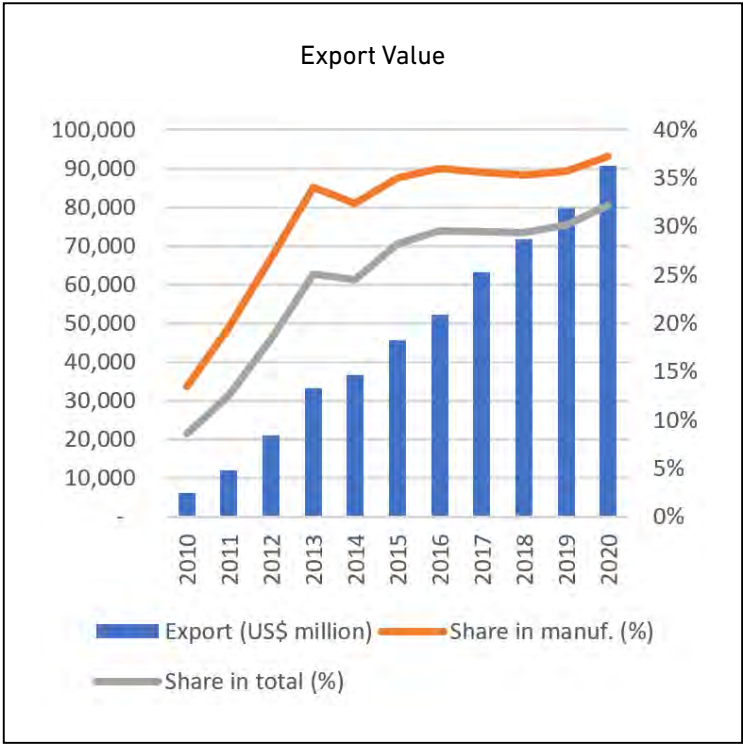
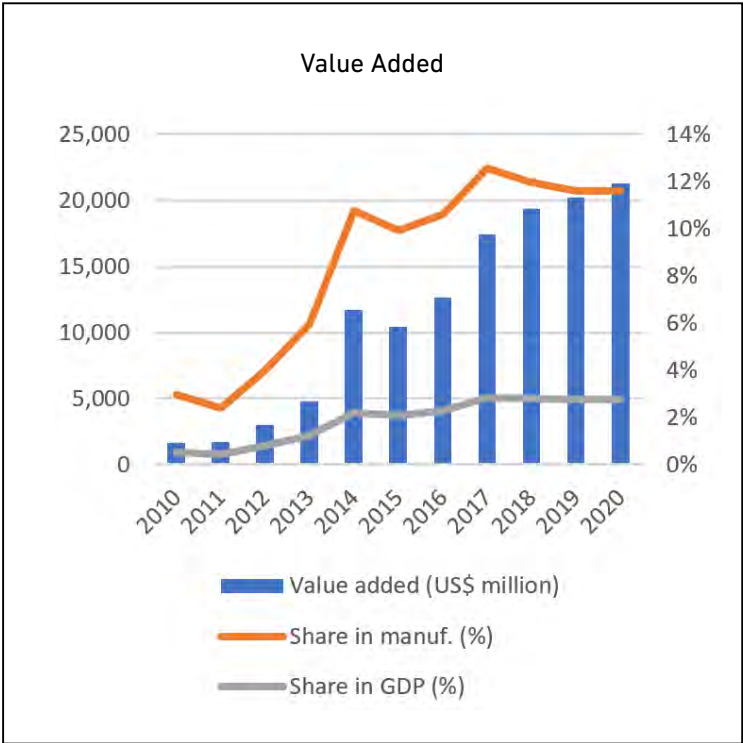
Source: General Statistics Office of Viet Nam (GSO).

As illustrated in Figure 10.5, the added value of the electronics industry also grew strongly in the period 2010–2020, increasing from US\$1.6 billion to US\$21.2 billion. Meanwhile, the contribution to GDP increased from 0.5% to 2.8%, and the contribution to manufacturing value added (MVA) increased from 2.9% to 11.6%.

Similarly, the export value of Viet Nam's electronics industry also grew strongly in the same period, increasing from US\$6.2 billion to US\$90.7 billion. The contribution to total export turnover increased from 9% to 32%, and the share in exports of manufactured goods increased from 14% to 37%.



Figure 10.5. Value Added and the Export Value of the Electronics Industry in Viet Nam

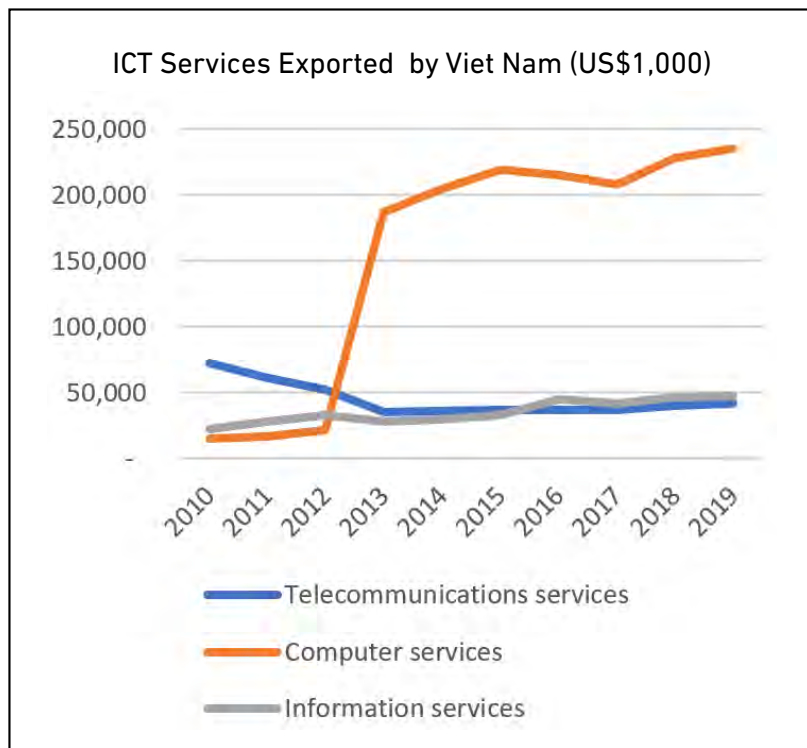
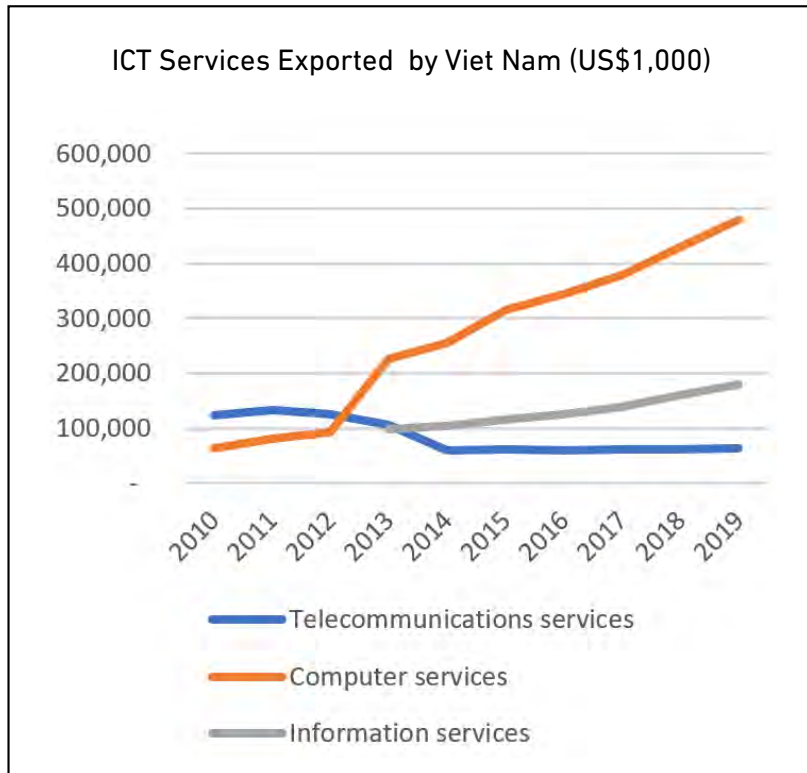


Source: Indstat Unido (for value added data) and ITC Trademap (for export data).

In Viet Nam, trade in ICT services accelerated by 16% for exports and 13% for imports in the period 2010–2019, contributing about 3% of total services exports and 2% of total services imports (Figure 10.6). Computer services played major roles in the trade of ICT services. A major component of computer services is software that is classified as system software and application software. Software does not have its own HS code, so declaring when importing software as well as applying a tariff rate depend on the machinery/equipment or carrier media the software is embedded in. Viet Nam is considering becoming a world manufacturing centre, and the demand for importing machinery and equipment for production is increasing. Along with that is the need to use the software that comes with these devices. In the future, Viet Nam's trade in services, especially computer services, will grow even faster.



Figure 10.6. Viet Nam's Trade in ICT Services



Source: ITC Trademap (www.trademap.org).

In a breakdown by the type of enterprise, as an emerging industry, Viet Nam's electronics industry depends largely on foreign-invested enterprises (FDI). Statistics show that, by 2020, amongst more than 2,500 electronic enterprises, FDI enterprises accounted for 41% of the number of enterprises, 95% of the number of employees, and 99% of the export value. By enterprise size, 85% of electronics enterprises are small and medium-sized enterprises (SMEs) with 300 or fewer employees, lower than the national average of 98%. However, SMEs in FDI enterprises account for only 66%, whilst this rate of domestic enterprises is 99%. These data suggest that FDI enterprises are mainly large-scale and labour-intensive. Although considered a high-tech, capital- and technology-intensive industry, electronics brands have separated their supply chains and moved labour-intensive and low-value-added segments to developing countries, including Viet Nam, where they can take advantage of the abundant land and labour whilst retaining knowledge- and technology-intensive and high-value-added segments. If this situation does not change, developing countries will be at risk of being trapped in a low value-added trap, another form of a middle-income trap, which will hinder economic growth and progress towards becoming high-income countries.

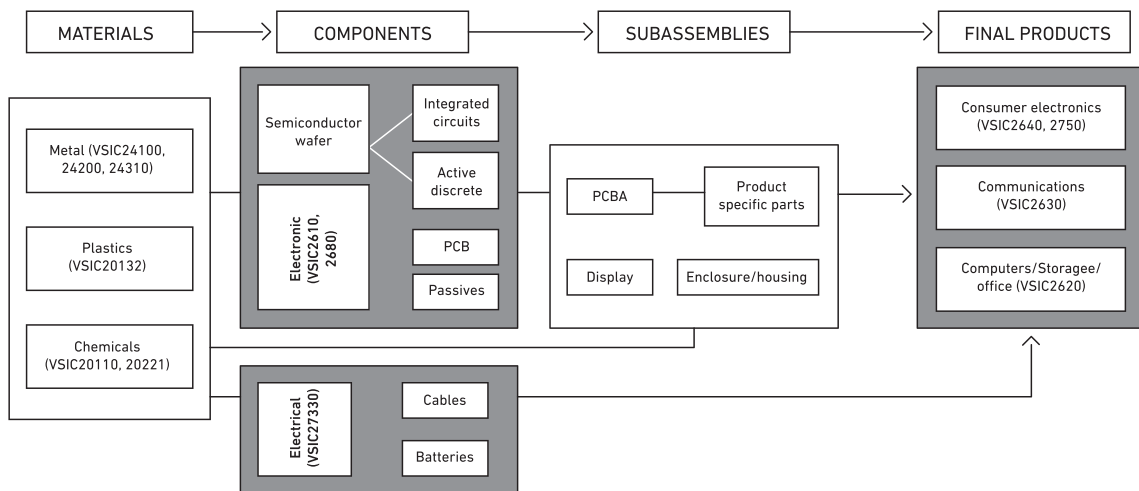
2.2. Electronics and ICT in Viet Nam's Economic and Industrial Strategy

The electronics industry has been identified as a priority industry in Viet Nam's economic and industrial development strategies. Specifically, Decision 879/QĐ-TTg, dated 9 June 2014, approving the strategy on Viet Nam's industrial development through 2025 with a vision towards 2035 identified: *'For the period up to 2025, priority is to be given to the development of computer equipment, telephones and components. In the period after 2025, priority is to be given to the development of software, digital content, information technology services and medical electronics.'* Electronics is also on the list of industries eligible for investment incentives under the Investment Law. Investment projects that produce electronic products will enjoy tax incentives and land access. Comparative advantages of geographic location, labour costs and access to land, as well as investment incentives, have helped Viet Nam become a hub of production and export of electronic products in recent years and a destination for many large electronics corporations, such as Samsung, LG, Canon, and Panasonic. Disruptions to the supply chain due to a variety of reasons, such as the US-China trade war, COVID-19, and the Russian-Ukrainian war, have forced electronics corporations to restructure their supply chains in a safer, more stable, reliable, and sustainable manner.

Derived from the US trade policy, the current wave of production migration out of China, mainly related to electronics products such as smartphones and tablets, is becoming more obvious and has been further accelerated by strict social distancing measures in many Chinese cities. Association of Southeast Asian Nations (ASEAN) countries are often seen as ideal destinations. Amongst ASEAN countries, Viet Nam is considered one of the countries benefiting the most from this wave. However, when deciding to invest in technology- and capital-intensive industries or segments, investment locations will be screened and selected differently, not only based on static advantages, such as geographical location, labour cost, or land availability, but more importantly, dynamic advantages will be considered thoroughly. There is an ecosystem that can facilitate the development of such investment projects, including the availability of qualified human resources, a network of qualified domestic suppliers who can replace the existing ones, a convenient logistics and financial system, the availability of technology partners, and so on. These factors for Viet Nam are not competitive compared to other countries in the region. These are obstacles that Viet Nam needs to overcome to catch up with others and to become a high-income country.

Electronic products are diverse in size, type, and quality requirements. However, in general, the supply chain of the electronics industry can be divided into four main segments, including raw materials (mainly plastic, rubber, metals, chemicals, etc.) to create single components, which are then assembled into subassemblies and finally assembled into finished products to be distributed to consumers (Figure 10.7). Each segment has different characteristics: it can be labour-intensive or capital-, technology-, or knowledge-intensive. Electronics corporations will divide their production into independent segments, locating each in appropriate places where they can bring the most benefits and be suitable for the characteristics of the stage. Recently, Viet Nam is home to the final assembly stage of large electronics corporations because it is a stage that requires a lot of labour and a large area of land to set up large-scale factories. The presence of these corporations in Viet Nam will also be an advantage if Viet Nam can connect them with domestic suppliers, gradually replacing imports to form a complete domestic supply chain and improve domestic value added throughout the value chain of electronic products made in Viet Nam.

Figure 10.7. Supply Chain of the Electronics Industry



Source: World Bank (2019).

The statistics data do not allow for the classification of enterprises according to the above four segments. However, based on their ISIC codes, electronic enterprises can be statistically divided into two segments. One includes final electronic goods producers, such as computers, communication equipment, consumer electronics, and so on, and the other one is a group of electronic components producers. The number of enterprises, employees, and the added value of each segment are quite different, sketching the overall picture of Viet Nam’s electronics industry. As shown in Table 10.3, the sub-segment of communication equipment has a small number of enterprises (466 enterprises) but attracts more than 276,000 employees, and creates US\$13 billion in added value. The segment of electronic components has the largest number of enterprises (1,365 enterprises) but creates lower jobs and added value. The majority of electronic enterprises are concentrated in the north. More than 80% of enterprises and employees in the electronic components segment are concentrated in the northern provinces, including Ha Noi, Bac Giang, Vinh Phuc, Bac Ninh, Hai Duong, and some southern

provinces such as Dong Nai, Binh Duong and Ho Chi Minh City. Final electronics producers are concentrated in the northern provinces, including Ha Noi, Thai Nguyen, Bac Giang, Bac Ninh, and Ho Chi Minh City, accounting for 76% in terms of the number of enterprises and 79% in terms of labour. The main activities of this segment are the assembling of final products from different imported subassemblies or components, whilst a complex local supply chain has not been developed yet.

Table 10.3. Electronics Industry in Viet Nam by Subsector, 2020

ISIC Code	Number of Enterprises	Number of Employees (persons)	Number of Female Employees (persons)	Value Added (US\$ million)	Annual Average Wage per Employee (US\$)
2610	1,365	266,899	178,227	3,201.63	4,805.58
2620	109	78,187	53,513	1,085.91	5,143.40
2630	466	276,138	192,670	13,002.94	6,165.13
2640	306	105,636	71,483	2,701.95	4,246.40
2651	193	7,527	3,474	70.41	4,316.52
2652	22	335	160	1.59	2,862.15
2660	8	26	9	0.43	4,421.77
2670	41	15,258	10,877	102.61	4,333.35
2680	22	5,792	3,549	60.39	6,304.47

Source: Indstat Unido.

3. Viet Nam's Position in the Global Value Chain

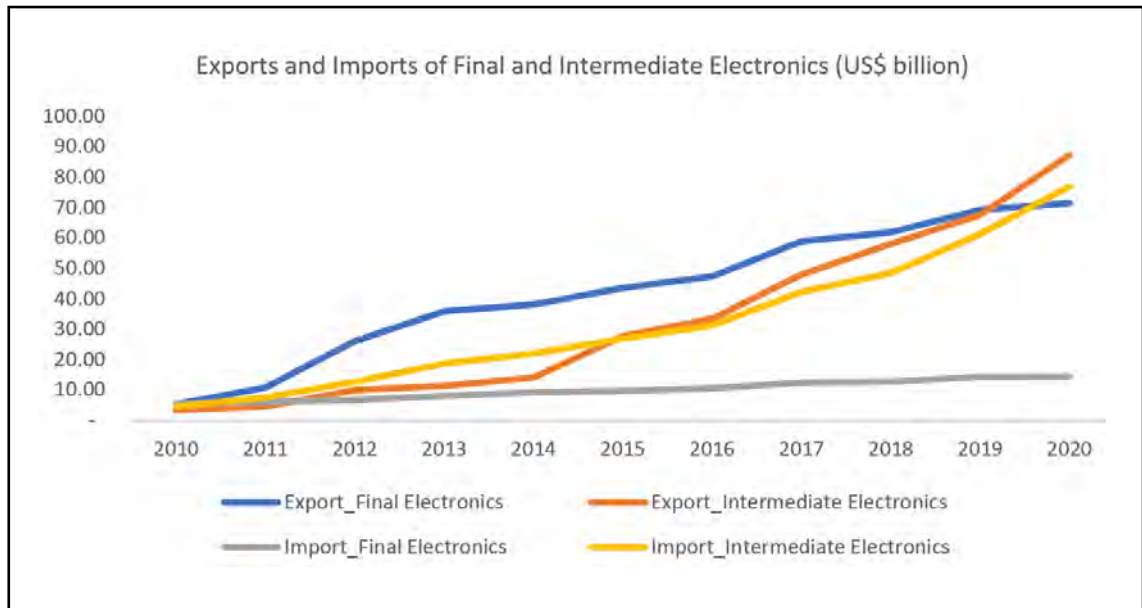
3.1. Mapping the Electronics Global Value Chain and Viet Nam's Position

The level of participation in the global value chain of a country is reflected in the import and export values of the products in each segment of the chain. At the global level, key players in the electronics global value chain include China, Germany, Hong Kong, United States, and Viet Nam as top exporters of final electronics, whilst Hong Kong, China, Taiwan, Korea, and Singapore are top exporters of electronic intermediate goods.

From 2010, Viet Nam's trade in intermediate electronic goods increased in both exports and imports, but trade in the final electronic goods only increased sharply in terms of exports, whilst imports remained unchanged (Figure 10.8). Amongst the final electronic products, mobile phones are the items with the largest export value, at over US\$30 billion and accounting for 27% of the total export value of electronic products in 2020. Amongst the intermediate electronic products that Viet Nam exports the most are parts of telephone sets, which in 2020 reached a value of US\$21 billion (accounting for 18%), and electronic integrated circuits, which reached US\$13 billion (accounting for 11%). These two items were also the most imported ones, with an import value of electronic integrated circuits in 2020 of US\$21 billion, equivalent to 23%, and parts of telephone sets at US\$16

billion (17%). These figures illustrate again the fact that the growth of Viet Nam's electronic industry has been derived from external resources, not only FDI but also imported inputs.

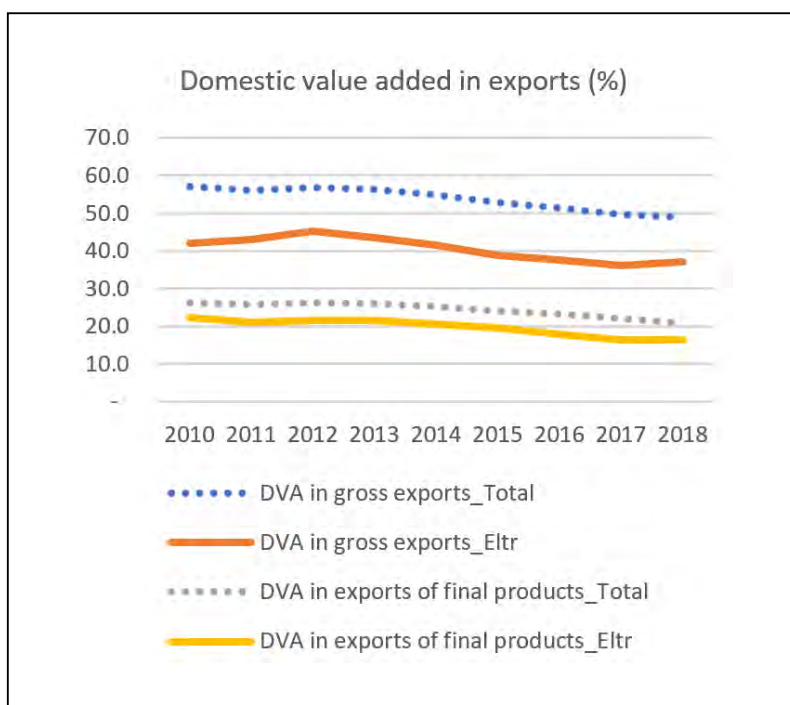
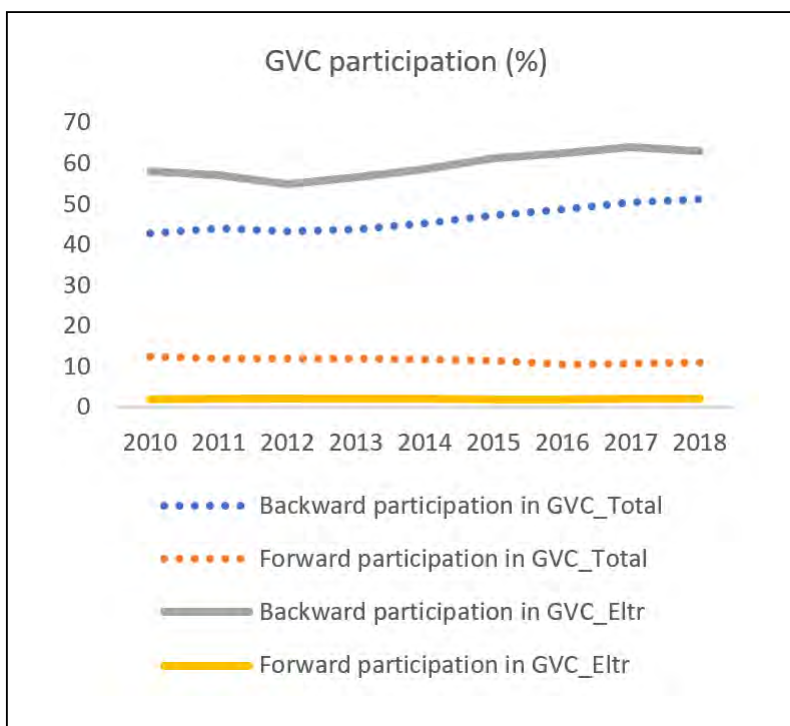
Figure 10.8. Trade Value of Viet Nam's Electronics Products by Supply Chain Segment



Source: UNComtrade.

Looking at the level of global value chain participation, it can be seen that the electronics industry has a very high level of backward linkage, whilst the level of forward linkage is low. Compared to the average level of total exports, the electronics industry has a higher level of backward linkage and a lower level of forward linkage. The domestic value added of the electronics sector is also lower than the average level in both gross exports and final products (Figure 10.9). Again, these data confirm that the industry is highly dependent on imported components (shown by a high level of backward linkage), but its contribution to the global supply chain (reflected through a low level of forward linkage) and to the domestic supply chain (reflected by the domestic value added in exports) is still quite low.

Figure 10.9. GVC Participation of Viet Nam's Electronics Industry



DVA = domestic value added, eltr = electronics.
 Source: Organisation for Economic Co-operation and Development (OECD)'s Trade in Value Added (TiVA) Database.

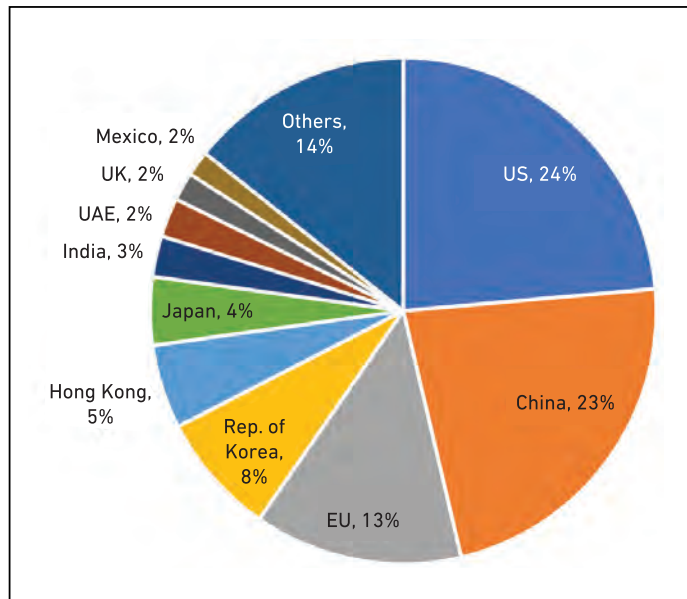
Semiconductors and electronic integrated circuits are the most important parts for electronic equipment and devices. They are increasingly being used in various industries, especially in the current context of the fourth industrial revolution, with the popularity of IoT devices and the digital transformation taking place in all industries. Electronic integrated circuits can be found in any electronic device, and, thus, its share in the total trade of electronic products is high, at about 30%. In the export structure of Viet Nam's electronic products, electronic integrated circuits account for 13%, and they also account for a large share in the import structure of Viet Nam, at 41%, mainly for assembling export-oriented electronic products. Developed countries, such as the US, the EU, and Japan, may not have a large share of semiconductor and electronics integrated circuits exports but play an important role in technologies, inventions, core components, materials, and equipment, whilst developing countries, such as China and Malaysia, have large export values but comprise mainly assembled products with low added value.

3.2. Free Trade Agreement Commitments Related to Electronics and ICT

Viet Nam has signed 15 free trade agreements (FTA), including seven agreements joining as an ASEAN member, six bilateral agreements, and two multilateral agreements, and it has been negotiating two other agreements. Regarding tariffs, since the most favoured nation (MFN) tariff rate for electronic products was already 0%, the FTAs had no room for further reductions, except for a few specific electronic products that still maintain a relatively high MFN tariff rate, such as watches, electronic bells (MFN rate of 20%), and television camera tubes (MFN rate of 10%), although these tariff rates have been committed to being reduced to 0% in the next few years. Viet Nam's largest trading partners in the electronics sector include the US, China, the EU, Korea, Hong Kong, and Japan. In 2020, the export value of electronic products to the US accounted for 24%, followed by China at 23%, the EU at 13%, Korea at 8%, Hong Kong at 5%, and Japan at 4%.



Figure 10.10. Export Markets for Viet Nam's Electronics, 2020



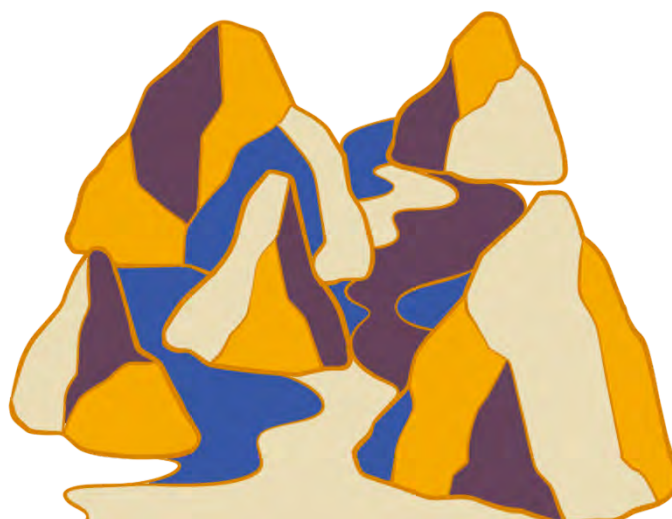
Source: ITC Trademap (www.trademap.org).

Amongst these markets, except for the US, which does not have any FTAs with Viet Nam yet, all the other countries have at least one FTA signed with Viet Nam, each with different provisions on non-tariff measures, of which the most notable measure is rules of origin (Table 10.4). Since the sector has become fully open, with MFN rates of most electronic products being 0%, the sector has not gained any benefit from the removal of tariff barriers from FTAs. However, comparing the provisions of rules of origin, the sector may enjoy less strict regulations from the EVFTA than other FTAs, in both regulations on change in tariffs and regional value content.

Table 10.4. Rules of Origin for Electronic Products Exported from Viet Nam to Major Markets

	ACFTA RVC 40%	RCEP CTSH or RVC 40%	EVFTA CTH or RVC 30%	AKFTA CTSH or RVC 40%	VKFTA CTSH or RVC 40%	AJCEP CTH or RVC 40%	VJEPA CTSH or RVC 40%	CPTPP CTSH
United States								
China	x	x						
European Union			x					
Korea		x		x	x			
Japan		x				x	x	x

RVC = regional value content; CTSH = change in tariff subheading; CTH = change in tariff heading; ACFTA = ASEAN China Free Trade Area, RCEP = Regional Comprehensive Economic Partnership; AKFTA = ASEAN Korea Free Trade Agreement; AJCEP = ASEAN Japan Comprehensive Economic Partnership; VJEPA = Viet Nam Japan Economic Partnership Agreement; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership.
 Source: Rules of Origin Facilitators (findrulesoforigin.org).



Box 10.1. Malaysia's Experience in Electronics Industry Development

In the ASEAN region, Malaysia is considered a successful country in the development of its electronics industry. The industry has been established and developed since the early 1970s, when foreign electronic corporations took their first steps toward investment in Malaysia. Until now, the electronics sector continues to be the key player in Malaysia's exports, with its export value accounting for 39.4% of total exports (MIDA, 2021). Malaysia is one of the world's hubs for manufacturing and exporting electronic products. Most of the large electronic multinational companies from the US, Japan, Taiwan, Korea, and the EU have set up their production bases in Malaysia in the early stages, such as Intel, HP, AMD, Bosch, Hitachi, Litronix, brought in opportunities for the formation and development of domestic electronic supply chains. Some Malaysian electronics enterprises positioned themselves in the electronics global value chain, such as Pentamaster, Vitrox, Globetronics, Inari Amertron, BCM Electronics, and so on. Each decade of development of the Malaysian electronics industry has had its own distinctive characteristics, with featured products that have demonstrated an ever-evolving level of technology and kept pace with the development trends of the global electronics industry.

- In the 1970s: Malaysia attracted investments in electronics through labour-intensive projects aimed at reducing unemployment, supported by a business-friendly government. Manufacturers concentrated on simple electronics components, semiconductor parts, and semi-knocked-down electrical products. Key products in this decade included simple components, semiconductor parts assembly and semi-knocked-down electrical products.
- In the 1980s: As the local companies matured and gained experience, the industry's sophistication in machining equipment grew in tandem. The companies began to manufacture consumer electronics parts and components and took on assembly-related work. The surge in demand for consumer electronics ensured that electronics manufacturing was on an upward trajectory. Key products of this decade were spread from consumer electronics parts to full assembly products.
- In the 1990s: Companies began to establish design and development (D&D) centres to engage in semiconductor packaging development, manufacturing process development, and design activities. Amongst the manufactured goods that dominated the era were office and computer equipment – including disks – to cater to the booming PC market demand. Key products of this decade were office and computer equipment (including hard disk drives).
- From the 2000s to the 2010s: Malaysia moved up the value chain. To stay competitive, electronics factories evolved from high-volume, low-mix operations to high-mix, low-volume operations. Wafer fabrication companies continued to establish and expand their facilities in Malaysia, further positioning the nation amongst the global top electronics exporters catering to the regional and global demand for semiconductors. Major products of this decade shifted to higher value-added products/activities, R&D, integrated circuit (IC) and system design wafer fab, ingot growing low volume, high complexity and high mixed products

- (e.g. instrument, medical, and aerospace), and digital consumer goods (e.g. Blu-ray players, HDTV-LED flatscreens, and e-book readers).
- In the 2020s: The government, through the Malaysian Investment Development Authority (MIDA), has been encouraging manufacturers to establish more R&D and D&D centres, centres of excellence, global procurement centres, logistic centres, and operation headquarters (OHQs) in Malaysia. Electronics manufacturers are currently exploring the business potential that can be derived from new growth areas, such as e-commerce, automation, IoT, and AI, and accelerating the move towards Industry 4.0 by society and industry alike. Today, IoT is pushing demand for more advanced semiconductor devices, such as sensors, resistors, and transceivers, to help the industry to adopt digitisation and digitalisation aimed at improved productivity, profit, and competitiveness. As such, the key products of this decade shifted to sensors, Internet of Things, cloud computing, wireless electronics, nano technology, smart electronics, 3D integration, smart grid, advanced energy, storage, fablite, fabless, miniaturisation, and electric vehicles.

Achieving the above results was partly thanks to the appropriate development policies of the Malaysian government to attract large electronics corporations from around the world to invest in Malaysia, forming clusters of the electronics industry across the country. The policies issued by the Malaysian government to attract electronics FDI include: (i) income tax exemption between 70%–100% of statutory income for 5–10 years; (ii) Allowances between 60% and 100% on qualifying capital expenditure incurred within a period of 5–10 years; and (iii) the formation of locally incorporated companies that use Malaysia as a base for conducting regional or global business and operations to manage, control, and support their key functions.

Although it has achieved some achievements that many countries have dreamed of, Malaysia's electronics industry still has many challenges ahead on the way to asserting its position in the global supply chain. Firstly, after half of a century of development, the electronics industry in Malaysia today is still generally labour-intensive. Most of the local electronics companies listed on Bursa Malaysia are involved in the mid-to-lower end of the value chain, serving foreign semiconductor manufacturers, brand owners, and IC developers and fabricators. Malaysia's electronics industry has minimal participation in higher value-added activities such as generating intellectual property (IP) and D&D. Secondly, the talent shortage starts with university graduates. Nowadays, university students prefer software design to hardware design as they can see results faster. Unfortunately, there is a shortage of design talent around the world, let alone Malaysia. There is also a mismatch of skills and competencies to industry needs. Malaysia has insufficient qualified and experienced technical workers to participate in higher-value activities, partly due to the low demand for master's and PhD holders. This trend has discouraged university graduates from pursuing postgraduate studies as most of the job requirements are not knowledge-intensive. In the long run, local engineers cannot progress in their careers without specialist technical knowledge and skills, hampering

Malaysia's ability to climb up the electrical and electronics value chain. Thirdly, all the technology or IP invented by Malaysians belong to the foreign companies they work for. A right ecosystem and incentives are needed to encourage more engineers to explore the entrepreneurial path. Only with a robust entrepreneurial culture and adequate support system, local technology start-ups can compete amongst the fierce regional competitors, such as Singapore, Taiwan, and Indonesia. Malaysia lacks not only hardware design engineers but also engineers with entrepreneurial skills. Local engineers often choose to work for multinational corporations before considering starting up their own tech companies.

As a successful case study for latecomers to learn from, experience in electronics industry development in Malaysia has provided several lessons, including attractive investment incentives for investors to invest in the sector; to be involved in activities directed by the government to adapt to the circumstance of each development stage; and proactive government policy in cluster formation in Penang to support infant industries. Incentives were also provided to encourage industry to invest in training students and academics and to transform from a labour-intensive to a knowledge-based economy. Greater collaboration between government, employers, and unions is also vital to provide a sustainable funding mechanism for supporting continuous upskilling and reskilling of local talents, as well as local technology start-ups.

Source: Author's compilation from MIDA (2021) and 27 Group (2020).

4. Emerging Issues in the Global Value Chain

4.1. Resilience and Restructuring of the Global Value Chain

In recent years, supply chain disruptions in the electronics industry have occurred frequently, affecting the production of many electronic devices. Due to the impact of the US-China trade war and the COVID-19 pandemic, a shortage of semiconductors – an important input for electronic products ranging from mobile phones to computers, vehicles, and electrical and IoT devices – has caused delays to many investment and production plans. The importance of semiconductors has prompted the US government to enact the Competition and Innovation Act to support the US chip industry, including spending US\$52 billion to subsidise the research and production of semiconductors. To meet the growing demand for semiconductors, many capacity expansion plans have been announced by leading chip companies since early 2022, such as Intel's US\$20



billion investment plan to build a semiconductor factory in Ohio. However, shortages of production equipment and tools to produce semiconductors have exacerbated semiconductor shortages and disrupted electronics industry supply chains.

Even if chipmakers could secure production equipment and tools, the Russia-Ukraine war disrupted the supply of critical raw materials for chip production. Ukraine is an important supplier of neon and argon used in chip production. Ukraine produces 70% of the world's neon supply. Neon is used in lithography, which is an important step in the chip manufacturing process. Argon is used in etching, which is needed to make semiconductors. Besides Ukraine, Russia supplies 35% of US palladium, a rare earth metal used for semiconductors. Finding alternative supplies of neon and palladium will also take time. Some suppliers are developing ways to recycle neon and other materials as an alternative. Besides neon and palladium, a shortage of processing chemicals for semiconductor production is at risk. In retaliation for European sanctions, the Russian state gas company Gazprom cut 60% of flows through the Nord Stream 1 pipeline to Germany. This natural gas crisis is threatening the manufacturing industry of processing chemicals for semiconductor processes, including cleaning, etching, and lithography at Germany-based BASF, the world's largest chemical company. As the war in Ukraine drags on, these material supply disruptions will prolong shortages of many products, triggering an escalation of inflation around the world.

In the future, even if problems such as US-China trade tensions, the COVID-19 pandemic, semiconductor shortages, or the Russia-Ukraine war are resolved, neither the electronic supply chain nor other industries can come back to the original status quo. Electronics multinational corporations have had to restructure their production chains to cut down on intermediaries, increase their domestic procurement, and diversify suppliers to be more flexible, resilient, sustainable, and controllable to achieve better results and avoid similar risks in the future.

4.2. Sustainability in Electronics and ICT and International Regulations and Standards

In addition to material shortages, increasingly, supply chain transparency and sustainable regulations in many countries are posing a requirement for traceability across the supply chain. This new requirement also somewhat disrupts the supply chain in the short term. For example, the Uighur Forced Labor Prevention Act came into force and disrupted the export of electronic chips, EV batteries, and apparel from China to the US. The act prohibits the import of goods made in whole or in part at factories in Xinjiang, China, unless companies can prove their production is not linked to forced labour. Under this act, all goods imported from China are presumed guilty until proven innocent. Because global supply chain operations are ambiguous and complex, it will be difficult and costly for a company to prove every transaction along the supply chain has no relationship to forced labour in Xinjiang.

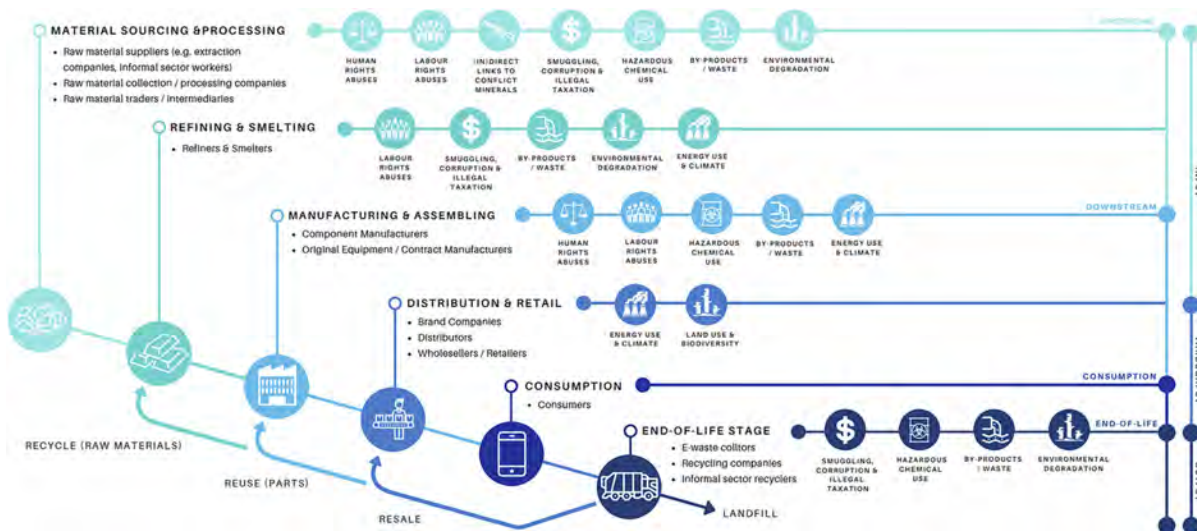
In addition to the US, several EU countries and Japan have also introduced regulations and guidelines on protecting human rights and the environment throughout the supply chain. Countries tend to legislate on labour and environmental requirements across the whole supply chain, rather than on a voluntary basis and on individual firms as in the past. The German Supply Chain Due Diligence Act was passed on 11 June 2021 and officially came into force from 1 January 2023 to

strengthen the protection of basic human rights and environmental standards across the global supply chains of German companies or foreign companies who have their businesses in Germany. The act requires companies the determination and assessments of the risks to and violations of protected legal rights, implementation of preventive and remedy measures, data collection, documentation and reporting obligations, and specific responsibilities in the entire supply chain according to the degree of relevance. Although the responsibilities are not subject to criminal regulations and do not create additional liability under civil law, businesses that fail to comply with the provisions of the act will be subject to administrative fines of up to €800,000 depending on the type and severity of the violation, and exclusion from public procurement bidding packages for a maximum of 3 years, which will damage the reputation and brand of their businesses. Recently, the Government of Japan has also issued guidelines on respecting human rights in responsible supply chains, in line with global trends, to direct Japanese businesses to apply global standards on labour and environmental due diligence. The new guidelines request all companies (including sole proprietors) engaging in business activities in Japan to establish human rights policies, conduct human rights due diligence, and provide remedies when they cause or contribute to adverse human rights impacts. The guidelines are to be applied globally, including in overseas supply chains. They cover all rights included under the International Bill of Human Rights and the principles concerning fundamental rights set out in the International Labour Organisation's Declaration on Fundamental Principles and Rights at Work. In particular, the guidelines set out that even where the laws and regulations or enforcement of a country do not appropriately protect human rights, businesses need to 'seek ways to respect internationally recognised human rights to the greatest extent possible'. In addition, the EU Commission is currently proposing a directive on corporate sustainability due diligence and accountability to apply to all companies in the EU. The directive requires large companies that are either based in member states or have a considerable turnover in the EU to identify, prevent, and mitigate human rights and environmental violations throughout their value chains. Currently, due diligence rules are in place only in a few EU countries, like France, whilst in Germany, companies with more than 3,000 employees will need to carry out mandatory due diligence starting January 2023. The EU proposal would apply to all companies based or operating in the bloc with more than 500 employees and a net €150 million annual turnover but also smaller companies in high-risk sectors, such as textiles, agriculture, and mineral extraction industries. In Viet Nam, with the support of international organisations, the National Action Plan on Policy and Legislation Improvement to Promote Responsible Business Practices in Vietnam in the period 2023-2027 was enacted in the Prime Minister's Decision No. 843/QĐ-TTg dated July 14, 2023, in order to identify the gaps between local policies and laws with international due diligence standards to bring about a better understanding and reflection of sustainable development standards in the social and economic development plan, in line with the United Nations Sustainable Development Goals.



Electronics is an emerging industry, and in addition to the general risks like other industries, the electronics industry has its own unique potential risks. Numerous studies on risks throughout the supply chain of the electronics industry have been carried out to identify and assess their impacts on people and the environment and recommend appropriate response measures. Research by Evans, R. and W. Vermeulen (2021) has determined the risks in the entire life cycle of electronic products, from upstream to downstream, i.e. from mining to materials processing, the production of components, assembly of finished products, distribution, sales, consumption, and finally the end of the product life cycle (Figure 10.11). Each process will have different risks related to sustainable development in terms of labour, environment, and governance. Growth in the electronics industry since the 1980s is archetypical of a globalised and technology-centric society. Yet, electronics are linked to a range of negative sustainability impacts or risks throughout their life cycle. These risks occur globally but disproportionately affect developing countries, particularly where weak public institutions and limited state authority allow risks to emerge and establish. Sustainability risks can be attributed to the challenges of governing sustainability in global supply chains, which fragment and disconnect the various stages of the electronics lifecycle across international borders. Within the whole global supply chain, sustainability governance is also undermined by the characteristics of international trade, whereby exchanges between suppliers and buyers are dynamic and kept confidential. Consequently, information regarding the conditions in which electronics are produced and disposed of is often obscured by limited transparency between actors in the global value chains, creating gaps for sustainability. This allows illegally produced or unsustainable minerals, components, and recycled material to enter the global market whilst also resulting in the non-allocation of accountability amongst companies that contribute to (directly or indirectly) unsustainable practices.

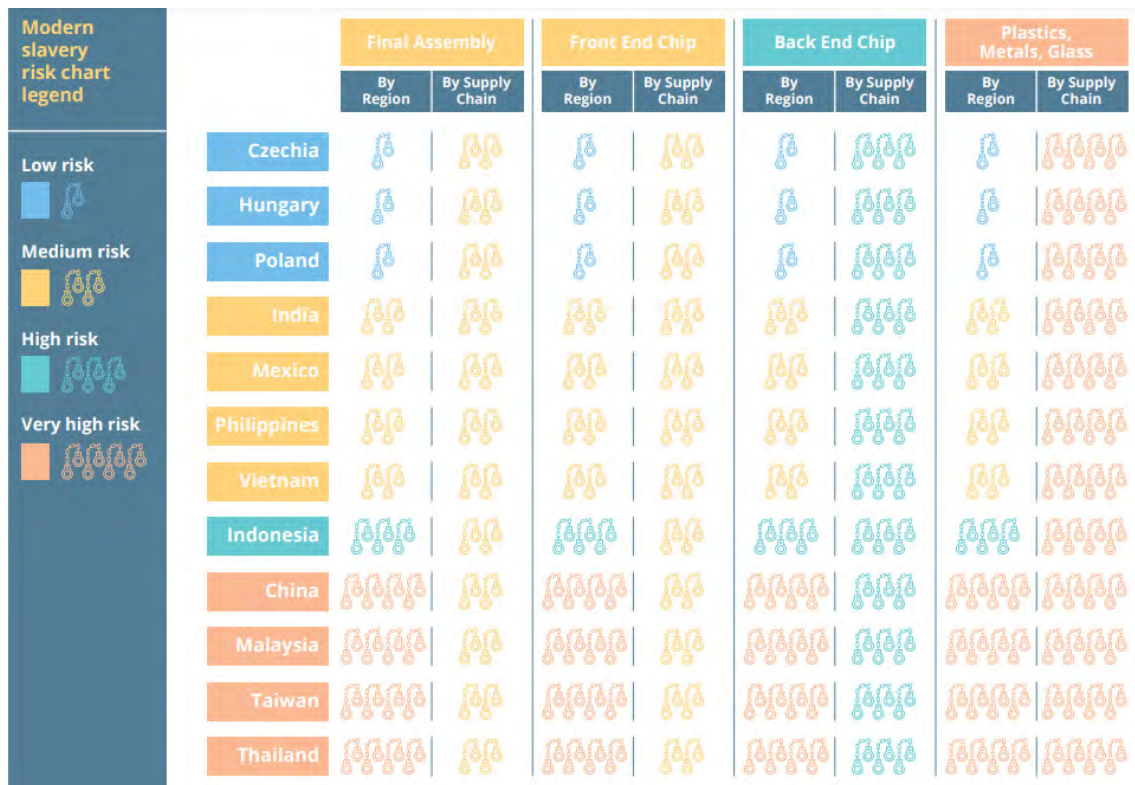
Figure 10.11. Potential Risks on Labor and Environment in the Electronics Industry



Source: Evans, R. and W. Vermeulen (2021).

Assessing the risk of forced labour in the electronics sector, a report by Electronics Watch (2021) has shown that Viet Nam's electronic supply chain has a very high risk in enterprises producing plastic, metal, and glass parts and components, a high risk in back-end chip-producing enterprises, and medium risk in the rest of the chain (Figure 10.12). In general, amongst the comparator countries, labour risks in the electronics supply chain in Viet Nam are assessed as medium. Regarding the risks related to the environment, the report found that the electronics industry was determined to use many toxic chemicals in the production process of electronic parts and components, such as Sn, Co, Cu, and Ni, which are used in the production of semiconductors, batteries, etc., and the working conditions and health protection measures for workers at mining and mineral processing mines were also a concern in the global electronics supply chain.

Figure 10.12. Risk Assessment of Human Rights in the Electronics Industry



Source: Electronics Watch (2021).

The electronics industry, an emerging sector in Viet Nam, has a complex supply chain with a wide range in terms of geography and related sectors, however, lack of corporate supply chain transparency undermines multi-stakeholder interaction, (no specific policy, no protective regime, no development strategy...). Viet Nam has already integrated into the global value chain, cannot avoid these emerging issues but should proactively consolidate its position in the chain. In the coming time, under the pressure of regulations and guidelines on the protection of human rights and the environment, Vietnamese electronics enterprises will have to take specific actions to be able to both meet the requirements of 'traditional' requirements of production such as quality, cost, delivery time, whilst ensuring the 'new' requirements of assessment, preventing labour and environmental risks. These changes will have a strong impact on the formation and relationships between businesses in the global supply chain of the electronics industry.

5. Conclusion

The electronics industry has had rapid growth and is a significant contributor to economic growth and job generation, with a high potential for further development. However, to turn this potential to reality, the industry still has to overcome bottlenecks and challenges ahead, which include excessive dependence on foreign investment and imported components, fierce global competition, and low and decreasing share of domestic value added. The core parts and components of electronic products, characterised by being high-tech, dual-use, and not easy to replace, are only made by the US, EU, and Japanese companies. Local firms can only supply simple parts, exposing fierce competition and unstable and unhealthy business relationships. In addition, more and more new regulations on supply chain sustainable development have been introduced, bringing both challenges and opportunities for local firms to participate in the global value chain. Facing such changes in the operating environment of the global supply chain, the Vietnamese electronics industry needs to build up reliable partnerships in the electronics industry at the macro and micro levels, absorb more investment in electronics to create local supply chains, strengthen FDI-local firm linkages, upgrade skills and local firms' capacity in manufacturing technologies, harmonise legal frameworks with international standards, especially the ones related to sustainability, and raise awareness and change mindsets for strategic policy to consolidate its position in the global value chain.

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Chapter 11

Digital Transformation- related Businesses

Nguyen Anh Duong



1. Introduction

Market-oriented institutional reforms and economic integration have been two of the three main pillars of Viet Nam's economic reforms since Doi Moi (Renovation) in 1986 (together with macroeconomic stabilisation). These have worked together to broaden the economic opportunities for Vietnamese businesses and people. At the same time, Viet Nam has made efforts to build capacity for its businesses and people to realise the opportunities, including via promoting innovation. Reforms were more progressive during the 1989–1996, 2000–2007, and 2014–2019 periods, which also brought about remarkable socioeconomic achievements. More recently, even in bad times during the COVID-19 pandemic, Viet Nam managed to sustain its economic reforms, aiming to promote sustainable and innovative growth. Consequently, Viet Nam outpaced most other nations with economic growth rates of 2.91% in 2020 and 2.58% in 2021 and had its growth recover to 8.02% in 2022.

Viet Nam, nevertheless, has been facing a slowdown in long-term economic growth. Such a slowdown has been accompanied by a modest upgradation in growth quality and worker productivity. The country has, thus, become more determined in searching for new drivers for future growth in order to reach its aspiration of becoming a high-income country by 2045. One of the emerging drivers is the rise of the digital economy. To accommodate and match the efforts of businesses in digital transformation, the Government of Viet Nam has taken radical actions to strengthen institutions for a digital government and the online delivery of public services. Viet Nam has also started to facilitate more drastic digital transformation in new economic areas, such as the sharing and platform economies, e-commerce, e-tourism, and the gig economy. These efforts were also made prior to 2020, but they were intensified

during the COVID-19 pandemic in 2020–2021. The Vietnamese Prime Minister's decisions, such as No. 645/QĐ-TTg in 2020 on the Master Plan to Develop E-commerce in 2021–2025; No. 749/QĐ-TTg in 2020 on the National Digital Transformation Program to 2025, Vision to 2030; No. 942/QĐ-TTg in 2021 on the Development Strategy for E-government Towards Digital Government in 2021–2025, Vision to 2030; and No. 411/QĐ-TTg in 2022 on Digital Economy and Digital Society are examples of such concerted efforts.¹

Apart from domestic efforts towards digital transformation, Viet Nam has also been more open in considering international collaboration in digital economy issues. This has been partly due to the growing consensus amongst various countries that digital transformation would be inevitable, irrespective of the standards that can be used (and thus the risk of choosing sides during geopolitical

¹ See Chapter 8 by Nguyen and Kimura for a more detailed review of these documents.

rivalries amongst superpowers). Countries in the region made various pioneering efforts towards partnership and cooperation in the digital economy, and some have gone past the level of the ambitions embodied under completed arrangements such as the Trans-Pacific Partnership Agreement (TPP, later replaced by the Comprehensive and Progressive Agreement for Trans-Pacific Partnership – CPTPP). The Digital Economy Partnership Agreement (DEPA) between Singapore and Australia and the DEPA between Singapore, New Zealand, and Chile then emerged as examples of such pathfinding initiatives. Additionally, initiatives were made to encourage paperless trade, with the UNESCAP Framework Agreement on Cross-Border Paperless Trade Facilitation coming into effect in February 2021 being the most notable.

It should be noted that digital economy covers more than just information and communication technology (ICT) activities. Instead, it also includes the use of digital technologies to transform traditional economic activities (i.e. digital transformation). In the case of Viet Nam, whilst digital economy measurement has remained an issue as of March 2023, such a transformational impact may arguably be even larger than the direct contribution of the ICT sector itself. Thus, fostering digital transformation entails complicated considerations, such as the sectors/activities for targeted development, whether the protection of ‘infant’ digital industries would be necessary, or whether it should wait until after a decent capacity for cybersecurity and cyberinformation security is established, etc. In this regard, the extent of Viet Nam’s preparedness for digital transformation and the approach it undertakes to nurture digitally enabled businesses will play a decisive role in the country’s engagement in and benefit from the digital economy.

This chapter aims to discuss the potential of digital transformation-related businesses in Viet Nam by 2045. In doing so, it starts by discussing the current state of such businesses to showcase their swift development since their emergence in Viet Nam. On that basis, the chapter elaborates on the future development paths and policy approaches of Viet Nam related to digital transformation-related businesses.

2. Current State of Digitally Enabled Businesses

Within its limited scope, this section focuses on some selected types of digitally enabled businesses, including: (i) the sharing and platform economy, (ii) e-commerce, and (iii) e-tourism.

2.1. Sharing and Platform Economy

Viet Nam has acknowledged the presence of the sharing and platform economy for various years. This newly emerging economic model has already been applied in a range of activities, from crowdsourcing and crowdfunding to ride hailing, etc. Under a proposal by the Ministry of Planning and Investment (Central Institute for Economic Management), the Prime Minister issued Decision No. 999/QĐ-TTg in 2019 approving the Scheme for the Development of Sharing Economy. The Decision aims to: (i) ensure a fair and equal business environment for businesses applying the sharing economy model and traditional businesses; (ii) ensure the rights, obligations, and legitimate benefits of the parties joining the sharing economy model, such as service providers and users, and platform providers; and (iii) encourage innovation, application of digital technology, and development

of digital economy (Prime Minister of Viet Nam, 2019). The Decision sets out four groups of policy measures, including: (i) solutions for exercising and performing the rights and duties of service providers in the sharing economy; (ii) solutions for exercising and performing the rights and duties of service users in the sharing economy; (iii) solutions for exercising and performing the rights and duties of technology companies/platform providers in the sharing economy; and (iv) solutions to be adopted by the state for establishing and developing business and investment ecosystems in the sharing economy.

In particular, the action plan to develop policies for the sharing economy covers a variety of tasks. These include establishing a fair and equal business environment between the sharing economy and traditional economy; reviewing and abolishing business conditions that are no longer suitable for the traditional business sector and generally apply to the sharing economy; encouraging innovation and the development of technology, especially the research and development of technological platforms, human resource development, and infrastructure development to facilitate the development of the sharing economy; amending the legal systems and applicable policies to correspond with sharing economy activities, especially regulations and policies stipulating the responsibilities of the parties of the sharing economy and the responsibilities of the state regulatory authorities related to the sharing economy model; establishing mechanisms for the sharing of information and data between governments at all levels and enterprises, professional associations, and household businesses; improving the legal framework to manage electronic payments for the cross-border provision of services. In doing so, Viet Nam also aims to mitigate consumer protection risks and prevent the evasion of taxes and performance of other liabilities as prescribed by laws.

Viet Nam has achieved some progress in developing the sharing economy. The most popular fields have been shared transportation, shared accommodation, and shared infrastructure. In the field of transportation, the development of online transportation services (Grab, Be, and Gojek (formerly known as GoViet), etc.) has helped mobilise a large number of labourers, cars, and personal motorbikes of households and resources of economic units in a shared manner. This in turn contributes to economising on resources and assets more economically and efficiently throughout the entire asset life cycle. According to a report by the Ministry of Transport (cited in Vu (2021)), in the two years (January 2016–January 2018) of the pilot project, 'Deploying the Application of Science and Technology to Support Management and Connection of Passenger Transport Activities Under Contract' (Grab car project), Viet Nam as a whole had 866 transport units (enterprises, transport cooperatives) with 36,809 vehicles, and tens of thousands of workers participated in the pilot. Of these, Ho Chi Minh City had 506 transport units and 3 software providers, with 21,601 vehicles participating in the pilot; Hanoi had 354 transport units and seven software providers, with 15,046 vehicles participating in the pilot; Quang Ninh province had 4 transport units and 2 software suppliers, with 62 vehicles participating in the pilot; Khanh Hoa province had 2 software providers and transport units, with 100 vehicles participating in the pilot. Indeed, Viet Nam was the fastest-growing market of Uber (which later merged with Grab) in 2015.

In the field of housing and hotels, a new type of housing and room-sharing service was launched in Viet Nam before the COVID-19 pandemic. Major platforms for the sharing service include Luxstay, Airbnb, and Travelmob. There are no accurate statistics on the number of participating accommodation establishments. However, the Ministry of Planning and Investment (2020) cited an estimate by Outbox (2019) that by January 2019, there were about 18,230 accommodation

establishments participating in the Airbnb model in Viet Nam, with 40,804 listings, an increase of more than 40 times compared to 2015. The figures exclude many room-sharing businesses and offices registered in other applications.

In the field of information and communication, although a sharing business model has not yet appeared, a form of cooperation in sharing the same transmission infrastructure is already in place. Following Directive No. 52/CT-BTTTT dated 11 November 2019 of the Minister of Information and Communications on enhancing the sharing and common use of passive telecommunications technical infrastructure amongst telecommunications enterprises, telecommunication enterprises including Viettel, VNPT, Mobiphone, and Gtel have signed an agreement to use the same location for base transceiver stations (BTS). The total number of stations that these enterprises have agreed to use together is nearly 2,100, which has increased investment efficiency and saved billions of Vietnamese dong for businesses. The potential for sharing BTS remains ample, as the sharing rate in Viet Nam was only 1.2–1.3 times, far lower than other countries such as the United States (2.5 times), China (1.48 times), India (2.1 times), and Indonesia (1.8 times) (Ha Linh 2022).

There have been several advantages that the sharing economy could offer to consumers as well. According to CSIRO (2019), buying or selling services on sharing economy apps were assessed by buyers to have a low-to-medium risk level, whilst saving time and expenses and augmenting income and flexibility. Besides, as the sharing economy helps conserve resources, it can limit pressure on resources (especially non-renewable resources) and the associated negative externalities of their production. This can in turn contribute to promoting sustainable consumption and production – a priority for Viet Nam in the decades ahead.

The room for developing the sharing economy in Viet Nam remains ample. On the one hand, software companies and start-ups are enjoying a more enabling environment as Viet Nam abolishes the regulatory constraints for digital economy development. On the other hand, Viet Nam's 'net-zero' commitment at COP26 and improved consumer literacy may increase attention on and practices of sharing assets. It should be noted that such assets should no longer be restricted to accommodation and cars, etc. Instead, the sharing economy may include in its scope digital assets as well (such as sharing subscriptions of subscription-based streaming services, etc.).



2.2. E-commerce

For decades, Viet Nam has worked to facilitate the development of e-commerce. The National Assembly of Viet Nam approved Law No. 51/2005/QH11 on Electronic Transactions as early as 29 November 2005. This Law was built on the basis of the Model Law on Electronic Commerce (1996) of the United Nations Commission on International Trade Law (UNCITRAL). In particular, the Law includes detailed regulations on e-signatures, a factor that ensures the reliability of data messages when conducting transactions.

Various government decrees were issued to guide the principles governing electronic transactions. Decree No. 52/2013/ND-CP on E-commerce of 2013 stipulates that electronic documents in commercial transactions may constitute a contract, proposal, notice, confirmation, or another document in the form of a data message provided by the parties and related to contract conclusion or performance. This Decree was amended by Decree No. 85/2021/ND-CP of 2021, which retains the same definition of electronic documents. Decree No. 30/2020/ND-CP of 2020 provides for equivalence between paper documents and electronic documents. In specific cases, electronic contracts in commercial transactions are applied according to Commercial Law No. 36/2005/QH11; specifically, the data messages that satisfy all the technical conditions and standards provided for by law shall be recognised as legally valid documents. Meanwhile, in Decree No. 47/2020/ND-CP dated 9 April 2020 on the Management, Connection, and Sharing of Digital Data of State Agencies, digital data is defined as data in the form of signs, scripts, numerals, images, sound, or a similar form and demonstrated by digital signals, and digital data carry digital information and may be shared in the form of data messages. In Decree No. 47/2020/ND-CP, accordingly, data are construed as digital data.

By the end of 2022, the Law on Electronic Transactions had not been revised yet. In the current development context, this Law arguably contains a number of shortcomings. Specifically, the provision on the scope is no longer appropriate as per current development practices; the regulations on the legal validity and evidentiary value of data messages, electronic records, and documents are unclear; specific regulations on procedures in concluding electronic contracts, secure data messages, and secure electronic signatures are not clearly stipulated, leading to a lack of trust of the parties when participating in electronic transactions. The Government of Viet Nam has identified a plan to revise the Law, as reflected in Resolution No. 50/NQ-CP, dated 20 May 2021, to implement the Resolution of the 13th Party Congress and Resolution No. 152/NQ-CP, dated 3 December 2021, on directions to revise some laws.

In the context of the COVID-19 pandemic, Viet Nam saw a more emphatic need for promoting e-commerce development, and the Prime Minister issued Decision No. 645/QĐ-TTg on Master Plan for E-commerce Development During 2021-2025. At the same time, the approach focuses not only on entry and competition in the e-commerce market but also on dispute resolution related to e-commerce transactions. Accordingly, Decision No. 645/QĐ-TTg sets out the task to promote a pilot mechanism of online dispute resolution (ODR). Various stakeholders have also embarked on the development of ODR platforms. The Vietnam International Arbitration Center (VIAC) established the Medup platform for online mediation in March 2021, whilst the Hanoi International Arbitration Center established its own ODR platform in 2020. With funding from the Aid for Trade programme by the

Australian Department of Foreign Affairs and Trade, the Central Institute for Economic Management (CIEM) of Viet Nam implemented – in collaboration with the VIAC and other organisations – a pilot project to promote ODR in Viet Nam during March 2020–September 2021. Amongst the project activities were three training sessions (in Hanoi, Danang, and Ho Chi Minh City) for enterprises on the use of online dispute resolution. Indeed, the project led to significant improvements in the awareness of small and medium-sized enterprises regarding the use of ODR: up to 99% of the firms that participated in the ODR simulations assessed themselves as having a moderate-to-high understanding of ODR (CIEM, 2021a).

Viet Nam has had a rapidly growing e-commerce market, especially since 2015. The business-to-consumer (B2C) e-commerce market has had a stable growth rate, reaching over 19.1% per annum on average, with a value rising from US\$4.8 billion in 2015 to US\$13.7 billion in 2021 (Table 11.1). The Internet and Digital Economy Agency (IDEA, 2022) projects that Viet Nam’s B2C e-commerce may reach a scale of US\$16.4 billion in 2022.

Viet Nam’s robust e-commerce development was reflected by increases in both the number of online buyers and the average value of online transactions per buyer. Specifically, the number of online buyers rose from 30.3 million in 2015 to 54.6 million in 2021. The average e-commerce transaction value per customer also increased from US\$160 in 2015 to US\$225 in 2019, and to US\$251 in 2021 (even in the context of the COVID-19 pandemic). In another aspect, the growth of e-commerce revenues has been faster than total retail sales in Viet Nam (Nguyen, Tran, and Do, 2022). Consequently, the share of B2C e-commerce in total retail sales climbed from 2.8% in 2015 to over 5.5% in 2020 and 7.0% in 2021.

Table 11.1. Viet Nam’s B2C E-commerce, 2015–2022

	2015	2016	2017	2018	2019	2020	2021	2022*
Number of online buyers (mil.)	30.3	32.7	33.6	39.9	44.8	49.3	54.6	57–60
Average value of online transactions per buyer (US\$)	160	170	186	202	225	240	251	260–285
Share of B2C e-commerce in total retail sales (%)	2.8	3.0	3.6	4.2	4.9	5.5	7.0	7.2–7.8
Internet penetration rate (%)	54.0	54.2	58.1	60.0	66.0	70.0	73.0	75.0

* Figures for 2022 are projections by IDEA.
Source: IDEA (2020, 2021, 2022).



Viet Nam is considered to be one of the most promising markets for e-commerce. By the end of 2021, nearly 73.0% of the population had access to the Internet (IDEA, 2022). The overall digital economy was projected by Google, Temasek, and Bain & Co. (2022) to reach US\$23 billion in 2022 and US\$49 billion in 2025, with a projected growth rate of 31% per annum on average during 2022–2025. Of this, the scale of e-commerce was projected to increase from US\$14 billion in 2022 to US\$32 billion in 2025, i.e. on average by 37% per annum.

On a related aspect, Viet Nam has improved its ICT infrastructure significantly. According to the United Nations (UN, 2022), in 2022, Viet Nam's Telecommunication Infrastructure Index ranking was 74th, lower than in 2020 (69th) but higher than in 2018 (100th). The International Telecommunication Union (2021) ranked Viet Nam at 25th out of 194 countries and territories in terms of its Global Cybersecurity Index, compared to 50th in the preceding ranking. Internet penetration rose to 74.9% in 2020, increasing by more than 3 times compared to 2015 (Ministry of Information and Communications, 2021). More importantly, Viet Nam is progressive in improving its regulations on the digital economy. The Digital Riser ranking by the European Center for Digital Competitiveness (ECDC, 2021) shows that Viet Nam had the most improvement in East Asia and the Pacific in the past 3 years, with top rankings in both the ecosystem and mindset dimensions.

From the firm level, there have been increasing efforts to promote and make use of e-commerce channels. According to the Viet Nam E-commerce Business Index 2021, 42% of surveyed enterprises² confirmed they had built a website, slightly lower than the rate of 44% in 2018 but similar to that in 2019. As an explanation, a portion of enterprises had more than one effective channel for direct business instead of focusing on doing business via a website, apart from the larger survey sample. Indeed, the total number of e-commerce websites and applications rose from 29,370 in 2019 to 36,451 in 2020 and 43,411 in 2021, i.e. on average by 21.6% per annum during 2019–2021. The number of corporate accounts received in e-commerce management also went up from 42,976 in 2019 to 67,054 in 2021, i.e. an average growth rate of 24.9% per annum (IDEA, 2022).

In parallel, other channels of e-commerce have proliferated. E-commerce via social networks increased due to relatively low costs and effective outreach to potential customers. Amongst the

² 4,693 valid responses. Source: VECOM (2021).

surveyed enterprises by the Vietnam E-Commerce Association (VECOM, 2021), 41% had sales via social networks in 2020. This does not take into account individual sellers on platforms such as Facebook, almost all of which did not have to pay income taxes for earnings on the Internet by 2021. In addition, e-commerce activities via platforms became more popular. In 2020, 22% of the surveyed enterprises had sales via e-commerce platforms, increasing by 5% compared to 2019. Meanwhile, the use of mobile e-commerce applications appeared to be rather stable. The share of enterprises having mobile-friendly websites stayed at 17% during 2017–2020.

Business-to-business (B2B) e-commerce is becoming more popular, albeit more slowly than the B2C market in Viet Nam. According to VECOM (2021), 81% of the surveyed enterprises received orders via email in 2020, about the same as in 2018 (84%). Orders via social networks and websites accounted for 63% and 37%, respectively. Conversely, the share of surveyed firms placing orders via email was 80%, whilst those using social networks and websites were 61% and 40%, respectively. In 2020, however, firms paid more attention to e-commerce platforms, which were used by 31% of the surveyed firms (in 2019: 25%).

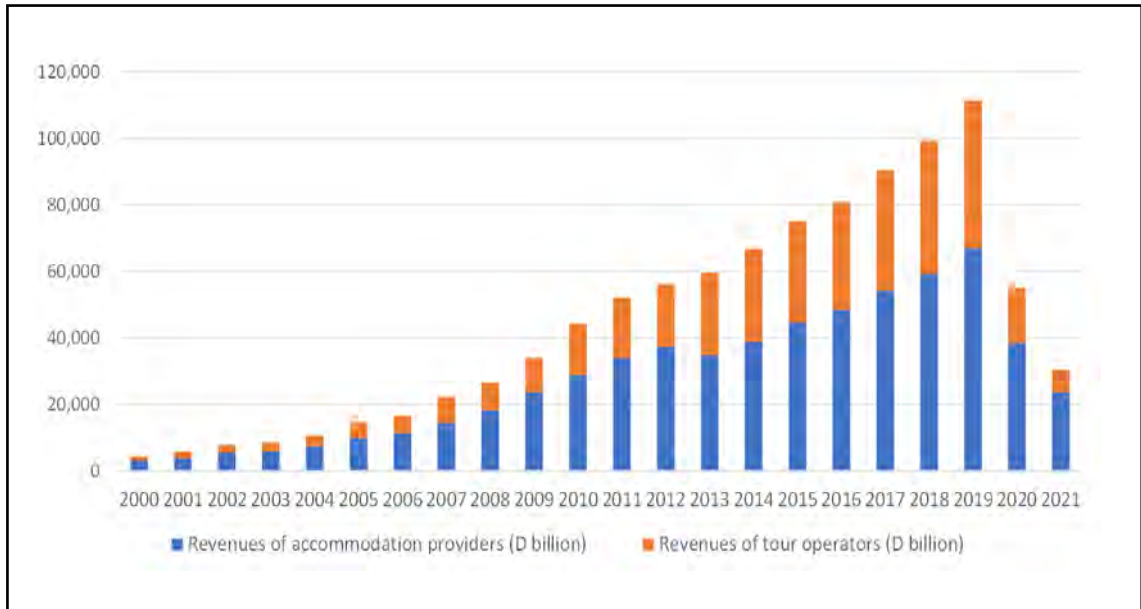
Viet Nam still has significant room for the future development of e-commerce. This projection can be explained by several reasons. First, Viet Nam's economy may continue to grow, with further improvements in people's incomes. Second, Viet Nam may address several issues related to e-commerce that consumers have identified, such as the inconvenience (and insecurity) of online payments, confidence with e-commerce transactions, and ease of dispute resolutions related to e-commerce transactions. Third, the eco-system for e-commerce is expanding in Viet Nam, with more diverse applications. For instance, payment methods are being renovated, with potential permission for fintech companies to provide innovative payment services and a more rigorous legal framework for cashless payments. In addition, the expanding services (related to food delivery, shopping, etc.) by sharing transportation platforms, such as Grab, Gojek, Be, etc. could facilitate e-commerce development.

2.3. E-tourism

Over the past decades, tourism has been an important sector in Viet Nam. Both revenues for accommodation providers and tour operators have been increasing continuously during 2000–2019, with respective average growth rates of 17.2% p.a. and 21.1% p.a. (Figure 11.1). The numbers of domestic tourists and international tourists have also gone up drastically. In particular, the number of domestic tourists rose on average by 17.1% p.a. during 2000–2019 (Figure 11.2). The sectors only experienced a sharp contraction in 2020–2021 due to the COVID-19 pandemic and associated policy measures by various countries (including Viet Nam) to prevent the spread of COVID-19 (Figures 11.1 and 11.2).

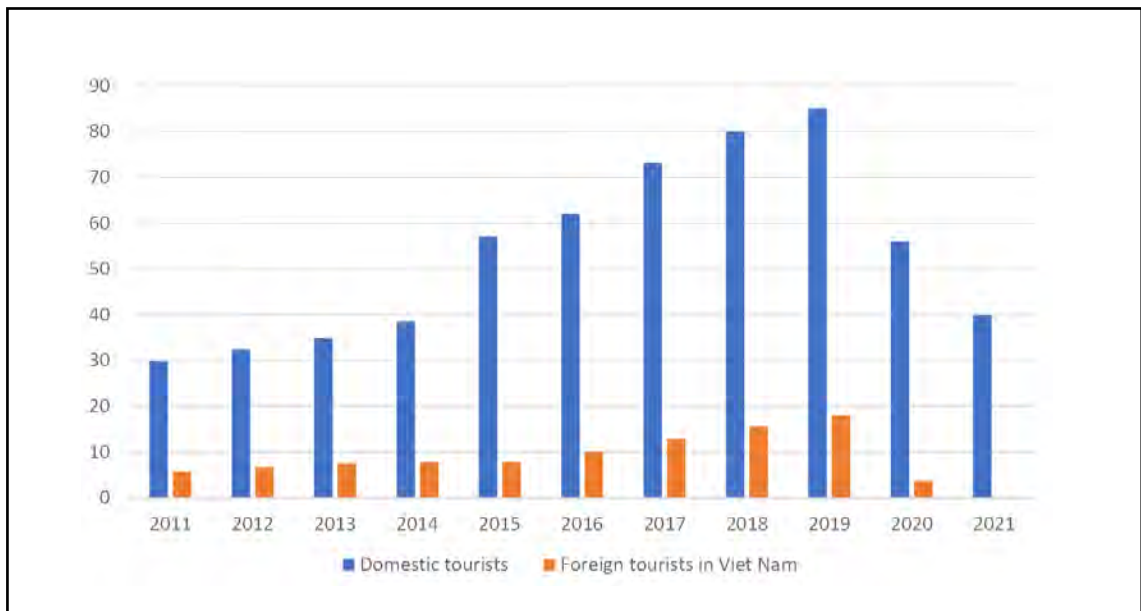


Figure 11.1. Revenues of Tourism-related Activities



Source: General Statistics Office.

Figure 11.2. Number of International Tourists (millions)



Source: Viet Nam National Administration of Tourism.

Amidst the context of the COVID-19 pandemic, Viet Nam made attempts to promote e-tourism activities. During September–December 2021, Ninh Binh province had a series of e-tourism activities scheduled every Sunday morning to introduce scenic spots in the province. The ATK Dinh Hoa historical relic in Thai Nguyen province deployed a digital map and VR tours via the address <https://atk.vimap.vn>, thereby enabling close viewing or moving between different spots. According to Google, Temasek and Bain (2022), the gross market value for online travel in Viet Nam is projected to rise from US\$2 billion in 2022 to US\$6 billion in 2025, i.e. a three-fold increase during 2022–2025.

In 2020, the Prime Minister issued Decision No. 147/QĐ-TTg approving the strategy of tourism development until 2030. Accordingly, the Decision sets out various measures to promote the digital transformation of tourism. Specifically, the measures are to: develop smart tourism; promote and brand tourism; manage tourists, tourism-related activities, and tourism resources; control, monitor and warn of pollution by applying scientific and technological advances in a digital platform; develop a smart tourism ecosystem; apply digital technologies to connect, support, and increase the experience for tourists; expand capacity to provide services combining digital and real channels; optimise electronic transactions in tourism activities. In line with this, various provinces have updated their tourism development plans to include e-tourism explicitly.

2.4. Key Issues

There are several key issues that must be addressed to promote the development of digitally enabled businesses. *First*, the legal framework for innovation and technological advancement still reflects incompatibility with the development of digitally enabled businesses. There are a couple of specific legal issues. On the one hand, the policies and programmes to foster technological innovation and start-ups fall short of expectations from businesses, particularly start-ups. In the area of e-commerce, the Law on Electronic Transactions was still under revision by the end of 2022, despite action plans to develop e-commerce as early as 2020. For e-tourism, meanwhile, there was no concrete policy document after Decision No. 147/QĐ-TTg in 2020 on the national strategy for tourism development. As will be discussed later, embarking on good regulatory practices in developing policies for digitally enabled businesses is no easy task, as data unavailability in these new business areas often prevent rigorous impact assessment and effective public consultation of policies. On the other hand, there remains the duplication and potential overlapping of duties and mandates amongst ministries, line ministries, and management organisations at all levels on issues related to innovation, digital transformation, and e-commerce, etc. More importantly, the policy action plans often do not come with adequately specified resources, which can hardly guarantee effective implementation.

Second, few academic institutions and colleges have formally adapted courses on innovative start-ups or kept up with global technological developments and start-up models. Most educational institutions lack any means of promoting innovative initiatives. Research capacity and the growth of innovative start-ups have been severely impeded by excessive concentration on teaching activities at universities and amongst colleagues as well as by strict funding regulations for such activities.

Third, the fiscal space for supporting innovation is inadequate. Viet Nam is in the process of restructuring budget revenues, as it participates in a number of free trade agreements that

induce the substantial removal of import tariffs. Accordingly, the authorities tend to be reluctant to consider proposals for tax exemption and tax reduction to incentivise economic activities, including innovation. Besides, the tax policy approach to innovation is not yet clear, i.e. whether the tax policy approach aims to maximise the collection of revenues or nurture innovative capacity and start-ups. A notable issue under debate that has already attracted a lot of attention is whether information technology (IT) companies – arguably making profits in the COVID-19 context – should be eligible for tax exemption and deduction. Eventually, the IT companies were not targeted for such fiscal support, with the reason that the support only targeted those making losses. With that approach, the IT companies were effectively penalised for being able to innovate and adapt to the new context.

Fourth, Viet Nam does not have concrete regulatory tools that can support the consideration of policies towards digitally enabled businesses. On the one hand, Viet Nam is short of various statistics related to digital activities at the micro level. The amended Statistical Law in 2020 already updated the list of statistical indicators related to the digital economy, but the figures are only at the national level. These indicators cannot help to measure the digital economy directly; nor has there been any concrete direction to improve the capacity to measure the digital economy. The available indicators could not help account for the interaction of digitally enabled businesses with other economic models/activities, such as the night-time economy. The only viable solution to measure services related to the night-time economy – identified by the Ministry of Planning and Investment with borrowed experience from China – is to work with payment service providers (including credit card providers) to collect details on transactions conducted during night-time hours. On the other hand, Viet Nam did not have a concrete competition assessment framework during the rulemaking process related to the digital economy. Consequently, push-back from traditional economic actors when facing competition from digitally enabled entities at times compelled the government authorities to reconsider, and even reverse, policies.

On a related aspect, Viet Nam has not been sufficiently confident in applying regulatory sandboxes to support innovation. The draft decree on regulatory sandboxes on fintech was introduced in 2020 but had not been issued as of February 2023. Without quick progress and detailed justification, this may be easily misinterpreted as reluctance to promote financial innovation, as Viet Nam retained the prudent approach to new financial products under its Law on Credit Institutions. Likewise, Decision No. 687/QĐ-TTg of the Prime Minister on Promoting Circular Economy Development in Viet Nam sets out a task of drafting a Decree on Pilot Mechanism for Circular Economy Development in Viet Nam, but its realisation will depend very much on the political will to adopt new regulatory initiatives that have cross-cutting implications (e.g. green taxonomy, use of digital technologies, etc.).

Fifth, consumer protection has not received adequate attention in Vietnamese laws in general and in the digital transformation process in particular. According to IDEA (2022), most consumers are concerned about products being of poorer quality than advertised and disclosure of personal data, etc. For various transactions related to traditional goods and services, consumers could not exercise their rights in the case of faulty or mis-advertised products due to the cumbersome procedures with related authorities and due to a large number of authorities with unclarified responsibilities in handling the complaints. In the digital environment, resolving such complaints may be harder as online dispute resolution is relatively new and needs complementary institutional and IT capacity. For consumer complaints related to intellectual property infringement, for instance, the responsibilities of the concerned authorities (such as platform providers, Ministry of Information and

Communications, Ministry of Science and Technology, etc.) are not clearly separated. Without easily accessible means of resolving disputes, the government authorities may be more inclined to ex ante customer protection via more restrictive entry conditions and/or more compliance requirements for providing digitally enabled services.

3. Projection of Related Policy Approaches

This section sketches out several projections for future policy approaches.

3.1. Tax Policy

Over the next decades until 2045, Viet Nam is expected to further improve its tax policy in association with the restructuring of state budget revenues, covering all revenue sources and expanding the revenue base, especially new sources of revenue, in line with international practices; increase the proportion of domestic revenue, ensure a reasonable ratio between indirect taxes and direct taxes, make good use of taxes collected from property and natural resources, and protect the environment; minimise the integration of social policies in taxes and policies on tax exemption, reduction and rescheduling, ensuring tax neutrality, and contributing to creating a favourable, fair, and encouraging business-investment environment.

Specifically, Viet Nam will continue to reform its tax instruments, including value-added tax, special consumption tax, import and export duty, corporate income tax, personal income tax, agricultural land tax, and environmental protection tax, amongst others. For income tax by households and individuals from domestic e-commerce activities, it seems clear that the tax authorities will enforce the tax collection from the sellers. For corporate income tax, Viet Nam may work in the directions of: reviewing and amending or abolishing tax incentives, including tax exemption and reduction, that no longer satisfy development and international integration requirements; minimising the integration of social policies with tax exemption and reduction policies, with the intention of ensuring tax neutrality for stable application thereof in the medium and long term; granting corporate income tax incentives to small and extra-small enterprises and, at the same time, putting more emphasis on the substance, instead of the quantity, of foreign investment encouragement policies, thereby encouraging the participation of all economic sectors in investment in key industries and sectors and areas preferred for investment; broadening the tax base to adapt to Viet Nam's socioeconomic situation and conform to international practices; and implementing standards of prevention and combat against transfer pricing and erosion of revenues in accordance with international practices.

There has been extensive debate in Viet Nam since early 2022 regarding the potential impacts of the country joining the global minimum tax mechanism. Whilst a concrete quantitative study of its impacts on Viet Nam remains absent, discussion with experts so far yields several insights. *First,*



joining the global minimum tax mechanism is likely to increase tax revenues for Viet Nam, including from the foreign-invested enterprises that provide digitally enabled services. *Second*, joining the global minimum tax mechanism may help Viet Nam in addressing practices of base erosion and profit shifting. *Third*, having fewer tax incentives also compels Viet Nam to improve the business environment significantly to ensure that it still appeals to foreign investors, especially those investing in innovative activities, such as digitally enabled services. *Finally*, joining the mechanism may enable Viet Nam to receive more technical assistance related to tax reforms, including those related to transactions in the digital environment.

3.2. Market-entry Conditions

Viet Nam may simplify market-entry conditions to ensure the participation of new players in markets with potentially significant digital transformation. Such a simplification may start with the ICT sector so that foreign investors may enhance their participation and share management expertise of specific activities. CIEM (2021b) also proposes the relaxation of foreign ownership limits in the banking sector so as to help the transfer of expertise to Vietnamese commercial banks, including in digital banking services. In addition, Viet Nam may establish a fairer and more equal business environment for businesses that join the digital economy. For instance, such a fair and equal environment will be enforced over the sharing economy model and traditional businesses and between domestic enterprises and foreign enterprises towards facilitating and assisting traditional enterprises in converting their business type. In this process, Viet Nam may make more use of competition assessment to check whether the draft regulations may affect market competition for digital goods and services.

Viet Nam may also seek to improve the responsibilities of platform providers. Such responsibility may be tied to handling complaints by users/consumers, the protection of personal data, and the provision of data upon request by government authorities. The extent to which Viet Nam may enforce compliance with such responsibilities may depend upon the political will, readiness, and actual progress in simplifying ex post dispute resolution, including via ODR. Without effective ODR, Viet Nam may revert more to the use of entry requirements on platform providers and service providers on digital platforms, etc. Viet Nam may further review and amend institutions for innovative start-up investment with a view to facilitating capital contribution, share purchases, and mergers and acquisitions of technology enterprises.

Specifically, Viet Nam will be progressive in establishing and improving regulatory frameworks for industries and sectors with new business models (e.g. e-commerce, sharing economy, financial technology, and digital banking technology, etc.). These efforts serve to ensure they are streamlined, encourage innovation, and are adaptable to the level of risks of each industry or business activity. Given the innovative and unprecedented nature of these new industries and business models, however, Viet Nam may need an approach that harmonises the need to quickly facilitate firm-level business activities and the evidentiary basis for policy consideration. In this regard, the country may popularise regulatory sandboxes for new business models to allow



for the pilot implementation of innovative products and services, and then gather the counterfactuals needed for developing countrywide policies.

In a parallel effort, Viet Nam may want to build its own capacity to master digital technology. Thus, the country may review and improve institutions or regulatory frameworks aiming towards encouraging domestic digital technology enterprises to invest in application development and research relevant to Industry 4.0 (IR4.0). A specific direction may be to use tax incentives and financial instruments as leverage for technological research and development and applications, etc.

3.3. Active Labour Market Policy (and Future of Work)

Viet Nam will build and assist in the development of the labour market by improving the effectiveness of policies and the system of legislative documents on labour market development and the enhancement of administrative reform to minimise the risks relevant to workers' benefits during IR4.0. Specifically, one line of effort would be to review and amend legislative documents on the labour demand–supply relationship, matching of labour demand and supply according to the labour market rules, international conventions and standards recognised by Viet Nam, and lawful and justifiable interests of workers and employers. Viet Nam will also develop a mechanism and execute programmes and schemes for assistance in job creation and participation in the labour market for special groups (disabled people, ethnic minorities, rural workers, and new graduates from universities and vocational education institutions). In this regard, the use of digital technology for collecting and processing labour-related data on a real-time basis may be enabled in the future.

Viet Nam will also improve the supply of labour skills for the new development context. The Ministry of Planning and Investment (2023), in their submission to the Prime Minister, identifies the need to upgrade labour productivity, including via developing skills for the digital economy. In doing so, the country will continue to design basic and advanced vocational training programmes according to standards of vocational skills; apply digital technologies; and study the formulation of policies on assistance in the provision of basic and advanced training for special groups of workers. In addition, Viet Nam will encourage the frequent and flexible provision of short-term training courses in digital skills for workers. It will also study and formulate policies to attract talent, especially policies on housing, salaries, and living and working conditions in order to attract and retain high-level experts, scientists, and managers. Finally, Viet Nam may encourage enterprises, enterprise associations, and professional associations to participate in the process of innovation and the improvement of education and vocational training quality in order to meet the demand of the labour market.

3.4. Cybersecurity and Data Privacy Policy

Viet Nam will continue to build capacity for cybersecurity. The Cybersecurity Law will remain in effect. There may be debates regarding the provision under the Law that requires data localisation. It may be probable that the authorities will be more open to hearing the views of business stakeholders about the need to revise such a provision under the Law. Nevertheless, Viet Nam may indeed focus more on building technical capacity to prevent and handle cybersecurity attacks. In doing so, Viet Nam may deepen collaboration. In fact, the Japan International Cooperation Agency (JICA) has already set a good example via the 'Project on Capacity Building for Cyber Security in Viet Nam',

which was implemented during June 2019–June 2022 and helped significantly improve the capacity of trainees and develop awareness materials on cybersecurity in Viet Nam (JICA, 2022).

In addition, Viet Nam may continue to strengthen data privacy rules and protection. Regulations on personal data protection may be issued and improved to ensure appropriate enforcement. However, Viet Nam may not necessarily employ a model of restrictive requirements for personal data protection like those seen in advanced countries (such as the European Union), as lessons from the COVID-19 period showed that having people forgo part of their personal data rights can help trace infections and eventually bring greater good for society.

Viet Nam is yet to consider the use of data privacy protection as a standard related to cross-border trade and investment. Another question would be whether Viet Nam may join some group of economies to promote the mutual recognition of such standards, thereby enabling the smoother operations of big tech corporations. An example of such a group is the APEC Cross Border Privacy Rules – a voluntary mechanism. Again, as Viet Nam has not considered such standards for use in regulating cross-border trade and investment, promoting mutual recognition may be an issue of lower priority.

3.5. Consumer Protection Policy

There may be two directions of efforts in Viet Nam's consumer protection policy. On the one hand, the country may revise regulations so as to provide a one-stop-shop model for consumer protection. This one-stop-shop model may receive complaints from consumers in all commercial transactions, whether physically or via digital platforms. This may come from the fact that the existing consumer protection framework involves too many agencies and organisations, which may lead to unclear separation of who will be leading the handling of consumer complaints. The regulations may also be elaborated further regarding the process, the requirements of evidentiary support, and basis for complaints, etc. for consumers when lodging their complaints.

On the other hand, Viet Nam may provide ODR to support consumer protection. As per the current Law on Consumer Protection, the consumer is defined to cover both individuals and buying entities. This definition may be retained in future versions of the law, which provides for a broad scope of customer protection and, thus, demand for ODR. The ODR platforms may undertake different forms of alternative dispute resolutions, including negotiation, mediation, and arbitration. In principle, such an online dispute resolution mechanism may work for both individual consumers and firms (as buyers) and for transactions conducted within Viet Nam or on a cross-border basis.

3.6. International Cooperation Framework

Viet Nam will continue to deepen its economic integration process. Existing tracks include the Association of Southeast Asian Nations (ASEAN), ASEAN-plus, World Trade Organization (WTO), and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). Under these frameworks, Viet Nam may deepen cooperation in the areas of digital data governance, e-commerce, consumer protection, paperless trading, IP protection, etc. At the same time, Viet Nam may seek technical assistance from partners, such as ASEAN or advanced CPTPP members, to build

legal and personnel capacity for the related areas. For example, Viet Nam may benefit from the technical assistance of Japan on issues related to ODR, cybersecurity, and competition policy in digital platforms.

At the same time, Viet Nam may be open to considering new international initiatives, such as the Indo-Pacific Economic Framework, or collaborating with appropriate countries on a bilateral basis. Such initiatives may cover relatively newer issues, such as digital economy partnerships and digital connectivity to support supply chain connectivity and resilience, etc. For these initiatives, Viet Nam may be open to joining, but the decision to participate and implement should be on a case-by-case basis. Learning from past experiences, should Viet Nam decide to join any initiative of this type, the initiative must incorporate development cooperation that enables capacity building for stakeholders in Viet Nam.

Viet Nam may also work with partners to harmonise the standards/requirements related to these new innovation-related areas. This is a crucial part as unlike tariffs, regulatory requirements related to digital and innovation-related sectors can hardly be applied to only some specific partners. Failure to harmonise the standards will imply that Viet Nam either has to pursue unilateral liberalisation or make agreement-based commitments at a minimal level.

4. Conclusions and Recommendations

This chapter aims to discuss the potential of digital transformation-related businesses in Viet Nam by 2045. Viet Nam has an established presence of various digitally enabled businesses, such as sharing economy, e-commerce, and e-tourism, etc. Still, Viet Nam needs to address key issues, such as its inadequate legal framework for innovation and technological progress; shortage of human resources on digital technology and business models; modest fiscal space for supporting innovation; lack of concrete regulatory tools to develop good policies for enabling digital businesses; and unmatched attention on consumer protection. The chapter also projects future policy changes related to the development of digital businesses, covering tax policy, market entry conditions, active labour market policy, cybersecurity and data privacy, consumer protection, and international cooperation.

Viet Nam needs to consider the below recommendations.

First, Viet Nam needs to improve coordination across government agencies. This requires improving the sharing of data across government agencies and expediting the process of consultation/providing comments by government



agencies on draft regulations related to digital data governance. Viet Nam also needs to coordinate the work of government agencies with donors to avoid the duplication of funding and/or to improve the efficiency of funds.

Second, Viet Nam should further review and amend (where necessary) the technical standards/specifications related to information technology products, telecommunication infrastructures, the interoperability and portability of data, electronic identity and authentication, and the traceability of products in e-commerce, etc. Viet Nam should also promptly issue regulations on data that cover data classification. At the same time, Viet Nam should review and amend (where necessary) the technical specifications of data shared across agencies.

Third, Viet Nam needs to establish more fundamental laws to support the digital transformation of economic sectors. These include the drafting and enforcement of the amended Law on Electronic Transactions, the Law on Digital Government, and the Law on Digital Technology Industry, etc. Regulations that facilitate and recognise the legitimacy of the operations of digital agents, such as chatbots, will also be essential.

Fourth, Viet Nam should conduct in-depth impact assessments of the Law on Cybersecurity as well as of regulations on data localisation for trade, investment, and exports by sector and by ownership. This will help propose recommendations to minimise the adverse impacts of regulations on cross-border data flows. In addition, Viet Nam should deepen efforts to study and develop an effective legal framework to protect data and privacy in cyberspace, with strict sanctions for any breach. Proposed regulations on data protection and privacy should be scientifically robust and harmonised to prevent raising unnecessary barriers to data flows and enable business operations in the digital area. To promote information dissemination and raise the awareness of the population and enterprises about information security and certification, the relevant risks, and prevention measures, and to improve functioning skills of using digital technology and the Internet to ensure e-transaction security. This knowledge and understandings, together with skills to safely and effectively explore and utilise Internet resources, should be integrated into high school informatics curricula to improve the awareness and skills of ICT amongst students.

Fifth, Viet Nam needs to enforce competition policy over digitally enabled businesses via simplifying regulations to create favourable conditions for enterprises in the production, provision, and application of digital technologies; improving regulations (including their enforcement) on customer protection towards a consumer-centred digital economy; and increasing the availability of statistical data on the digital economy to support competition assessment when formulating new regulations on the digital economy.

Finally, Viet Nam needs to develop human resources for digital transformation via formal programmes or the learning-by-doing approach. Viet Nam should also focus on reviewing regulations to make efforts (where necessary) to harmonise industrial relations and/or protect workers' rights in the digital platform. In the transformation to the digital economy, various industrial relations may need to be concretised in the regulatory framework, including partnerships and employer–employee relations.

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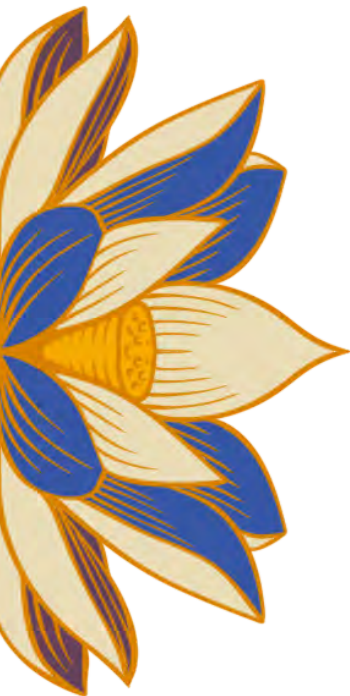


Chapter 12

Viet Nam's Textile and Garment Industry in the Global Value Chain

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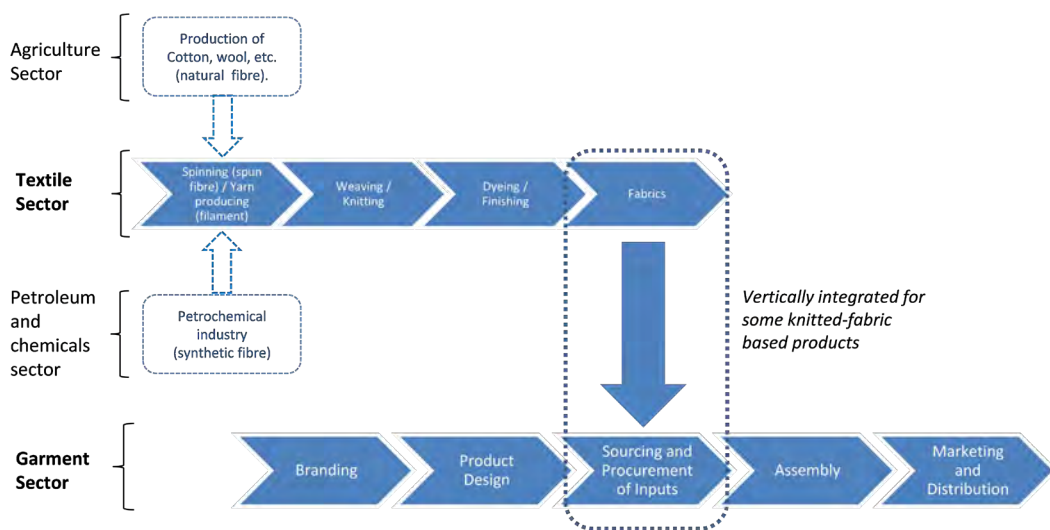


1. Introduction

'The textile and garment industry is an archetypal industry through which developing countries achieve industrialisation and economic growth.' This is how the industry is often characterised by academics, policymakers, and development practitioners. Whilst the statement is not entirely wrong, it may not be completely correct either. The problem lies in the attempt to make a useful statement by combining, without making a clear distinction between 'textile' and 'garment.'

The textile and garment industry comprises a wide range of sub-sectors, spanning agriculture to manufacturing (see Figure 12.1). For instance, cotton fibre, which is one of the most widely used natural fibres in textile and garment products, is an agricultural commodity, produced in countries with geological and climatic conditions compatible with the cultivation of cotton. This includes countries such as China, India, Pakistan, and the United States (US). The post-harvesting processes, such as the spinning of the fibre into yarn, belong to the manufacturing sector, which may or may not take place where the cotton is produced. Synthetic fibre, such as polyester, however, is a petrochemical product, produced with modern machinery, and is much more capital- and technology-intensive. It would be rather unrealistic to expect developing countries to use this sub-sector as a 'springboard for industrialisation and economic growth'.

Figure 12.1. Production and Distribution Flow of the Textile and Apparel Value Chain



Source: Modified from Goto (2011) and Fukunishi, Goto, and Yamagata (2013).

Meanwhile, the garment sector has its own set of processes that are very different from the textile sector.¹ The most important in this is the sewing process of the garments, using textiles as key inputs. This is essentially an assembly process, often referred to as Cut-Make-and-Trim (CMT). It is highly labour-intensive, even compared to the production of cotton yarn (spinning). Countries that are richly endowed with cheap labour, therefore, tend to exhibit a clear international comparative advantage in the CMT process. As such, the garment sector has in fact often served these developing countries to establish a foothold in the global economy, primarily by undertaking the CMT function. In the global garment industry, Viet Nam consistently performs well, ranking third only after China and Bangladesh (Goto, forthcoming).

It would be crucial to make this distinction when we look at the textile and garment industry of a particular country, such as Viet Nam, because textiles and garments are two interrelated but different sub-sectors, with significantly different factor intensities and technological attributes. And whilst Viet Nam's garment sector has played a pivotal role, particularly in the context of its export-oriented industrialisation trajectory, its textile sector has yet to evolve to consolidate its position in the global industrial landscape.

2. Background

The textile and garment industry of Viet Nam has a relatively long tradition, particularly its cotton-spinning sub-sector, which dates back to its French colonial past. Even prior to this, there were many local cotton weavers using imported yarn, which were eventually crowded out as the colonial government increased its tariff rates on the yarn to promote domestic production. This occurred when large and modern spinning factories were established by the French: the first in Nam Dinh in 1889, followed by another in Hanoi in 1894, and then later in Hai Phong. These three were finally integrated into the *Société Cotonnaire du Tonkin* in 1912, boasting the largest and most sophisticated spinning facility in Indochina at the time (Itsumi, 1943; Goto, 2003).

A more indigenous industry started to evolve after World War II (Tuan et al. 2001; Goto, 2003). The North introduced textile machinery from the former Eastern bloc, primarily the Soviet Union, whilst the South depended entirely on the West. After reunification, however, all the large textile-related companies in the South (which also included garment companies) were nationalised and became state-owned enterprises (SOEs) and rearranged into production units in the central-planning-based economic system.

One of the characteristics of the industry at the time was that it was highly integrated vertically. Firms in both upstream (textiles) and downstream (garment) sectors were connected through strong interfirm relationships, maintaining a clear division of labour within the industry. However, the subcontracting agreement (The May 19th Agreement) with the Soviet Union of 1986, under

¹ While this is mostly true for woven-textile-based garments (HS62), the production of knitted-textile-based garments (HS61) may be more integrated, where the division between textile production (knitting) and garment production (CMT) is indivisible. Typical products include underwear, socks, and knitted gloves. See Figure 12.1.

which Viet Nam was to import Soviet textiles for domestic processing and re-export the final outputs (garments) to the Soviet Union, drastically reduced domestic demand for Viet Nam's textiles. This effectively ended the domestic integrated production structure. As a response, a significant number of large textile companies started to produce garments as well, emerging as competitors of incumbent garment companies. Another key feature of Viet Nam's textile and garment industry during this period was that its growth potential was strictly limited to its domestic markets and foreign channels through COMECON, as it did not have any diplomatic and trade relationships with the West allowing it to access and explore the wider global economy.

The real take-off for Viet Nam's garment industry occurred in the early 1990s, when Japan was instrumental in connecting it to the global garment value chain, with a primary orientation towards the Japanese market. In 2001, Viet Nam restored its economic relationship with the US as their Bilateral Trade Agreement (USBTA) came into effect. This was a key turning point for the industry, resulting in an unprecedented export boom. The US has since been the largest garment export destination for Viet Nam. The abolition of the Multi-Fibre Arrangement/Agreement on Textiles and Clothing (MFA/ATC) in 2005 and Viet Nam's accession to the World Trade Organization (WTO) in 2007 further ignited the growth of the industry, surpassing the export value of crude oil in 2010.

Table 12.1 provides an overview of Viet Nam's textile and garment industry. The number of companies, turnover, and workers for both textiles and garments (apparel) have all been increasing since 2015, with a slight drop in 2020, probably due to the COVID-19 pandemic. Growth rates during this period have been higher, in general, for textiles than for garments. One interesting difference between the textile and garment sectors is the number of workers. Whilst there were about 1.45 million workers in the garment sector in 2020, there were only 331,000 workers in the textile sector, which could reflect the fact that the garment sector tends to be more labour-intensive (note the small difference in net turnover). Another is the high share of female workers in the garment sector compared to the textile sector, which may have to do with the relatively lower level of average monthly compensation.



Table 12.1. Overview Statistics of Viet Nam's Textile and Garment Industry

		2015	2017	2018	2019	2020
Number of Acting Enterprises	Total	442,485	560,413	610,637	668,503	684,260
	Manufacturing	67,490	84,142	96,715	109,917	107,100
	Textile	2,789	3,518	4,404	5,086	4,858
	Apparel	5,981	6,961	7,627	8,655	8,370
Net Turnover (D billion)	Total	14,949,181	20,660,022	23,637,554	26,327,115	27,374,963
	Manufacturing	5,838,043	8,044,332	9,211,394	10,079,725	10,522,386
	Textile	222,005	303,367	372,552	406,702	393,715
	Apparel	267,514	340,887	411,804	451,872	428,772
Profit Rates	Total	3.63%	4.25%	3.79%	3.38%	3.48%
	Manufacturing	4.83%	5.39%	4.52%	3.82%	4.26%
	Textile	3.27%	4.51%	4.00%	2.72%	3.16%
	Apparel	1.43%	1.82%	2.51%	2.75%	3.07%
Number of Workers	Total	12,856,856	14,518,326	14,817,812	15,151,631	14,702,546
	Manufacturing	6,234,593	7,082,889	7,303,704	7,557,711	7,516,598
	Textile	243,428	283,986	309,488	315,751	330,698
	Apparel	1,337,132	1,467,767	1,560,751	1,598,372	1,449,929
Share of Female Workers	Total	46.0%	46.1%	46.7%	47.3%	46.7%
	Manufacturing	60.6%	59.9%	59.3%	59.1%	57.0%
	Textile	54.4%	53.7%	52.8%	52.7%	53.9%
	Apparel	80.2%	79.5%	79.2%	78.6%	76.0%
Average Compensation per month (D thousand)	Total	6,966	8,269	8,836	9,325	9,547
	Manufacturing	6,346	7,725	8,226	8,569	9,020
	Textile	6,365	7,369	8,206	8,618	9,176
	Apparel	5,585	6,638	7,184	7,437	7,633

Source: Prepared by the author using GSO (2022).

3. Viet Nam's Textile and Garment Industry in the Global Economy

This chapter will mainly focus on assessing Viet Nam's textile and garment industry in the context of the global economy by looking at its position within the global textile and garment value chain. As such, there will be an emphasis on export orientation. However, the latter part of this chapter will discuss the important roles of local and domestic markets.

Table 12.2. Overview of Viet Nam's Textile and Garment Trade (US\$ million)

	2017	2018	2019	2020
Exports				
Textiles (HS52, 54, 55, 58, 59, 60)	5,456	6,313	6,838	6,047
HS52 (Cotton)	2,641	2,843	3,055	2,708
HS54 (Man-made filaments)	923	1,144	1,133	980
HS55 (Man-made staple fibres)	500	605	649	522
HS 58 (Fabrics, special woven)	90	110	121	119
HS59 (Textile fabrics, others)	543	629	712	584
HS60 (Knitted fabrics)	758	983	1,168	1,134
Garments (HS61, 62)	24,396	28,152	30,038	27,031
HS61 (Knitted garments)	12,059	13,850	14,885	13,701
HS62 (Woven garments)	12,337	14,301	15,153	13,330
All Commodities	215,119	243,699	264,610	281,441
Imports				
Textiles (HS52, 54, 55, 58, 59, 60)	16,190	18,507	18,724	16,515
HS52 (Cotton)	4,055	4,765	4,374	3,693
HS54 (Man-made filaments)	2,512	2,988	3,399	2,884
HS55 (Man-made staple fibres)	3,060	3,389	2,959	2,327
HS 58 (Fabrics, special woven)	1,013	1,086	1,081	991
HS59 (Textile fabrics, others)	1,115	1,277	1,465	1,416
HS60 (Knitted fabrics)	4,434	5,002	5,446	5,204
Garments (HS61, 62)	519	487	492	464
Apparel (Knitted, HS61)	285	231	224	245
Apparel (Woven, HS62)	234	256	269	219
All Commodities	213,215	236,869	253,442	261,309

Note: HS52 is 'Cotton'; HS54 is 'Man-made filaments; strip and the like of man-made textile materials'; HS55 is 'Man-made staple fibres'; HS 58 is 'Fabrics; special woven fabrics, tufted textile fabrics, lace, tapestries, trimmings, embroidery'; HS 59 is 'Textile fabrics; impregnated, coated, covered or laminated; textile articles of a kind suitable for industrial use'; HS 60 is ' Fabrics; knitted or crocheted'; HS 61 is 'Apparel and clothing accessories; knitted or crocheted'; and HS 62 is 'Apparel and clothing accessories; not knitted or crocheted.'

Source: Prepared by the author using UN Comtrade.



Table 12.2 summarises Viet Nam's recent trade values for textiles (HS52, 54, 55, 58, 59, and 60) and garments (HS61 and 62). In terms of exports, the importance of its garment sector is very clear. In 2020, it exported US\$27 billion of garments, which accounted for about 9.6% of all exports, whilst that for textiles was just 2.3%. Garments are the third-largest export commodity of Viet Nam; the other two larger commodities being electronics (HS85) and machinery (HS84), which together occupy 46% of total trade. The fourth-largest export item was footwear (HS64), with a 6.1% share. The small trade value of Viet Nam's textiles is a manifestation of its weak position in the global textile and garment value chain.

As stated earlier, the textile and garment industry of Viet Nam has experienced a significant uplift since the turn of this century, however, all these developments have been limited to the garment sector. The textile sector had been facing strong headwinds as the yarns and fabrics used in export-oriented apparel value chains were essentially imported from other countries that were more competitive. These include neighbouring countries such as China, the Republic of Korea (hereafter, Korea), Taiwan, and Thailand. Whilst the number of companies and workers in this sector has been significant, it has also been suffering from quality and productivity issues, unlike the garment sector. As such, this chapter will primarily focus on the garment sector but will address the latest trends in Viet Nam's textile sector in the latter section.

4. Viet Nam in the Global Garment Value Chain

Viet Nam's textile and garment companies are highly heterogeneous in terms of firm characteristics; some are privately owned with varying degrees of foreign ownership, whilst some remain state-owned. Whilst some utilise modern machinery and employ thousands of workers under formal contracts, others operate more informally with limited capital utilisation. Tables 12.3 and 12.4 summarise the size distribution of companies in the textile and garment industry, with reference to manufacturing and the overall national economy.

The general trend is that the manufacturing sector tends to be larger in both number of workers and capital in its overall economy. Within this, the share of companies in the garment sector with a large workforce (say, above 300) is significantly larger than the textile sector, manufacturing, and the national average. On the other hand, the share of companies with larger capital values is much lower than for manufacturing and the textile sector. As mentioned earlier, this is most likely due to the high labour intensity of its production processes.



Table 12.3. Size Distribution of Firms (number of workers)

	Less than 5	5-9	10-49	50-199	200-299	300-499	500-999	1000-4999	5000-	Total
Total	414,406	126,341	109,918	24,046	3,156	2,625	2,018	1,521	229	684,260
Share (%)	60.6%	18.5%	16.1%	3.5%	0.5%	0.4%	0.3%	0.2%	0.0%	
Manufacturing	48,816	19,000	24,152	9,359	1,611	1,549	1,330	1,117	166	107,100
Share (%)	45.6%	17.7%	22.6%	8.7%	1.5%	1.4%	1.2%	1.0%	0.2%	
Textile	2,116	754	1,126	544	114	84	62	53	5	4,858
Share (%)	43.6%	15.5%	23.2%	11.2%	2.3%	1.7%	1.3%	1.1%	0.1%	
Garments	3,469	1,065	1,693	996	225	305	286	288	43	8,370
Share (%)	41.4%	12.7%	20.2%	11.9%	2.7%	3.6%	3.4%	3.4%	0.5%	

Note: Number of firms as of 31 December 2020.
Source: Prepared by the author using GSO (2022).

Table 12.4. Size Distribution of Firms (size of capital in D billion)

	Less than 0.5	0.5-1	1-5	5-10	10-50	50-200	200-500	500-	Total
Total	67,636	61,067	251,489	109,181	137,114	38,700	9,971	9,102	684,260
Share (%)	9.9%	8.9%	36.8%	16.0%	20.0%	5.7%	1.5%	1.3%	
Manufacturing	7,496	7,751	35,870	16,351	23,764	10,010	3,205	2,653	107,100
Share (%)	7.0%	7.2%	33.5%	15.3%	22.2%	9.3%	3.0%	2.5%	
Textile	325	367	1,502	724	1,100	516	172	152	4,858
Share (%)	6.7%	7.6%	30.9%	14.9%	22.6%	10.6%	3.5%	3.1%	
Garments	708	743	3,066	1,232	1,636	656	199	130	8,370
Share (%)	8.5%	8.9%	36.6%	14.7%	19.5%	7.8%	2.4%	1.6%	

Note: Number of firms as of 31 December 2020.
Source: Prepared by the author using GSO (2022).



Viet Nam's textile and garment industry has a dualistic structure, which is particularly acute in the garment sector. In this, large firms dominate export-oriented businesses, whilst the smaller ones primarily cater for local and domestic markets (Goto, 2014). The latter also includes a sizeable informal economy (Goto, 2013a). As such, much of the focus of this chapter will inevitably be on relatively larger garment firms, which also tend to operate in the formal economy.

The garment value chain of Viet Nam is similar to that of other garment-exporting, countries such as Bangladesh or Cambodia, in the sense that it is almost entirely focused on the assembly process, of the CMT function (Figure 12.2).

As discussed, garments produced for export have always been of high import intensity, where most of the input materials (fabrics) are imported from neighbouring countries, which typically tend to have higher income levels. In 2020, about 60% of the textiles used in export-oriented garment value chains were imported, with China a major supplier of such inputs. The creation of domestic backward linkages by encouraging local textile sector development has long been a major policy goal in this industry, as has been the case for others. Whilst there has been no particular policy intervention with a successful outcome in this, more recent anecdotal evidence suggests domestic supporting industry development happening through the influx of foreign direct investment, particularly from Taiwan, Korea, and China. We will return to this issue later in this chapter.



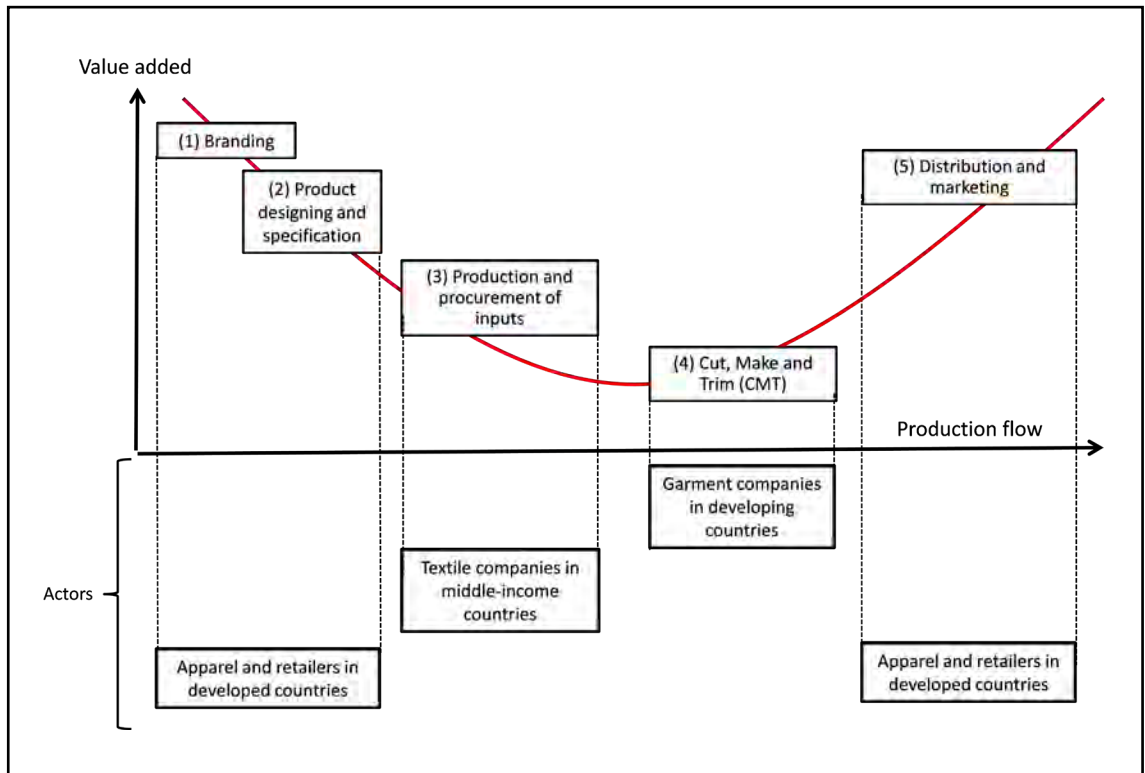
5. The Global Garment Value Chain and Upgrading

Integrated production processes have been sliced up according to differences in factor intensities unique to each of the processes/functions and relocated across borders in locations where factor endowments are most compatible with those factor requirements, leading to the creation of global value chains (GVCs). The garment sector is one of the early industries in which such dynamics, often referred to as fragmentation, have evolved. This trend particularly accelerated in the late 1990s as significant reductions in service-link costs, due to progress in trade liberalisation, reductions in international transportation costs, and the proliferation of information and communications technology (ICT), particularly the internet, occurred (Jones and Kierzkowski, 1990; Kimura, 2022).

Fragmentation is dynamically efficient because it capitalises on the differences in factor intensities of the different processes in the garment production flow. Figure 12.2 depicts a highly simplified picture of this. The first set of functions is of high knowledge and skill intensity, including (1) managing branding strategies, and (2) product design and technical specification, both of which are undertaken by lead firms (apparel firms and retailers from developed countries). Lead firms are important in value chains because they configure them by allocating the processes to selected value chain participants, and exercise power through key parameters (quality, price, and delivery) under which these firms must operate (Humphrey and Schmitz, 2000; Kawakami and Goto, 2020; Sturgeon, 2009; Goto, forthcoming).



Figure 12.2. The Production Flow and Value Added in the Apparel Industry



Source: Based on Goto (2014).

The next process is (3) to produce and procure the inputs (fabrics and accessories), which tend to be capital- and technology-intensive functions. Lead firms optimise efficiency by allocating these functions to middle-income countries, which exhibit comparative advantages in such processes. This is then followed by (4) the labour-intensive CMT process, typically undertaken by firms in developing countries with abundant workers, such as Viet Nam. Then they will finally go through (5) marketing and distribution, for which functions are again managed by lead firms in developed countries.

One of the main concepts of the GVC framework is upgrading, defined as a form of innovation to improve a firm's position in value chains to generate economic rent. Upgrading in the GVC literature is often categorised into the following three broad areas: (1) *process* upgrading, (2) *product* upgrading, and (3) *functional* upgrading (Gereffi and Memedovic, 2004; Goto, Natsuda, and Thoburn, 2011; Kaplinsky and Morris, 2001; Kawakami and Goto, 2020; Palpacuer, Gibbon, and Thomsen, 2005). *Process* upgrading refers to increased technological efficiency in the processes of transforming inputs into outputs, and *product* upgrading to undertake the production of higher value-added products. The former is likely the easiest to imagine, where leverage points could be as wide-ranging as to include, for instance, the upgrading of machinery, reorganising production flows on

the shop floor, introducing new accounting and management systems, and upgrading the skills and knowledge of workers in the particular functional area. Successful *process* upgrading through such initiatives is, in many cases, a precondition for *product* upgrading.

Functional upgrading is fundamentally different from *process* and *product* upgrading, which is about the acquisition of higher value-added functions within the value chain. Whilst the former types of upgrading are both forms of innovation that occur *within* a particular process or function, functional upgrading is a *shift* from one process or function to another, which would entail a fundamental change in the utilisation of the factors of production. This is why functional upgrading is often the most difficult to achieve.

The success of upgrading determines the levels of entry barriers each company can gain; the more difficult the type of upgrading realised, the higher the entry barriers. Unless firms are able to build economic rent through continuous and successful upgrading, competitive pressures in the market may eventually compel firms to compete by cutting production costs, including workers' wages. Such survival strategies are often called 'race to the bottom' strategies (Kaplinski, 1998).

Whilst Viet Nam's orientation towards Western markets can be traced back to its bilateral trade agreement with the European Union in 1992 (Goto, Natsuda, and Thoburn, 2011), the integration of Viet Nam's garment industry into the global economy was effectively led by Japanese lead firms, as mentioned earlier, who were in most cases trading companies, at around the same time. This was a strategic response of those Japanese multinational enterprises (MNEs) to rising wage levels in more traditional garment production sites in Asia, such as Korea, Taiwan, and Thailand. Because of this, Japan had become the largest export destination for Viet Nam's garments by the late 1990s.

The connection with value chains coordinated by Japanese MNEs had had significant impacts in terms of both process and product upgrading of Viet Nam's garment firms. As the products had to meet the Japanese market's stringent quality requirements, significant technology transfer from Japanese lead firms took place in the assembly function through those value chains, leading to both process and product upgrading (Goto, Natsuda, and Thoburn, 2011; Goto, 2013b). This contributed to building the competitive capabilities of Viet Nam's export-oriented garment enterprises, which were typically large SOEs, most of them



belonging to the former General Corporation, Vietnam National Textile Corporation, or VINATEX, at the time.²

Technology transfer from the Japanese lead firms to Vietnamese garment companies was a self-enforcing arrangement, as it proved to be a win-win relationship for both. As Japan already lost its international comparative advantage in the labour-intensive CMT functions, they saw no conflict of interest to transfer such technology and knowledge to their Vietnamese counterparts. Because competitiveness in value chains crucially depends on how competitive the entire chain could become as a production and distribution system (collective efficiency), it was crucial for the Japanese lead firms to ensure significant technological upgrading of their Vietnamese counterparts. It should be noted, however, that the types of technology and knowledge that are transferred from Japanese lead firms have been limited to those related to functions in which Japan has lost international comparative advantages. In other words, there are no incentives for the Japanese to transfer any technology or knowledge that directly relates to their core-competency areas, such as branding and designing, which is why functional upgrading tends to be more difficult.

6. The Middle-income Trap and the Domestic Market

The garment industry in Viet Nam is currently at a crossroads. Whilst it recorded impressive economic growth in the first two decades of the 21st century, spearheading nationwide industrialisation, it also led to increases in wage levels and acute labour shortages (Goto, 2013b; Goto 2014). This, in turn, began to affect the competitiveness of the garment industry, for which operations had predominantly been limited to the labour-intensive CMT function. The country's overall industrial structure also started to change, with a shift of gravity towards the rapidly evolving electronics and machinery sectors.

All these suggest an acute need for the garment industry to shift towards processes and functions that are inherently more capital, technology, and knowledge-intensive within garment value chains. In other words, the long-term growth prospects of Viet Nam's garment industry will be very much dependent on whether it can successfully achieve functional upgrading. Failing to do so will lead to a situation that is widely referred to as the 'middle-income trap' as mentioned earlier.

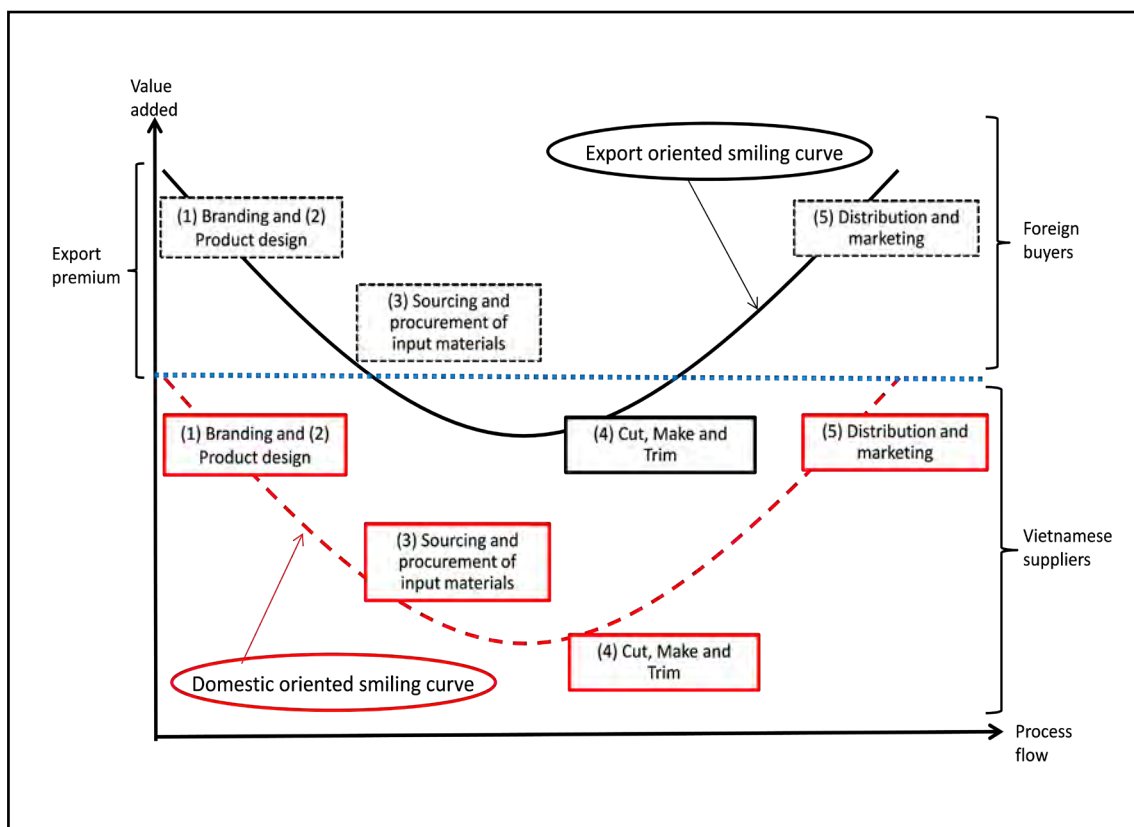
Functional upgrading in the garment industry almost always entails a view to incorporate higher value-added processes and functions that are highly knowledge and skill-intensive, primarily the branding, designing, product specification, and marketing functions. Whilst there has been no strong evidence of such a type of *functional* upgrading occurring in the export-oriented garment industry, domestic and regional markets of proximity may prove much more promising (Goto, 2014).

In Viet Nam, the domestic market has primarily been catered by small local firms, ranging from large private firms to small workshops in the informal economy. Compared to the much larger and formal export-oriented garment firms, these domestic-oriented firms typically lack the

² Formerly 'General Corporation (Tổng công ty)', now re-established as Vietnam National Textile and Garment Group (Tập đoàn).

process technologies that are acceptable at the international level. However, these firms have for a long time been undertaking a much wider range of processes outside of the CMT, including the knowledge-intensive designing and marketing processes (Goto, 2006). However, it is important to recognise that these domestic garment companies operate at a much lower level of technological sophistication and value-addition in each of the processes, primarily because there has been very limited, if any, technological transfer from companies from advanced countries, leading to a notable 'export premium' (Goto, 2014). As such, the two value chains (domestic and export) have co-existed in parallel with almost no interaction (see Figure 12.3).

Figure 12.3. The Apparel Smiling Curve: Functional Hierarchy in Garment Production-Distribution



Source: Modified from Mudambi (2007) and Goto (2003, 2006, 2007, 2014).

However, Viet Nam’s robust economic performance in the past two decades has increased local purchasing power significantly, which has made its local market increasingly attractive. Accordingly, some of the large and advanced export-oriented garment companies, and some foreign buyers who have been entirely focused on foreign markets, have started to target and expand into domestic-market-oriented businesses. Reorienting businesses toward such emerging local markets will likely induce changes in how value chains are organised, which also may lead to shifting priorities of those export-oriented companies. New players could evolve as key coordinators of those regional and local market-oriented value chains in Viet Nam.

Upgrading will be crucially important to sustain the growth of the garment industry. As mentioned earlier, failing to do so might leave those garment companies to compete by taking a 'race to the bottom' approach, for instance at the expense of working conditions. It could also lead to the 'informalisation' of production and working arrangements, some of which have been observed in Thailand (Goto and Endo, 2014).

7. Regional Trade Agreements and FDI in the Textiles Sector

Regarding the textile sector of Viet Nam, there has been an interesting development in relation to the negotiations of a particular regional trade agreement (RTA), the Trans-Pacific Partnership (TPP) agreement. RTAs often influence how GVCs evolve and expand. For Viet Nam, the negotiation process of the initial TPP, particularly when it was still led by the US before it withdrew from it, had a significant impact, particularly on the textile sector.

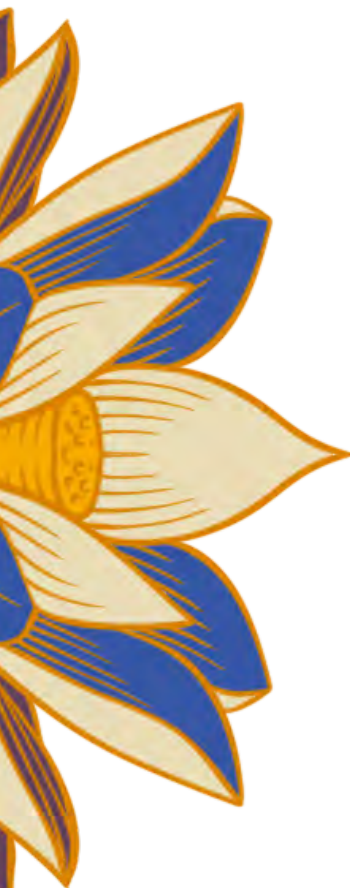
As mentioned earlier, the key inputs for the garment industry (textiles) for the export-oriented garment industry have been primarily imported from neighbouring countries, despite the existence of a relatively large domestic spinning and weaving/knitting capability, as the domestic sector had for a long time lacked international competitiveness in terms of both quality and price.

In Viet Nam, the TPP agreement had been discussed primarily in relation to the textile and garment industry and to the US market. This is because the anticipated benefits of an increase in exports bound for the US as a result of the TPP would be relatively larger for this industry than others. The US was the biggest export destination for Viet Nam in 2016, and garment products (HS61 and 62) were the largest export commodity occupying about 30% of all exports.

The US at the time had been applying the Most Favoured Nation (MFN) treatment under the WTO rules on Viet Nam's garment products. Most Asian exporters, such as India and Indonesia, however, had been granted market access under the more advantageous Generalized System of Preferences (GSP). Furthermore, for least-developed countries like Cambodia, the more progressive GSP-LDC rate had been applied. As such, there were expectations that the ratification of the TPP agreement would lead to a large reduction of US import tariffs on garments from Viet Nam (Shiino, 2013).

However, one of the key issues was in the rules of origin, which at the time was called the 'yarn forward rule (YFR)'. This required





TPP members, including Viet Nam, to undertake at least the three key processes of spinning, weaving, and assembly (CMT) either domestically or within another TPP member country to be eligible for the TPP tariff rates. As noted above, Viet Nam's export-oriented garment sector has been heavily dependent on Chinese fabrics, however as China is not a member of the TPP agreement, this production modality would not qualify for preferential treatment under the TPP agreement.

As the inclusion of rules of origin requirements like the YFR in RTAs such as the TPP agreement has direct implications on the export competitiveness of Viet Nam's garments to its member countries, particularly the US, this led to a drastic increase in demand for domestic textile production capabilities. In 2005, this triggered an influx of foreign direct investment (FDI) in Viet Nam's textile sector from non-TPP members, such as China, Taiwan, Korea, and Hong Kong.

As discussed earlier, the lack of international competitiveness in the upstream textile sector has been seen as a major bottleneck for a long time. However, the possibility of upgrading these sectors through foreign investment provides an interesting opportunity for the future development of Viet Nam's textile industry. Whilst overall, textile exports from Viet Nam are still limited compared to those for garments (Table 12.2), Viet Nam is rapidly building international comparative advantages in textiles (HS58, 59, and 60); its Revealed Comparative Advantage in 2005 was just 0.384, whilst it was 1.719 in 2020. What is striking is its large share of exports to Cambodia; in 2020, 31.6% of all textile exports from Viet Nam were bound for Cambodia, followed by China (13.0%), Indonesia (9.7%), and the US (8.8%).

The recent tensions between the US and China have further induced an influx of FDI into Viet Nam's textile sector, particularly from China. The primary motivation behind this is to avoid the negative effects due to the possible trade restrictions on Chinese textiles to the US market. It is important to note that trade-related institutions and international market dynamics seem to be having significant impacts on shaping the growth trajectory of the textile sector of Viet Nam. As the experience of the garment sector suggests, a relatively free and open business environment compatible with globalisation dynamics may further propel the robust growth of the textile sector in the future.

8. Sustainability Issues in Global Garment Value Chains and Future Challenges

On 24 April 2013, the Rana Plaza building in Dhaka, Bangladesh, which housed five garment factories, collapsed. It was one of the worst industrial disasters in the world, killing 1,132 and injuring more than 2,500 people. These garment factories had been part of global garment value chains, undertaking CMT processes for major European and US brands. This event was a major wake-up call for the possible and serious working condition deficits to which workers in the garment sector in Bangladesh, and throughout the world, were exposed.

This event was crucial in bringing consumers' attention to the grim realities of some of the garment factories in developing countries, in which working conditions may have been indecent, violating fundamental principles and rights at work, or more broadly, human rights. It was also a crucial moment that induced major responses from governments and businesses around the globe.

Global brands and retailers, or lead firms of global garment value chains, now must actively ensure that employment practices are in full compliance with all the relevant regulations, and also in line with global standards, including those articulated in the OECD Guidelines for Multinational Enterprises, the International Labour Organization's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (MNE Declaration), and more recently, the United Nations Guiding Principles on Business and Human Rights, which was adopted in 2011.

With the unanimous adoption of Agenda 2030 at the UN General Assembly in 2015, realising sustainable development has become a responsibility



not just for governments but also for businesses. Within this, the Sustainable Development Goals (SDGs), stipulating 17 goals with 169 targets and 232 indicators, have become important guidelines to conduct global businesses. A progressive view that business performance should be measured not just in financial terms but from a much wider set of dimensions, primarily from the environment, social, and governance (ESG) fronts has become much more common. Corporations are now expected to report their performance from such a comprehensive perspective through annual integrated reports. Meanwhile, a specific due diligence guideline specific for the textile and garment (and footwear) industry has been developed and published by the OECD (OECD Due Diligence Guidance for Responsible Supply Chains in the Garment & Footwear Sector) in 2017.

Whilst such guidelines are in principle voluntary, more proactive measures have been taken in developed countries. In 2015, the UK passed the Modern Slavery Act, which includes Transparency in Supply Chain Provisions, requiring major businesses to publish annual statements to ensure that slavery and human trafficking are not taking place in their supply chains. The significance is that it explicitly holds those large companies in the UK (who are, in many cases, also lead firms of GVCs) accountable for working conditions throughout their value chains, regardless of ownership or contractual relationships. Similar legislation has been passed in other countries, with broader requirements related to due diligence in working conditions and human rights. For instance, France adopted a law imposing due diligence on multinationals (Duty of Vigilance Act) in 2017 to prevent serious human rights abuses in value chains, and Germany approved similar draft legislation on corporate due diligence in supply chains. In addition, in February 2022, the EU announced a proposal on a Directive for a European Supply Chain Act, which requires companies to implement social and environmental due diligence along the entire value chain, including all direct and indirect business relationships. The aim is to prevent, end, or mitigate their adverse impacts on human rights and the environment throughout the value chains.

These developments have direct implications for the textile and garment industry of Viet Nam, as lead firms will require local companies connected to their GVCs to comply with these standards. These developments are not unique to the textile and garment industry. In fact, the electronics industry has been much more proactive in incorporating sustainability concerns in the value chains, which have already significantly impacted Viet Nam's electronics sector through a series of tripartite dialogues between employers, workers, and the government (Goto and Arai, 2018).

Conclusion

Viet Nam's textile and garment industry is at a crossroads. The garment industry, which has for a long time spearheaded industrialisation in Viet Nam, is facing challenges where competitiveness can no longer be based on low labour costs alone. As a significant amount of process and product upgrading has happened, it now must think of ways to achieve functional upgrading and cater for the higher value-added functions, which are of higher skills and knowledge intensity. For this, the domestic and regional markets will be important. However, the underdevelopment of logistics, infrastructure, and institutions that support smooth business transactions may become a key bottleneck. The textile sector, meanwhile, could further grow, particularly with increased inward FDI from neighbouring economies, including China, Taiwan, and Korea, creating significant domestic backward linkages.

As sustainability has become a prime concern for businesses, particularly lead firms that configure and coordinate value chains, improving on technical efficiencies alone will not be sufficient. Social and environmental concerns have increasingly become amongst the most important sources of competitiveness.

Whilst implementing good social and environmental practices has, in some cases, been considered as costly, negatively affecting competitiveness and economic growth, there has been ample evidence that good social and environmental practices are compatible with dynamic competitiveness. The future growth potential of Viet Nam's textile and garment industry is most likely conditional on how it can lead with such practices, in which connectivity to the global economy will continue to be amongst the most critical factors.

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Chapter 13

Consolidation of the Supporting Industries under International Economic Integration

Mai Fujita



1. Introduction

Viet Nam, exhausted by prolonged warfare, the central planning system, and international isolation, embarked on industrialisation under a market-oriented transition only in the mid-1990s, far after its Asian neighbours. After nearly 3 decades, Viet Nam has transformed itself into a fast-growing middle-income country that is becoming a global manufacturing hub (Eckardt, Mishra, and Viet Tuan Dinh, 2018). One of the reasons behind this remarkable transformation is the country's participation in international production networks. The fact that Viet Nam emerged as a major production site for both multinational corporations (MNCs) seeking efficient production for the global market and those seeking to capture the domestic market has been a major driving force for the growth of the manufacturing sector and the expansion of exports.¹

Viet Nam now aims at achieving further development, setting a goal of becoming a developed country with high income by 2045. In its continued drive towards industrialisation and modernisation with increasing emphasis on technology and innovation, as outlined in the documents adopted at the 13th Communist Party Congress in 2021, the country seeks to develop key industries including the mechanical industry, create global and domestic value chains, and strengthen the linkages between foreign direct investment (FDI) and local firms. The development of robust supporting industries is crucial in all these endeavours.

The discussion surrounding the supporting industries in Viet Nam emerged in the early 2000s, when their development constituted one of the key issues within the debate over industrialisation strategies under international economic integration, culminating in numerous surveys and studies. Since then, Viet Nam's participation in the international economy has entered a new phase, bringing about new dynamics to the machinery industry including the remarkable growth in exports of electronic products. While recent studies primarily provide crucial insights into the localisation of key products such as mobile phones and automobiles (Sturgeon and Zylberberg, 2016; Kobayashi, 2017; Truong Thị Chí Bình, Phạm Hải Phong, Nguyễn Trường Minh, 2021), limited attempts have been made to analyse the transformation of the supporting industry in the machinery industry as a whole.

¹ Viet Nam's export value index (2000=100) reached 1,952.1 in 2020, the fifth-highest amongst countries for which World Bank data are available. The percentage of merchandise trade to gross domestic product was 184.1% in 2021, ranking fifth after Hong Kong, Singapore, Djibouti, and Slovenia (World Bank Open Data, <https://data.worldbank.org/>, accessed 25 October 2022). Foreign-invested enterprises account for over 70% of exports (General Statistics Office of Viet Nam, www.gso.gov.vn, accessed 25 October 2022).

This chapter attempts a comprehensive analysis of the supporting industries in the machinery industry in light of the recent transformation of the industrial sector in Viet Nam. A dominant approach for studying the supporting industries, both in general and specifically in Viet Nam, has been to look at them from the demand side, focusing in particular on the sourcing practices of machinery product manufacturers to which parts and other inputs are supplied and the manufacturers' relationships with the suppliers of such parts and inputs. However, an alternative approach, which focuses on the supplier side, has also been advocated on the grounds that the supporting industries in the machinery industry serves as the base supporting the production of a variety of end-products. By adopting the supplier-side perspective in addition to the demand-side, this paper sheds a new light on the characteristics of Viet Nam's supporting industries and considers their implications.

The remainder of the paper is organised as follows. The next section discusses the concepts of supporting industries and the main analytical approaches. Section 3 provides the historical background of industrial development and the evolution of policies for the development of supporting industries in Viet Nam. Section 4 analyses the status of the supporting industries in the machinery sector from the demand and supply sides to shed light on their characteristics. The last section concludes with a summary of the findings and their implications.

2. What is a Supporting Industry?

2.1. Historical Background

The term 'supporting industries' has been used since the 1980s. The term came up in a 1985 report on Japan's economic cooperation in connection with the development of local small and medium-sized enterprises (SMEs) that could supply parts to foreign firms (Ministry of International Trade and Industry, 1985). This happened within the context of developing countries increasingly promoting FDI for industrialisation. While FDI, by transferring a package of capital, technology, and management, provides an efficient way of building production capacity in the host country, it also creates difficulties such as limited linkages for the rest of the economy, dependence on imported imports, and rising trade deficits. As early as the 1970s, Watanabe (1972) argued for the development of SMEs as subcontractors for foreign firms to overcome these problems by encouraging the acquisition of skills, creation of jobs, and efficient utilisation of resources.

As Japanese companies expanded into Asia in the 1980s, the development of supporting industries became one of the focal areas of Japan's economic cooperation with the region. The development of local subcontractors met the needs of Japanese companies faced with the requirement to promote domestic production, as well as the needs of host country governments wishing to promote industrial development.

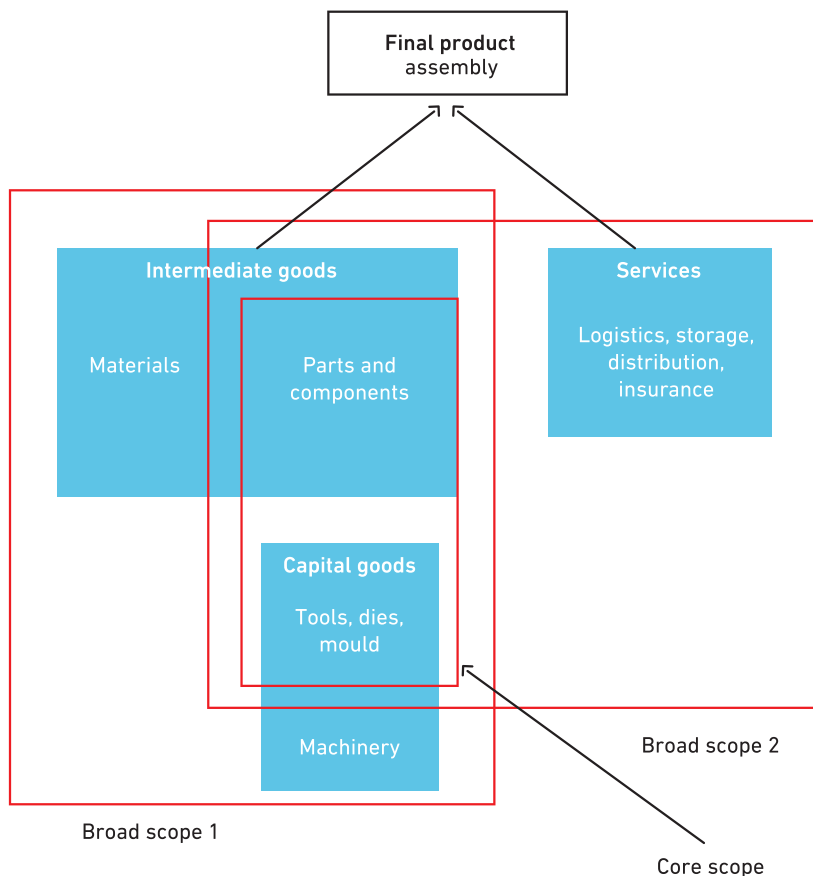


2.2. Concept and Analytical Approaches

Although the term 'supporting industries' is widely used, its definition and usage vary depending on the context and the focus. Furthermore, there is a large body of research that has analysed similar subjects without using the term. Such studies, typically those using concepts such as parts transactions, manufacturer-supplier relationships, production networks, or value chains (Asanuma, 1989; Ernst and Kim, 2002; Schmitz, 2004), provide crucial insights into the analysis of supporting industries.

One crucial issue concerns the concept and scope. In general, supporting industries refer to those that supply inputs necessary to produce final products. However, the production of machineries, the focus of this paper, requires a broad range of inputs, as shown in Figure 13.1. Nguyen Thi Xuan Thuy (2007), who reviewed the concept of the supporting industry in view of providing practical inputs for the Vietnamese government's policy making, considered 'parts and tools' to be the core scope of the supporting industry, while presenting two versions of the broader scope: 'the core scope plus materials and machinery' and 'core scope plus services'.

Figure 13.1. Scope of Supporting Industries



Source: Prepared by the author with reference to Nguyen Thi Xuan Thuy (2007).

Another issue concerns the analytical approach. The dominant approach has been to focus on the role of manufacturers of final products in organising and governing networks of suppliers. Following this approach, supporting industries are typically depicted as a pyramid-like structure. Taking the automobile industry as an example, the automobile manufacturer is at the top, followed by large first-tier suppliers, then smaller second- and third-tier suppliers, and lastly, firms producing materials, dies and moulds, jigs and tools, and equipment at the bottom.² The focus of the analyses has been on the relationship between manufacturers and the suppliers who directly provide inputs to them, including the role of manufacturers in setting standards, transferring knowledge, and incentivising and disciplining suppliers (Ernst and Kim, 2002; Schmitz, 2004).

There is yet another approach that focuses on the overall structure of the supporting industries in a particular country or region. Put differently, this approach examines supporting industries from the perspective of suppliers of intermediate goods and capital goods. This is typically illustrated by Watanabe (1997), who discussed the social division of labour in the Japanese machinery industry. In this industry, it is argued, subcontractors specialise not in specific products (e.g. automobiles) but specific processes, thereby receiving orders from producers of a variety of machinery products. The study presents a mountain-chain structure, consisting of numerous producers of final machinery products forming summits of varying heights and widths, followed by firms that supply parts primarily to each of the final product markets, and finally, firms that specialise in specific processes at the bottom. In contrast to the previous approach, it brings to light numerous SMEs at the bottom of the multi-polar structure, which serve as the basis for a broad range of machinery products.



² A typical example is the structure of Indonesian automobile industry depicted by JICA (2021: 13).

3. Development of Viet Nam's Machinery Industry and Policies Concerning Support Industries

3.1. Development of the Machinery Industry

The history of Viet Nam's machinery industry dates to the late 1950s, when socialist industrialisation was launched in the North with a focus on heavy industry. Although progress was constrained by capital and technology shortages and prolonged periods of war, state-owned enterprises were established in the machinery sector with Soviet and Chinese assistance. From 1976 onward, socialist industrialisation was extended to the whole country, and factories in the South were nationalised. Still, the progress of industrialisation was hampered by the demise of the centrally planned system and international isolation.

With the official launching of Doi Moi in 1986, the country's priority shifted from heavy industry to the production of food, necessities, and export goods. Having achieved economic stabilisation by the early 1990s as a result of early reforms, Viet Nam began to explore the next stage of development. In 1996, the Eighth Communist Party Congress acknowledged that Viet Nam was moving into an era of industrialisation and modernisation, striving to make Viet Nam basically an industrialised country by 2020 (Shiraishi, 1999).

The machinery industry became one of the focal sectors in Viet Nam's industrialisation drive. Along with establishing state-owned enterprise groups in industries such as shipbuilding, electronics, and agricultural machinery, the government encouraged foreign companies to launch production in Viet Nam, mostly by establishing joint ventures with state-owned enterprises. In order to protect domestic production, tariffs and non-tariff barriers were introduced, which made import-substituting production of machinery-related products highly attractive to local and foreign-invested enterprises (CIE, 1999a, 1999b; IMF, 1999). By the late 1990s, the government also introduced the policy to promote the localisation of motorcycles and mechanical-electric-electronic products by specifying preferential import tariff rates for these products contingent upon localisation ratios (WTO, 2006).

Since the early 2000s, such protective measures started to be adjusted. In 2001, the Politburo promulgated Resolution No.07 on international economic integration. The US–Viet Nam trade agreement, which granted significantly improved access of Vietnamese goods to the US market, came into effect in the same year. As this triggered the rapid growth of the exports of labour-intensive manufactures such as textiles and garments and leather and footwear, Viet Nam announced that it would speed up the process of negotiations for accession to the World Trade Organization (WTO). During the negotiation process, Viet Nam was compelled to reduce/eliminate tariff and non-tariff barriers and adjust its policies in accordance with WTO rules, including localisation policies, export performance requirements, and export subsidies (WTO, 2006).

In the 2010s, Viet Nam's international integration entered a new phase. The country actively participated in free trade agreements (FTAs), including state-of-the-art frameworks led by major economies or regions known for comprehensive coverage and high quality such as the Trans-Pacific

Partnership and the FTA with the European Union (EU). The combination of domestic and external factors, i.e. low labour costs, the progress of domestic reforms and, more recently, US–China trade tensions, resulted in successive inflows of large-scale, export-oriented manufacturing investments and the country’s integration into the international production networks (Leung, 2022). In the meantime, the reduction of tariffs has led to an increase in imports, forcing producers engaged in import-substitution to restructure their operations.

3.2. Emerging Debate on the Development of Supporting Industries

The debate over supporting industries in Viet Nam began in the early 2000s when trade liberalisation within the Association of Southeast Asian Nations (ASEAN) region was underway, arousing concerns over the consequences of international economic integration on domestic industries. In such a context, Japan and Viet Nam launched joint research on Viet Nam’s industrialisation under international integration. In this research, the development of supporting industries became one of the key issues (Ohno and Nguyen Van Thuong, 2005; Ohno and Kawabata, 2005), focusing in particular on the supply of metal, plastic, and rubber parts, as well as moulds and tools, to the three machinery sectors: automobiles, motorcycles, and electrical and electronics. This corresponds to the ‘core scope’ of the supporting industries discussed in Section 2.2. Concerning the structure of the supporting industries, several studies assumed the ‘multi-polar’ structure in which material processing and mould-making firms are shared by multiple product sectors such as electrical and electronics, motorcycles, and automobiles (Ohno, 2005: 51; Pham Truong Hoang, 2009; Nguyen Thi Xuan Thuy, 2007). Mori and Ohno (2005: 131–2) explicitly argued developing such firms were the most realistic route for Viet Nam for the following reasons. First, material processing technologies can be applied to multiple product areas and, even if technological changes transform the composition of final products, demand for such technologies would last. Viet Nam could thus expect to maintain its competitiveness as a manufacturing base for a long time. Second, by moving towards high-precision processing, firms would be able to increase the value added. Third, limited agglomeration of material processing industries existed in neighbouring ASEAN countries, providing scope for Viet Nam to establish a competitive edge in the region.



3.3. Evolution of Policies for the Development of Supporting Industries

Viet Nam has introduced a series of policies to promote supporting industries. The first one, promulgated in 2007, was the Masterplan for the Development of Support Industries for 2010 (Ministry of Industry Decision 34/2007/QD-BCN). Acknowledging that the development of supporting industries is a breakthrough for the rapid and sustainable development of core industries, the masterplan stated that supporting industries should be promoted for the international division of labour, cooperation, and the development of SMEs under international integration, and should be developed selectively in accordance with Viet Nam's potential and competitiveness. While the masterplan did not define what 'supporting industries' meant, it specified the goals, development directions, and general solutions for five industries: textile and garments, leather and footwear, electronics and computers, automobile production and assembly, and machinery manufacturing.

In 2011, the Prime Minister issued Decision 12/2011/QD-TTg on the development of supporting industries. It defined a supporting industry as 'an industry that produces materials, parts, accessories, and semi-finished goods for supplying to industries manufacturing and assembling complete products which are production material or consumption products.' With respect to the target, the decision included 'supporting industries to high-tech industries' in addition to the five sectors specified in the masterplan in 2007. It was stipulated that the government would provide support for market development, infrastructure development, and human resources and training, as well as financial support in accordance with existing policies such as the High Technology Law and the SME Development Support Policy (Government Decree 56/2009/ND-CP).³ A list of supporting industry products to be given priority for development was also promulgated in the same year (Prime Minister's Decision 1483/QD-TTg). In the machinery sector, moulds, tools, machining, and welding machinery parts, measuring and inspection equipment, and machine parts were included in the list.

Furthermore, the Government issued Decree 111/2015/ND-CP on the development of supporting industries in 2015. In this document, supporting industries were briefly defined as 'industries that produces raw materials, materials, and parts for supplying to the production of complete products,' which corresponds to the 'core scope' discussed

³ In 2012, Prime Minister promulgated Decision 1556/QD-TTg approving the programme for the promotion of SMEs in supporting industry.

in Section 2.2 plus materials. The target industries were not specified; it instead provided a 'list of products of supporting industries to be given priority for development' in six sectors identified in the decision in 2011. In addition, a programme for the development of supporting industries was established to support activities such as capacity building, human resource development, research and development, and technology application and transfer, with funds from the state budget and other sources.

In the policies discussed above, the scope of supporting industries is not limited by sector or markets served, or the nationality of supporting industry firms or customer firms. Since the 2010s, however, the development of supporting industries has come under increasing emphasis in the Vietnamese government's policies towards FDI. For instance, the foreign investment cooperation strategy for 2021–30, promulgated in 2022 (Prime Minister's Decision 667/QĐ-TTg dated 2 June 2022), included the development of supporting industries and promotion of local linkages and spillovers as one of the solutions for raising the effectiveness of FDI. In practice, the government has worked closely with major foreign-invested firms to boost the local supply of parts, particularly from local firms (Viet Nam News, 2022).

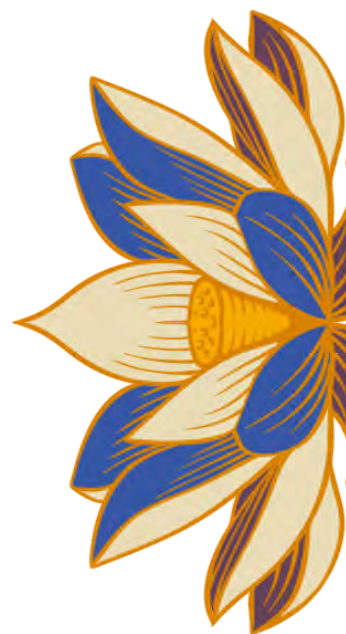
4. The Transformation of Supporting Industries in Viet Nam

This section analyses how Viet Nam's supporting industries have been transformed since the early 2000s from the demand and supply sides.

4.1. The Demand Side: Transformation of the Machinery Assembly Industry

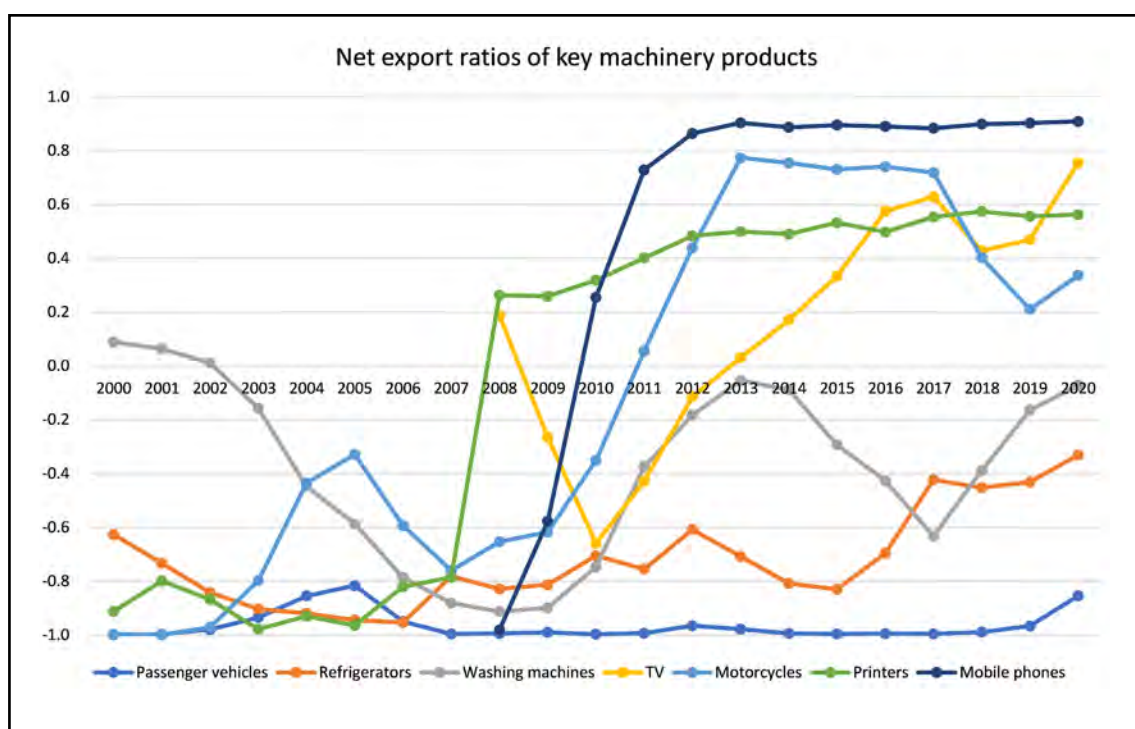
We start the demand-side analysis of the supporting industries by reviewing the situation in the early 2000s. Vietnam Development Forum (VDF 2006: 2–3) reported on the underdeveloped status of the supporting industries for the automobiles, motorcycles, and electrical and electronics industries. The motorcycle industry was most advanced in the localisation of parts, with an average local procurement ratio of 75%, while the respective ratios ranged between 20%–40% for TVs, and only 5%–10% for automobiles.

The report suggested that differences in the progress of localisation reflected the development of the assembly sector. With the exception of the motorcycle industry, which had experienced the rapid growth of the domestic demand, the underdeveloped domestic market remained an obstacle to promoting local procurement. Ohno (2005: 60, 62) argued that, in order for the development of supporting industries to become a realistic policy issue, the scale of production in the downstream assembly sector must be sufficiently large, and that the vital first step for strengthening the supporting industries was to attract a large amount of assembly-type FDI.



Over the subsequent decade and a half, the machinery industry in Viet Nam was substantially transformed. Most notably, the electronics industry achieved phenomenal growth, driven by foreign-invested enterprises producing mobile phones, computer parts and printers for export. In the meantime, import-substituting industries have been affected by growing imports due to the progress of trade liberalisation. In order to observe differences in competitiveness outcomes across products, Figure 13.2 shows the net export ratio of major machinery products, calculated as the ratio of net exports (exports minus imports) to total trade value (the sum of exports and imports). The ratios range from minus one to plus one. Having values close to plus one implies that the product is internationally competitive, while the opposite applies to values close to minus one.

Figure 13.2. Net Export Ratios of Key Machinery Products



Note: The products correspond to the following HS codes: passenger vehicles 8703; refrigerators 841810, 841821; washing machines 845011, 845012; TV 852871, 852872; printers 8443; mobile phones 851712; motorcycles 871110, 871120, 871130, 871140, 871150.

Source: Prepared by the data using data from United Nations, UN Comtrade Database (<https://comtrade.un.org/data>, accessed 31 August 2022).

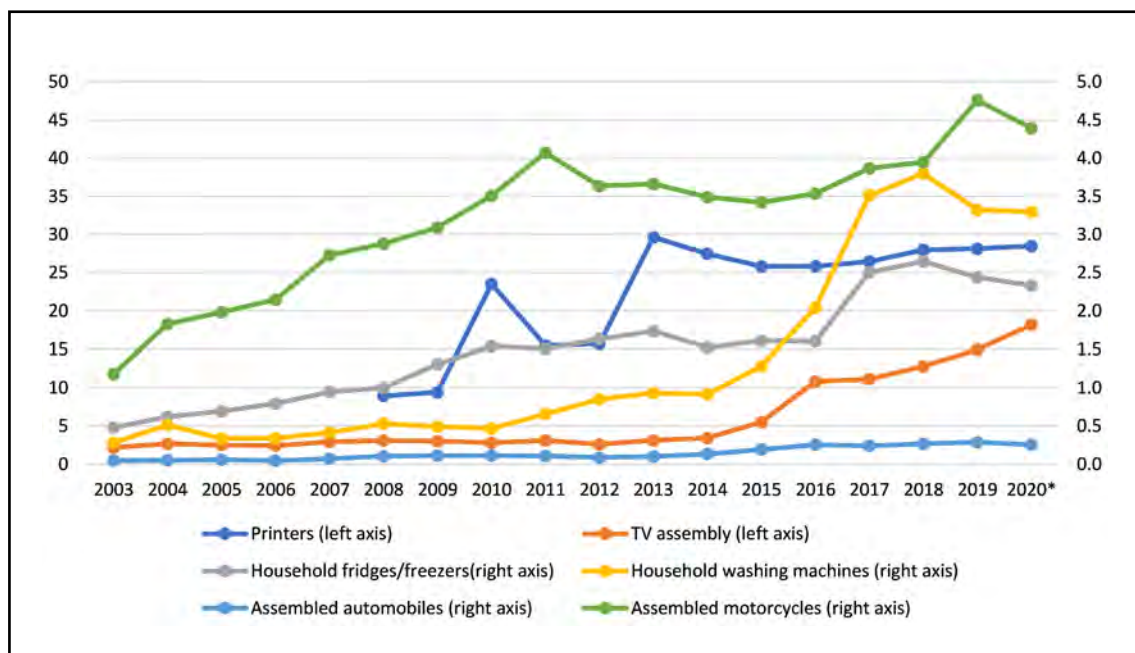


Until the mid-2000s, the net export ratios were lower than zero for almost all the products, suggesting that Vietnamese machinery products were not internationally competitive. Developments after the late 2000s show divergence in performance across products. On the one hand, mobile phones, printers, motorcycles, and televisions exhibit sharp increases in net export ratios. The net export ratio for mobile phones, in particular, reached an extremely high level, close to plus one. Of these products, the production of mobile phones and printers has been oriented primarily for export since it started in Viet Nam. By contrast, the production of motorcycles and televisions was initially launched for import substitution. In the motorcycle industry, foreign-invested manufacturers gradually improved their operations to become internationally competitive, driven by the rapid expansion of the domestic market combined with intense competition (Fujita, 2013). Faced with the saturating domestic market and economic downturn in the early 2010s, manufacturers were able to expand exports to compensate for the slower growth of the domestic sales. The television sector, by contrast, experienced a turnover of the main players. Sony, Toshiba, and Panasonic, which were amongst key players in the 2000s producing TVs for the domestic market, announced the suspension or reduction of TV production in Viet Nam (Vnexpress, 2021). By contrast, Samsung and LG made investments in cutting-edge factories in the mid-2010s,⁴ becoming the main drivers of the country's TV exports. On the other hand, the net export ratios of washing machines, refrigerators, and passenger cars continue to stagnate. Manufacturers of these products, continuing to cater primarily to the domestic demand, are faced with growing competition from imports. In particular, the net export ratio of passenger cars remained virtually unchanged at nearly minus one.

Figure 13.3 shows the volume of production for major machinery products, which, as discussed in Section 3.2, has been regarded as a precondition for the development of supporting industries. Caution is required that different scales are applied to the left axis (for products destined primarily for exports) and the right axis (for those primarily sold in the domestic market). Mobile phones, which exhibited exceptional speed of growth in production from almost zero in 2008 to more than 200 million units within a decade to become the country's largest export product, could not be included in this graph. The figure shows rapid expansion of production for products primarily destined for exports as well as some import-substituting products with sizeable domestic market such as motorcycles.

⁴ Samsung established a new factory in Ho Chi Minh City in 2014, and LG in Hai Phong in 2015 (LG Newsroom, 2021; Vietnam Investment Review, 2020).

Figure 13.3. Production of Main Machinery Products (million units)



Source: General Statistics Office of Viet Nam, www.gso.gov.vn, accessed 25 October 2022.

The significant transformation of the machinery industry discussed above raises questions on the consequences for the supporting industries. The surveys conducted by the Japan External Trade Organization (JETRO, 2010, 2021) provide information on the procurement structure of Japanese-affiliated companies. The local procurement ratio (average of surveyed companies, which may change from year to year) increased from 22.4% in fiscal year (FY) 2010 to 37.4% in FY2021, while the ratio of procurement from Japan decreased from 42.5% to 35.0%. However, the figure for FY2021 (37.4%) is lower than China (69.5%), Thailand (56.4%), and Indonesia (50.6%). The ratio of local companies in local procurement was 43.4% in FY2021, lower than China (65.4%) and Indonesia (45.5%) but higher than Thailand (41.4%). A salient feature of local procurement of Japanese companies in Viet Nam is the role played by non-Japanese foreign-affiliated suppliers (11.5% in FY2021⁵). Suppliers from Taiwan and ASEAN countries, in particular, have made significant contribution to local procurement of Japanese companies in Viet Nam. Of the respondents in Viet Nam, 86.0% indicated they were planning to expand local procurement in the next 1 to 3 years, second only

⁵ This is roughly double the figures in China, Indonesia, and Thailand. The ratio was 14.5% in FY2020.

to China (91.9%). In short, although local procurement by Japanese companies is still below other countries in the region, it is on the increase, and Japanese-affiliated companies plan to expand local procurement in the near future.

With respect to the firm-level situation of local sourcing, Trương Thị Chí Bình, Phạm Hải Phong, Nguyễn Trường Minh (2021) provides data for three major MNCs. Honda Viet Nam, the leader in the motorcycle industry, further advanced local procurement, which had already reached a high level in the 2000s. In 2020, Honda held a 79.7% share of the domestic market while exporting 181,600 units, and production reached 2.6 million units. The local procurement ratio reached 98%; with the exception of special raw materials and some engine parts, almost all parts could be sourced locally. The number of suppliers in Viet Nam had reached 240, 105 of which were Vietnamese. The authors mention that the number of suppliers increased only very slightly over the past 3 years because the domestic market had already been saturated.

In the automotive industry, where producers based in Viet Nam struggled to compete with imports, local procurement made limited progress. Even in the case of Toyota, which holds the largest market share amongst foreign-invested automakers, the local procurement rate ranged between 19% and 37% depending on the model. The company had 34 parts suppliers in Viet Nam, of which only six were Vietnamese companies.

With respect to the electrical and electronics sector, where exports have increased rapidly, Trương Thị Chí Bình, Phạm Hải Phong, Nguyễn Trường Minh (2021) examine the case of Samsung Viet Nam, covering mobile phone, home appliance, and telecommunications equipment segments. The local procurement ratio reached 59% in 2019, with three plants in Bac Ninh, Thai Nguyen, and Ho Chi Minh City using a total of 201 suppliers in Viet Nam. The number of first-tier local suppliers increased from four in 2014 to 35 in 2018, and second-tier local suppliers numbered 157 as of 2018. However, most local firms are suppliers of metal or plastic parts for consumer electronic products, with few supplying parts for mobile phones.

4.2. The Supply Side: The Development of Supporting Industry Firms

Turning to the supply side, the Ministry of Industry and Trade (MOIT) provides basic data on the supporting industries in mechanical, automobile, electronics, garments and textiles, and footwear and leather product sectors as summarised in Table 13.1.⁶ As of 31 July 2022, there were 3,977 enterprises in the supporting industries, slightly less than half of which belonged to the three machinery-related sectors (mechanical, automotive, and electronics). The sum of the number of enterprises in five sectors substantially exceeds 3,977, suggesting that many enterprises are engaged in more than one sector. This characteristic is particularly salient amongst companies in the three machinery-related sectors. Examining these three sectors in detail, the number of enterprises are larger for the electronics and mechanical sectors than the automotive industry,

⁶ However, there is no clear statement as to what types of enterprises are covered. The fact that the website also uses the product categories of 'final products' and 'supporting industry products' suggests that the scope of data coverage is broader than the standard definition of 'supporting industries' discussed in Section 2.

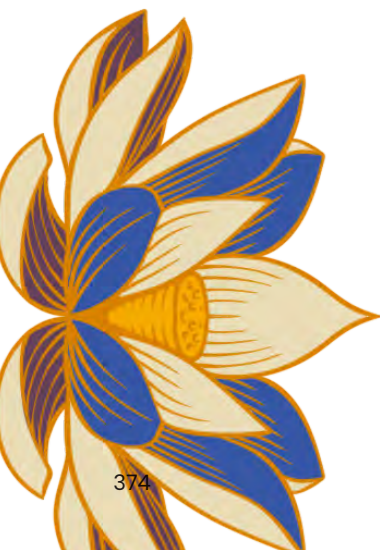
suggesting differences in levels of development of supporting industries across sectors. Foreign firms account for a high percentage in the electronics and automotive sectors, while local firms account for most firms only in the mechanical sector.

**Table 13.1. Overview of Supporting Industries in Viet Nam
(as of July 2022)**

	Number of firms	State- owned	Type of firms Non-state	Foreign investment
Total number of firms	3,977			
of which: Textiles and garments	1,314	13%	45%	42%
Leather and Footwear	969	0%	57%	42%
Automobiles	358	3%	50%	46%
Mechanical	763	2%	84%	14%
Electronics	898	5%	30%	66%

Note: Since the data include firms engaged in multiple industries, the numbers of firms by industry do not add up to the total number of firms.

Source: VASI (<http://vsi.gov.vn/en/statistic.html>, accessed 31 August 2022).



Another related set of data is provided by the Viet Nam Association of Supporting Industries (VASI). It estimates that there are over 1,800 businesses engaged in supporting industries in Viet Nam, which is slightly less than the total of the three machinery-related sector in Table 13.1 (VietNamNet, 2019). Considering the overlap of companies engaged in the three industries, MOIT and VASI figures seem broadly consistent with each other. VASI also estimates that 300 businesses have joined production chains of MNCs.

To gain a more in-depth understanding of supporting industries, we now conduct an analysis of the database of supporting industry

firms developed by the author. The database draws on the supplier directories prepared by JETRO Hanoi Office (2017a, 2017b, 2018) and Ho Chi Minh Office (2018a, 2018b), from which as many as 538 firms (348 local and 190 foreign-invested firms) were extracted (Table 13.2). Prepared with the aim of assisting the local sourcing of Japanese companies in Viet Nam, the directories provide detailed information on extensive numbers of firms that primarily produce metal, rubber, and plastic parts and dies and moulds and are likely to meet the requirements of Japanese customers.⁷ These features of the data nevertheless suggest possible omissions. One group of firms that is not covered is local affiliates of MNCs playing integral roles in the parent companies' global production networks. As these firms typically produce core parts on a large scale, they make significant contribution to the country's exports (in case they engage in direct exports, e.g., Denso and Nidec) or to local sourcing of MNCs in Viet Nam (in case they serve MNCs in Viet Nam, e.g., Samsung SDI) in value terms. Another group of firms is smaller foreign-invested and local firms that are unlikely to qualify as suppliers of Japanese customers. Accordingly, the analysis of the database focuses on a sub-group of firms in supporting industries in Viet Nam, namely, those primarily engaged in the metal, plastic, and rubber processing and the manufacture of dies and moulds for foreign-invested manufacturers, particularly Japanese ones. Nearly two-thirds of the firms are Vietnamese, while the remaining one-third are foreign-invested firms primarily from Asia.



⁷ For instance, JETRO Ho Chi Minh Office (2018a) states it was compiled by sending and collecting questionnaires directly from Vietnamese firms considered to be promising in terms of meeting the quality and delivery needs of Japanese companies in Viet Nam.

Table 13.2. Basic Profile of Supporting Industry Firms

	Viet Nam	Japan	Taiwan	Rep. of Korea	Others	Total
North and Central	210	64	44	12	29	359
Metal, plastic, and rubber processing	128	48	31	9	18	234
Electric/Electronic Parts/ Electronic Controls/Parts Assembly	16	13	12	2	8	51
Packaging	16	3	0	0	0	19
Dies, moulds, jigs, and tools	36	0	0	1	3	40
Production goods	14	0	1	0	0	15
South	138	28	4	8	1	179
Metal, plastic, and rubber processing	101	25	2	5	0	133
Electric/Electronic Parts/ Electronic Controls/Parts Assembly	21	1	0	3	0	25
Dies, moulds, jigs, and tools	16	2	2	0	1	21
Total	348	92	48	20	30	538

Note: 'Others' includes Hong Kong, China, Singapore, Thailand, Malaysia, Indonesia, India, Italy, the United Kingdom, Germany, France, and Australia.

Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).

Table 13.3 shows that the timing of firm establishment differs by nationality. Vietnamese firms consist of two groups. One consists of firms, mostly state-owned, established before or in the early stages of Doi Moi (many of which have been equitised and transformed into private entities). Many transformed products and customers over time, focusing increasingly on supplying parts to foreign-invested manufacturers in Viet Nam. The other group consists of firms established in recent years. This group includes spin-offs, i.e., firms established by people who had previously worked for foreign-invested companies in Viet Nam.⁸ Amongst foreign-invested firms, the majority of Taiwanese firms were established by the 2000s. Japanese-affiliated companies were established mainly in the 2000s and 2010s, while Republic of Korea (henceforth Korea)-affiliated companies were mostly established in the 2010s, which corresponds with the wave of large-scale Korean investments.

Table 13.3. Basic Profile of Supporting Industry Firms

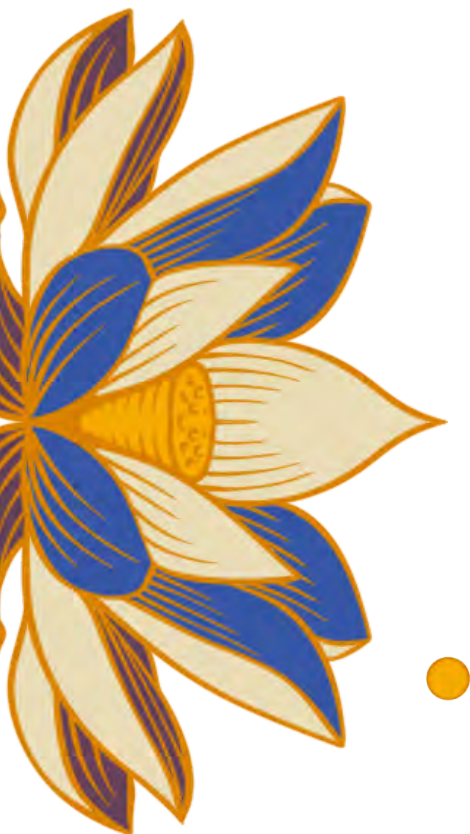
	Viet Nam	Japan	Taiwan	Rep. of Korea	Others	Total
-1985	41	0	0	0	0	41
1986-99	67	0	3	0	0	70
2000-09	151	36	38	3	14	242
2010-	78	55	4	17	14	168
no data	11	1	3	0	2	17
Total	348	92	48	20	30	538

Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).



⁸ On the basis of the information provided in directories and the author's interviews, six firms in the North and two firms in the South could be identified as cases of spin-offs. In addition, six firms in the North explicitly state in the directories that their engineers or employees had worked for foreign-invested companies in Viet Nam or had been trained overseas.

Table 13.4 shows firms named by supporting industry firms as amongst the main customers.⁹ Most of the top customers are foreign-invested companies in Viet Nam producing motorcycles, printers, home appliances, or mobile phones. Few supporting industry firms named automakers, which are still struggling to expand production, as their main customers. The table also points to a salient feature of the sourcing patterns of foreign-invested companies, i.e. the diversity of suppliers' nationalities. For example, Japanese manufacturers' suppliers include, along with Japanese and local suppliers, certain numbers of Taiwanese, Korean, and other suppliers, which is consistent with the results of the JETRO survey mentioned above. This contrasts with previous studies on local procurement by MNCs, which classified suppliers into so-called 'follow-source suppliers', which followed the client companies from their home country, and local suppliers (Humphrey and Memedovic, 2003; Ivarsson and Alvstam, 2005, 2009). It should be noted that 'customers' in this table are limited to firms with direct transactional relationships. If indirect transactions, i.e. those between final product manufacturers and second or third-tier suppliers, are included, the number of suppliers having transactions with customers named in Table 13.4 would be expected to be substantially larger.



⁹ The directories provide space for either four or six customers. Nevertheless, some firms list more than one customer name in one space, and the total number of customers listed varies substantially. Some firms only provide information on industry or nationality (e.g., 'automobile manufacturers' or 'Japanese companies') without providing specific company names. The table excludes such data.

Table 13.4. Main Customers of Supporting Industry Firms

	Viet Nam	Japan	Taiwan	Rep. of Korea	Others	Total
Honda	31	3	15	1	5	55
Samsung	21	1	2	15	5	44
Yamaha	23	3	14	0	3	43
Canon	25	4	7	1	5	42
Panasonic	21	7	8	0	4	40
Brother	5	6	9	0	7	27
Piaggio	9	1	11	0	3	24
LG	8	0	2	3	2	15
Kyocera	4	2	3	0	5	14
Toyota	10	0	0	0	0	10
Total number of firms	348	92	48	20	30	538

Note: The figures denote the number of supporting industry firms that identified the respective machinery product manufacturer as amongst their main customers (multiple answers).

Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).



These findings suggest that foreign-invested manufacturers and motorcycles and printers, in particular, played key roles in driving the development of supporting industries in Viet Nam. The two sectors are common in that leading foreign manufacturers arrived in Viet Nam early on, i.e. the late 1990s or early 2000s, and expanded production rapidly. They promoted localisation of parts, creating opportunities for both foreign-invested companies of diverse nationalities and local ones to join their supplier networks (Mori and Ohno, 2005; Fujita, 2013; Truong Thi Chi Binh and Nguyen Manh Linh, 2013). Over time, however, circumstances grew increasingly difficult for suppliers. On the one hand, entries of new suppliers and improvement of existing suppliers' capabilities have made competition between suppliers increasingly intense. Serving the largest players, in particular, offered the attraction of large orders yet suppliers were at the risk of price squeeze and dependence on particular customers.¹⁰ On the other hand, under the existing international division of labour within the MNCs' global networks, suppliers in Viet Nam had limited prospects for moving beyond production to engage in high-value-added activities such as product design.

Faced with such challenges, supporting industry firms are seeking new customers and markets as a means of creating new business opportunities and reducing dependence on particular customers. Table 13.5 shows the incidence of exports by supporting industry firms.¹¹ About 70% of the firms are engaged in exporting. A higher percentage of exporting firms are found in the South than in the North and amongst foreign-owned firms than amongst local firms. Even in the north, where numerous large foreign-invested customer firms are located, 60% of local firms engage in exports. Export products vary but consist primarily of machine parts and moulds, largely similar to those destined for the domestic market. Most exports are to East and Southeast Asia, Europe, and the US. In the South, 79% of all exporting firms and 85% of local exporting firms listed more than one country as export destinations, suggesting that firms export to diversified markets.



¹⁰ A Taiwanese-invested supplier remarked that it competed intensely for orders from Japanese motorcycle manufacturers, particularly with Vietnamese firms that have cost advantages and improved capabilities (interview, 27 November 2019).

¹¹ Firms that provide information on 'export destination' and/or 'exported goods' in the directories were identified as engaging in exports.

Table 13.5. Exports by Supporting Industry Firms by Region

	Exporting	Ofc which: exporting to only one country	Of which: exporting only to Japan	Non- exporting	Total	% of exporting firms	% of firms exporting to more than one country
North	235	78	44	124	359	65%	67%
Foreign	108	37	19	41	149	72%	66%
Local	127	41	25	83	210	60%	68%
South	144	30	21	35	179	80%	79%
Foreign	39	14	10	2	41	95%	64%
Local	105	16	11	33	138	76%	85%
Total	379	108	65	159	538	70%	72%

Notes: '% of exporting firms' refers to the ratio of exporting companies to the total number of firms. '% of firms exporting to more than one country' refers to the number of firms exporting to more than one country to the number of exporting firms. Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).

Many supporting industry firms simultaneously engage in business with foreign-invested firms in Viet Nam and exports. Table 13.6 shows the incidence of exports for firms that supply to foreign-invested firms producing motorcycles, printers, home appliances, and mobile phones/consumer electronic products in Viet Nam. At least half of the firms supplying foreign-invested customers in Viet Nam are also engaged in exporting.



Table 13.6. Exports by Supporting Industry Firms by Domestic Industries Supplied

Domestic Industries Supplied	Nationality	Exporting	Non-exporting	Total	% of exporting firms
Motorcycles	Foreign	23	12	35	66%
	Local	41	7	48	85%
Printers	Foreign	22	7	29	76%
	Local	15	12	27	56%
Home appliances (Japanese)	Foreign	20	5	25	80%
	Local	21	9	30	70%
Mobile phones/home appliances (Korean)	Foreign	16	9	25	64%
	Local	17	9	26	65%

Notes:

1. Domestic industries supplied' refers to products manufactured by the supporting industry firms' main customers in Viet Nam (multiple answers).
2. Customers covered under each industry are as follows: motorcycles (Honda, Yamaha, Suzuki, SYM, Kymco, Piaggio); printers (Canon, Brother, Kyocera, Fuji Xerox), home appliances (Japanese) (Panasonic, Sanyo/Aqua/Haier, Sony), mobile phones/home appliances (Korean) (Samsung, LG). As for Samsung and LG, it was impossible to distinguish whether the firms supplied mobile phones or home appliance parts.

Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).

Moreover, suppliers have developed diversified customer portfolios even for business with foreign-invested firms in Viet Nam, simultaneously serving customers across multiple industries (Table 13.7). Strikingly, combinations of industries served are not limited to sets of industries having similar technological characteristics and partial overlap amongst producers such as ‘motorcycles and automobiles,’ but include patterns such as ‘motorcycles and printers’ and ‘motorcycles and home appliances’. Each of the products in the latter patterns requires product-specific parts as well as a range of metal, plastic and rubber parts and dies and moulds. While requirements vary by customers in terms of precision, quality, or environmental standards, such parts can be manufactured with common sets of equipment and human resources. Accordingly, such suppliers, after having developed business with foreign-invested manufactures in one industry, could leverage the capability to respond to the MNC customers’ requirements as well as the records and reputation built through the transactions to acquire additional MNC customers in different industries.

Table 13.7. Sharing of Supporting Industry Firms across Industries

Domestic Industries supplied	Shared	Shared with customers in:					Not shared	Total
		Motorcycle	Passenger vehicles	Printers	Home appliances (Japanese)	Mobile phones/home appliance (Korean)		
Motorcycles	23 (28%)	-	6	13	6	8	60	83
Passenger vehicles	7 (70%)	6	-	2	3	1	3	10
Printers	31 (55%)	13	2	-	17	13	25	56
Home appliances (Japanese)	31 (56%)	6	3	17	-	18	24	55
Mobile phones/home appliances (Korean)	28 (55%)	8	1	13	18	-	23	51

Notes:

- 1) Amongst 83 motorcycle suppliers, 23 (or 28%) also do business with customers in one of the four industries while 60 do not.
- 2) Customers covered under each industry are as follows: motorcycles (Honda, Yamaha, Suzuki, SYM, Kymco, Piaggio);

¹² This combination is widely seen elsewhere. Kobayashi (2017) discussed the transformation of motorcycle parts supplier to auto parts suppliers in Viet Nam.

passenger cars (Toyota), printers (Canon, Brother, Kyocera, Fuji Xerox), home appliances (Japanese) (Panasonic, Sanyo/Aqua/Haier, Sony), mobile phones/home appliances (Korean): Samsung, LG. As for Samsung and LG, it was impossible to distinguish whether the firms supplied mobile phones or home appliance parts. These two client companies are classified as 'Mobile phones and home appliances (Korean).'

Source: Supporting Industry Database prepared by the author (JETRO Hanoi Office, 2017a, 2017b, 2018; JETRO Ho Chi Minh Office, 2018a, 2018b).

This is confirmed by the interviews with Vietnamese, Taiwanese, and Japanese motorcycle parts suppliers in Viet Nam conducted by the author in 2019. A local supplier of plastic parts provides a case in point. This firm, which had produced household plastic products, started supplying plastic motorcycle parts to MNC customers in Viet Nam in the mid-1990s. Particularly in the early years, the firm benefited from technical assistance provided by motorcycle MNC customers. While serving them still offered the attraction of large orders, the firm remarked that it faced intense competition and was under strong pressure to reduce prices. By 2019, alongside supplying motorcycle parts to three foreign-invested manufacturers, the firm supplied home appliance and printer parts to Panasonic and LG in Viet Nam and auto parts to Toyota Viet Nam, and even started to supply electric scooter parts to Vinfast. In moving beyond the motorcycle customers, the firm had to upgrade its processes to meet stringent precision, quality or environmental standards required by new customers, some of which offered hands-on assistance. Although there were other cases in which diversification constituted a desperate attempt for survival rather than a proactive strategy, it nevertheless offered a viable option for suppliers depending on large MNC customers in an industry where the domestic market is increasingly saturated.



4.3. 'Shared Supporting Industries'

The above discussion points to the emergence of supporting industries firms of diverse nationalities, primarily supplying parts, moulds, and tools to various machinery product sectors in both domestic and export markets. In other words, these firms are 'shared' by various machinery industries in Viet Nam and abroad.

Why did Viet Nam's supporting industries come to have this structure? Simply put, in Viet Nam, varieties of machinery industries were launched and transformed within a short period of time. The process was driven primarily by MNCs in the context of a series of key policy transitions, from import substitution to export promotion, from the introduction of local content rules to their elimination, from the protection of domestic industries to their liberalisation. With rising production costs in China and other neighbouring countries and Viet Nam's efforts to promote international economic integration, the country has emerged as one of the promising destinations for cross-border outsourcing of machine parts and moulds.

Under such circumstances, only a few companies that arrived early on sought to nurture their own networks of suppliers in the country over extended periods. For end-product manufacturers arriving later, it made sense to use the existing supporting industry base that had grown through transactions with foreign firms in other industries while, if necessary and possible, bringing in their affiliated suppliers from home. This is because it enabled the manufacturers to expand local sourcing quickly while saving the costs of finding and developing suppliers. Suppliers, too, saw the benefits of diversifying into different markets and industries in terms of increasing sales, diversifying risks, and reducing the dependence on existing customers. Caution is needed, however, as the consequences of diversification on firms' performance may vary across cases. While some may have the capacity to choose customers strategically, others may diversify desperately to compensate for the loss or decline in sales to existing customers, which may even involve product or process downgrading. Nevertheless, even in the latter case, firms would still be better off by acquiring additional customers than the situation without them. Further research is needed to shed light on the consequences of diversification on the firms' upgrading and overall performance.



5. Concluding Remarks

Viet Nam's machinery industries have experienced dynamic transformation over the past few decades. Whereas previous studies had suggested developing supporting industries having a 'multi-polar' structure as an appropriate strategy for Viet Nam, few studies, if any, have examined if supporting industries in Viet Nam were indeed taking such a structure. In order to fill this gap, this paper has engaged in a comprehensive analysis of a sizeable sample of supporting industry firms in Viet Nam, primarily consisting of firms engaged in metal and rubber processing and the manufacturing of dies and moulds for foreign-invested – particularly Japanese – companies. Through a detailed analysis of the product and market structure from the suppliers' perspective, we have found that supporting industry firms not only serve multiple end products, as suggested by the previous studies, but also serve multiple customers within a given product sector and, more importantly, both domestic and export markets, typically more than one country.

Our findings suggest that clusters of supporting industry firms have emerged in Viet Nam, primarily engaged in metal and rubber processing and the manufacturing of dies and moulds for diverse machinery end product sectors in domestic and export markets. Compared to large-scale foreign-invested suppliers such as Denso, Nidec or Samsung SDI, the current contribution of such firms to direct exports or local procurement of major foreign-invested manufacturers in Viet Nam may be limited in value terms. Nevertheless, such firms constitute an integral part of the country's supporting industries and should be encouraged to develop further so as to lay a solid foundation for the machinery industry. In the light of recent developments in Viet Nam, such as the US–China tensions, supply chain restructuring under the COVID-19 epidemic, and the rise of electric vehicle manufacturer Vinfast, changes in the demand for mechanical parts are expected to continue and even accelerate further over the coming years. Particularly in such a context, the recognition that Vietnamese supporting industry firms have developed linkages with industries producing a wide variety of machinery products for the domestic and foreign markets provides an important premise for understanding the development paths of such firms as well as for formulating policies for further promoting their development.

Although circumstances specific to Viet Nam were conducive to the emergence of a multi-polar structure of the supporting industries in the country, 'developing linkages with diverse machinery product sectors in domestic and foreign markets' has general relevance as a development strategy for suppliers in the machinery industry. Indeed, our findings illuminate how the analysis of the supporting industry firms' businesses in entirety, rather than their relationships with main MNC customers, sheds new light on the development paths of such firms, particularly where they face limited prospects for shifting beyond manufacturing to higher value-adding functions within their business with their existing MNC customers. While linking with diverse product sectors in different markets, at the very least, enables suppliers to increase sales and diversify risks, further research is needed to examine the consequences of diversification on the firms' performance.

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Chapter 14

New Aspects of Agricultural Development in Viet Nam

Shozo Sakata

1. Introduction

Viet Nam has achieved high economic growth, which has been driven by the labour-intensive industrial sector for exports since the onset of the Doi Moi economic reform. In 2008, when the per capita Gross National Income (GNI) exceeded \$1,000, Viet Nam joined the 'middle-income countries,' as defined by the World Bank. While its rapid industrial growth tends to be highlighted, Viet Nam's agriculture, including the forestry and fishery subsectors, has a significant presence in world commodity markets.

This chapter analyses Viet Nam's achievements in the agricultural sector since the 1990s, and it reflects on the country's future and challenges in this domain. Over the past 3 decades, Viet Nam has made rapid progress in transforming its market-driven agriculture and food system. First, agricultural development during the early stages of Doi Moi reform contributed significantly to poverty reduction. In addition, agricultural productivity gains increased the food supply to laborers and the urban population during the early stages of industrialisation, thus facilitating a smooth transition. Since the early 2000s, Viet Nam's agricultural sector has seen increased productivity, with diversified commercial production. In 2008, the Communist Party of Viet Nam, hereafter the Party, issued Resolution No. 26, an epochal agricultural development policy, and Viet Nam's agriculture has pursued modernisation, achieving higher value-added production, in tandem with the development of efficient agri-food value chains.

This chapter, after tracing the progress made since the onset of the Doi Moi reform, discusses potential prospects and the areas in which Japanese official development assistance and private companies can cooperate with Viet Nam. Whether Viet Nam can achieve further agricultural modernisation depends largely on its technological advancement and socioeconomic factors, including rural infrastructure, labour distribution, the land market, and agri-food value chain development. However, agricultural development may have negative effects on rural societies, such as a widening income gap. Therefore, this chapter proposes comprehensive approaches to future agricultural development.

2. Current Status and Positions of Viet Nam's Agriculture in the World

2.1. Economic Development and Agriculture

As predicted by conventional development economics, the increased production of food crops is essential for industrialisation, especially in the early stages of economic development. Without an increase in food production, either due to land resource constraints (the Ricardian 'trap' argument) or an increase in labourers in the industrial sector (Ranis-Fei's model), food prices will rise relative to industrial product prices, resulting in increased land prices or wages and thus ultimately limiting economic development (Hayami, 1997). These arguments could explain Viet Nam's economic stagnation during the era of planned economies.

In some developed countries, the agricultural sector has played an even larger role in economic development than in increasing the domestic food supply, i.e. by improving trade balance. In many countries, it has been observed that, as economies develop, the major economic activities shift to primary industries, including agriculture; secondary industries; and tertiary industries, as suggested by the Petty Clerk's Theorem. However, this does not indicate that agricultural production takes place only in poor developing countries or that advanced industrial countries only import agricultural products. Figure 14.1 shows that most of the top 10 countries in terms of exporting agricultural products are developed countries. In these countries, although the share of agriculture in the economy should be declining, agriculture has continued to play an important role in the economy, even after it has developed. Although simple comparisons with these



countries cannot be made, due to differences in climate and land size, Viet Nam has the potential to develop as a major agricultural country in the region even as industrialisation progresses.¹

2.2. Export of Global Commodities

While the agricultural sector's share of gross domestic product has decreased to below 20% since the beginning of the 2010s, Viet Nam remains one of the largest producers of rice (as of 2022, Viet Nam ranks as the world's fifth-largest producer and third-largest exporter of rice). Moreover, Viet Nam has become one of the major exporters of certain agricultural products, as shown in Table 14.1, due to its favourable natural environment and its continued shift in production from food to cash crops for export markets since the early 2000s. Except for rice, these exports are tropical products, for which Viet Nam has a comparative advantage over imports (non-tropical) countries. Currently, the most critical problem with agricultural exports is over-dependence on Chinese markets. In 2020, more than 35% of Viet Nam's fresh fruit and vegetable exports² and 20% of its seafood exports were destined for China.³



¹ Indonesia's and Malaysia's agricultural exports are heavily dependent on palm oil, accounting for 47.7% and 45.2% of agricultural exports, respectively, while Viet Nam is virtually unable to produce it due to climatic factors. Excluding palm oil, Malaysia's agricultural exports are \$5 million less than Viet Nam's.

² 'Fresh fruits and vegetables' include those with the code HS 07 (Edible Vegetables and Certain Roots and Tubers), HS 08 (Edible Fruit and Nuts; Peel of Citrus Fruit or Melons) and HS 09 (Coffee, Tea, Mate and Spices).

³ Global Trade Atlas database (<https://connect.ihsmarket.com/gta/home>, accessed March 2023).

Table 14.1. Top Ten Exporting Countries by Commodity, 2020
(unit US\$1,000; year 2020)

Rice		Coffee		Cashew nuts	
Country	Value	Country	Value	Country	Value
India	7,980,028	Brazil	4,973,728	Viet Nam	2,843,195
Thailand	3,710,031	Colombia	2,453,943	India	404,228
Viet Nam	2,790,951	Viet Nam	1,943,554	Netherlands	317,578
Pakistan	2,101,268	Honduras	980,247	Germany	200,914
USA	1,888,782	Germany	972,497	Côte d'Ivoire	102,108
China	916,644	Indonesia	809,679	Brazil	90,666
Myanmar	773,176	Ethiopia	742,823	UAE	80,766
Italy	712,946	Guatemala	651,964	Indonesia	43,912
Brazil	503,577	Peru	639,931	Belgium	30,062
Cambodia	479,186	Belgium	617,996	Mozambique	28,944

Natural rubber		Pepper	
Country	Value	Country	Value
Thailand	1,275,269	Viet Nam	626,122
Viet Nam	204,157	Brazil	185,322
Guatemala	65,340	Indonesia	160,388
Malaysia	43,247	India	66,661
Lao PDR	38,635	Germany	65,568
Netherlands	32,767	Sri Lanka	52,869
Belgium	24,805	USA	37,537
Cameroon	10,208	Netherlands	36,625
USA	10,044	UAE	34,979
Myanmar	9,935	France	31,859

USA = United States of America, UAE = United Arab Emirates, Lao PDR = Lao People's Democratic Republic.
Source: FAOSTAT database (<https://www.fao.org/faostat/en/#data>, accessed May 2023).

At the same time, Viet Nam imports substantial amounts of cereals, especially maize and wheat for livestock feeds. Viet Nam's cereal import value is about the same as its cereal exports (\$3.45 billion of imports against \$3.42 billion of exports in 2020). As such, Viet Nam is now integrated into the global food trade regime, and food security is amongst the most crucial issues for its socio-economic development.

3. Agricultural Policies and Achievements after the Onset of the Doi Moi Reform

3.1. Liberalisation and Land Productivity Increases

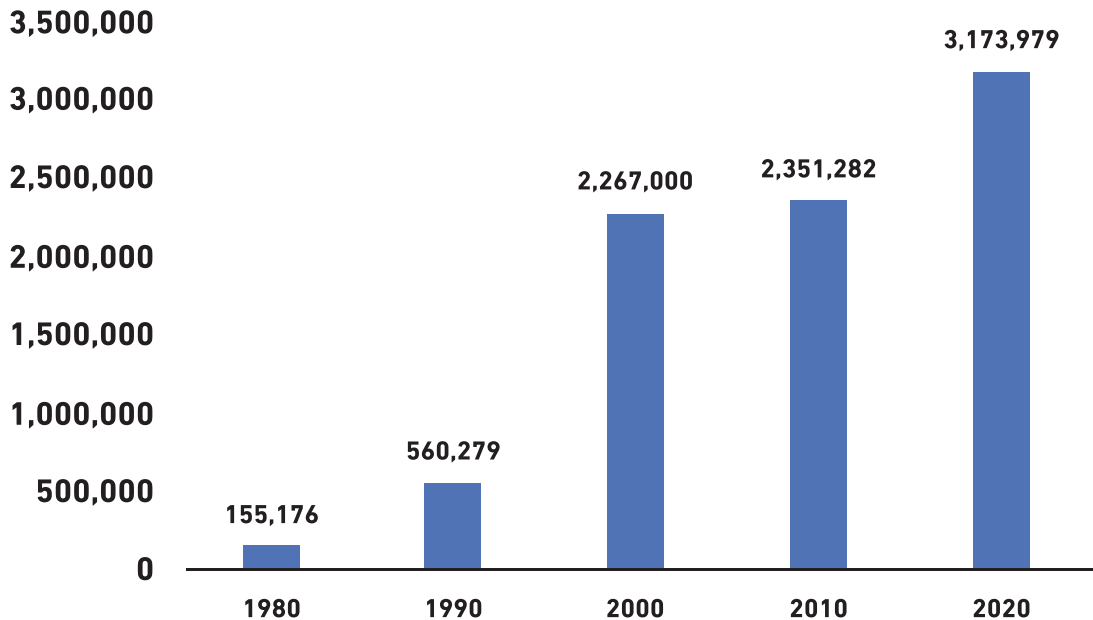
In the early stage of the *Doi Moi* economic reform, various new policies to liberalise the production and sale of agricultural products were promulgated, which resulted in improved land productivity. These policies included the decollectivisation of agricultural production in 1988 (Party Politburo Resolution No. 10), the land reform of 1993 (Land Law), and the establishment of a nationwide public agricultural extension system in 1993 (Government Decree No. 13). Due to these new policies and technological developments, rice production increased 1.7 times within 10 years of the *Doi Moi* reform, elevating the average yield from 2.8 tonnes to 3.8 tonnes per hectare (Nguyen Sinh Cuc, 1995; 2003). Viet Nam's rice exports began in 1989, and the country became the world's second-largest exporter for some years after 1997. Following the *Doi Moi* reform, Viet Nam went from being a country suffering from chronic food scarcity to one of the largest exporters of agricultural products in the region.

One of the crucial factors that led to increased productivity was the intensive use of chemical inputs. In the 1990s, while price controls and import restrictions on fertilizers still existed, decollectivised individual farm households opted to use more chemical inputs to increase the productivity of their farmlands. The country's total chemical fertilizer ($N+P_2O_5+K_2O$) use increased more than fourfold in the 1990s (Figure 14.2).⁵ As such, increased productivity was linked to the economic liberalisation of the industrial and commercial sectors.



⁵ In the early 2000s, the private sector and joint ventures were allowed to join the chemical fertilizer market, and the import quota was removed (Tran Toan Thang, 2014). However, as Figure 14.2 shows, chemical fertilizer use did not increase significantly in the 2000s. Instead, the increased production of private enterprises replaced that of state-owned enterprises at that time.

Figure 14.2. Fertilizer Use (tonnes)



Source: FAOSTAT database (<https://www.fao.org/faostat/en/#data>, accessed March 2023).

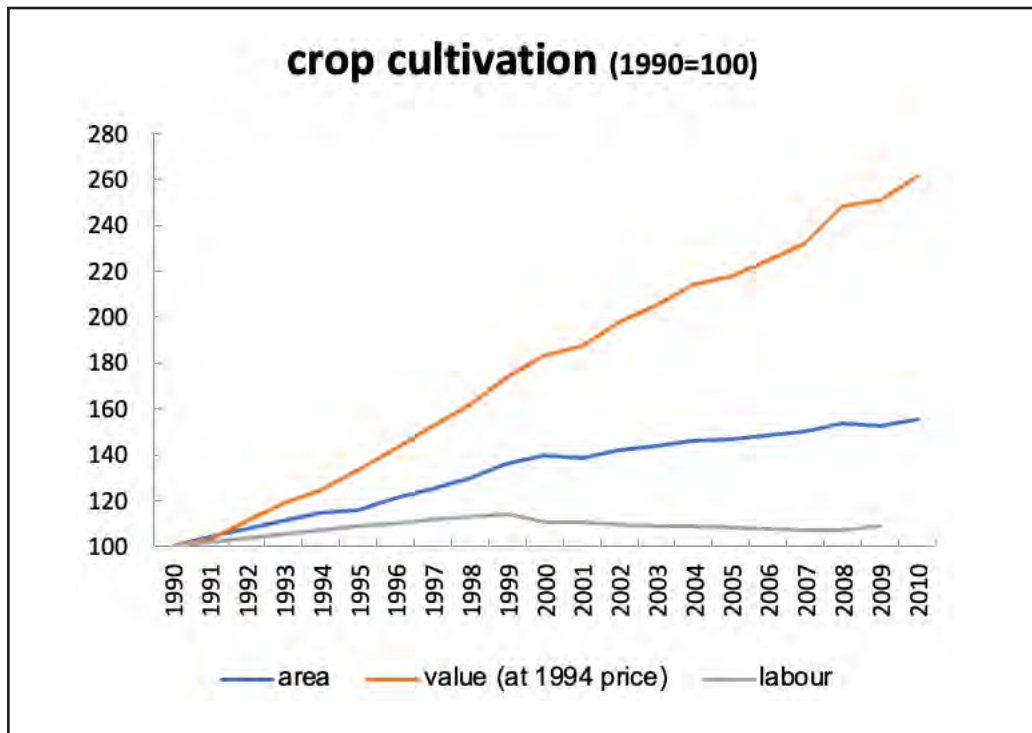
3.2. Shift from Input-led Higher Growth to Increased Production Efficiency

The decade of the 2000s was when Viet Nam's agricultural policies shifted from focusing on farmers' subsistence to encouraging non-rice production for the sake of increasing their profits. The 10-year development plan for agricultural development (Government Decree No. 9 [9/2000/NQ-CP]), issued in 2000, advocated for the conversion of rice fields into fields for commercial crops, maintaining 4 million hectares of the former with higher productivity. The government also issued policies intended to increase the number of *Farms (trang trại)*, creating a privately owned, large-scale mono-production agricultural production model. Government Resolution No. 3 (3/2000/NQ-CP), in 2000, recognised the legal status of Farms for the first time, and this was followed by Joint Circular No. 69 of the Ministry of Agriculture and Rural Development (MARD) and the General Statistics Office (69/2000/TTLT-BNN-TCTK), which defined and classified *Farms*.⁶ At the same time, the government began to promote the development of non-agricultural economic activities in rural areas, particularly cottage industries, handicraft production, and construction, by issuing Prime Minister's Decision No. 132 (132/2000/QĐ-TTg) in 2000, followed by Government Decree No. 134 (134/2004/ND-CP) in 2004.

⁶ Apart from state-owned farms, private Farms were, in fact, established and developed by the end of 1980s; however, these organisation forms had not been officially recognised by 2000 (Phan Si Man, 2006). The first definition set in 2000 included a minimum land size of three hectares for annual crop production; three hectares and five hectares for perennial crops in South and Central regions, respectively; and 10 hectares for forestry.

Figure 14.3 shows the shift in production value, number of workers, and production area of crop cultivation, placing the 1990 levels at 100. The figure indicates that the production increase in the 1990s was associated with a land and labour increase, whereas that in the 2000s was achieved even though the land increase slowed and labour decreased.

Figure 14.3. Labour and Land Productivity (1990–2010)

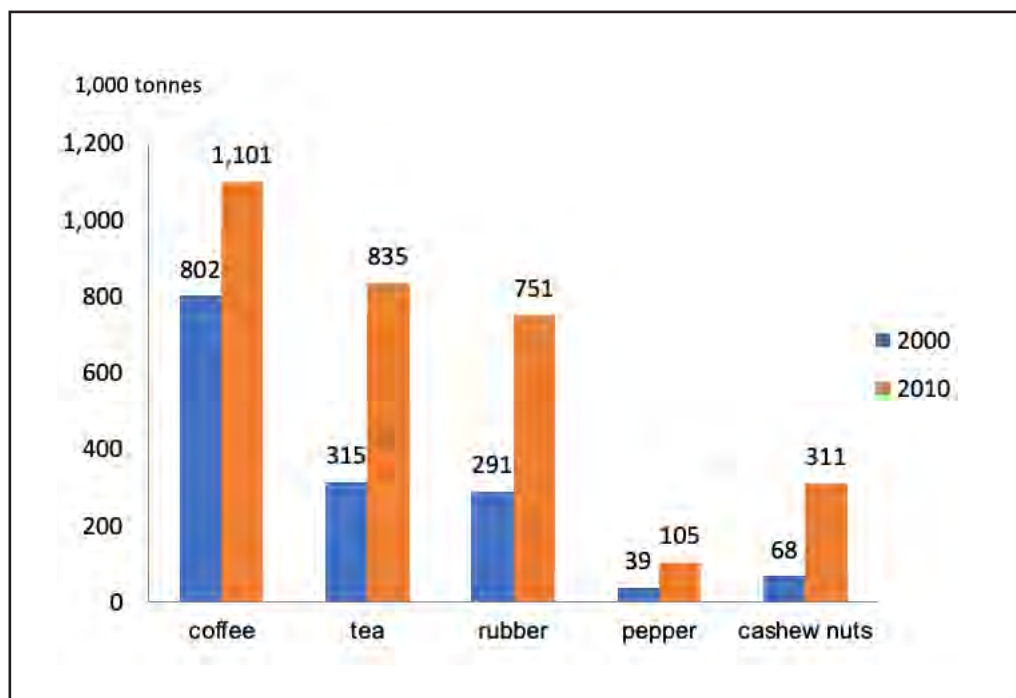


Source: Compiled from Nguyen Sinh Cuc (2003) and GSO (various years).

Thanks to policies to promote non-rice crop production, along with preferred global market conditions, the production of industrial crops increased rapidly during the 10 years of the 2000s, e.g. coffee by 40%; tea, rubber, and pepper by more than 150%; and cashew nuts by 360% in volume terms (Figure 14.4). By 2010, Viet Nam had become the world’s largest exporter of cashew nuts and pepper and the second- or third-ranked exporter of coffee and rubber in their respective global markets.



**Figure 14.4. Production Volumes of Non-Rice Crops
(1,000 tonnes: 2000–2010)**



Source: Compiled from GSO (various years).

4. New Directions towards More Market-Oriented Agriculture in the 2010s

4.1. Resolution No. 26: Turning Point for Modernisation of Agriculture

In the late 2000s, the Party changed the direction of the country's agricultural development from pursuing increased productivity and poverty reduction to achieving synchronised development with the industrial and service sectors. In 2008, the Party's Central Committee issued Resolution No. 26, which proposed an objective 'solution for three rural (*ba nông*) problems.' The phrase 'three rural problems' refers to those issues relating to agriculture (*nông nghiệp*), farmers (*nông dân*), and rural areas (*nông thôn*). In this resolution, solving these problems implied transforming Viet Nam's agriculture, human resources, and rural areas to support the nation's 'industrialisation and modernisation,' which was one of the key slogans for nation building used since 1994.

Resolution No. 26 aims 'to achieve the comprehensive development of agriculture by pursuing modernity, sustainability, large-scale production, high productivity, high quality, efficiency and (international) competitiveness' (Article I-2). To realise this, the Party and the government issued

four sets of interlinked major policies: 1) the mobilisation of capital from the private sector,⁷ 2) the accumulation of agricultural land and the promotion of large-scale agricultural production,⁸ 3) the development of a 'high-tech agriculture' model,⁹ and 4) the promotion of contract farming and the creation of modern agri-food value chains.¹⁰

These directions for agricultural development in the resolution, which seemingly aimed to promote the increased commercialisation of the agricultural sector, reflected Viet Nam's changing positions in both the domestic and the global circumstances of the agri-food system at that time. First, the resolution was formulated under conditions of high economic growth (7.5% annual) and rapid industrialisation during the first half of the 2000s. Second, Viet Nam was being integrated more fully into the global economic system, as it entered the World Trade Organization in 2007. The further growth of the agricultural sector due to trade expansion and foreign direct investment inflow was expected. Third, food security became an important global agenda in the mid-2000s. Food commodity prices rapidly hiked, induced by oil price fluctuations and increased demand for biofuel, which hit a historic peak in 2008, after 20 years of low food prices (Troste, 2008). Viet Nam, with a population of more than 80 million at that time, faced increasing concerns regarding food security, whereas the global situation elevated Viet Nam's position as a large and growing food provider in world markets.

The resolution also proposed a new concept of rural development, namely the *new rural* (*nông thôn mới*). In the 'national target program' to establish the *new rural*, which was created in 2010 (Prime Minister's Decision No. 800 [800/QĐ-TTg]), the government set 19 criteria that were required to be designated as *new rural*, including the status of transportation, infrastructure, non-agricultural employment, labour structure, poverty reduction, education, and political institutions. This new rural concept aimed at upgrading multiple aspects of people's lives in rural areas and extensively curbing rapid rural-urban migration and population concentration in urban areas.

4.2. Some Indicators of Achievements

Some data indicate the achievements of Resolution No. 26 in 2008. As Table 14.2 shows, while households were still dominant players in the agricultural sector, the number of households as production units decreased by more than 1 million between 2011 and 2020. In contrast, the number of enterprises increased by nearly 5,000 units. These newly entering enterprises included the affiliates of large-scale non-agriculture enterprises, such as Vingroup, Hoa Phat, THACO, and FLC, which had invested in capital-intensive 'high-tech' agricultural production. Furthermore, several start-ups emerged in the so-called 'agri-tech' sector, engaging in the development and diffusion of information and communication technology (ICT) devices and services using these devices.

⁷ Some examples are Government Decree No. 61 (61/2010/ND-CP) in 2010, Government Decree No. 210 (210/2013/ND-CP) in 2013, and Government Resolution No. 63 (63/NQ-CP) in 2019.

⁸ Examples include Resolution No. 19 (19-NQ-TW) at the Seventh Conference of the Party Central Committee in 2012 and the Amended Land Law in 2013.

⁹ The first ordinance was issued in 2010 as the 'Scheme for the development of high-tech agriculture through 2020' (Prime Minister's Decision No. 176). In 2012, the basic guidelines for high-tech agricultural development were presented by the MARD (Prime Minister's Decision No. 1895), followed by the 'Master Plan for high-tech agricultural development' (Prime Minister's Decision No. 575) in 2018.

¹⁰ The government issued Prime Minister's Decision No. 62 in 2013, which was amended in 2018 as Government Decree No. 98 (98/2018/ND-CP).

Table 14.2. Number of Production Units

	2011	2020	# increase	% increase
Total	10,376,981	9,123,018	-1,253,963	-0.12
Enterprise	2,536	7,471	4,935	1.95
Cooperative	6,302	7,418	1,116	0.18
Household	10,368,143	9,108,129	-1,260,014	-0.12
Agriculture	9,598,723	8,174,162	-1,424,561	-0.15
Enterprise	955	4,426	3,471	3.63
Cooperative	6,072	6,885	813	0.13
Household	9,591,696	8,162,851	-1,428,845	-0.15
Forestry	57,159	163,328	106,169	1.86
Enterprise	434	1,112	678	1.56
Cooperative	33	86	53	1.61
Household	56,692	162,130	105,438	1.86
Fishery	721,099	785,528	64,429	0.09
Enterprise	1,147	1,933	786	0.69
Cooperative	197	447	250	1.27
Household	719,755	783,148	63,393	0.09

Source: compiled from GSO (2012) and GSO (2021).

However, the accumulation of agricultural land does not seem to have achieved significant progress during the past 10 years. In particular, the proportion of small-scale (under 0.2 hectares) agricultural (crop production) land owned by households even increased by eight points, while that of large-scale land was slightly reduced (Table 14.3). While the data do not include the land owned by enterprises and cooperatives, the trends may not change that much, even after these data are included, considering that the number of enterprises and cooperatives remains insignificant and many enterprises and cooperatives do not have their own land, because they usually contract out their production to individual households.¹¹ This implies that policies to invite private capital to the agricultural sector have not, at a macro level, expanded the large-scale production model.

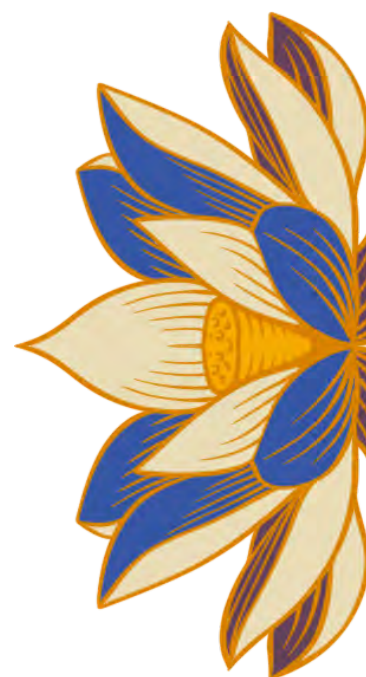
¹¹ While data on the land size of enterprises and cooperatives are not available in the published results of the 2020 Mid-term Rural and Agricultural Survey, data from the 2016 Rural, Agricultural, and Fishery Census show that 61.6% of enterprises and 72.9% of cooperatives do not use their own land for production (GSO, 2018).

Table 14.3. Distribution of Households by Land Size (%)

Distribution of household by land size (%)					
Agriculture	<i>Under 0.2 ha</i>	<i>0.2 under 0.5 ha</i>	<i>0.5 under 2 ha</i>	<i>2 ha and over</i>	
2011	34.7	34.3	24.8	6.2	
2020	42.7	28.1	23.3	6.0	
Forestry	<i>Under 1 ha</i>	<i>From 1 to under 3 ha</i>	<i>From 3 to under 5 ha</i>	<i>Form 5 to under 10 ha</i>	<i>10 ha and over</i>
2011	53.5	30.8	7.8	5.3	2.6
2020	45.7	37.6	9.7	5.2	1.7
Fishery	<i>Under 0.2 ha</i>	<i>0.2 under 0.5 ha</i>	<i>0.5 under 2 ha</i>	<i>2 under 5 ha</i>	<i>5 ha and over</i>
2011	75.1	8.9	11.4	4.0	0.6
2020	59.6	12.1	20.4	7.0	0.9

Source: Compiled from GSO (2012) and GSO (2021).

With regard to the development of a 'high-tech agriculture' development model, the government provided guidelines and designated 'high-tech agricultural zones' and 'high-tech agricultural enterprises' (by issuing Prime Minister's Decision No. 1895 [1895/QD-TTg] in 2012). The government set the target of establishing, at most, seven 'high-tech agricultural zones' (3–5 by 2015 and another 1–2 during 2016–20) in the country and certifying 200 'high-tech agricultural enterprises' by 2020. In 2017, the government established a further target in the form of a larger number of 'high-tech agricultural zones,' i.e. 11 zones by 2030 (Prime Minister's Decision No. 694 [694/QD-TTg]). While the achievement of these targets has not been officially announced, there have been many investment projects in 'high-tech agricultural zones,' which are managed by either MARD or provincial authorities. However, according to the list of 'high-tech agricultural enterprises' obtained from MARD by the author, there were only 63 certified 'enterprises' as of mid-2021.



While it is difficult to quantitatively assess the progress of the modern agri-food value chain, one noticeable achievement is the diffusion of safety standards for agricultural production, which has served as the basis of modern value chains. VietGAP, the Vietnamese version of the safety standards that benchmark the standards of the GLOBAL G.A.P. (Good Agricultural Practices), was introduced in 2008¹² and diffused widely. By 2016, 1,495 production units (with the participation of 25,279 households) had acquired VietGAP certificates, in which the collective acquisition by farmers' groups, cooperatives, and enterprises exceeded that by individual farm households, accounting for 63.9% of the total (Table 14.4).

Table 14.4. VietGAP Acquisition as of 2016

By type of production unit					
Total	Households	Farmers' group	cooperatives	enterprises	others
1,495	540	551	199	200	5

By type of production			
Total	Cultivation	Husbandry	Fishery
1,495	1200	101	194

Source: GSO (2018).

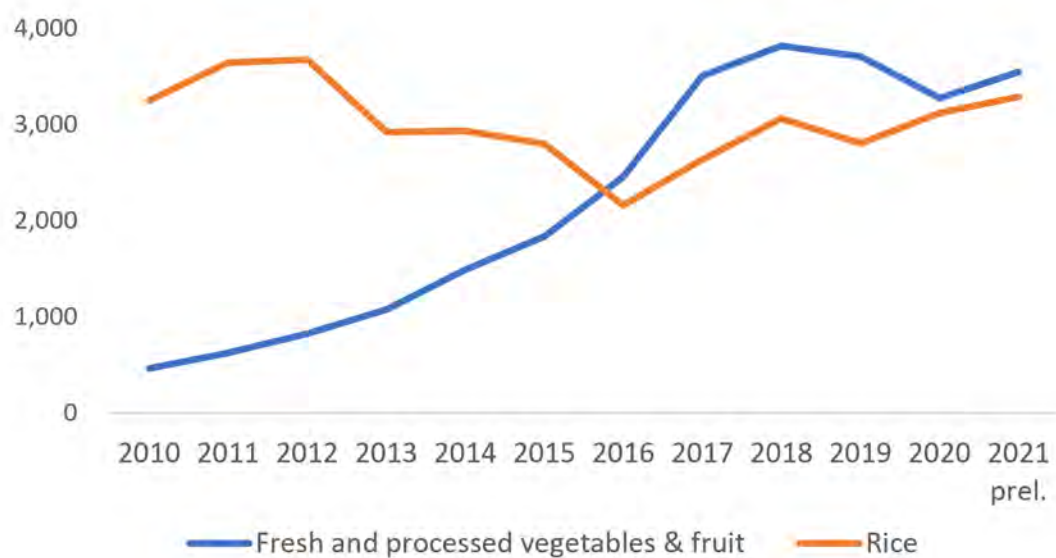
The improved quality and safety levels of agricultural products and the establishment of modern value chains also contributed to the rapid increase in exported products with higher added value. The export of fresh and processed vegetables and fruits rapidly increased (30% annually, on average, from 2010 to 2018), and the export value of such exceeded that of rice since 2016 (Figure 14.5). The main market for Vietnamese vegetables and fruits is China, which absorbed 39% of the total export value in 2020 (unchanged since 2011).¹³



¹² The initial VietGAP criteria for vegetable, fruit, and tea production were introduced by Prime Minister's Decision No. 99 (99/2008/QĐ-BNN) and issued by MARD.

¹³ UN Comtrade Database (<https://comtrade.un.org/data>, accessed March 2023).

Figure 14.5. Export Values of Rice, as well as Fruits and Vegetables (million US\$)



Source: GSO website (http://www.gso.gov.vn/Default_en.aspx?tabid=491).

5. Prospects and Challenges for Agricultural Development

5.1. New Policy Orientations for Future Development

In 2022, the government and the Party presented new long-term policy orientations for agricultural development. On the government side, Prime Minister's Decision No. 150 (150/QĐ-TTg) was issued in January 2022, which stipulates targets for 2030 and a vision towards 2050. On the Party side, the Central Committee issued Resolution No. 19 (19-NQ/TW) in June 2022, which also encompassed targets for 2030 and a vision towards 2045. Decision No. 150 emphasises the sustainable development of the agricultural sector, while Resolution No. 19 refers to broader issues in the form of the 'three rural problems' as a follow-up to Resolution No. 26 of 2008.

Both policy orientations appreciate Viet Nam's progress in agricultural and rural development in recent years and set an annual growth target of 3% for the agricultural sector until 2030 (Decision No. 150 sets it at 2.5%–3.0%), which was lower than that for 2020 set in Resolution No. 26 (3.5%–4.0%). Both policy orientations, for the first time in agricultural-development-policy history, set

targets for labour productivity (5.5%–6.0% until 2030), whereas Resolution No. 26 of 2008 referred to only the proportion of labour in the agricultural sector (30% of the total employed population by 2020, which was actually achieved in 2021). In addition, the new policy orientations also proposed the improvement of human resources, including various types of training not only for farmers but also for those in related areas, such as machineries and services, as well as government officials.

One of the new and important directions in these policy orientations is the incorporation of agricultural development with environmental protection. In all agriculture subsectors, i.e. cultivation, livestock, forestry, and aquaculture, the policy orientations emphasise the importance of protecting the ecological environment, reducing greenhouse gas emissions, and adapting to climate change.

The new policy orientations also recognise the potential for local-level advantages in rural areas. They proposed promoting the concept of 'One Commune One Product (OCOP)' to 'promote the identity and advantages of localities, associated with building new rural areas' (Decision No. 150), as well as 'the preservation and promotion of traditional cultural values' (Resolution No. 19). Unlike the 'One Village One Product' movement in Japan in the 1980s, the OCOP model is explicitly aimed at linking products with export markets (Decision No. 150).

5.2. Challenges for Further development until 2045

The vision towards 2050 in Decision No. 150 envisages Viet Nam becoming 'one of the world's leading agricultural countries with a modern, efficient, and environmentally friendly agricultural product processing industry.' At the same time, Resolution No. 19 proposes the holistic upgrading of the agricultural sector until 2045 to develop 'ecological agriculture, large-scale production of high value-added products, close linkage with domestic and foreign markets, modern agricultural product processing and preservation industries, and exports of various world-leading agricultural products.'

These visions provide appropriate directions that reflect Viet Nam's agricultural development potential. Furthermore, these visions are also consistent with the current global conceptualisation of food security, which goes beyond simply referring to the supply of food at a national level. Since the FAO's declaration of food security at the 2009 World Food Summit (FAO, 2009), the global notion of food security has incorporated considerations of the 'social acceptability' of food and environmental sustainability (Bilali, 2019; Clapp, 2015; Gibson, 2012).



To realise these ambitious visions, the Government of Viet Nam, in cooperation with Japanese official assistance and the private sector, can further address the following challenges.

5.2.1. Security and quality improvement for new export markets

Because Viet Nam has recently concluded 'higher-level' free trade agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Regional Comprehensive Economic Partnership, and EU-Viet Nam Free Trade Agreement, which will potentially expand the export markets of Vietnamese agricultural products, Viet Nam's now-strong reliance on the Chinese market will likely weaken. Exports to these countries typically impose stringent hygiene, quality, and safety requirements, which will require greater producer compliance (far higher than the VietGAP standards) with the demands of these markets.

The Global Food Value Chain literature suggests that the governance mechanisms established by the 'lead firms' (multinational food companies and supermarket chains) in globally extended value chains tend to exclude small-scale producers. This is because suppliers in the global food value chain must invest in not only obtaining safety standards but also packaging and labelling facilities, as well as just-in-time delivery arrangements (Cramer and Sender, 2019; Dolan and Humphrey, 2004; Neilson and Pritchard, 2009). Since most producers in Viet Nam are smallholder farmers, establishing 'inclusive' food value chains is a challenge. To develop inclusive value chains leading to export markets, more holistic government actions, including improved access to export market information, support for producers in obtaining higher-level safety standards (e.g. GLOBAL G.A.P.), and the development of modern public infrastructure for exports, should be pursued.

5.2.2. Formulation of diversified domestic agri-food systems

The pursuit of modern and efficient agricultural production that enables the non-seasonal and year-round supply of agricultural products is a challenge for Viet Nam's agricultural sector. The application of modern technologies, particularly digital technologies, is amongst the most prominent trends in Viet Nam's agricultural sector. The government can invest more heavily in promoting digitalisation and infrastructure development for efficient agricultural production and value chain development. The government should, further, endeavour to foster locally developed technologies, including the establishment of a system for property rights protection regarding local innovations.

As a country's economy grows and urbanisation progresses, its food systems naturally diversify rather than simply transforming from traditional to modern (Moustier et al., 2021; Tefft et al., 2017). Therefore, agricultural production must meet various demands through diversified value chains, including the provision of economical products obtained through traditional short relational value chains, standardised food sold in supermarkets, trust- and reputation-based region- specific products (possibly an advanced OCOP model), and high value-added products targeted at middle-to-high-income consumers.

Even with the expansion of supermarket chains in Viet Nam since the early 2010s, the number of traditional wet markets and small-scale individual retailers has remained the same or even slightly increased to date (Sakata and Takanashi, 2022). The 'modernisation' of 'traditional' agri-food value chains—for example, the improvement of wholesale markets in terms of their information dissemination function, hygiene, and waste management—is one of the practical approaches to building a diversified food system in the future.

5.2.3. Agriculture in an ageing society

Viet Nam's agriculture will soon face labour shortage problems due to the rapid aging of its population. According to the latest projection of the United Nations' *World Population Prospects 2022*, in 2045, Viet Nam's aging ratio (population aged 65 or older) will exceed 17.9% (medium variant projection), which is higher than the world average (15.4%) and the Southeast Asian average (12.0%).¹⁴ With increasing urbanisation, rural societies will be composed of a more elderly population. The *new rural* policy will mitigate the rate of out-migration from rural areas amongst the younger population if economic factors, living conditions, and employment opportunities are improved. However, labour shortages in the agricultural sector caused by the aging population will be unavoidable. There will be an urgent need to formulate an agricultural development model based on the premise of an aging rural society.

It is necessary to promote high-value-added agricultural products to attract younger or corporate farmers as new producers. The accumulation of agricultural land without transferring ownership, which has not made significant progress thus far, could be an effective measure, as it would enable the efficient outsourcing of agricultural work from elderly farmers to younger producers or corporate farmers. Furthermore, the improvement of labour productivity by promoting the mechanisation of agricultural production is another way to address the aging problem. In Japan, the government has promoted the mechanisation of agriculture, particularly in terms of crop cultivation, since the 1960s in three respects: support for agricultural machinery manufacturers in developing machines suited to Japan's field conditions (such as small tractors), support for seed manufacturers in developing varieties suited to machine use, and investment in the improvement of soil and field conditions. These experiences with Japan's agricultural mechanisation processes are valuable resources that can be shared for the sake of policy formulation in this area.

¹⁴ World Population Prospects 2022 database (<https://population.un.org/wpp/>, accessed March 2023).

5.2.4. Environmental protection in line with international commitment

As is fully addressed in Decision No. 150 and Resolution No. 19, environmental protection in agriculture is one of the most important factors regarding future agricultural development. The use of resource-saving or less chemically dependent input technologies in production will be imperative not only to increase exports to countries with consumers who have greater environmental concerns but also to reduce carbon emissions and mitigate the adverse effects of global climate change.

In the forestry sector, the proper management of forest resources will contribute to earning carbon credits. Furthermore, crop cultivation and aquaculture could also contribute to reducing carbon emissions by utilising new technologies and production methods, such as a 'carbon farming' method to improve soil fertility. At the same time, there is an urgent need to involve the agricultural sector in the carbon credit exchange market. In these areas, Japan can play an important cooperative role with Viet Nam.



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Part III:
**Sustainability
and Social Issues**





Chapter 15

Sustainable Energy Supply

Shigeru Kimura, Alloysius Joko Purwanto and Han Phoumin



1. Introduction

The Socialist Republic of Viet Nam has sustained stable economic growth over the last 2 decades, with a Gross National Income of approximately \$3,000 per capita in 2019. Viet Nam is actively striving to surpass the \$10,000 per capita income threshold at the earliest opportunity to evade the middle-income trap. Viet Nam's objective to become a high-income country by 2045 was endorsed by the 13th National Congress of the Communist Party of Viet Nam. To achieve this, sustainable energy will be crucial in driving stable economic growth. In economic theory, continued sustainable growth can be explained by the trans-log production function, which includes energy as a production factor in addition to capital, labour, and land. Therefore, Viet Nam will need more energy, but it should be sustainable, such as with renewables, as well as new and innovative technologies such as hydrogen and carbon capture utilisation and storage (CCUS).

To attain high-income status by 2045, Viet Nam, as addressed during the 13th Congress of the Communist Party of Viet Nam, must place its emphasis on enhancing transportation and energy systems, developing information technology, and fortifying infrastructure to effectively address the challenges posed by climate change. Achieving near carbon neutrality by 2045, and potentially full carbon neutrality by 2050 or 2060, should be part of this strategic endeavour. Although Viet Nam has been impacted by the negative consequences of the coronavirus disease (COVID-19) and Russia's invasion of Ukraine, particularly in terms of energy demand and supply, it is anticipated that energy demand in Viet Nam will recover after 2022.

Chapter 15 addresses how Viet Nam will shift towards renewables and cleaner energy. This means that Viet Nam will need to redesign its entire energy system. This chapter will review the historical energy demand supply and forecast future energy demand. Further, it will study the promotion of energy efficiency and conservation (EEC) in the final energy consumption sectors, i.e. industry, transport, commercial and residential sectors, as well as clean energy technologies. The chapter will also address decarbonisation in the electricity sector and solutions that can support sustainable growth through the introduction of ordinary renewables (biomass, hydropower) and variable renewables, such as wind and solar, and the possible option of nuclear. The chapter will also highlight the importance of hydrogen, ammonia, and battery storage as future available technologies at affordable costs. In addition, the introduction of efficient types of battery electric vehicles (BEVs) will be studied for Viet Nam's low-carbon energy transition in the road transport sector. Furthermore, the role of CCUS will be crucial to decarbonise the remaining emissions from power generation and industrial clusters such as the cement industry. Emissions in transportation sectors will need to be offset by negative emission technologies such as bioenergy and possibly direct air capture with CCUS.

Although COP 26 achieved consensus on limiting temperature rise to well below 2 degrees Celsius, or preferably to 1.5 degree Celsius compared to pre-industrial levels, the pathway to reach this goal will be different for each country based on their respective socioeconomic and political contexts. Viet Nam will need to consider other priorities such as energy access, energy affordability, and energy security while grafting any new energy policy design to meet the Paris Agreement and the recent commitment at COP 26.

2. Review of Energy Supply Demand in 1990–2019

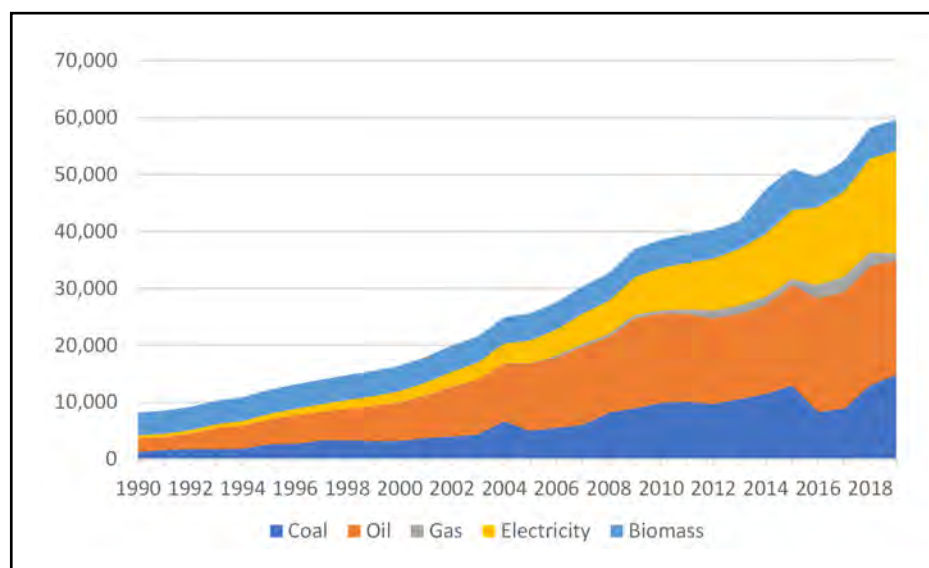
In this section, we review energy demand supply of Viet Nam historically using the Asia Pacific Economic Cooperation (APEC) Energy Database as managed by Asia Pacific Energy Research Center, which has been the coordinating agency of the Expert Group on Energy Data Analysis, one of the groups under the APEC Energy Working Group. Viet Nam joined APEC in 1998.

2.1. Total Final Energy Consumption

a. By fuels

Total final energy consumption (TFEC) of Viet Nam, which is induced by industry, transport, residential and commercial activities, increased from 8,277 ktoe in 1990 to 59,658 ktoe in 2019, with an annual growth rate of 7.1%. On the other hand, the growth rate of Viet Nam's constant gross domestic product (GDP) was 6.8% per annum in the same period, so that TFEC elasticity per GDP was more than 1. Looking at fuels, gas showed the highest growth at 20.4% per annum, followed by electricity at 12.9%, coal at 8.7%, oil at 7.7%, and biomass at 1.1% (Figure 15.1)

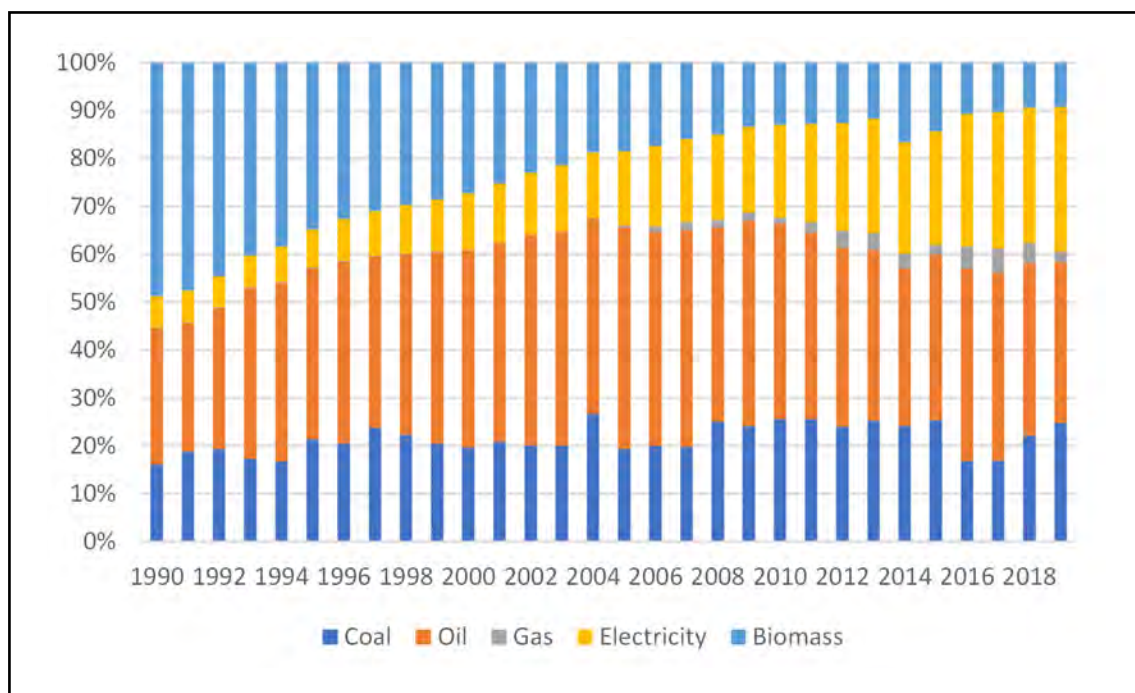
Figure 15.1. Historical Final Energy Consumption by Fuel (ktoe)



Source: APEC Energy database, 2022.

In 1990, Viet Nam's final energy consumption sector depended on traditional biomass at 49%, followed by oil at 29%, coal at 16%, and electricity at 6%. By 2019, this structure had largely changed, with 34% of consumption stemming from oil, followed by electricity at 30%, coal at 25%, biomass at 9%, and gas at 2% (Figure 15.2). In the last 30 years, biomass has been phased out from Viet Nam's energy market; on the other hand, electricity use has been increasing rapidly across the sectors. In addition to electricity, oil and coal are still important fuels for Viet Nam's economic activities. As mentioned, the long-term elasticity defined as TFEC/growth rate of GDP was 1.04 in 1990–2019. But if we use TFEC without biomass, the growth rate becomes 9.2% and the elasticity also changes from 1.04 to 1.35. Consequently, Viet Nam will need appropriate national energy efficiency and conservation policies and feasible action plans that will meet the specifications of each final sector in order to curb final energy consumption towards 2050.

Figure 15.2. Historical Final Energy Consumption by Fuel Share



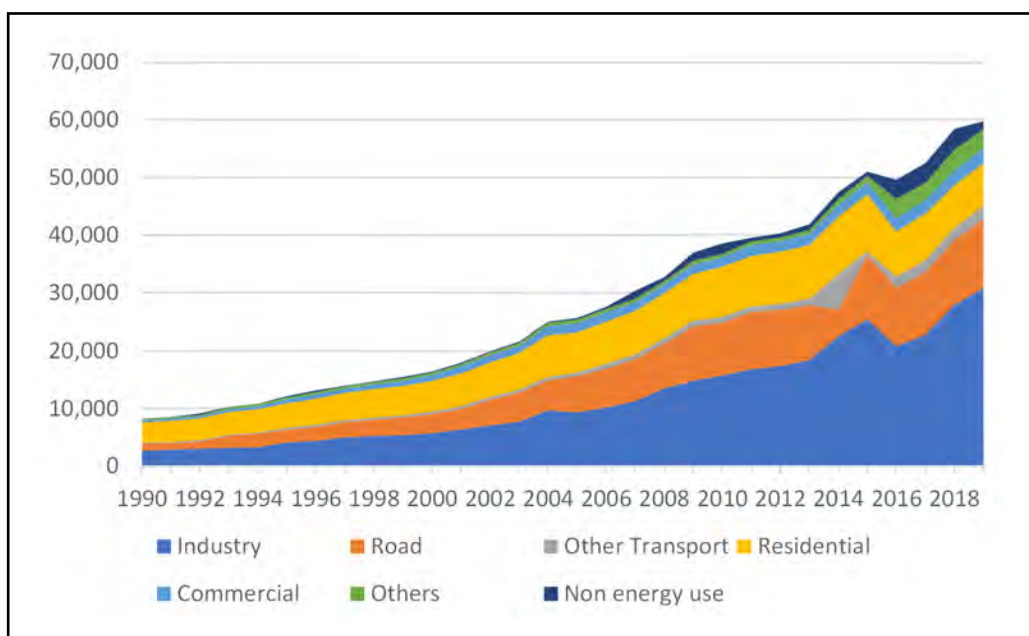
Source: APEC Energy database, 2022.



b. By sectors

As mentioned, final energy consumption consists of industry, transport, residential, commercial, and other sectors. Energy consumption of other transport excluding roads showed the highest growth at 9.8% per annum from 1990–2019, followed by other sectors at 9.3% per annum, industry at 8.8% per annum, road transport at 8.0% per annum, commercial at 7.4% per annum, and residential at 2.6% per annum (Figure 15.3).

Figure 15.3. Historical Final Energy Consumption by Sector (ktoe)

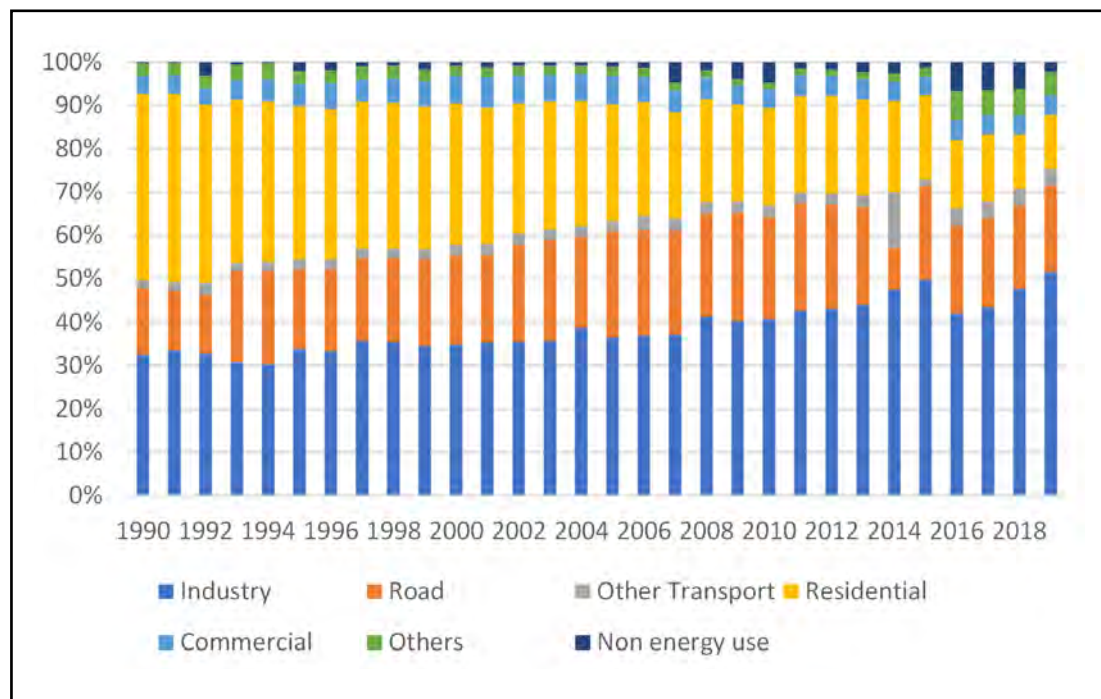


Source: APEC Energy database, 2022.

Looking at energy share by sector, in 1990, the residential sector had the highest share at 43%, followed by industry at 32%, roads at 15%, commercial at 4%, other at 3%, and other transport at 2%. By 2019, however, these percentages changed drastically. Industry became dominant (51%), followed by roads at 20%, residential at 12% (due to the phase-out of biomass), other at 5% and commercial and other transport both at 4% (Figure 15.4). By sector, industry and roads will be crucial regarding energy consumption in Viet Nam.



Figure 15.4. Historical Final Energy Consumption by Sector Share (%)



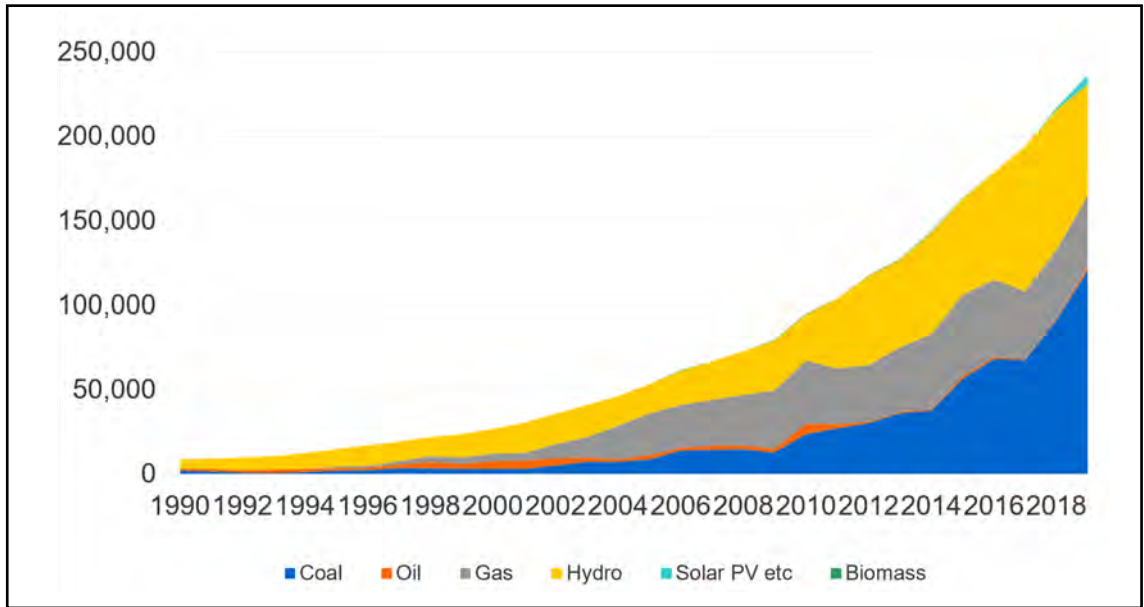
Source: APEC Energy database, 2022.

2.2. Power Generation

Hydropower, coal, and gas are major power generation sources in Viet Nam. Due to significant increase of electricity demand in 1990–2019, each power generation source has also increased. Gas power generation marked highest growth at 35.7% per annum in 1990–2019, followed by coal power generation at 15.2% per annum and hydropower at 9.0% per annum (Figure 15.5). Oil power generation has been phasing out, while renewables such as solar and wind have shown a remarkable increase recently. As a result, the share of hydropower generation was dominant at 61.8% in 1990 but it has decreased to 27.9% in 2019. On the other hand, the share of coal power generation, which marked the second largest share at 23.0% in 1990, has been dominant at 50.7% in 2019. Gas share in 1990 was just 0.1%, but it increased to 17.9% in 2019. Oil share in 1990 was 15.0%, dropping to 0.9% in 2019. Renewables have increased rapidly and their share in 2019 was 2.3% (Figure 15.6).

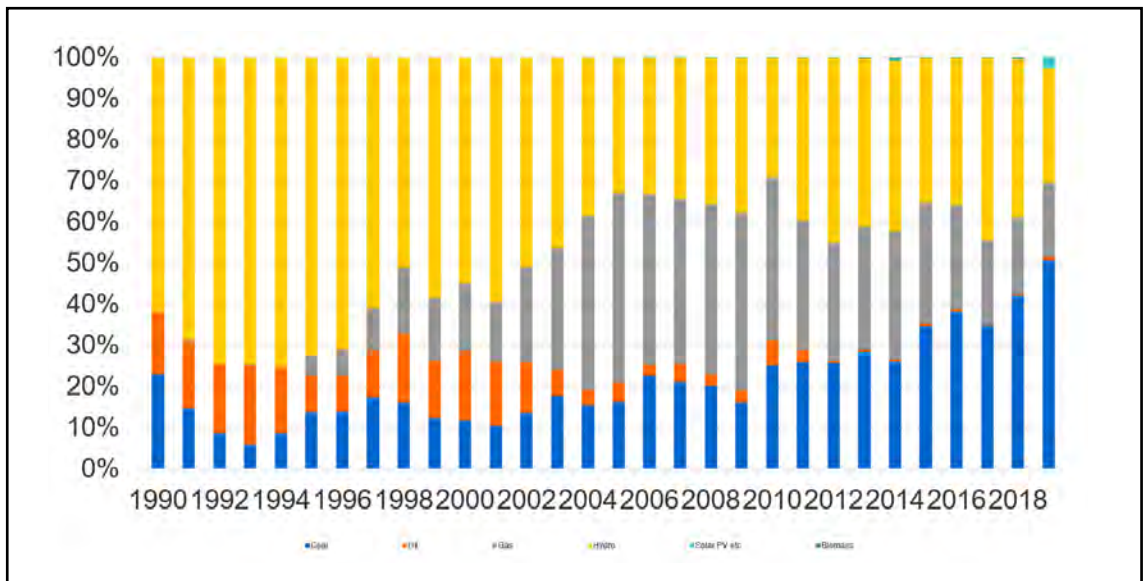


Figure 15.5. Historical Power Generation by Sources (GWh)



PV = photovoltaic.
Source: APEC Energy database, 2022.

Figure 15.6. Historical Power Generation by Fuel Share (%)

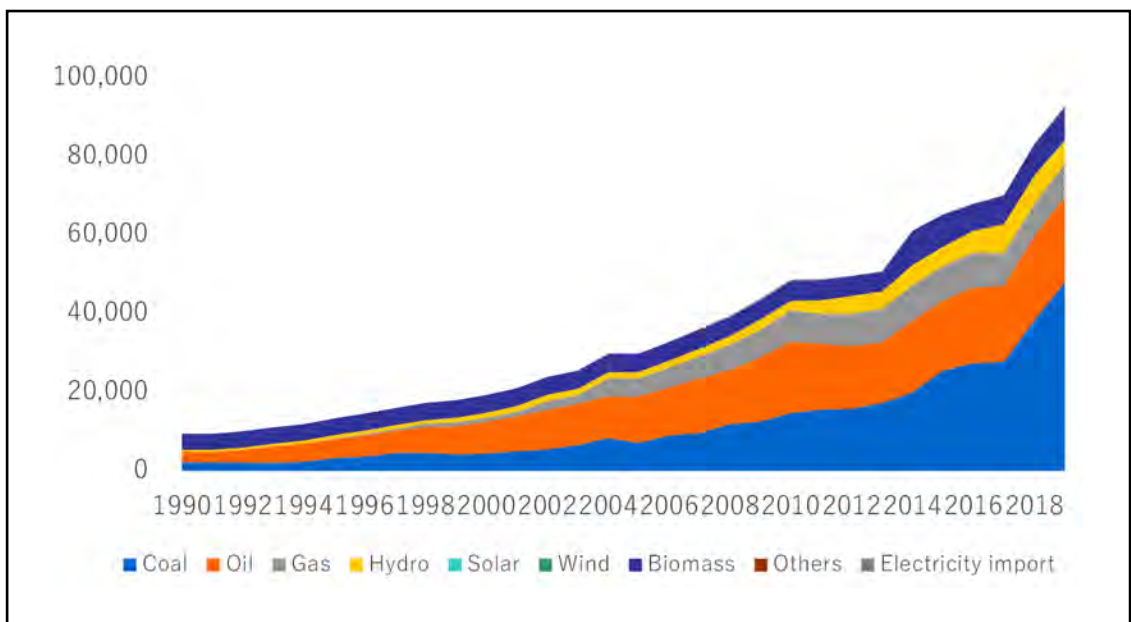


PV = photovoltaic.
Source: APEC Energy database, 2022.

2.3. Total Primary Energy Supply

Total primary energy supply (TPES) of Viet Nam increased from 9,440 ktoe in 1990 to 92,763 ktoe in 2019 and its growth rate was 8.2% per annum. On the other hand, the growth rate of Viet Nam's constant GDP was 6.4% per annum in 2000–19, so that TPES outpaced economic growth, similar to the circumstance with TFEC. Looking at fuels, gas showed the highest growth at 31.5% per annum, followed by coal at 11.2% per annum, hydropower at 9.0% per annum, oil at 7.4% per annum, and biomass 2.4% per annum (Figure 15.7). Solar and wind rapidly increased from 2014–19 and Viet Nam started importing electricity from neighbouring countries such as Lao People's Democratic Republic from 2006.

Figure 15.7. Historical Primary Energy Supply (ktoe)

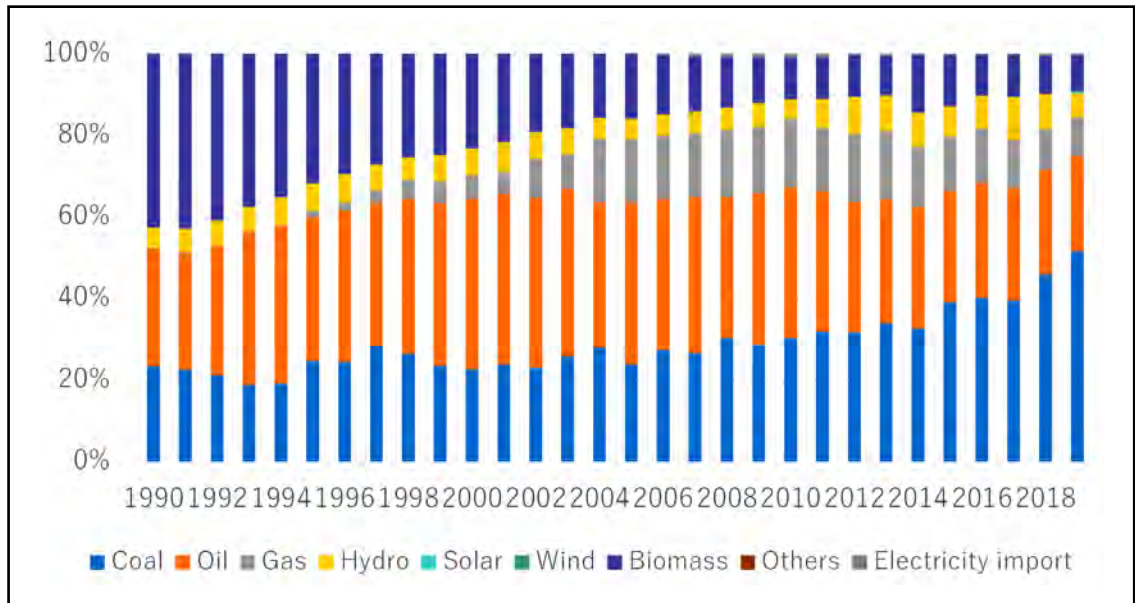


Source: APEC Energy database, 2022.

Coal share increased from 23.4% in 1990 to 57.1% in 2019. On the other hand, oil share decreased from 29.0% in 1990 to 23.5%. Viet Nam started using gas in the early 1990s; currently its share is more than 10%. Hydropower maintained a constant share of 5%–6% from 1990–2019 (Figure 15.8).



Figure 15.8. Historical Primary Energy Supply by Fuel Share (%)



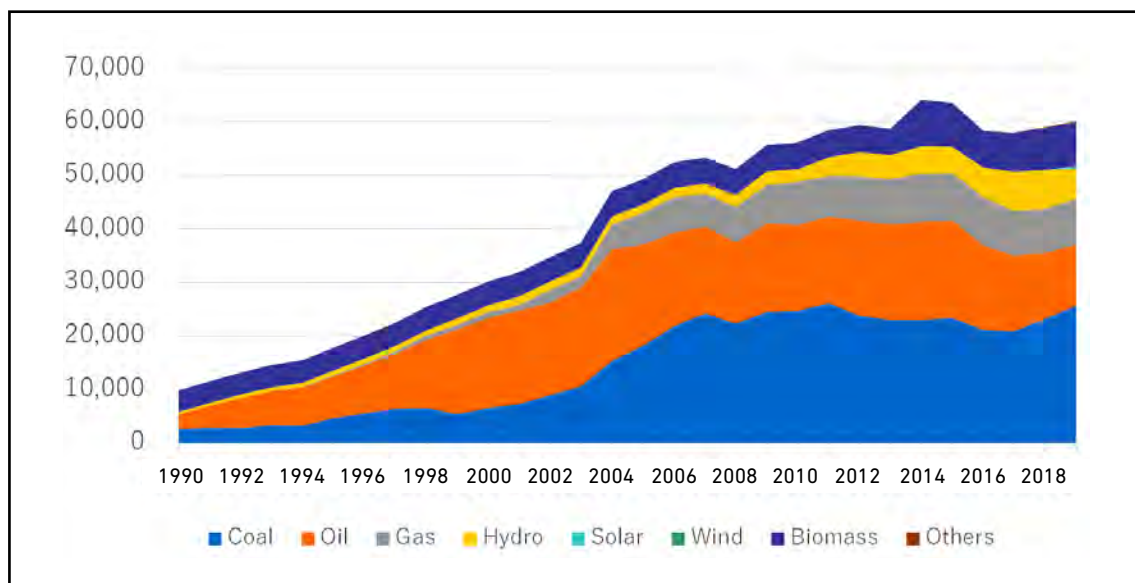
Source: APEC Energy database, 2022.

Biomass was phased out of the domestic energy market and its share decreased from 42.6% in 1990 to 8.8% in 2019. Viet Nam started electricity imports as mentioned, but its share has been less than 1%.

TPES is termed primary energy consumption or inland delivery of energy, so that its concept is the same as the total energy requirement of Viet Nam. Thus, we next assess Viet Nam’s energy supply. There are two main sources: indigenous production and imports. Viet Nam’s indigenous production increased 6.4% from 1990–2019, but its increase ratio was quite different before and after 2006. The growth rate from 1990–2006 was 11.0% per annum; by contrast, in 2006–19, it was 1.0% per annum due to curbs on fossil fuel production after 2007 (Figure 15.9). Looking at share by fuels, biomass was dominant in 1990 (40.9%), followed by oil (28.0%), and coal (26.4%) but this share changed by 2019. Remarkably, by 2019, coal became dominant (42.7%), followed by oil at 19.0%, gas at 14.2%, biomass 13.7%, hydropower at 9.5%, and solar/wind at 0.8%.



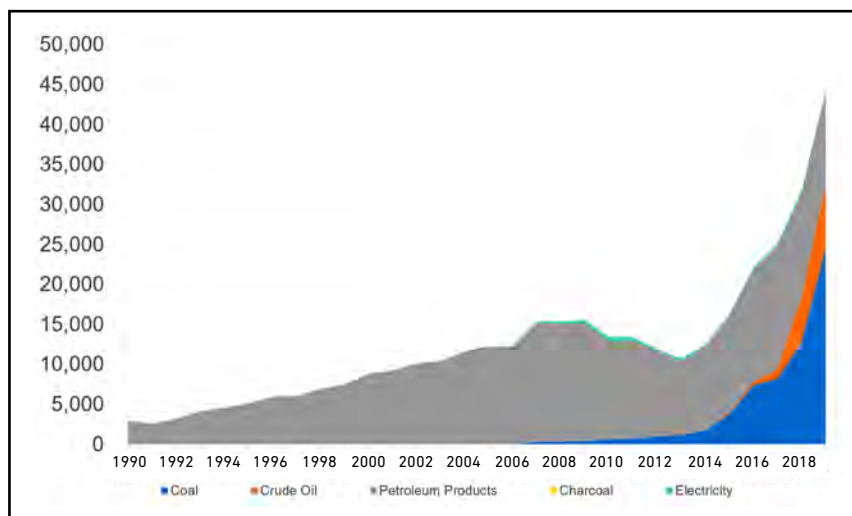
Figure 15.9. Historical Indigenous Product by Fuel (ktoe)



Source: APEC Energy database, 2022.

Contrasting with the production, import of fuels remarkably increased at 9.8% per annum in 1990 to 2019. The main import fuel has been petroleum products such as gasoline and diesel oil. Coal imports started in 2005 and was dominant at 55.3% in 2019. Crude oil was imported from 2015 due to start of a refinery operation and share of oil (crude oil and petroleum products) in 2019 was 44.0%. Coal and oil imports marked a significant increase from 2013–19 to 26.6% per annum, so that energy security, especially coal and oil, has been vulnerable (Figure 15.10).

Figure 15.10. Historical Energy Import by Fuel (ktoe)

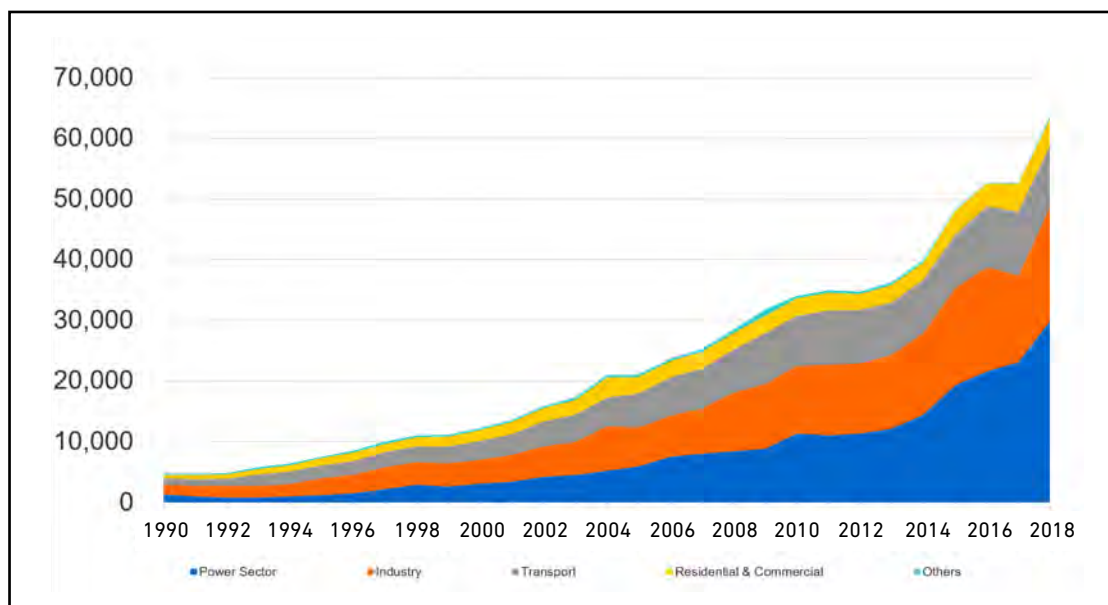


Source: APEC Energy database, 2022.

2.4. CO₂ Emissions

Due to the remarkable increase in energy consumption in Viet Nam, CO₂ emissions also increased from 4,752 kt-C in 1990 to 63,551 kt-C in 2018 and its growth rate was 9.7% per annum. By sector, power marked the highest growth at 11.7% per annum in 1990–2018, followed by industry at 9.4%, transport at 8.1%, and residential and commercial at 7.7% (Figure 15.11).

Figure 15.11. Historical CO₂ Emissions by Sector (kt-C)

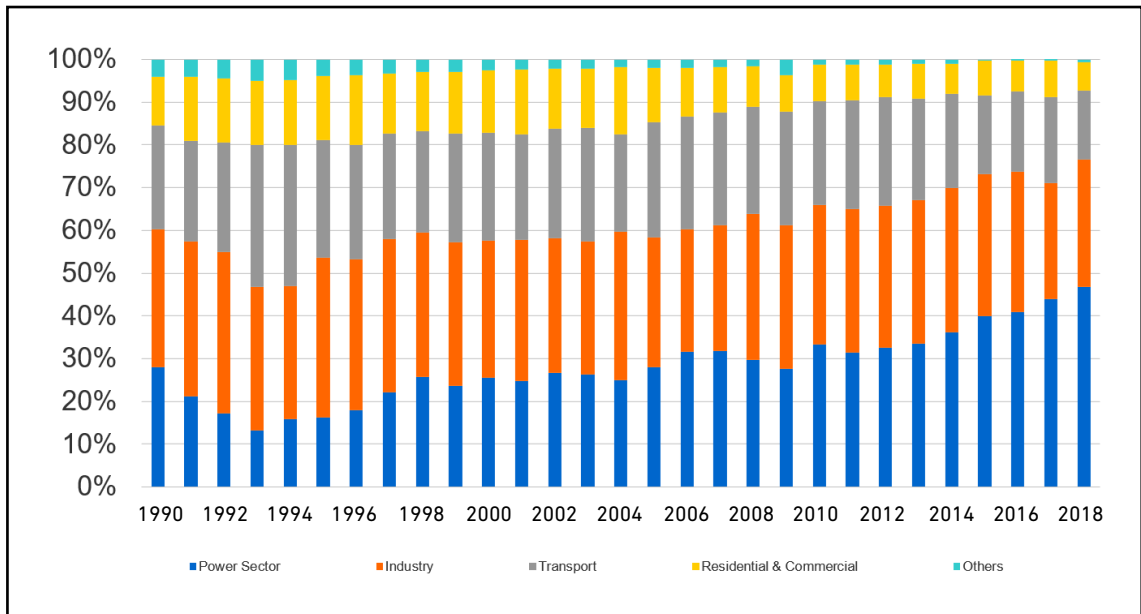


Source: APEC Energy database, 2022.

The power sector share was dominant in 2018 at 46.9%, followed by industry at 29.7%, transport at 16.1%, and residential and commercial at 6.8% but the share in 1990 was quite different from 2019. Industry was dominant at 32.2%, followed by power at 28.0%, transport at 24.4%, and residential and commercial at 11.3% (Figure 15.12).



Figure 15.12. Historical CO₂ Emissions by Fuel Share (%)



Source: APEC Energy database, 2022.

2.5. Energy Indicators

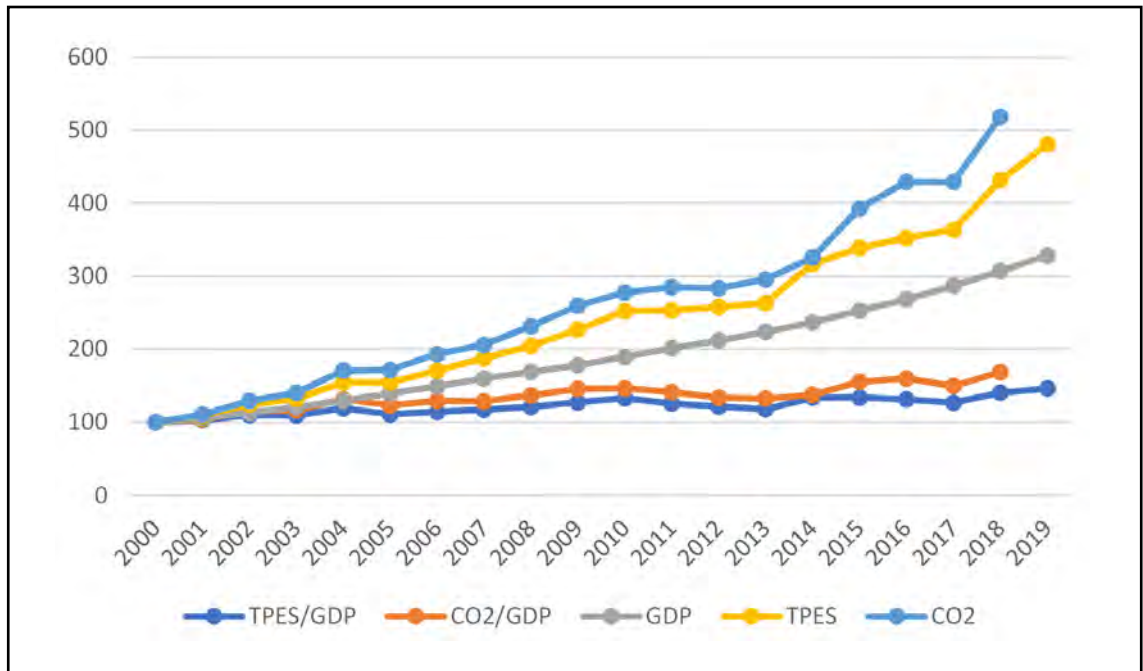
a. Relation between GDP and TPES & CO₂ emissions

In order to analyse the relation between economic growth and energy consumption, we define the following energy indicators:

- Energy intensity, defined as TPES/GDP
- CO₂ intensity, defined as CO₂/GDP

If these intensities are less than 1, it indicates a better situation between economic growth and energy consumption. Figure 15.13 shows the historical trend of the intensities. TPES and CO₂ emissions had higher growth compared to GDP; thus the intensities worsened from 1990–2019. The energy intensity in 2019 was 1.46 times that of 1990 and CO₂ intensity worsened 1.68 times from 1990–2018. It means that Viet Nam’s economy has been requiring more energy consumption in order to increase GDP. As a result, CO₂ emissions increased over the same period due to shifting to fossil fuel consumption. This is a future energy issue for Viet Nam’s Ministry of Industry and Trade (MOIT).

Figure 15.13. Historical Trend of Energy and CO₂ Intensities (2000=100)



GDP = gross domestic product, TPES = total primary energy supply.
Source: Author's calculation.

b. Import dependency

In part (3) of section 2, we showed both indigenous and import fuel production. Then, we analysed import dependency of each fossil fuel. Total energy import dependency was around 20% in 1990–2013 but after 2013 the ratio went up over 40% until 2019. The reason was the increased imports of coal and oil after 2013; by 2019, the import ratio of oil was over 60% and coal was around 50%. Thus, EEC across the final sectors and development of domestic energy sources such as hydropower are essential policies for Viet Nam in term of improving supply security (Figure 15.14).

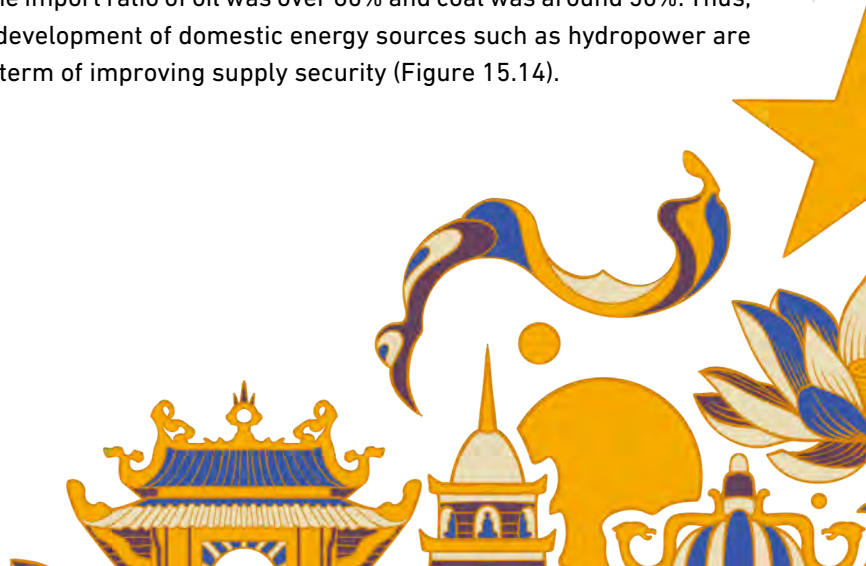
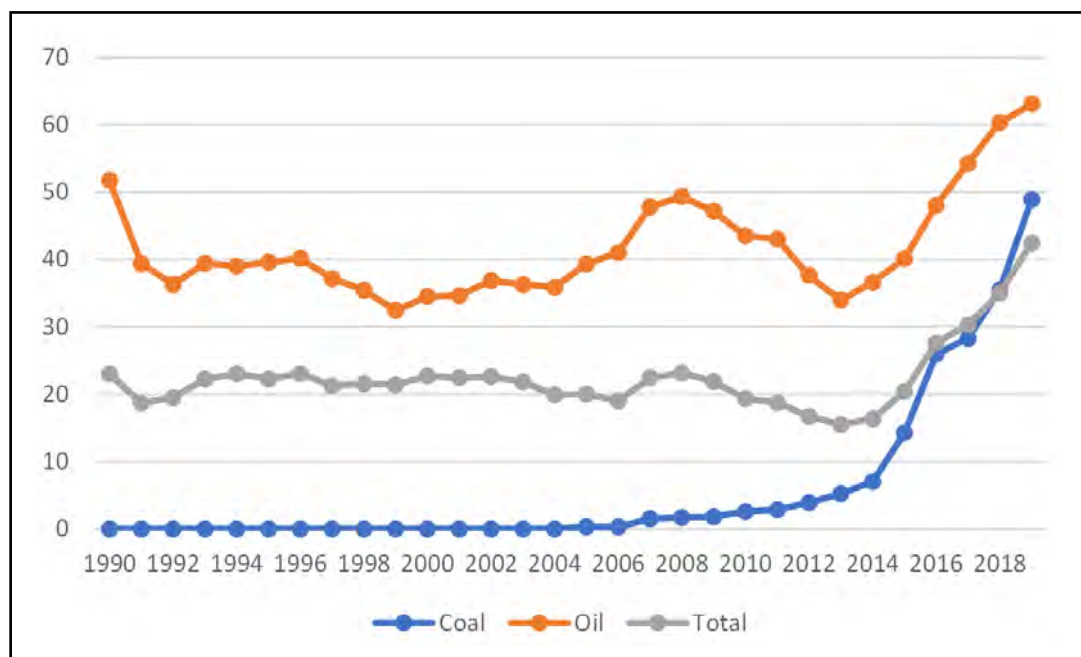


Figure 15.14. Historical Import Dependency by Fuel (%)



Source: Author's calculation.

3. Forecast of Energy Supply Demand Situation until 2050

In this section, we forecast Viet Nam's future energy supply, referring to the report 'Energy Outlook and Energy Saving Potential in East Asia 2020' published by the Economic Research Institute for ASEAN and East Asia (ERIA). ERIA has been updating the energy outlook and savings potential of the 17 East Asia Summit (EAS) countries every 2 years based on aggressive EEC and renewables targets reported under the EAS Energy Cooperation Task Force framework. The purpose of this energy outlook is to assess whether the reported EEC and renewables targets would be effective through analysing the energy-saving potential defined as business as usual (BAU) – alternative policy scenario (APS), including with aggressive EEC and renewables.

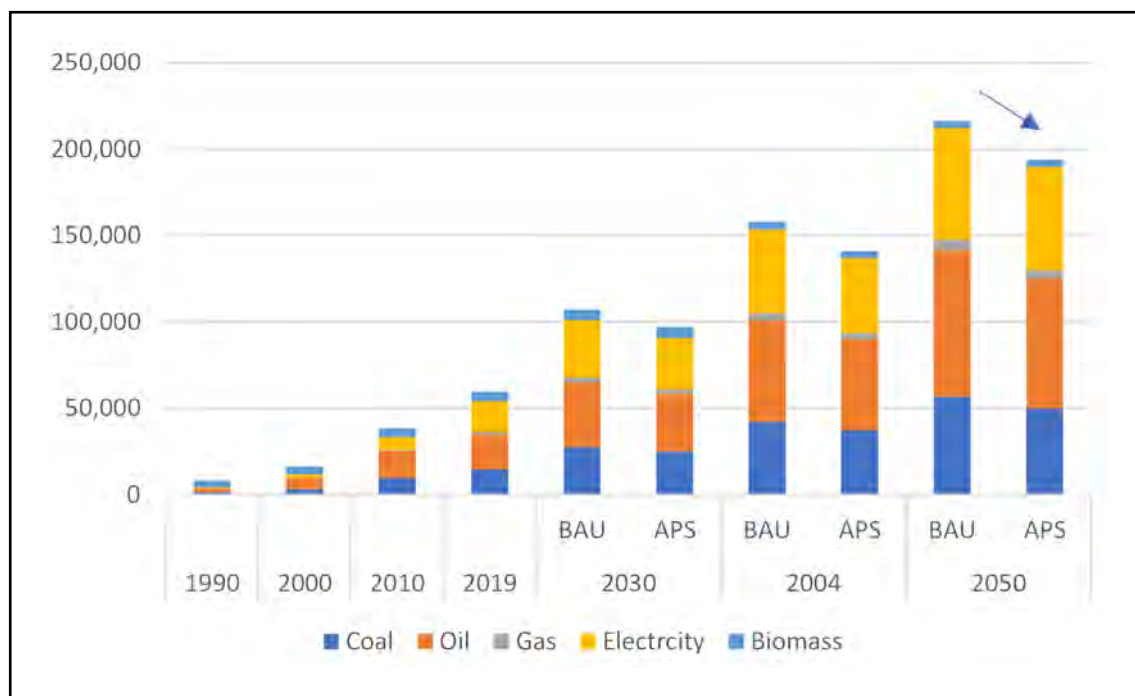
3.1. Total Final Energy Consumption

a. By fuels

Drawing on stable economic growth assumptions (5.2% per annum in 2019–50), TFEC will increase from 59.66 Mtoe in 2019 to 216.02 Mtoe in 2050 in BAU and 193.66 Mtoe in APS. The growth rate of TFEC in 2019–50 is 4.2% per annum in BAU and 3.9% per annum in APS. Thus, energy elasticity per GDP is less than 1 (0.81 and 0.75 respectively) from 2019 to 2050. Looking at fuels, gas has the

highest growth at 4.9% per annum, followed by oil at 4.7%, coal at 4.4%, and electricity at 4.2%. As a result, oil keeps the highest share at 39% in 2050, followed by electricity at 30%, and coal at 26%. Energy-saving potential defined as BAU – APS is estimated as 22.36 Mtoe and the savings ratio is around 10% in 2050 (Figure 15.15).

Figure 15.15. Forecasted TFEFC of BAU and APS by 2050 by Fuel (ktoe)

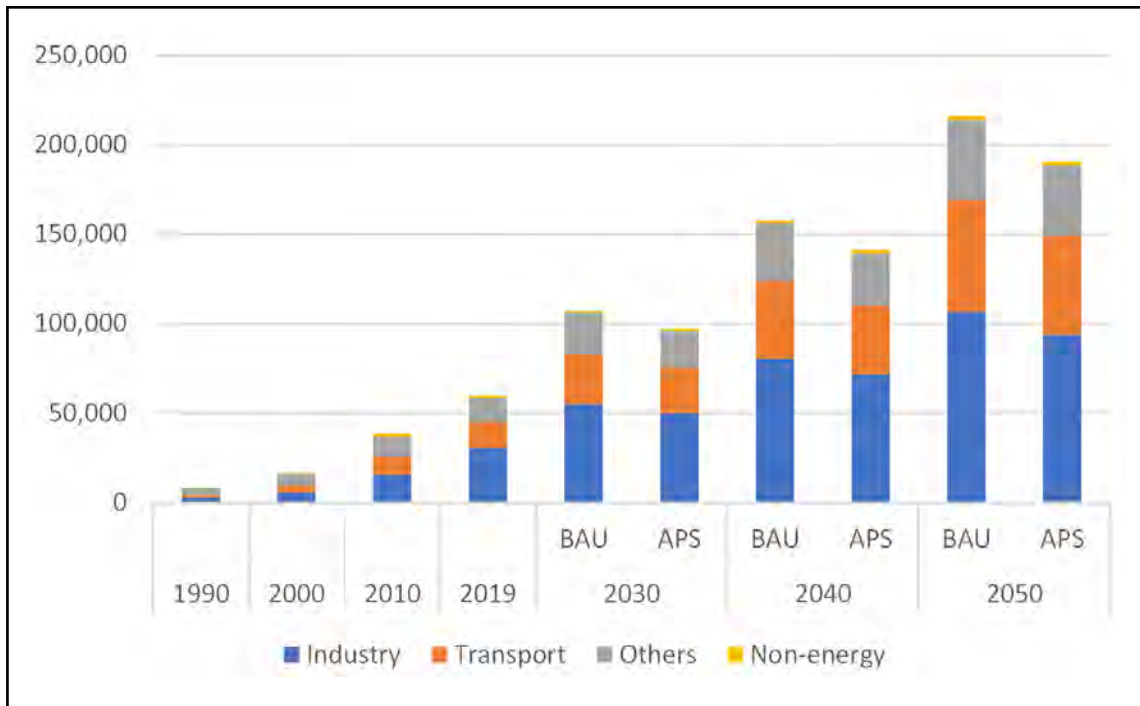


TFEFC = total final energy consumption, BAU = business as usual, APS = alternative policy scenario.
Source: APEC Energy Database, 2022, and EAS Energy Outlook 2020.

b. By sectors

Towards 2050, the transport sector has shown the highest BAU growth rate at 5.0% per annum, followed by industry at 4.1% and others at 4.0%; APS shows similar results, but its growth rates are lower than BAU (Figure 15.16). As a result, shares by sectors are forecast to remain the same from 2019 to 2050 (industry is 50%, transport 30%, and others less than 20% up to 2050). Expected energy savings ratios are around 10% across the sectors in 2050, but this is not enough if Viet Nam is to achieve net-zero emissions by 2050. More ambitious EEC targets are recommended across the sectors; for example, industrial structure shifting from raw material production to knowledge-intensive industries, internal combustion engines giving way to BEVs/fuel-cell vehicles in the road transport sector, and promotion of net-zero energy houses and net-zero energy buildings in residential and commercial sector.

Figure 15.16. Forecasted TFEC of BAU and APS by 2050 by Sector (ktoe)



TFEC = total final energy consumption, BAU = business as usual, APS = alternative policy scenario.
Source: APEC Energy Database, 2022, and EAS Energy Outlook, 2020.

3.2. Power Generation

Viet Nam will shift to gas power as part of its clean energy transition. In BAU, gas power will grow the most from 2019–50 at 8.2% per annum, followed by hydropower at 2.2%, and coal at 2.0% (Figure 15.17). Oil will be phased out from the electricity market. In APS, gas, hydropower, and variable renewables such as solar/wind will increase significantly. On the other hand, coal power generation will be phased out, the same as oil power. While this is an appropriate energy transition pathway, more ambitious policies will be needed for achieving net-zero emissions in the power generation sector, such as nuclear power plants, shifting from gas and coal power generation to hydrogen/ammonia power generation and gas power generation with CCUS.

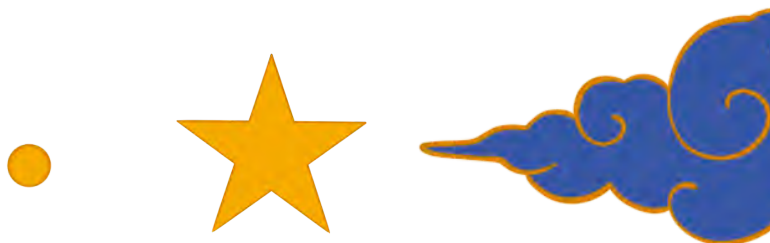
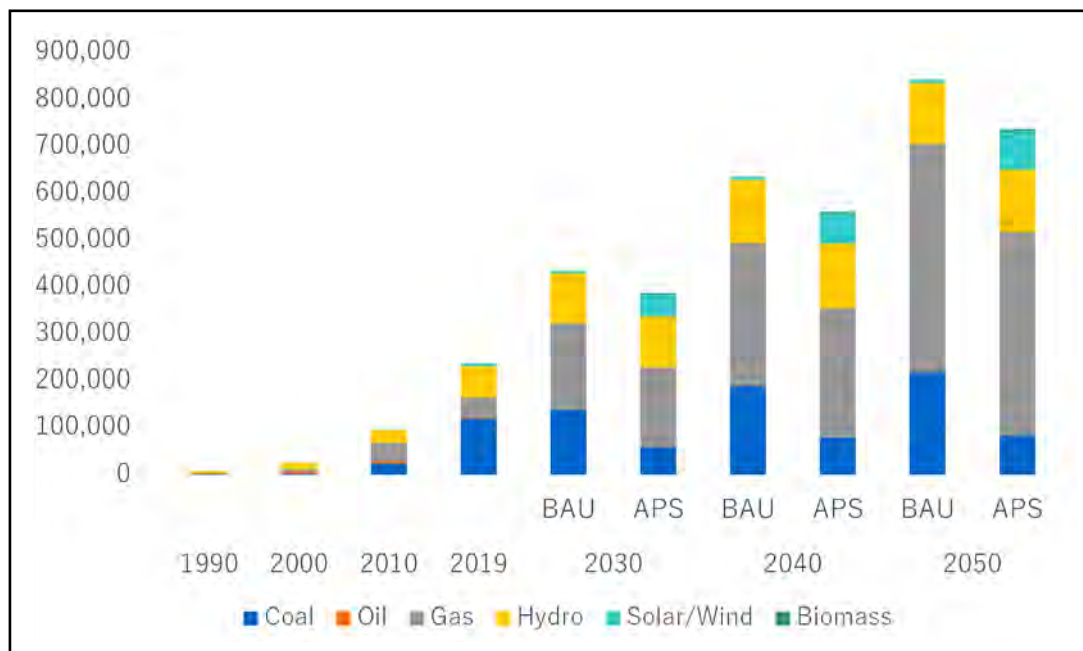


Figure 15.17. Forecasted Power Generation by 2050 by Fuel (GWh)

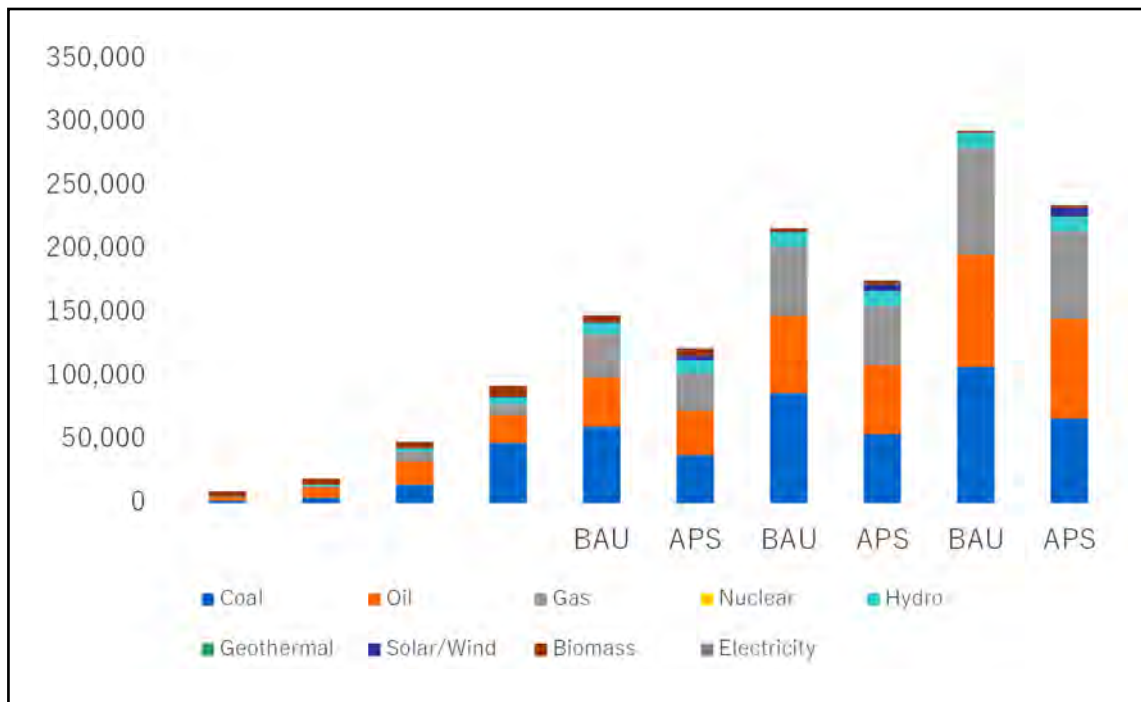


BAU = business as usual, APS = alternative policy scenario.
Source: APEC Energy Database, EAS Energy Outlook 2020.

3.3. Total Primary Energy Supply

TPES of BAU will increase from 92.76 Mtoe in 2019 to 293.59 Mtoe in 2050 and its growth rate is 3.8% per annum, while TPES of APS is 3.0% per annum in the same period. They are much lower than the historical growth rate of 8.2% per annum from 1990–2019 due to moderate GDP growth assumption until 2050, which is 5.2% per annum in 2019–50 compared to 6.8% per annum in 1990–2019. Other reasons include the promotion of energy saving across the final sectors, shifting from low-efficiency coal power plants to highly efficient gas power plants and increases in solar and wind. Thus, the energy elasticity per GDP of BAU and APS are 0.72 and 0.58, respectively. BAU and APS gas shows the highest growth rates at 7.7% per annum and 7.0% per annum in 2019–50, respectively, followed by oil at 4.6% and 4.2%, hydro at 2.2% and 2.3%, and coal at 2.6% and 1.1%. Renewables (except APS hydropower) will increase from 476 ktoe in 2019 to 6,905 ktoe in 2050 and the growth rate is 9.0% per annum. Thus, the concept of APS incorporates shifting coal to gas and a large increase of variable renewables such as solar/wind in power generation. The energy-saving potential of TPES is estimated as 58.81 Mtoe in 2050, 62% of which comes from coal, followed by gas (23%), and oil (15%). Nonetheless, the fossil fuel share of TPES in 2050 will be around 90%, which is very far from being carbon-neutral by 2050 (Figure 15.18).

Figure 15.18. Forecasted TPES of BAU and APS by 2050 by Fuel (ktoe)

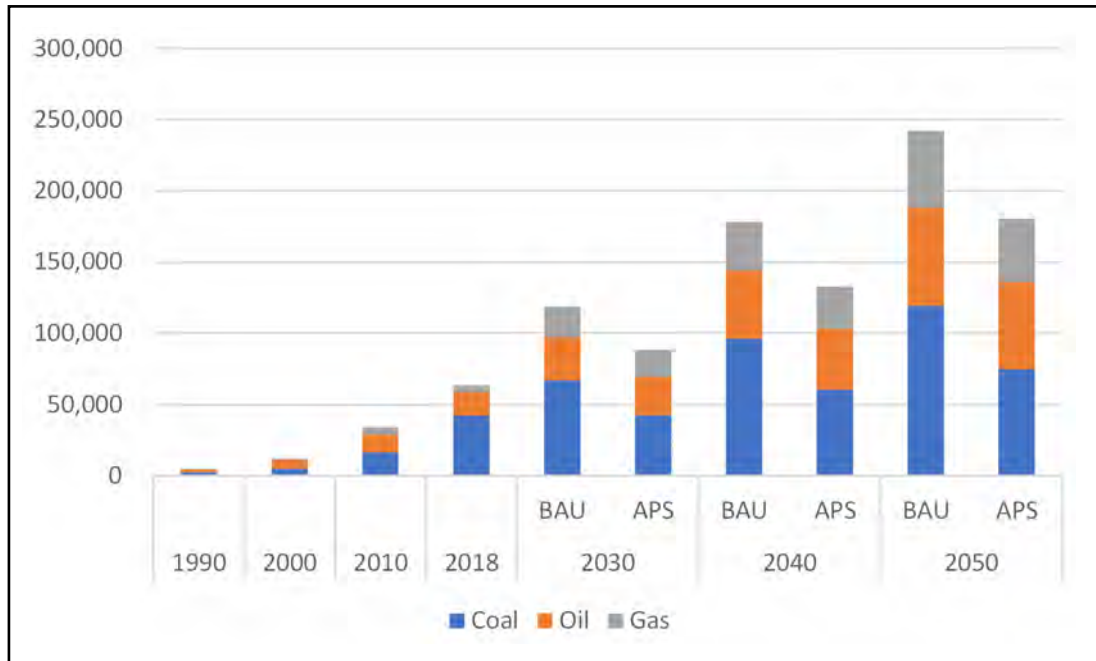


TPES = total primary energy supply, BAU = business as usual, APS = alternative policy scenario.
 Source: APEC Energy Database, 2022, and EAS Energy Outlook, 2020.

3.4. CO₂ Emissions

CO₂ emissions will increase from 63.55 Mt-C (million tons of carbon) in 2018 to 242.4 Mt-C in 2050 and their growth rate is 4.3% per annum in case of BAU. 49% of CO₂ emissions come from coal, followed by oil (29%) and gas (22%). In APS, CO₂ emissions in 2050 will be 180.3 Mt-C and fuel shares are 41% of coal, 34% of oil, and 25% of gas, respectively. Therefore, expected CO₂ reduction in 2050 defined as BAU – APS is forecasted at 62.1Mt-C and the reduction ratio is 25.6% from BAU (Figure 15.19). Savings from reduced coal consumption contributes to 71% of CO₂ reduction, followed by gas (16%) and oil (13%). Aggressive energy policies including EEC and renewables, which are reflected in APS, contribute significantly to reduction of CO₂ through 2050, but the policies are not enough if Viet Nam is to achieve carbon neutrality by then, i.e. CO₂ emissions less than those of a forest carbon sink. Thus, the following energy policies and action plans towards clean energy are essential: shifting from oil to electricity or hydrogen in the transport sector; more electrification in the residential and commercial sector; applying CCUS to the raw materials industry; and shifting to clean thermal power generation such as hydrogen/fuel ammonia to replace coal and gas and applying CCUS for existing thermal power generation using coal and gas.

Figure 15.19. Forecasted CO₂ Emissions of BAU and APS by 2050 (kt-C)



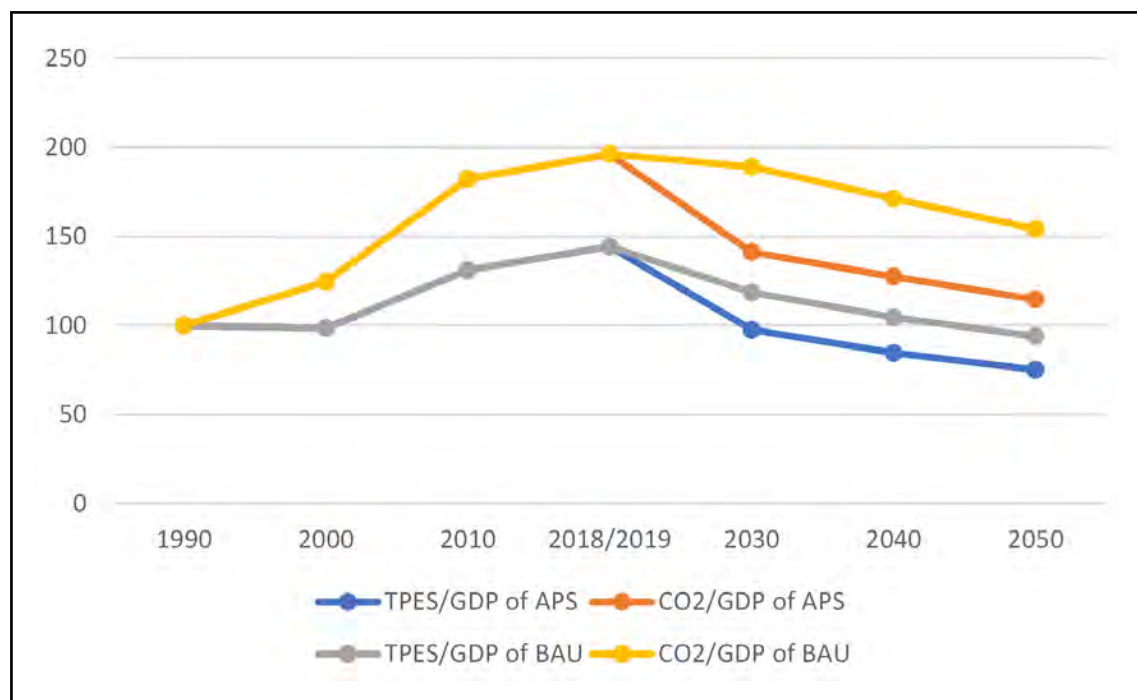
BAU = business as usual, APS = alternative policy scenario.
 Source: APEC Energy Database, 2022, and EAS Energy Outlook, 2020.

3.5. Energy Indicators

Energy and CO₂ intensities defined as TPES/GDP and CO₂/GDP respectively will improve towards 2050 from 2018–19. The energy intensity in 2019 was 144 (1990=100); it will improve to 94 (BAU) and 75 (APS) by 2050. CO₂ intensity was 196 in 2018 and it will improve to 154 (BAU) and 114 (APS) by 2050 because carbon dependency, defined as CO₂/TPES (t-C/toe), is different between BAU and APS in 2050; 0.82 and 0.77, respectively. APS represents an energy composition that includes fewer carbon fuels (Figure 15.20).



Figure 15.20. Forecasted Energy Indicators by 2050 (1990=100)



TPES = total primary energy supply, BAU = business as usual, APS = alternative policy scenario, GDP = gross domestic product.

Source: Author's calculation.

4. Necessary Energy Technologies for Carbon Neutrality

According to 9.3, BAU is very far from being carbon-neutral until 2050; APS could reduce CO₂ emissions compared to BAU, but it is also still far from being carbon-neutral. Thus, in this section, necessary energy technologies to make Viet Nam carbon-neutral are reviewed and highlighted.

4.1. Energy Efficiency and Conservation

Viet Nam's fast-paced economic development and GDP growth have resulted in high energy demand. EEC will be significant to curb demand while maintaining growth because the same amount of energy use will lead to larger output. EEC can be an energy resource as it will become available for other economic activities. Saving electricity is even more significant as every kWh saved is fuel for power generation. EEC will also help by avoiding building more power plants.

To address the fast-growing energy demand, Viet Nam developed a comprehensive EEC law with 12 chapters, and 48 articles. The law was officially approved on 18 June 2010 and has been in effect since 1 January 2011. The Prime Minister's Decision No. 1427/QĐ-TTg indicates the National Targeted Programme on Energy Savings and Efficiency in 2012–15. On measures for EEC, Circular No. 64/2011/TT-BGTVT covers infrastructure planning and investment to operation and management. The Law on Energy Efficiency and Conservation also set national greenhouse gas (GHG) and carbon-intensity targets. The targets are (i) reduce GHG emissions in energy sector around 5% by 2020, 25% by 2030, and 45% by 2050 compared to BAU, and (ii) increase the share of renewables-based electricity to 4.5% in 2020, 15% in 2030, and 33.1% in 2050.

Viet Nam also issued the Decision No.280/QĐ-TTg on 13 March 2019, which aimed to implement National Energy Efficiency Program for 2019–30, with the main targets to ensure and stabilise national energy security and fulfil its commitment to reduce GHG emissions with concrete targets: (i) by 2025, to save 5%–7% of the national energy consumption and to reduce power loss to less than 6.5%; and (ii) by 2030, to save 8%–10% of the national energy consumption and to reduce power loss to less than 6.0%.

Viet Nam also issued the Decision No.24/2018/QĐ-TTg on 18 May 2018, which was a roadmap for elimination of energy-consuming equipment and prohibition of development of new power generating units with low efficiency. This roadmap aimed specifically at coal- and gas-fired power plants, and it took effect on 10 July 2018 with the following restrictions: (i) it is not permitted to build coal- or gas-fired power-generating units with outdated technologies, or with efficiency at the start of commercial operation lower than the regulated efficiency corresponding to each range of unit capacities as specified in the Appendix of this Decision/regulation; (ii) it is not permitted to import old power-generating units with capacity beyond the range of capacities specified in the Appendix of this Decision/regulation; and (iii) No approval for investment in coal- or gas-fired thermal power plants with lower efficiency than that corresponding to capacities of power-generating units specified in the Appendix of this Decision/regulation shall be given.

4.2. Nuclear and Biomass

Viet Nam has considered nuclear power generation since 1995. Several firm proposals surfaced in 2006, and Russia agreed to finance and build 2,400 MWe of nuclear capacity from 2020; Japan agreed to another 2,200 MWe. On 22 November 2016, The National Assembly's Resolution No. 31/2016/QH14 tasked the Government to halt the investment in nuclear power by: (i) applying solutions for issues related to stopping investment in nuclear power projects; and (ii) focusing on development of new and renewable energy resources, safe and efficient energy resources, and environmental protection to supply sufficient energy needed for socio-economic development.

Viet Nam has also issued several decisions/regulations to support the development and introduction of biomass power plants through various government mechanisms and supports. For instance, Decision No. 24/2014/QĐ-TTg, issued on 24 March 2014, aimed to support projects in Viet Nam in which the electricity price of biomass power connected to the grid is incentivised as follows: (i) for heat cogeneration projects, the price for power was set at VND1,220/kWh (excluding value added

tax, equivalent to \$0.058/kWh); and (ii) for other biomass power projects (not heat cogeneration projects), the electricity price avoided the applicable cost tariff.

On 5 March 2014, Decision No. 31/2014/QĐ-TTg was issued to support the development of power generation projects using solid waste in Viet Nam. This decision aimed to provide incentives in the form of feed-in-tariffs for the electricity produced from solid waste power projects connected to the grid. The decision has set the electricity price of biomass power plant at \$0.1005/kWh for incineration technology, \$0.0728/kWh for burial of solid waste.

4.3. Carbon Capture Utilisation and Storage

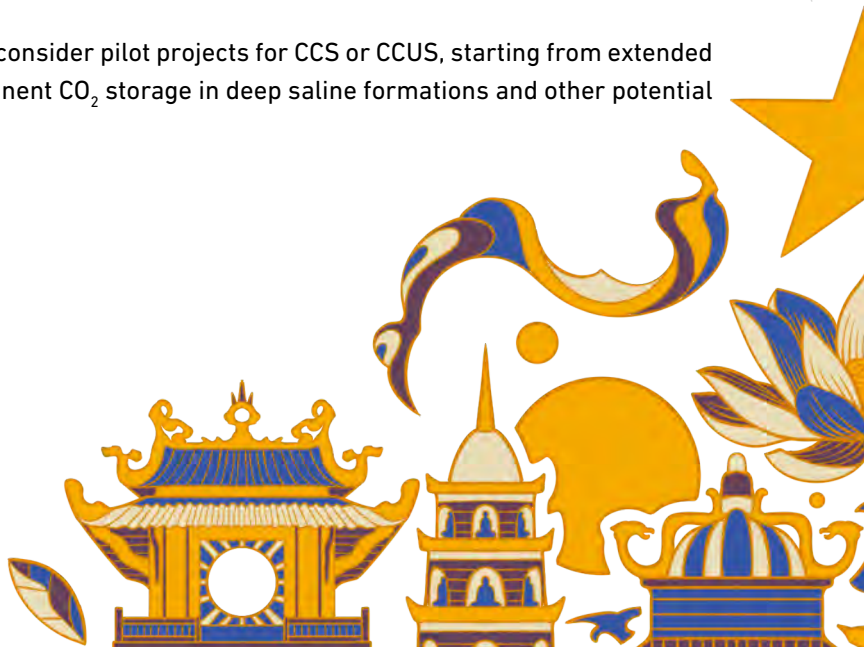
CCUS is vital if Viet Nam is to have any chance of reducing emissions to net zero and achieving global climate change targets. Currently, Viet Nam does not have any policy on CCUS, but it has the great potential to develop an associated value chain as it has industrial clusters that can be developed for the shared CO₂ emission pipeline. Further, it is important that Viet Nam consider extended oil recovery and other potential CO₂ storage.

Viet Nam's potential underground CO₂ storage, including depleted oil/gas reservoirs, deep saline aquifers, and coal formations, is huge (Harrison, 2022). As first steps in Viet Nam, there appear to be specific opportunities by applying carbon capture storage (CCS):

- It will enhance oil recovery while storing CO₂ in the river basin area of Cuu Long.
- It will enhance coal bed methane recovery while storing CO₂ in the Quang Ninh coal basin.
- More CO₂ storage is estimated at the depleted oil fields in Cuu Long, Song Hong, and North end.

These opportunities are not being exploited presently. CO₂ can be transported from the emitted sources to storage sites by onshore pipeline, offshore pipeline, or ship. CCS project developers, depending on distance between capture and storage sites, will select one or a combination of several methods for CO₂ transport. For example, pipelines and ships are likely to be used for long distances. If the transport distances are shorter, pipelines have more advantages. Regional planning for transport infrastructures may create CO₂ logistic hubs in ports and around heavy industry.

In this regard, Viet Nam may need to consider pilot projects for CCS or CCUS, starting from extended oil recovery to the potential of permanent CO₂ storage in deep saline formations and other potential of storage hubs.



4.4. Renewable Energy

According to MOIT (2016), Viet Nam has a solar power potential of 130 GW and a wind power potential of 27 GW.

On 25 November 2015, the Government of Viet Nam issued Decision 2068/QĐ-TTg on the National Strategy of Renewable Energy Development by 2030 and with a vision to 2050, with the goal of reducing the country's dependency on fossil fuels, maintaining national energy security, and contributing to global climate change mitigation. This Strategy included the objective to raise the share of electricity generation from renewables from 35% of total national production in 2015, to 38% by 2020, and to 43% by 2050. According to this Strategy, emphasis shall be given to hydropower, wind power, solar power, biomass energy and biogas, with a view to using various renewables for efficient power supply to the national electricity system and thermal energy for heating needs in production and residential activities.

Viet Nam's 'Revision of National Power Development Plan' (Decision No. 455/QĐ-TTg dated 18 March 2016) details its plans to increase wind power from 140 MW in 2015 to 800 MW in 2020, to 2,000 MW in 2025, and to 6,000 MW in 2030. The Decision also targeted to increase solar power capacity from the negligible rate in 2015–16 to around 850 MW in 2020, to around 4,000 MW in 2025, and to around 12,000 MW by 2030. The expected share of electricity generated from solar energy is around 0.5% in 2020, around 1.6% in 2025, and around 3.3% in 2030 (Vietnam Electricity, 2016).

Furthermore, Prime Minister Phuc said in June 2018 that Viet Nam will increase electricity output produced from renewable sources from approximately 58 TWh in 2015 to 101 TWh by 2020, and 186 TWh by 2030 (Pearson and Vu, 2018). According to Massmann (2020), the Government of Viet Nam also promulgated several policies to set fit-in tariffs for solar power (Decision 13/2020/QĐ-TTg), wind power (Circular 02/2019/TT-BCT), and bioenergy, i.e., solid waste (Decision 31/2014/QĐ-TTg).

According to Nguyen (2021), by 2020, Viet Nam's total installed capacity of renewable energy, excluding hydroelectricity, reached 17,430 MW, which was 25.3% of the total installed capacity of 69,000 MW. Also according to Nguyen (2021), by 2020, the total installed capacity of solar farms, solar rooftops, and wind in Viet Nam reached 8,550 MW, 7,711 MW, and 538 MW, respectively.

The total solar power installed capacity in 2020 was 16,261 MW, which was well beyond 2020's target of merely 850 kW. The installed capacity continued to increase, reaching 16,504 MW in 2021, according to the Viet Nam Electricity (2016), quoting VN Express (2022).

According to Massmann (2022), the latest draft of the National Power Development Plan VIII was approved on 26 April 2022 by the Appraisal Council; the MOIT was to submit the final draft for the Prime Minister's approval in May 2022.

The draft of the National Power Development Plan VIII includes the following:

- Solar power development: the total capacity of solar power sources will reach around 16,491 MW by 2025 and should remain unchanged until 2030, and reach between 74,741MW and 96,666 MW by 2045. In terms of proportion, the electricity produced from solar power is expected to reach a share of around 6.8%–7.0% by 2025, 4.5%–4.8% by 2030, and 11.1%–12.1% by 2045.
- Wind power development: Total onshore and nearshore wind power capacity should reach between 10,700 MW and 13,616 MW by 2025, between 11,700 MW and 16,121 MW by 2030, and between 36,170 MW and 55,950 MW by 2045. Total offshore wind power capacity should reach around 7,000 MW or possibly higher when economic and technical conditions allow in 2030 and should reach between 30,000 MW and 64,500 MW in 2045. Total electricity produced from wind power is expected to account for between 14.4% and 15.7% by 2025, between 10.3% and 15.6% by 2030 and between 31.2% and 43.2% by 2045.

4.5. Hydrogen and Ammonia

To develop renewable energy, Resolution No.55-NQ/TW of the Politburo on Orientations of Viet Nam's National Energy Development Strategy to 2030 and outlook to 2045, signed 11 February 2020, mentioned a mission to conduct technology research and develop plans for piloting electricity generation using hydrogen and encouraging its use consistent with global trends.

As the implementation of that resolution, Decision No. 1658/QĐ-TTg was issued on 1 October 2021 that stated the duty of MOIT to formulate the incentive mechanism for development of hydrogen in concert with offshore wind.

Nevertheless, while hydrogen use is encouraged and its development path is currently being designed, no energy policy on the use of ammonia has ever been promulgated in Viet Nam.

4.6. Electric Vehicles

In Viet Nam, the first policy related to electric vehicles can be traced back to 2006 with the Ministry of Industry's Decision No. 33/2006/QĐ-BCN on the necessity to produce high quality and clean-fuel motorcycles (powered 2-wheelers or P2Ws).

However, the intention to change fuel types vis-à-vis the reduction of fossil fuels and the increasing use of renewables and low GHG-emissions fuels was formalised only 6 years later, on 25 September 2012, with the issuance of the Prime Minister's Decision No. 1393/QĐ-TTg on the Approval of the National Strategy on Green Growth.

Prime Minister's Decision No. 1168/QĐ-TTg on the Approval for the Strategy to Develop the Automotive Industry in Viet Nam by 2025 with Orientation to 2035, issued on 16 July 2014, can be considered as the most important policy measure. The Decision encourages production of eco-friendly automobiles that include electric passenger cars (under nine seats) and electric buses.

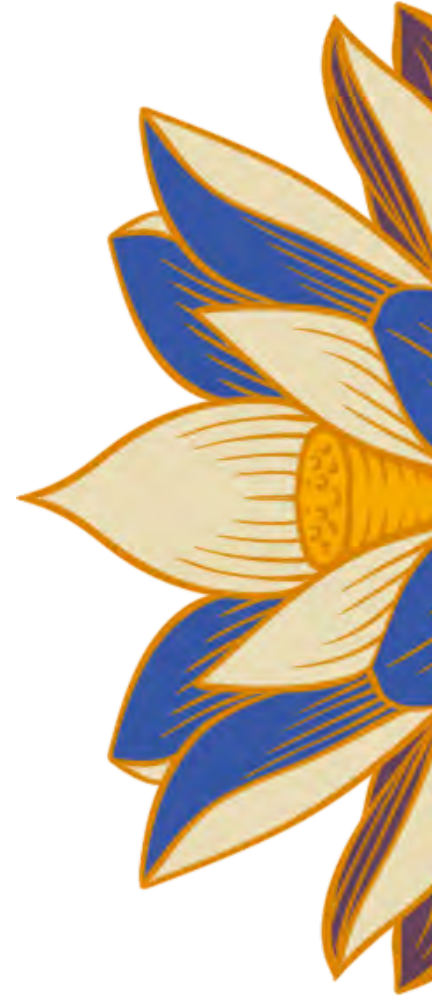
Subsequently, Prime Minister's Decision 985a/QD-TTg, issued 1 June 2016, on the National Action Plan for Air Quality Management to 2020, with a Vision to 2025 included an instruction for the Ministry of Transport (MoT) to formulate and promulgate management and development policies for electric transport vehicles. This decision was followed by Prime Minister's Decision No. 2053/QD-TTg, issued on 28 October 2016, on the Implementation Plan of the Paris Agreement on Climate Change, where the MoT is instructed to carry out mitigation measures for greenhouse gas emissions in the transport sector from 2016–20 and 2021–30. As the implementation, the MoT issued its Decision No. 1456/QD-BGTVT on the Action Plan of Climate Change Adaptation and Green Growth Strategy in 2016–20 that included the objective to push the use of renewable and clean energy in the transport sector.

Cities' governments have also been involved in the promotion of electric vehicles in Viet Nam. For instance, Resolution No. 12/NQ-CP (2019) instructed people's committees of five central-level cities, i.e. Hanoi, Hai Phong, Da Nang, Ho Chi Minh City and Can Tho, to support the development of environmentally friendly buses. Hanoi People's Committee's Plan No. 201/KH-UBND, issued on 16 October 2020, on Public Passenger Transport Vehicle Development in the period 2021 to 2030, defined the number and share of vehicles by type and by key future timelines, i.e. 2020, 2025, and 2030.

The necessity of pushing electric transport vehicle development is also mentioned in Resolution No. 55-NQ/TW. In point 3 of item 3 (Key Measures and Tasks), an encouragement policy for consumers to use clean and renewable energy is needed, especially in industry and transport.

As one of the actions of the Resolution No. 55-nQ/TW implementation, on 2 October 2020, the government issued Resolution 140/NQ-CP. The Resolution 140/NQ-CP set the objective of reaching a reduction of greenhouse gas emissions from energy activities as big as 15% by 2030, and 20% by 2045 compared to BAU. The MOT is responsible for implementing research and development programmes for transport systems that save energy, use clean energy, and are environmentally friendly.

To accelerate the penetration of electric vehicles, the government has so far implemented only special consumption tax (SCT) incentives. Regulated in Law No. 106/2016 / QH13 dated 6 April 2016, the SCTs of electric vehicles are set lower than those of fossil fuel vehicles (Le, Nguyen, Do, 2021). Concretely, the SCT rates applied for under nine-



seat electric vehicles, 10–16 seat electric vehicles, and 16–14 seat electric vehicles are 15%, 10%, and 5%, respectively, compared to the SCT rates of 35%–150% applied to fossil fuel photovoltaics.

Apart from special consumption tax incentives, the government has also implemented import tax relaxations for electric vehicles. On 25 May 2020, the Government of Viet Nam issued the Decree 57/2020/ND-CP that stipulated that a preferential import tax rate of 0% will be levied on inputs, raw materials, and accessories that have not yet been domestically produced to serve the manufacture and process (assembly) of prioritised supporting products for the development of the automobile manufacture and assembly industry. This Decree applies to automobiles in general, including electric vehicles.

Incentives have also been given for the use of electric public transport, i.e. electric buses. The most important incentive is the reduction of SCT such as regulated by Decision 13/2015/QD-TTg, Law No. 106/2016/QH13, and Decree No. 10/2020/NQ-CP.

5. Preparation of a Pathway for Viet Nam to Apply Carbon-Neutral Technologies

The basic concept of a carbon-neutral scenario in Viet Nam by 2050 focused on the transition from a fossil fuels-based energy system towards cleaner and greener energy systems in which it highlights the importance of EEC, wind, solar, hydropower, biomass, and other clean fuels such as hydrogen and ammonia, the introduction of BEVs, fuel cell vehicles, large deployment of battery energy storage systems, nuclear, carbon sinks such as CCUS, and forestation, afforestation, and blue carbon; these energy technologies are summarised in Table 15.1

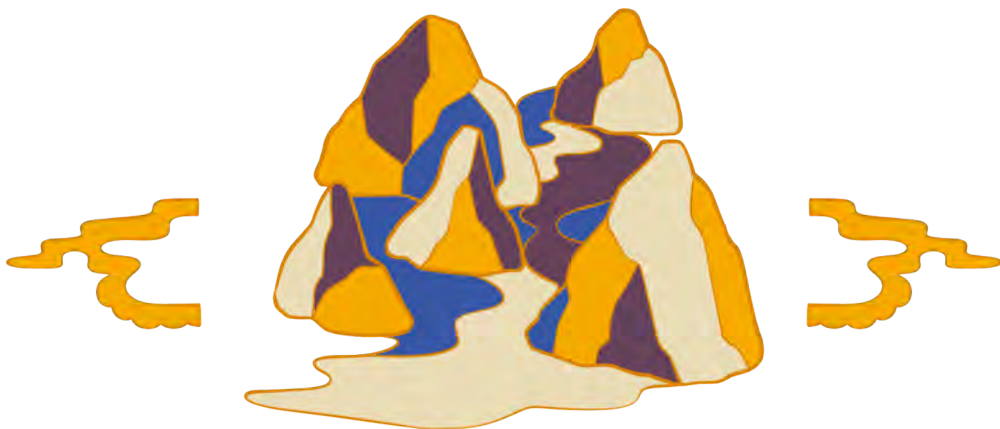


Table 15.1. Selected Low-Carbon Technologies in the Model

Renewables	Solar, Onshore wind, Offshore wind, Hydro, Geothermal, biomass
Nuclear	Light water reactor
CCUS	CO ₂ capture: Chemical absorption, Physical absorption, Direct air capture CO ₂ utilisation: Methane synthesis, FT liquid fuel synthesis CO ₂ storage: Geological storage
Hydrogen	Supply: Electrolysis, Coal gasification, Methane reforming, H ₂ separation from Ammonia, H ₂ trade amongst ASEAN countries, H ₂ imports from non-ASEAN countries Consumption: H ₂ turbine, Natural gas-H ₂ co-firing, fuel cell electric vehicle, H ₂ -based DRI+EAF, Fuel cell ship, H ₂ aviation, H ₂ heat for industries, Fuel synthesis (methane, FT liquid fuel, ammonia)
Ammonia	Supply: Ammonia synthesis, NH ₃ trade amongst ASEAN countries, NH ₃ imports from non-ASEAN countries Consumption: Ammonia turbine, Coal-ammonia co-firing, H ₂ separation
Negative emissions technologies	Direct air capture with CCS, Biomass-fired power generation with CCS

ASEAN = Association of Southeast Asian Nations, CCS = carbon capture storage, CCUS = carbon capture utilisation and storage, DRI = Direct Reduced Iron, EAF = Electric Arc Furnace, FT = Fischer-Tropsch.

Source: Author.

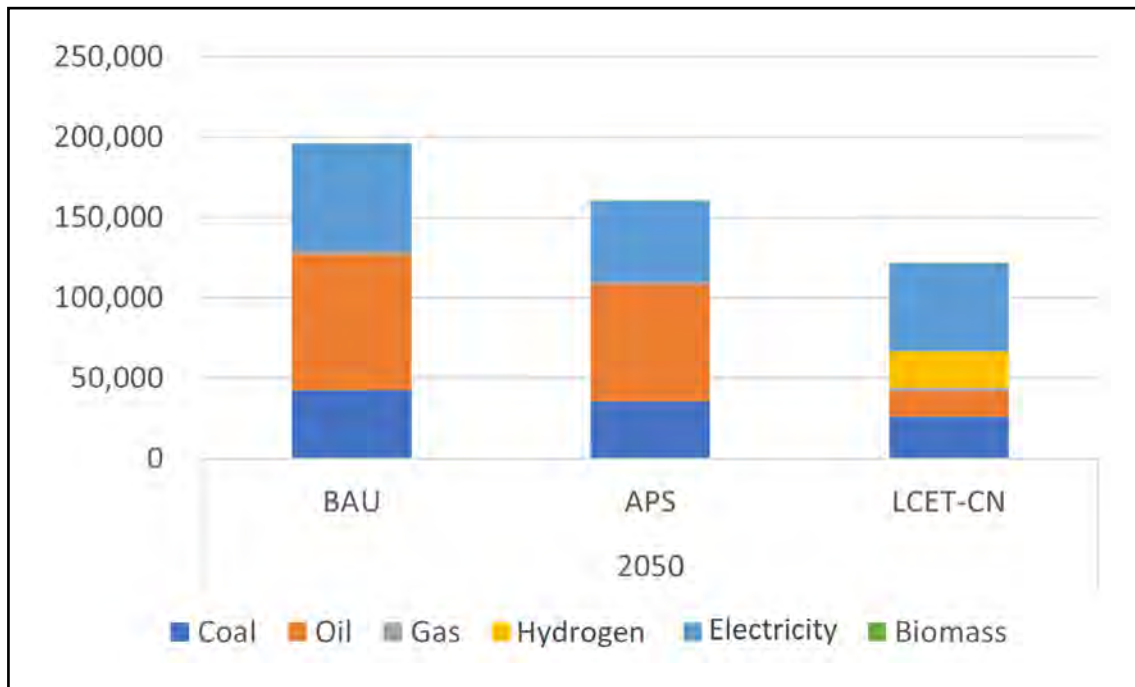


Paying attention to advantage of natural energy resources of Viet Nam, a carbon-neutral pathway namely Low-Carbon Energy Transition – Carbon Neutral (LCET-CN) is examined applying the following energy technologies:

- a. Promoting EEC significantly compared to APS.
- b. Promoting electrification across the final sectors.
- c. Increasing renewables significantly compared to APS, especially solar and wind power.
- d. Applying CCS for thermal power plants.
- e. Producing hydrogen using electricity from wind power and using hydrogen for thermal demand in industry and fuel in the transport sector.

Final energy consumption in 2050 amongst the three scenarios is shown in Figure 15.21. Viet Nam needs more aggressive EEC than in APS, along with an increase of electrification across the sectors, especially the transport sector, and new uses of hydrogen for industry and transport activities.

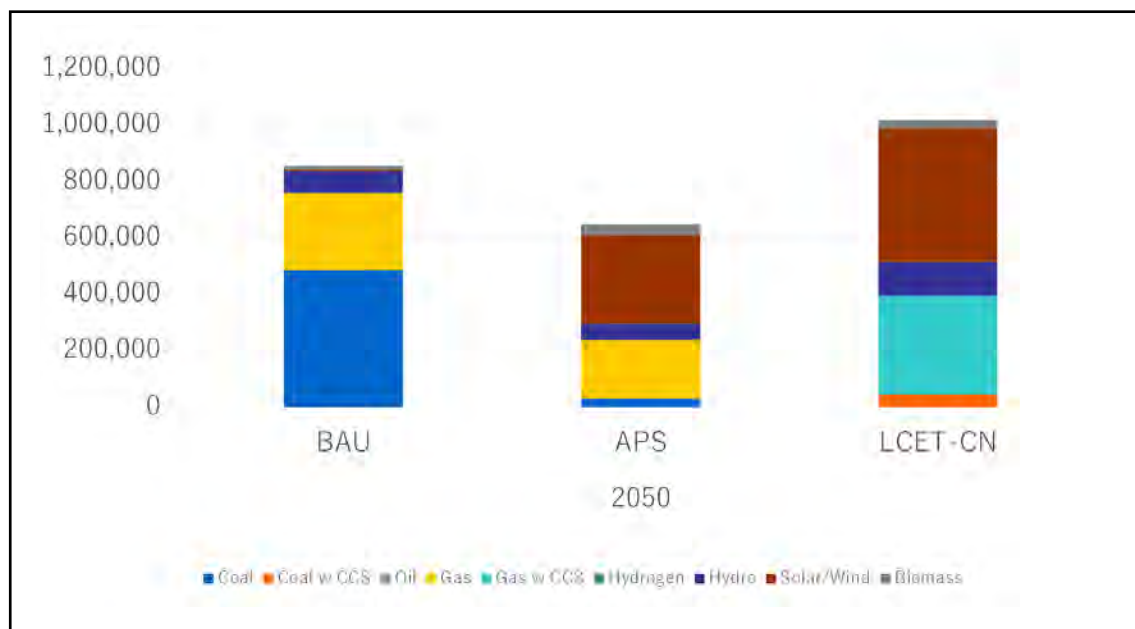
Figure 15.21. Final Energy Consumption in 2050 amongst BAU, APS, and LCET-CN (ktoe)



LCET-CN = Low-Carbon Energy Transition – Carbon Neutral, APS = alternative policy scenario, BAU = business as usual.
Source: Author.

The power generation mix of LCET in 2050 is quite different from BAU and APS. BAU still depends on fossil power generation (coal and gas), but APS shifts more renewables such as solar and wind power. By 2050, the total share of solar and wind power in the LCET-CN scenario would reach around 50%; interestingly, this percentage falls within the 2045 targeted range of the total share of wind and solar power generation as determined in the draft of the National Power Development Plan VIII, i.e., between 42.3% and 55.3%. In addition, LCET-CN applies CCS to coal and power generation. Thus, the share of thermal power generation in 2050 declines from 90% of BAU to less than 40% of APS. The share of LCET-CN is same as APS but all the thermal power plants are equipped with CCS, so that CO₂ emissions reduce to 10% of APS (Figure 15.22).

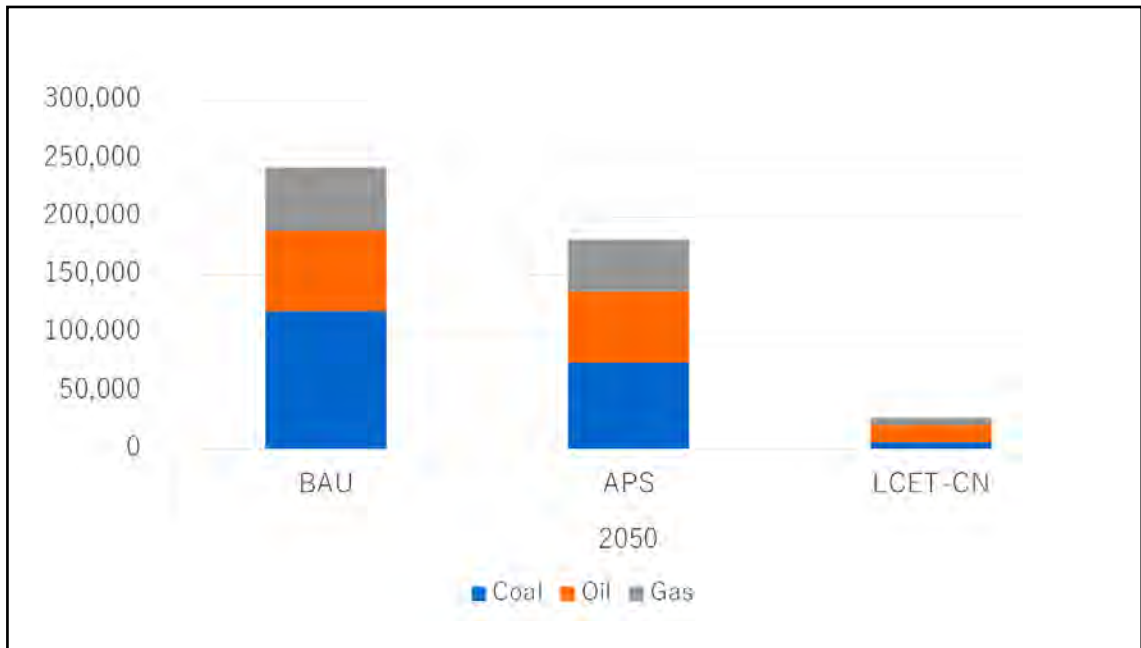
Figure 15.22. Power Generation Mix in 2050 amongst BAU, APS, and LCET-CN (GWh)



LCET-CN = Low-Carbon Energy Transition – Carbon Neutral, APS = alternative policy scenario, CCS = carbon capture storage, BAU = business as usual.
Source: Author.



Figure 15.23. CO₂ Emissions in 2050 amongst BAU, APS, and LCET-CN (Mt-C)



LCET-CN = Low-Carbon Energy Transition – Carbon Neutral, APS = alternative policy scenario, BAU = business as usual.
Source: Author.



6. Conclusions and Policy Recommendations

Energy efficiency and electrification in the end-use sector can serve as a central strategy for decarbonising Viet Nam's energy systems, particularly when integrated with low-carbon power sources. Given renewables' potential in Viet Nam, the development of solar and wind power generation plays a major role in the decarbonisation of the region. At the same time, however, not only renewables but also other carbon-free technologies such as hydro, geothermal, and biomass contribute to carbon neutrality. Therefore, it is desirable to decarbonise power sources by effectively combining multiple technologies. While energy demand in Viet Nam is expected to continue to grow, progress in energy efficiency and electrification in the end-use sector are crucial for deeper decarbonisation. In addition, CO₂-free hydrogen and CCS are also essential to achieve carbon neutrality. Despite the high costs associated with these technologies at their current stage of development, they are expected to gain widespread adoption in the long run, thanks to cost reductions achieved through technological innovations. In essence, this underscores the pursuit of suitable pathways for transitioning to low-carbon energy solutions.

The expansion of storage battery capacity and the establishment of grid interconnections within the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy region are essential for scaling up renewable energy sources and reducing costs by mitigating the need for additional generation capacity. Research and development and international collaboration are key factors in accelerating the pace towards carbon neutrality in Viet Nam. Viet Nam's energy transition must take into account the role of various 'low-carbon' technologies, spanning from coal-fired to natural gas-fired power generation, more efficient turbines, and co-firing with hydrogen or ammonia. These technologies can collectively contribute to a gradual and systematic decarbonisation process in the power sector. Viet Nam has many existing coal-fired and gas-fired power plants, both old and relatively new, in operation. In the medium term, affordable low-carbon technologies will likely be introduced. Introducing low-carbon technologies effectively utilising existing facilities makes it possible to advance efforts towards decarbonisation while keeping expansion of the economic burden on the end-users to a moderate level. The final stage of achieving carbon neutrality requires introducing more expensive decarbonisation technologies such as hydrogen/ammonia, CCUS, and Direct Air Capture with Carbon Storage. However, it can be said that effective use of low-carbon technologies during the transition period leads to steady reduction of CO₂ emissions.

Therefore, this study recommends the following:

- Promoting EEC is essential for Viet Nam in the coming years for reducing energy consumption, especially petroleum and electricity consumption. The Government of Viet Nam should support the implementation of EEC action plans by establishing relevant policies, including mandatory and incentive-based measures. Further, Viet Nam should develop detailed EEC targets for the commercial, residential, industry, and transport sectors applying Energy Efficiency Indicators. The plans should include standard and labelling systems such as the green building index and Minimum Energy Performance Standards.
- Coal thermal power plants are one of the major power sources to meet the growing electricity demand in Viet Nam. Thus, shifting to natural gas from coal for power generation will reduce

emissions. In this instance, the establishment of transparent liquefied natural gas (LNG) markets in Asia will undoubtedly play a significant role in boosting LNG consumption within ASEAN as well as for Viet Nam's LNG supply security.

- Viet Nam is a net exporter of crude oil but is an importer of petroleum products for domestic demand because of limited oil refinery capacity. Viet Nam will expand its refinery capacity, but it will still have to import petroleum products until 2040. Petroleum products are mainly used for road transport; therefore, fuel switching from oil fuels to electricity and hydrogen is an important policy in Viet Nam in order to reduce the dependence on energy imports.
- A safe and stable electricity supply system is very important for Viet Nam, given how renewable energy sources have been developing and will develop in the coming years. Therefore, it is necessary to develop a power generation source with a reasonable structure, such as maximally mobilised hydropower sources, pump hydro and back-up systems such as battery storage, or hydrogen power generation. In this way, it is very important to give priority to wind power and solar power development in accordance with the ability to ensure system safety at reasonable prices and natural gas power as an important source of power supply.
- Viet Nam is a large coal exporter in the ASEAN and East Asia region, but, due to promotion of carbon neutrality globally, Viet Nam cannot export coal to other countries in the future. If so, Viet Nam will produce hydrogen applying gasification technology to coal with CCS and export it based on the hydrogen value chain network. Viet Nam expects continuous export of hydrogen instead of coal.
- For the CCUS, the establishment of policies and regulations for Enhanced Oil and Gas Recovery need to be accelerated. Viet Nam has the potential to store CO₂ in aquifers, and it needs to be linked to the wider ASEAN CO₂ storage hub. Thus, the promotion of CO₂ storage in Viet Nam is critical for the acceleration of the CCUS in the region.

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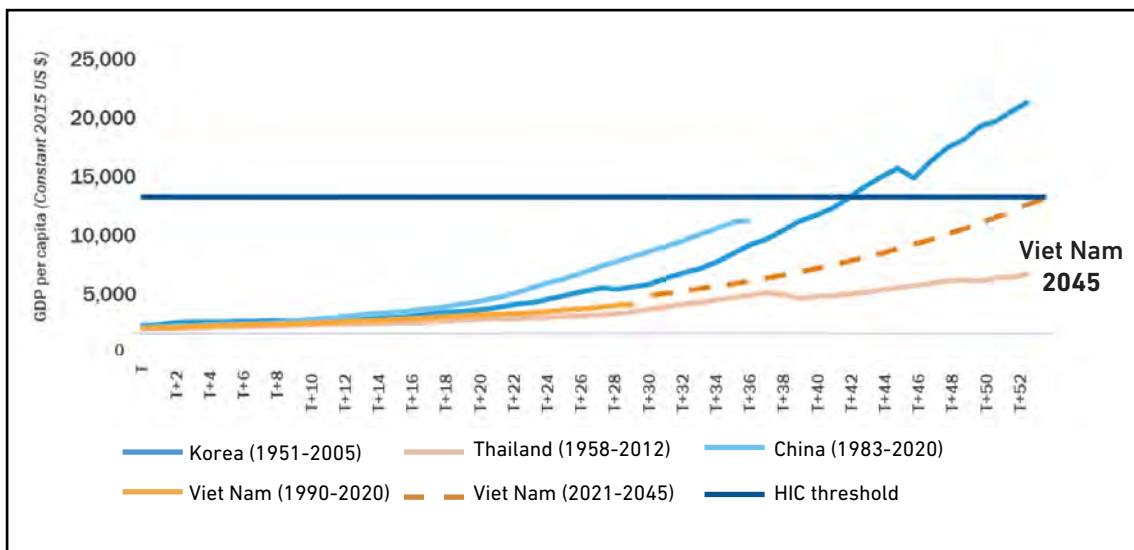
Chapter 16

Advancing Climate Change Adaptation, Disaster Risk Reduction, and Resilient Growth

Venkatachalam Anbumozhi and Lai Van Manh

Since the Doi Moi reforms and after more than 2 decades of steady economic growth, Viet Nam has set an ambitious goal of reaching high-income country status by 2045 (Figure 16.1). To achieve this, the industrial growth achieved during 1990–2000 needs to be tripled to reach a per capita income of \$12,695 from the current level of \$2,785 (IMF, 2022). Viet Nam’s latest Socio-Economic Development Strategic Plan 2021–30 emphasizes the need to accumulate more productive, physical, and human capital—and to use its resources more efficiently—to generate productivity and social development gains.

Figure 16.1. Viet Nam’s Path to High-Income Status by 2045



HIC = household income, GDP = gross domestic product.
 Source: World Bank, 2022a.

Previously, Viet Nam relied heavily on its natural resources for industrial development, using its extensive stocks of agricultural, forest, and mineral resources to drive export-led economic growth. The estimated value of Viet Nam’s natural capital accounted for about 35% of its wealth during 1990–2018, compared with 10% in East Asia and 17% in other developing countries of Southeast Asia (Thanh et al., 2017). The deterioration or depletion of the existing natural capital has been further exacerbated by climate change. This chapter examines the climate risks posed to the country, compares its adaptations with Japan’s and proposes areas for international cooperation for reconciling economic growth with climate change.

1. Impacts of Climate Change on Economic Growth and Social Development in Viet Nam

1.1. Changes in Temperature, Rainfall, and Weather Patterns

The Ministry of Natural Resources and the Environment study (MONRE, 2021) summarises the evolution of climate change in Viet Nam over 1958–2018 as follows:

Temperatures tended to increase nationwide from 1958–2018. On average, annual temperatures increased by about 0.89°C from 1958–86; from 1986–2001, they increased by 0.74°C, and from 2001–18, they increased by 0.32°C (Table 16.1). Assuming a similar rate of increase in average temperatures, by 2080–90, temperatures could be higher on average by 1°–3.4°C, relative to the 1986–2005 baseline for Viet Nam. The temperature rise is likely to amplify the impacts on rainfall patterns, human health, livelihoods, and natural ecosystems.

Table 16.1. Change in Average Temperature from 1958 to 2018 Across Climate Zones (°C)

Climate zone	Winter	Spring	Summer	Autumn
Northwest	1.1	0.8	0.9	1.3
Northeast	1.0	0.8	0.8	1.1
Northern Delta	0.9	0.9	0.7	1.2
North Central	0.8	0.9	0.8	1.3
South Central	0.6	0.4	0.6	0.9
Highlands	1.3	0.7	1.0	1.4
Southern	1.1	0.8	0.9	1.1

Source: MONRE, 2021.

Annual national rainfall increased by 2.1% in the period 1958–2018, mainly in the southern area (Table 16.2). Several modelling results show considerable uncertainty around two important issues for Viet Nam: future rainfall patterns and the intensity of extreme events such as floods and droughts.

**Table 16.2. Change in Average Rainfall from 1958 to 2018
Across Climate Zones
(mm)**

Climate zone	Winter	Spring	Summer	Autumn
Northwest	41.4	9.9	-4.3	-17.3
Northeast	34.3	-0.7	1.4	-16.0
Northern Delta	13.8	2.7	-0.9	-27.1
North Central	16.8	13.0	8.6	-12.1
South Central	82.2	23.0	8.9	11.3
Highlands	40.3	14.6	0.5	7.4
Southern	97.4	7.5	2.5	3.8

Source: MONRE, 2021.

Further, the low-lying coastal and river delta regions of Viet Nam have very high vulnerability to sea level rise. It has been observed that water levels tend to increase, with the strongest rate of over 6 mm/year at the Cua Ong, Bach Long Vy, and Con Dao hydrographic stations (Box 16.1).

Box 16.1. Summary of Sea Level Change in Viet Nam

(1) According to sea level observations at selected hydrographic stations:

- Almost every station reported increasing sea level trends.
- Cua Ong station had the largest increase (6.5 mm/ year).
- Hon Ngu and Co To station had a decreasing trend (5.7 and 0.6 mm/year).
- Con Co and Quy Nhon had no trend.
- The average water level in all stations had risen to about 2.7 mm/per year.
- From 1993 to 2018, the average sea level rise in all stations had grown to 3 mm/year.

(2) According to the satellite statistics:

- The average water level in the East Sea rose by 4.1 mm/per year.
- The average water level in the East Sea centre had the largest increase to 6–7.2 mm/year.
- The average water level in the Viet Nam Coastal Sea increased to 3.6 mm/ per year.
- The coastal water level from the Mekong delta had the lowest growth of 2.2–2.5 mm/year.

Source: MONRE, 2021.

The number of storms and tropical depressions tends to be less variable but more concentrated at the end of the monsoon season, which is also when cyclones are mainly active in the South. Strong to very strong storms tend to increase over time. On average, there are 12–13 storms and tropical depressions in the East Sea every year. The activity of tropical depressions affecting Viet Nam in recent years has many irregularities and erratic patterns. The number of hot days when the temperature is more than 35°C has increased almost everywhere in the country, with the largest increase in the North Central, South Central, and Southern regions. Drought may become more severe in some regions due to increased temperature and reduced rainfall in the dry season, such as in the South Central region in spring and summer, the South in spring, and the North in winter. The number of days of intense cold and harmful cold also has tended to decrease; however, the number of cold spells has fluctuated sharply from year to year. Table 16.3 summarises the impact and forms of extreme weather events through different channels, adversely impacting the future of economic growth in Viet Nam.

Table 16.3. Types and Forms of the Impact of Extreme Weather Events on Viet Nam's Economy

Impact Factors	Type of Impact
Increase in temperature	<p>Affecting natural ecosystems, shifting the thermal boundaries of ecosystems, and changing the structure of plant and animal species in some regions. Some species may be lost leading to biodiversity loss. For agricultural production, the structure of crops, livestock, and seasons may change in some regions, requiring changes in farming techniques. There will be increased likelihood of developing pests and diseases, leading to reduced productivity and output, and increasing risks to agriculture and food security.</p> <p>There will be increased pressure on the human body, especially the elderly and children, which increases disease. The increase in temperature also will affect other sectors such as energy, transportation, industry, construction, tourism, commerce, etc. related to the increased costs for cooling, information, and communication.</p>
Rainfall change	<p>An increase in rainfall or an increase in rainfall intensity affects the productivity of the production area over time. In particular, abnormal rainfall changes lead to unpredictable consequences of natural disasters, many mountainous areas are strongly affected by natural disasters caused by water, such as flash floods, and landslides (MONRE, 2021).</p>
Sea level rise	<p>Viet Nam is a sea country, with a coastline of more than 3,260 km and more than 3,000 islands, including two archipelagos of Hoang Sa and Truong Sa. There are 28 coastal provinces and cities, and the population accounts for more than 50% of those in the country, with most of the labour here working in marine economic sectors; 28 coastal provinces</p>

Impact Factors	Type of Impact
Extreme weather phenomena	<p>and cities contribute over 60% to the national GDP (Hills et al., 2022).</p> <p>Long coastlines and heavily populated low-lying areas also make Viet Nam one of the world's most vulnerable countries to rising sea levels (IMF, 2022). Sea-level rise makes drainage difficult, increasing coastal erosion and salinisation of water sources affecting agricultural production and domestic water, and posing great risks to the coastal areas. Coastal constructions such as sea dykes, roads, ports, factories, urban areas, and coastal residential areas.</p> <p>Rising sea levels and temperatures affect marine and coastal ecosystems, pose risks to coral reefs and mangroves, and have negative impacts on biodiversity, local communities, and economic activities such as fishing, marine tourism, and aquaculture.</p> <p>Extreme weather is a permanent, immediate, and long-term threat to all sectors, regions, and communities. Storms, floods, droughts, heavy rains, heat, storms, and hurricanes occur every year in many regions of the country, causing damage to production and life.</p> <p>The areas that are expected to be most affected by these extreme climate events are the Central Coast, the North and North Central Mountains, the Northern Delta, and the Mekong River Delta (MONRE, 2021).</p>

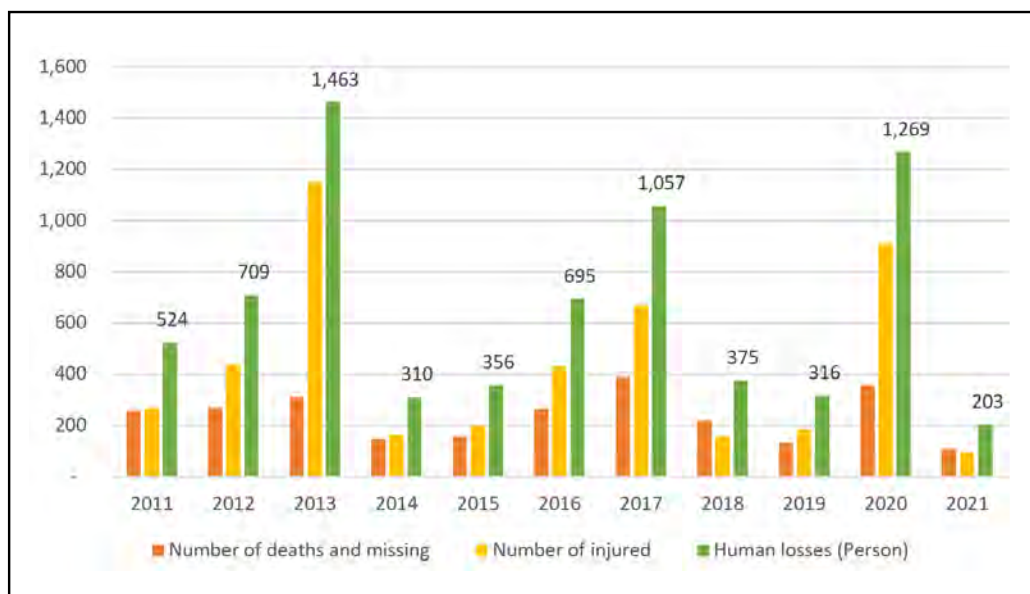
Source: Authors collected, 2022.

1.2. Impact of Climate Change Natural Disasters on Socioeconomic Development

According to the Viet Nam Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (IMHEN & UNDP, 2015), increased exposure to changing weather patterns and hazards to people and property has had a profound impact on all areas of socio-economic development and regions. According to the IMF (2022), the total costs of climate hazards already exceed \$3–5 billion in case of an increase in the intensity and frequency of extreme events. Figures 16.2, 16.3, 16.4, and 16.5 describe the historical value of damages caused by natural disasters in the country in terms of people, housing assets, crop-cultivated areas, and the economic value of damages (GSO, 2022).

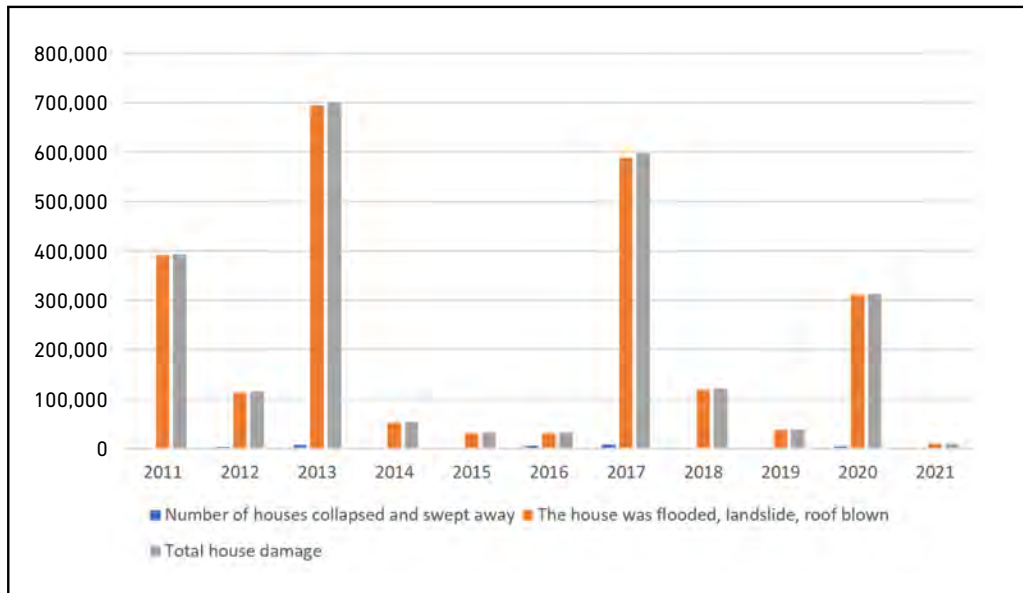
Climate change-induced natural disasters are affecting the basic elements of human life in all provinces, and access to water, food, energy, and health are becoming major challenges to achieving sustainable economic growth. It also has a profound impact on the achievement of the United Nations' Sustainable Development Goals set for 2030.

Figure 16.2. Number of Deaths and Injuries Caused by Natural Disasters in Viet Nam from 2011–21



Source: GSO, 2022.

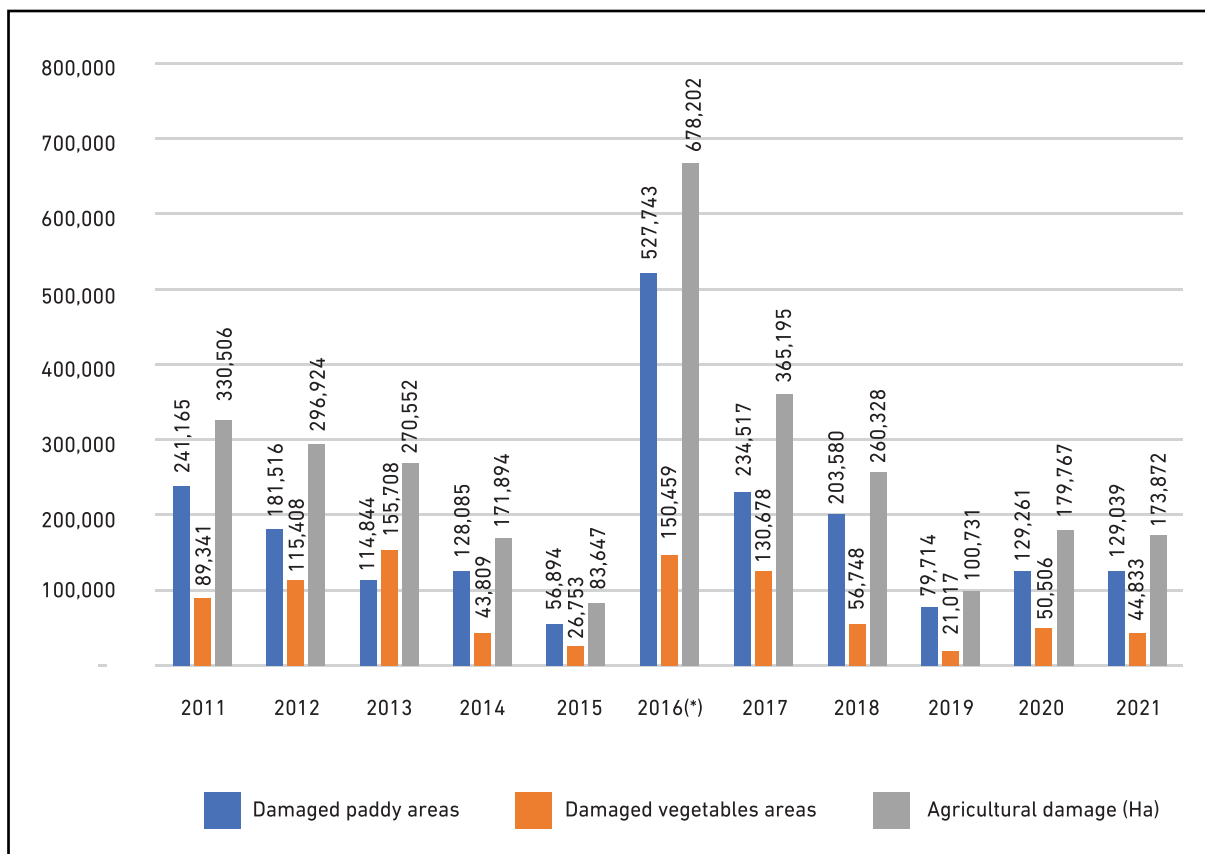
Figure 16.3. Number of Houses Damaged or Impacted Caused by Natural Disasters in Viet Nam, 2011–2021



Source: GSO, 2022.

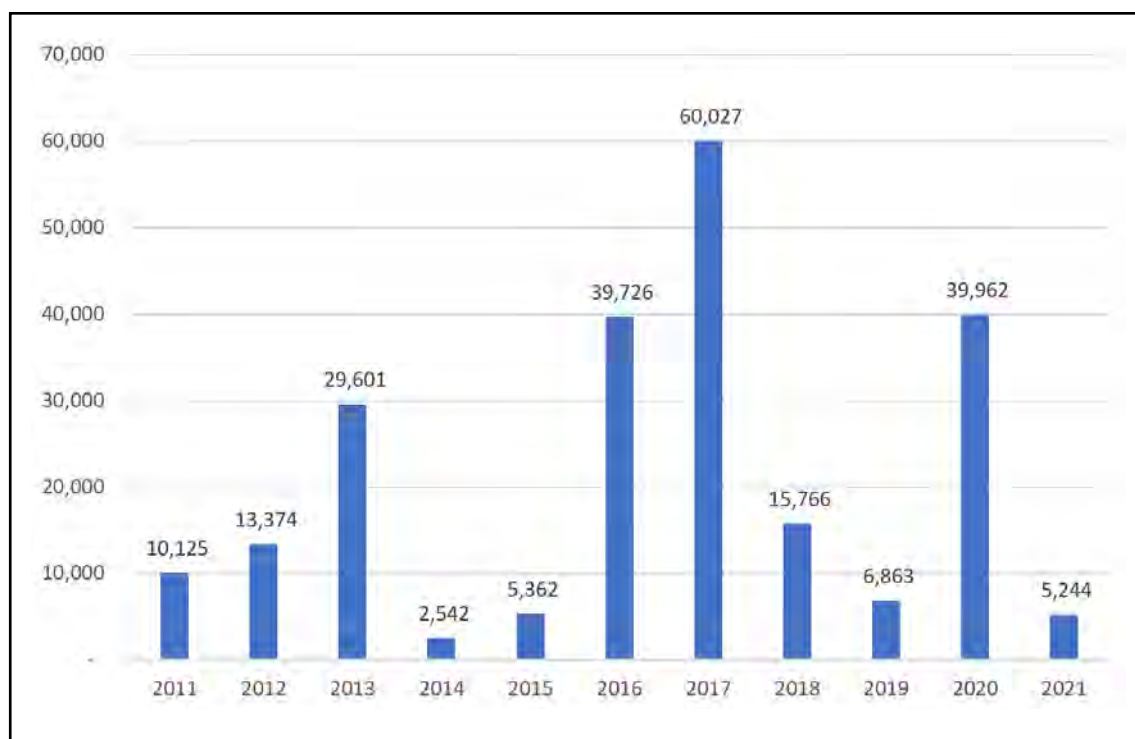


Figure 16.4. Damage to Rice and Crop Areas Caused by Natural Disasters in Viet Nam, 2011–2021



Source: GSO, 2022.

Figure 16.5. Total Economic Losses Annually Due to Natural Disasters in Viet Nam, 2011–2021 (Billion D)



Source: GSO, 2022.

1.3. Climate Risk Management and Resilient Economic Growth

According to the Climate Change Vulnerability Index (MONRE, 2021), Viet Nam is one of the 30 countries in the world categorised as 'extremely risky'. Eckstein et al.'s Climate Risk Index (2021) ranked Viet Nam as the 13th-most affected nation regarding the impact of natural disasters from 2000–19, and ranked fourth amongst the Association of Southeast Asian Nations (ASEAN) member countries affected by climate-induced natural disasters, as illustrated in Table 16.4.

Table 16.4. Climate Risk Index for 2000–2019 in the ASEAN Region

CRI rank in global	CRI Rank in ASEAN	Country in ASEAN	CRI score	Average fatalities 2000–19 (Rank)	Average Fatalities per 100,000 inhabitants, 2000–19 (Rank)	Average Losses in million \$(PPP) 2000–19	Average losses per unit GDP in % 2000–19
176	9	Brunei Darussalam	167.50	167	151	178	178
14	5	Cambodia	36.17	38	35	53	28
72	7	Indonesia	143.17	93	155	120	168
52	6	Lao PDR	60.50	82	66	73	38
116	8	Malaysia	105.67	64	108	66	144
2	1	Myanmar	10.00	1	1	19	19
4	2	Philippines	18.17	7	16	8	31
179	10	Singapore	172.00	172	172	162	177
9	3	Thailand	29.83	22	60	3	17
13	4	Viet Nam	35.67	15	47	11	47

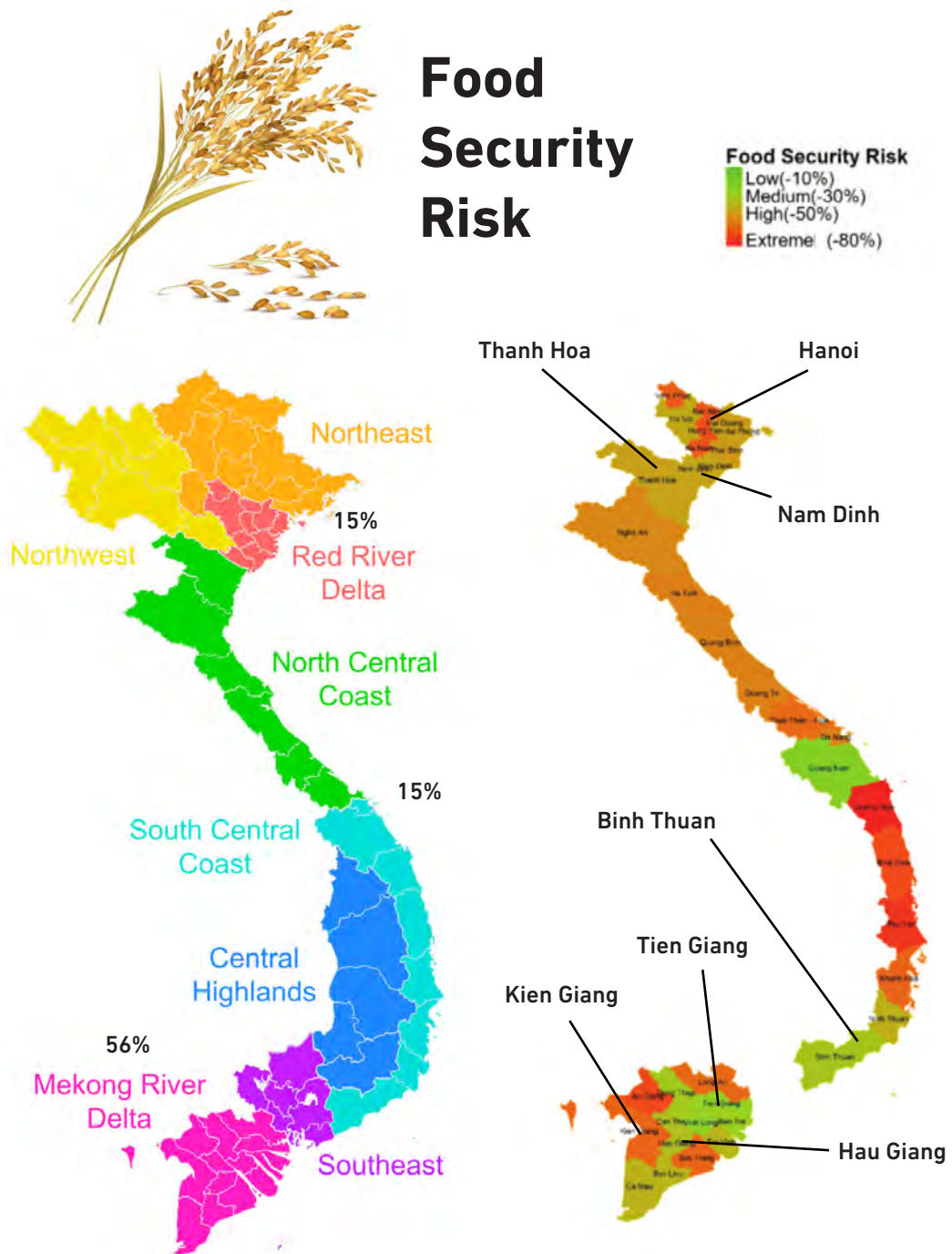
ASEAN = Association of Southeast Asian Nations, CRI = climate risk index, GDP = gross domestic product, PPP = purchasing power parity, Lao PDR = Lao People's Democratic Republic.

Source: Eckstein et al., 2021.

Without effective adaptation measures, 6–12 million people in Viet Nam could be affected by coastal flooding by 2070–2100, which could be exacerbated by the already substantial risks posed by river floods by 2035–45. Several million acres of cropland are affected by extreme floods every year; combined with droughts, almost all provinces of Viet Nam will face severe food security challenges, with extreme risks projected in the Mekong River Delta (Figure 16.6).

As the climate changes, it is increasingly disrupting Viet Nam's economy, and the costs are already starting to undermine the current economic growth. Recent estimates suggest that Viet Nam lost \$10 billion in 2020, or 3.2% of its gross domestic product (GDP), due to climate change (World Bank, 2022a). These damages' magnitude, which is projected to increase rapidly, emphasises the increasing need for Viet Nam to adapt to the risks of a changing climate.

Figure 16.6. Climate Change and Food Security Risks in Viet Nam, 2020–2050



Source: Anbumozhi et al., 2019.

While Viet Nam's vulnerability to climate change stems from the global accumulation of greenhouse gas (GHG) emissions in the atmosphere and the slow response by the advanced and emerging economies to reduce their carbon emissions; it is exacerbated by the past practices of uncoordinated and unsustainable management of natural resources. A case in point is the Mekong Delta, where continued sand mining compounds the effect of sea level rise on the erosion of the coastline and riverbanks (Anbumozhi et al., 2019).

According to the report on the Index for Risk Management by European Commission 2017 illustrated in Table 16.5, Viet Nam ranks 98th globally on the INFORM climate change index. Compared with Japan (ranked 153), Viet Nam's index is still low, but in ASEAN, Viet Nam ranks third after Singapore (191) and Malaysia (100) in terms of INFORM index. This proves Viet Nam's efforts in natural disaster prevention and control and climate change adaptation.

Table 16.5. Index for Risk Management in Viet Nam and other ASEAN countries and Japan

Country	Natural	Human	Hazard & Exposure	Social Economic Vulnerability	Vulnerable Groups	Vulnerability	Institutional	Infrastructure	Lack of Coping Capacity	INFORM 2017	RANK	Lack of Reliability Index
Brunei Darussalam	2.3	0.1	1.3	1.0	0.6	0.8	4.7	4.2	4.5	1.7	164	4.1
Cambodia	5.4	4.2	4.8	4.1	1.7	3.0	7.0	6.0	6.5	4.5	59	2.2
Indonesia	7.8	6.6	7.2	2.3	2.3	2.3	4.5	5.1	4.8	4.3	66	1.3
Lao PDR	4.7	2.9	3.9	4.2	2.0	3.2	6.4	6.0	6.2	4.3	66	1.7
Malaysia	4.8	3.6	4.2	2.3	3.7	3.0	3.3	2.9	3.1	3.4	100	3.1
Myanmar	8.0	7.0	7.5	5.0	6.9	6.0	7.4	5.7	6.6	6.7	12	3.4
Philippines	8.4	9.0	8.7	2.6	4.1	3.4	4.6	3.6	4.1	4.9	50	1.6
Singapore	0.1	0.1	0.1	0.6	0.3	0.5	1.2	0.9	1.1	0.4	191	3.3
Thailand	6.4	4.3	5.4	2.1	3.8	3.0	5.0	2.9	4.0	4.0	80	2.2
Viet Nam	7.2	2.8	5.4	2.6	0.9	4.1	3.5	5.2	3.4	4.3	98	1.8
Japan	8.3	0.6	5.7	0.9	0.8	0.9	2.0	1.0	1.5	2.0	153	3.3

ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People's Democratic Republic.
Source: European Commission, 2017.

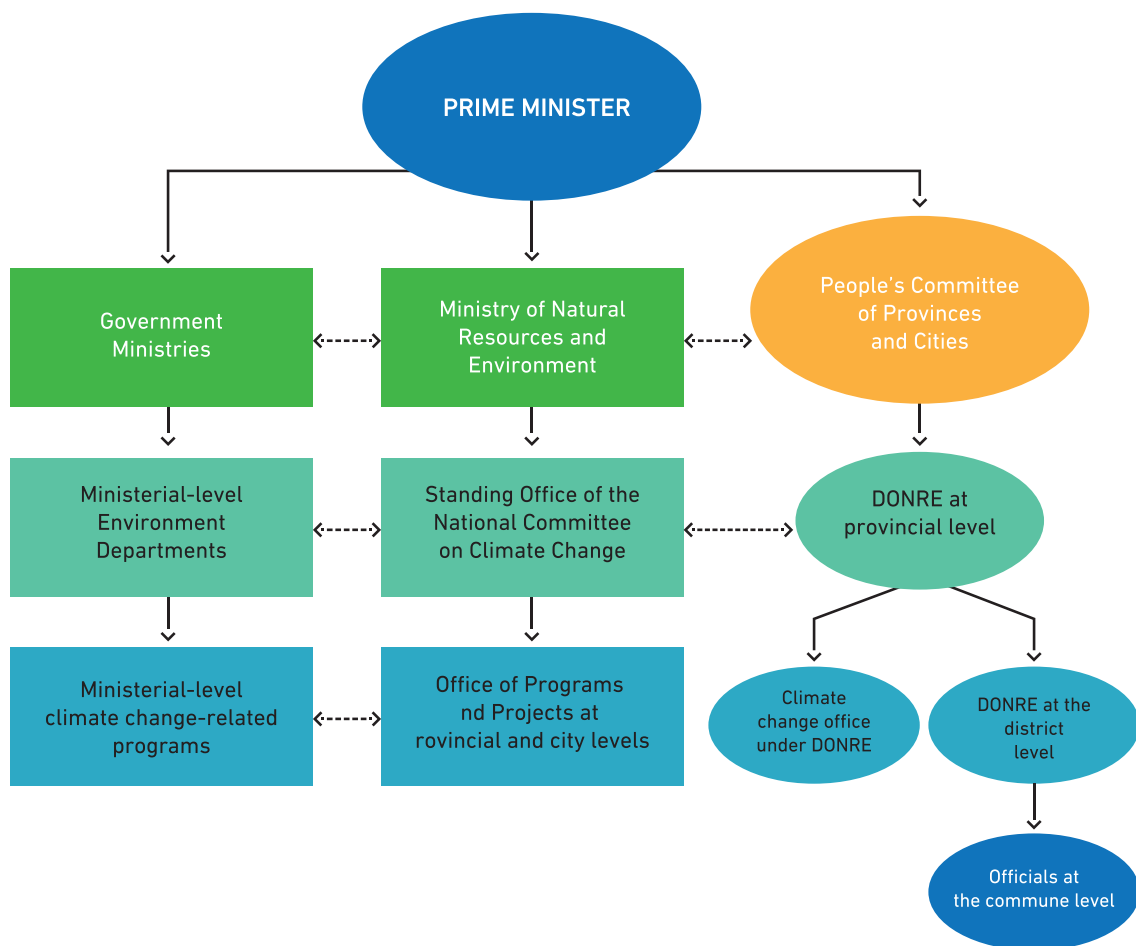
Climate change is not only negatively affecting strategic sectors, such as agriculture, water, transport, and fisheries, but also global supply chains and production networks, slowing labour productivity growth, increasing costs for insurance, and affecting business continuity plans, as well as health expenditures. Climate change adaptation seeks to reduce the risks posed by climate change and to benefit from any associated opportunities where possible. It is one of two main policy responses to climate change in Viet Nam, the other being mitigation, that is, reducing GHG emissions to address the root causes. While Viet Nam's climate risks are well captured in recent policy documents, academic reports, and national economic statistics, public and private budgets often fail to account for the loss of natural and physical assets.



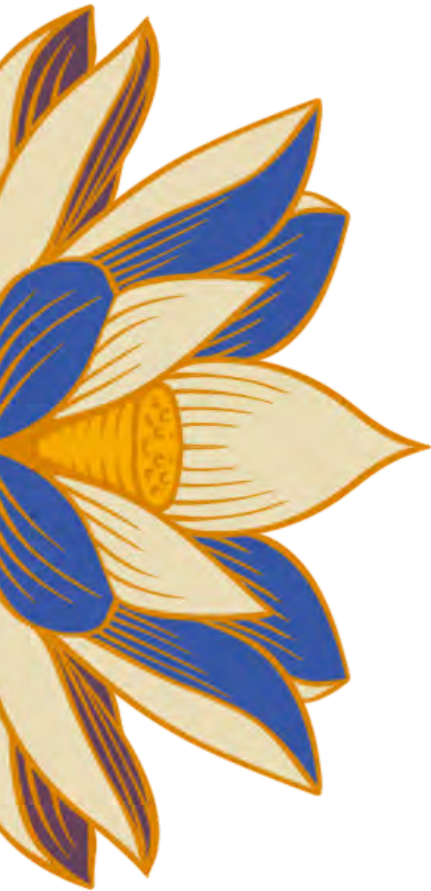
2. Current Strategies, Policies, and Legal Frameworks in Addressing Climate Change Risks

2.1. Organisational Structure

Figure 16.7. Organisational System in Response to Climate Change in Viet Nam



DONRE = Department of Natural Resources and Environment.
Source: Authors, 2022.



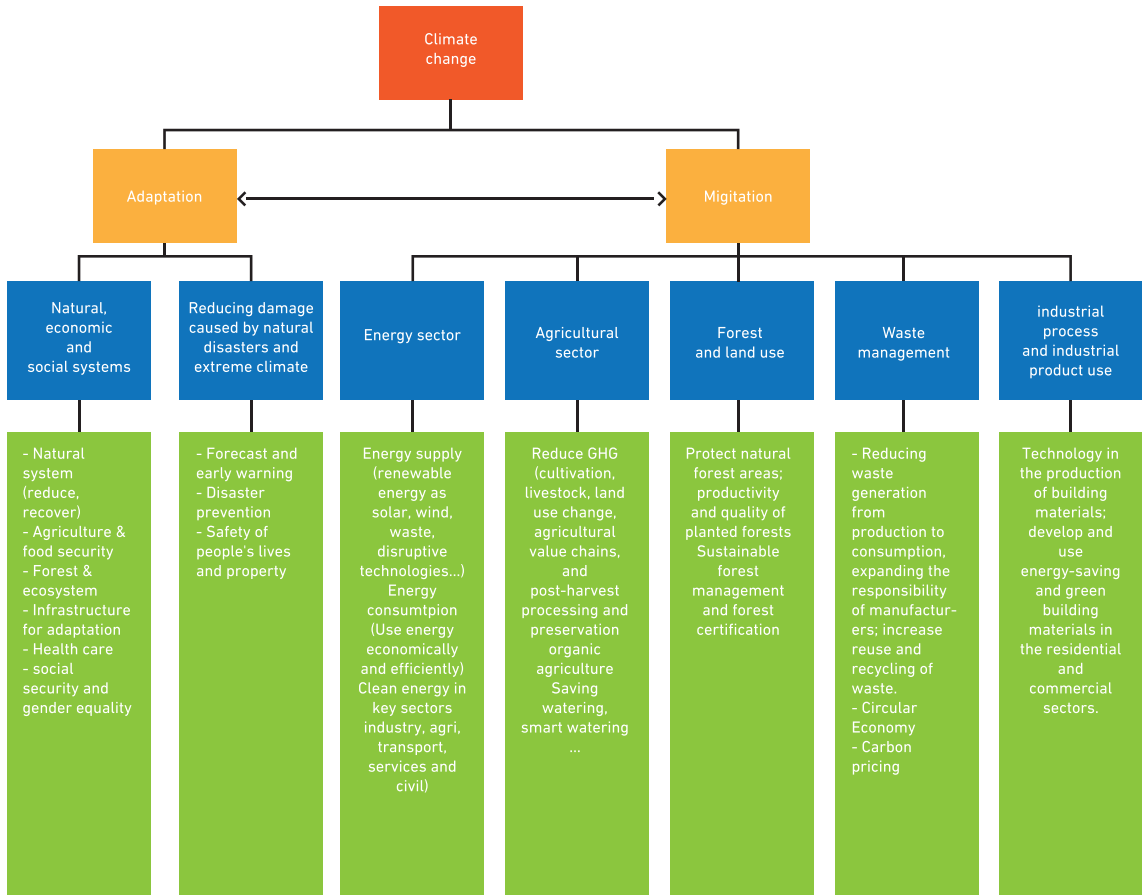
The organisational system of Viet Nam's climate change response is shown in Figure 16.7. Viet Nam has a National Committee on Climate Change, which advises and assists the government and the Prime Minister in researching, proposing, directing, regulating, coordinating, and urging the settlement of tasks, sectors, fields, programmes, and national strategies on climate change, including international cooperation programmes. The Prime Minister is the chairman of the committee; the permanent vice president is the Deputy Prime Minister, and the vice president is the Minister of Natural Resources and Environment. The members are from relevant ministries and branches.

In addition, Viet Nam has a National Steering Committee for Natural Disaster Prevention and Control established by the decision of the Prime Minister (the Ministry of Natural Sources and Environment of Viet Nam, personal communication, 20 March 2015). The Committee oversees inter-sectoral coordination, assisting the government and the Prime Minister in natural disaster prevention and control nationwide. The Committee is headed by the Prime Minister or the Deputy Prime Minister; members include ministers, heads of ministerial-level agencies, or leading representatives of several related ministries and agencies, all working on a part-time basis. The Ministry of Agriculture and Rural Development is the standing body of the Committee and has a specialised agency to advise and assist it.

2.2 Strategic Approach to Cope with Climate Risks

Viet Nam demonstrated the country's strong commitment to climate change actions at COP26 when the Prime Minister declared it would reach net-zero GHG emissions by 2050, saying that 'climate change response and the restoration of nature must become the highest priority in all development decisions and calling for fairness and justice in the global response to climate change' (Government News, 2021). Furthermore, at COP26, Viet Nam joined more than 100 countries in pledges to halt deforestation by 2030 and to slash methane emissions by 30% from 2020 levels in the same period. Viet Nam has further committed to ending all investment in new coal power generation, scaling up deployment of renewable energy, and phasing out coal power by the 2040s. These commitments go beyond those included in the nationally determined contribution (NDC) update submitted in 2020 under the United Nations Framework Convention on Climate Change. The overall framework of Viet Nam's current approach to climate actions, both adaptation and mitigation, is summarised in Figure 16.8.

Figure 16.8. Current Framework of Viet Nam's Climate Change Policies and Actions



Key actions/Solutions:
 Develop and achieve policies, legislation frameworks, institutional; improve communication, awareness
 Human resources development; enhance scientific and technology development; mobilizing financial resources and international cooperation.

GHG = greenhouse gases.

Source: Author adapted from National Strategy on Climate Change and related policies, 2023.



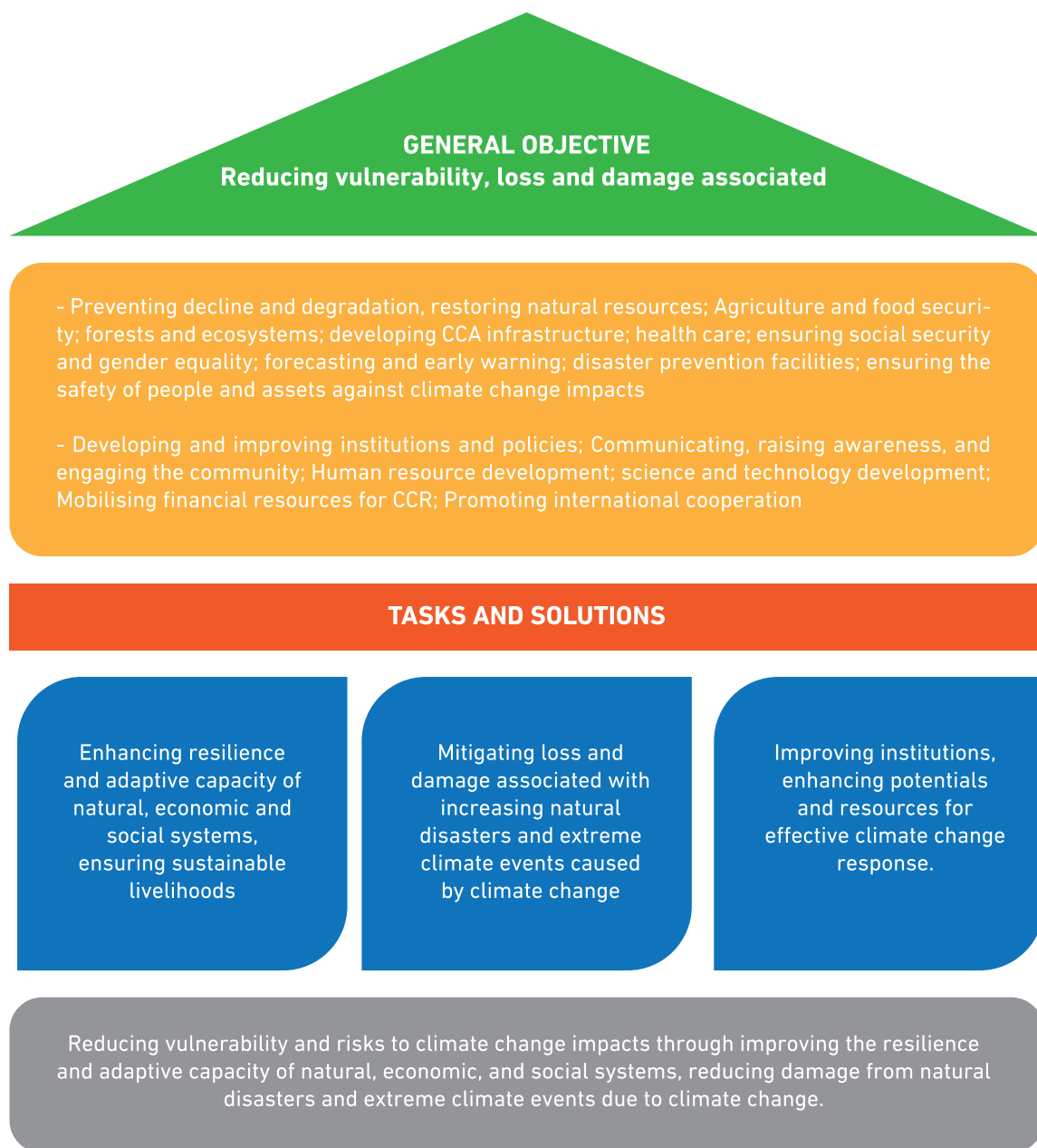
Building on the recent economic development plan for 2021–30, the government has already started to revamp its implementation and develop corresponding legal framework conditions. A new Viet Nam green growth strategy prepared by the Ministry of Planning and Investment was adopted in October 2021, while an updated NDC implementation programme is being led by MONRE. In addition, the amended Law on Environmental Protection adopted in 2020 represented the most significant modernisation of Viet Nam’s environmental legislation since 1993 and has climate change as its focus. The draft Power Development Plan VIII reinforces the centrality of renewable energy.

Climate change adaptation and disaster prevention were clearly shown in the orientation from the Communist Party of Viet Nam such as its Resolution on Active Response to Climate Change, Improvement of Natural Resource Management and Environmental Protection (2013); its Strategies and plans for socioeconomic development through 2010–20, and 2021–30; and other relevant resolutions on the development of specific regions, development of industries, etc. Based on these orientations, the Government has issued the National Climate Change Adaptation Plan from 2021 to 2030, with a vision to 2050, and the national strategy for climate change to 2050 with detailed viewpoints, goals and specific tasks, solutions, and mechanisms.

As illustrated in Figure 16.9, the overall objective of the national strategy for climate change is to strengthen the resilience and adaptive capacity of communities, economic sectors, and ecosystems, and to promote the integration of climate change into the strategic and planning system.



Figure 16.9. Summary of the National Strategy for Climate Change Adaptation to 2050



CCA = climate change adaptation, CCR = climate change remediation.

Source: Authors edited from Decision No. 896/QĐ-TTg by Prime Minister on approving the National Climate Change Strategy to 2050, and Decision No. 1055/QĐ-TTg by Prime Minister about promulgate the National Plan to adapt to climate change for 2021–30, with a vision to 2050.

2.3. The Legal Framework for Climate Change Adaptation

Viet Nam does not have a law on climate change. However, disaster prevention and climate change response has been integrated into the legal system. The following are some summaries of Viet Nam's legal response to climate change.

In Article 90 of the Law on Environmental Protection 2020, there are provisions for adaptation to climate change. These include (i) assessment of impacts, vulnerabilities, risks, losses, and damages for sectors, regions, and communities based on different scenarios and development forecasts; (ii) implementation of disaster risk reduction and community-based and ecosystem-based adaptation models; (iii) response to sea-level rise and urban flooding; and (iv) a monitoring and evaluation system. The Law also stipulates the responsibilities of ministries, ministerial-level agencies, and provincial-level People's Committees in implementing climate change adaptation.

Adaptation to climate change is also mentioned in specialised laws such as those related to (i) forecasting, disaster warning, and climate change monitoring (Law on Hydro-meteorology, 2015); (ii) disaster risk reduction, prevention, and control (Law on Natural Disaster Prevention and Control, 2013); (iii) flood prevention and control of river routes with dikes (Law on Dikes, 2006); (iv) improving the adaptive capacity of communities, economic sectors, and natural systems (Law on Crop Production, 2018).

2.4. Practical Efforts and Limitations in Viet Nam's Climate Change Adaptation

The system of forecasting technology and network of hydro-meteorological monitoring stations have been gradually consolidated and automated.¹ The reliability of disaster forecasts and warning systems for tropical depressions and storms have increased, while hydrometeorological forecasting technologies are gradually approaching the level of advanced countries in the region. The earthquake and tsunami warning system has begun to take shape. Hydrometeorological activities for specialised services of organisations and individuals have been enhanced with the appearance of thousands of monitoring stations across industries and fields.

Up to now, climate change and sea-level rise scenarios for Viet Nam have been updated in 2012, 2016, and 2021, with an increasing level of detail, contributing to the creation of a database on climate change. Sea-level rise has been associated with digital elevation models for socioeconomic development planning.

¹ Viet Nam has 187 surface meteorological stations, 242 hydrological stations, 20 hydrographic stations, 10 weather radar stations, six radio air-sensing stations, eight pilot stations, and 782 independent rain gauges.



Regarding the agricultural sector, transforming the structure of plant varieties and livestock and adjusting seasons and production techniques have been outlined in an action plan. Up to now, several rice varieties adapted to inundation, salt tolerance, and alum have been studied and applied, while farming methods to adapt to climate change have also been studied and implemented.

Public awareness of natural disaster prevention has been promoted and has gradually improved. Information and communication work has effectively contributed to the warning of natural disasters. Research programmes on climate change response have been implemented in recent years, especially the national programme 'Science and technology to respond to climate change, natural resource management, and environmental protection'.

According to the National Report on Sustainable Development Goals (UNDP and HSF, 2020), by 2030, Viet Nam will complete Sustainable Development Goal 13, including three specific goals: (i) strengthening resilience and adaptability to risks associated with climate change, disaster response, and other natural disasters; (ii) integrating climate change factors into development policies, strategies, master plans and plans; and (iii) education, awareness raising, capacity building and institutions in early warning, climate change response and disaster risk reduction. However, to achieve this goal, Viet Nam needs to continue making efforts to mobilise resources (especially financial resources), perfect the system of monitoring infrastructure, natural disaster warning, project hydro-meteorological reports, and improve the system of relevant institutions, policies, and laws.

There are key limitations in coping with the future climate risks in Viet Nam including the following:

- i. Limitations in interdisciplinary and inter-regional thinking. The ability to withstand and recover from natural disasters is still limited; the investment in natural disaster prevention and control is still weak, fragmented, small, lacking capital, technology, techniques, and human resources;
- ii. Information, data, and qualifications of officials and people in analysing and using information and data effectively are still not high; the technical infrastructure system to cope with climate change and natural disasters is still limited and outdated;
- iii. Financial resources for climate change response are lacking compared to requirements; international support tends to decrease; the mobilisation of resources from private enterprises has not been achieved as expected;
- iv. The application of science and technology in climate change response is generally slow, not meeting the requirements; hydrometeorological monitoring systems, climate monitoring, and climate change databases are lacking and inconsistent;
- v. Lack of monitoring and evaluation system; the monitoring and supervision of the implementation has not been paid due attention; many tasks and projects in the plan were not approved (MONRE, 2022).

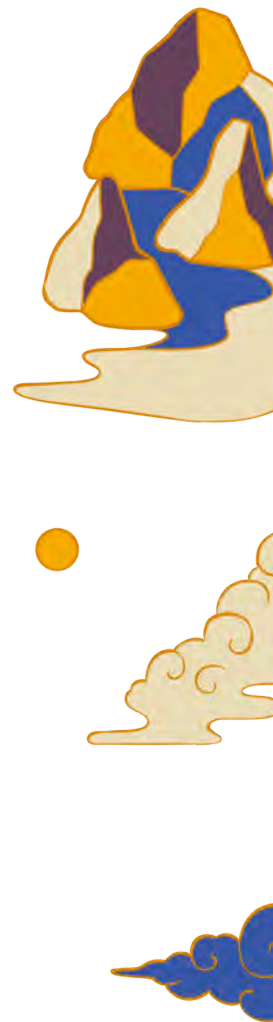


2.5. Capacity Building Challenges and Financial Needs for Enhanced Adaptation

There are five major challenges that need immediate attention for tackling climate change. First, Viet Nam's climate strategies need to be rebalanced to include strong policies and investments for adaptation as well as mitigation. The current strategies emphasise mitigation, but, as a highly vulnerable country, Viet Nam also needs to invest in resilience. The imbalance between mitigation and adaptation is most visible in the green growth strategy, which introduces several energy intensity targets, both nationwide and sectoral, but has no equally specific targets in terms of adaptation—even though the strategy recognises the importance of resilient agriculture, transport, and cities.

All the current strategies and Viet Nam's NDC need to be updated to reflect recent commitments, including those made at COP26. For example, the net-zero carbon emissions target has yet to be factored into any national or sectoral strategies. Greater consistency is needed across key climate policy documents. The new commitments and strategies, prepared by different ministries, set targets and priorities in inconsistent ways, complicating the vision and potentially hindering implementation. For example, the NDC defines the mitigation target as a reduction in GHG emissions relative to a business-as-usual scenario, while the green growth strategy targets the carbon intensity of GDP. These indicators are related but different; for example, whether the latter achieves absolute emissions reductions depends on the rate of GDP growth.

Second, the new strategies have yet to be translated into significant changes in Viet Nam's fiscal policy. For example, some progress has been made on the development of carbon pricing instruments, but such instruments are not yet implemented at scale. The existing carbon tax, i.e. the Environmental Protection Tax, is around \$0.50 per tCO₂e on coal, \$77.60 per tCO₂e on gasoline, and \$32.90 per tCO₂e on diesel, lower than most countries and too low to incentivise large-scale decarbonisation. However, the authorities have demonstrated a strong interest in using quantity-based caps in a trading system and have started to shift subsidies from petroleum to renewable sources of energy, which contributed to a private investment boom in solar energy in 2020. On the expenditure front, a recent analysis of six key ministries found climate-related spending varied annually from 2016 to 2020, but held relatively steady, ranging from 26% to 38% of the ministries' combined budgets. About 25% of public capital expenditures were fully or partially directed to adaptation, mainly in the irrigation and transport sectors. Though promising, the figures should be interpreted with caution, because there is no accepted methodology to capture them in the budget. There are also well-known inefficiencies in public investment management, and maintenance is typically underfunded in Viet Nam. Green public procurement is also just in its infancy, as existing legal and institutional frameworks need to be aligned with international best practices.





Third, the private sector will need to make substantial investments to adapt to climate change, which is already impacting many businesses. It is estimated that \$300 billion of assets held by the commercial and industrial sectors are vulnerable to climate-related disasters. Many firms are already reporting climate change impacts that significantly affect their income, mainly from extreme weather events that disrupt operations, but also from reduced labour productivity and other problems.

According to VCCI Vietnam and the Asia Foundation (2020), up to 54% of enterprises surveyed in Viet Nam said that they have had their production and business activities interrupted due to climate change, up to 51% decline in labour productivity and revenue due to inclement weather. The most vulnerable sectors to climate change are extractives, manufacturing, agriculture, wholesale and retail, and hotels/accommodation. In addition, many firms have substantial long-term investments in high-emission production methods, which puts them at risk of losing competitiveness in increasingly clean export markets. Yet businesses lack the resources to adapt to climate change and to invest in cleaner technologies. This will require a greater engagement of the financial sector to ensure that private savings can be mobilised into green and more resilient investments.

Fourth, state-owned enterprise (SOE) reform will be important to encourage greater private sector investment in green technologies and business practices. In Viet Nam, SOEs still dominate many of the country's most carbon-intensive industrial sectors, particularly coal, chemicals, fertilisers, electricity, and freight transport, crowding out private investment. As part of its mitigation strategy, the government could condition its near-term support for SOEs on actions that accelerate decarbonisation, enhance climate resilience, and otherwise reduce climate-related risks. Over the medium to long term, reforming SOEs and opening the market to greater private sector participation in the economy is essential to achieving much of the climate agenda as many of the new technologies are easily accessed by private firms, including foreign ones. Putting Viet Nam on a low-carbon climate-resilient path will require mobilising massive amounts of private capital, which will not happen in sectors dominated by SOEs without fostering further competition now and in the future.

Finally, the financial sector, which will be the key to ensuring that capital can flow to climate investments, is also vulnerable to climate change in two ways. First, there is physical risk, as extreme weather events can disrupt business operations and damage the property and infrastructure of financial institutions and their customers. Rising temperatures, rising sea levels, and precipitation changes will require additional investments and adaptation by households, firms, and governments that may increase their credit risk. Second, financial institutions may face risks through their high-emitting clients who could suffer market losses and be exposed to legal challenges. According to estimates of the World Bank (2022a), to achieve Viet Nam's net zero emissions target by

2050, Viet Nam needs about \$368 billion for 2022–40, equivalent to about 6.8% of GDP per year, 65% of which will have to be mobilised from outside the public sector. There has been no systematic and comprehensive assessment of the climate risks faced by the financial sector in Viet Nam. Several indicators suggest that physical risks for many financial institutions in Viet Nam are already high and expected to grow. For example, about 55% of total loans extended by banks in Viet Nam goes to businesses and people in climate-vulnerable coastal regions. Similarly, the risks for banks have not been evaluated. The government should consider assessing climate-related risks in the government and commercial banking sector and other parts of the financial system including stress testing, as recommended by international standards. Such assessment will require quality data and robust analytics.

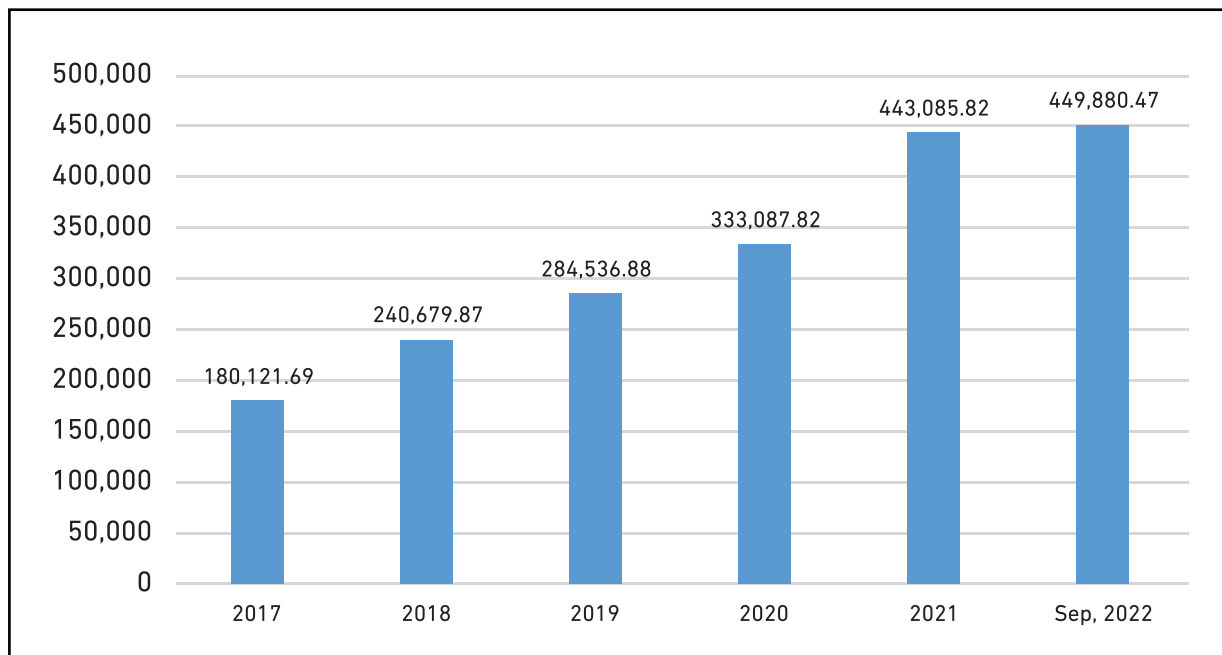
In addition, green financial flows, including green credits, green bonds, and green loans, are showing strong signs of development in Viet Nam due to the commitments of commercial banks, international financial institutions, etc. to accompany the government's commitments at COP26 (Figure 16.10). However, this resource is still quite small, focusing mainly on a few key areas such as renewable energy (wind power, solar power) and green agriculture projects (Figure 16.11). Therefore, Viet Nam needs to implement the following solutions: build a green taxonomy and create conditions for commercial banks and businesses to access green financial capital in climate change adaptation and resilience, and disaster reduction.

According to statistics from the State Bank, the green credit balance exceeded D180 billion in 2017 and had surged to nearly D450 billion (equivalent to US\$20 billion) by September 2021. This accounted for over 4% of the country's total credit balance and approximately 5.3% of Viet Nam's GDP, as illustrated in Figure 16.10. Notably, the majority of these outstanding loans were channelled into the renewable energy sector (comprising over 47%), and green agriculture (constituting around 32%), as depicted in Figure 16.11. This pattern underscores that in Viet Nam, green credit has yet to encompass all categories of environmentally beneficial projects that could make significant contributions to environmental protection and sustainable development. Examples of such unaddressed areas include projects focused on the conservation and development of natural capital, biodiversity, technological advancement, and initiatives related to climate change adaptation.



Figure 16.10. Development of Total Green Credit in the Period 2021–2022 (unit: Billion D)

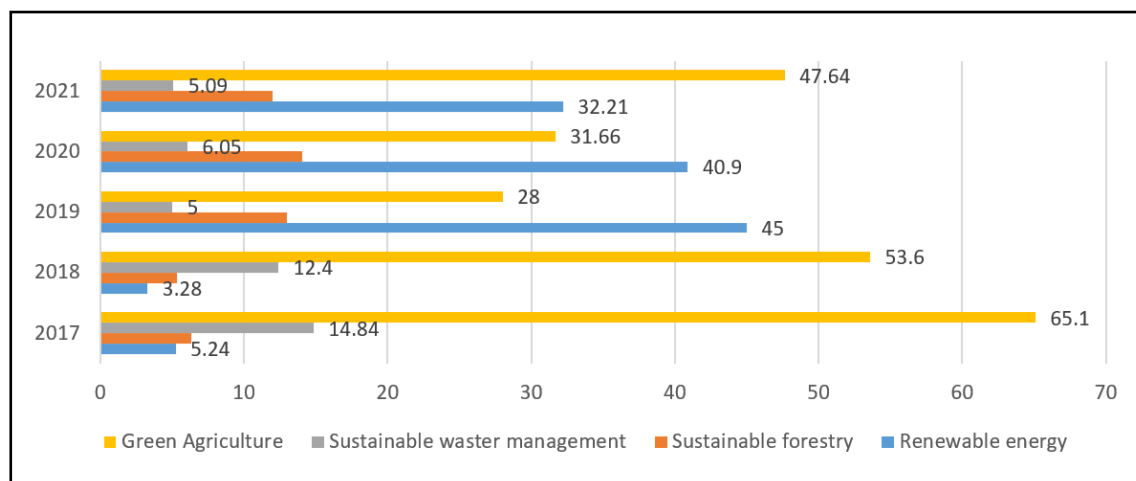
Unit: Billions D



Source: State Bank of Viet Nam, 2022.²

Figure 16.11. Viet Nam's Green Credit Balance from 2017 to 2021

Unit: % of total green credit balance



Source: State Bank of Viet Nam, 2022.

² Tran Anh Quy (2022). Materials in the Consultation workshop on the Prime Minister's Draft Decision on environmental criteria for projects granted with green credit or issuing green bonds. State Bank Vietnam (2022).

In Viet Nam, green bond market remains relatively limited. Various regions have taken steps to issue government bonds, local government bonds, and corporate bonds for environmentally sustainable objectives, programmes, and projects. According to a report by Climate Bonds Initiative (CBI) from 2021,³ which focuses on ASEAN's sustainable finance market encompassing both green bonds and green loans, Viet Nam has experienced rapid growth. By 2021, the market had reached a value of US\$1.5 billion, a nearly fivefold increase from the previous year when it stood at US\$0.3 billion. Notably, Viet Nam's overall bond market expanded by more than US\$5 billion in 2021, with over 80% of the bonds issued being government bonds. Similar to green credit, green bonds predominantly originate from the transportation and energy sectors (Climate Bond Initiative, 2022).

According to the State Securities Commission of Viet Nam, the concepts of green bonds, social bonds, or sustainable bonds are relatively new in the Vietnamese context. The introduction of such bonds dates back to 2016 when both Ho Chi Minh City and Ba Ria Vung Tau province initiated the issuance of green municipal bonds to secure funding for environmental protection projects as part of their respective budget mandates. Subsequently, Ho Chi Minh City issued D3,000 billion worth of 15-year municipal green bonds to raise capital for projects outlined in budget expenditure mandates, including 11 environmental protection initiatives. Similarly, Ba Ria Vung Tau province issued D500 billion in 5-year bonds, which encompassed one environmental protection project (Ministry of Finance, 2021).⁴



³ <https://www.climatebonds.net/2022/06/asean-sustainable-debt-market-hits-record-issuance-volume-2021>

⁴ Official Document No. 5122/BTC-TCNH on providing information and data on green bonds of the Ministry of Finance

3. Japanese Experience in Setting Priorities for Enhanced Resilience against Climate Change and Natural Disasters

3.1. Imperatives of Disaster Risk Management and Climate Change Adaptation in Japan

Japan shifted from a middle-income country to a high-income country from the 1950s to the 1970s, while confronting earthquakes, tsunamis from frequent typhoons, deadly heatwaves, and landslides (Box 16.2)

Box 16.2. Frequent Natural Disasters in Japan Often Linked to its Topography

Almost 75% of Japan's land is mountainous, which limits the amount of water that it can store.

Most of its population sits in alluvial planes or low-elevation areas where the level of floodwater is higher than the area itself. For instance, Tokyo is built on an alluvial plain, and its elevation is below sea level.

Droughts are frequent in Japan. Before its modernisation, most water shortages were due to droughts, which affect its electricity supply, hydropower generation, and industries.

Japan's battle with floods for centuries resulted in their innovative flood management systems; however, authorities warn residents, especially those in Tokyo, to remain vigilant towards disasters.

With climate change, Japan is expecting that the number of heavy rains will increase by up to 10 days in the next 100 years.

Source: Authors.

The high concentration of the population in small habitable areas has made Japan historically vulnerable to droughts.

Box 16.3. Japanese Experience in Building Climate-Resilient Water Infrastructure Systems

To understand Japan's complex relationship with water, we must first turn to its topography. Nearly three-quarters of Japan's land is mountainous, which forms the basis of its steep and short rivers. This limits the amount of rainwater that can be captured before it flows into the sea. As a nation that receives intense rainfall during specific periods of the year (rainy season from June to July and typhoon season from August to September), Japan has traditionally suffered from extreme floods.

Prior to Japan's modernisation, most of its water shortages were caused by severe droughts: 1939 Lake Biwa, 1964 Tokyo Olympics, 1967 Nagasaki, 1973 Takamatsu, and 1978 Fukuoka are some examples. According to a meta-analysis of Japan's droughts from 1902 to 2009, the most severe drought took place from 1939 to 1941, lasting for 666 days. This drought very seriously affected water supply, electricity, hydropower generation, factories, railway, and marine transportation. It was even considered the reason for the nationalisation of major industries.

A more recent example is the nationwide drought that began in spring and ended in mid-September of 1994. The continuing low rainfall had deteriorated the water quality of major rivers near Lakes Sagami, Tsukui, and Tanzawa and forced the rationing of water. Water rationing began in June in the Kiso River basin and spread to other districts. In the most extreme cases, water for irrigation and industrial use was rationed to a maximum of 65% and 35% in the case of domestic uses. Rainfall started in September, and water rationing was relaxed and finally lifted in November.

Japan has also been fighting floods for centuries, and its evolving flood management has been documented extensively. The Tokyo of today is a product of the engineering of the Tone River to the east and the Arakawa River to the west during the Tokugawa era (1603–1867). To avoid disasters in Tokyo's east lowlands, the Arakawa Channel, Edogawa Channel, and a reclamation land at Kasai were constructed. In light of the high population density in the east lowlands, it has been urged that the population remain vigilant towards natural disasters by strengthening the early warning system.

Source: Authors.

Japan has been proactive in boosting its resiliency to disasters – and continues to boost economic growth. Japan first prepared using infrastructure development and forested areas or green dams. There is a strong emphasis on the use of forest management to address water management. Japan’s climate mitigation includes the use of renewable energy, forest conservation, and drainage infrastructures.

3.2. Japanese Climate Policies and Practices

The Climate Change Adaptation Act enacted in 2018 provides Japan’s legal foundation for adaptation measures. It mandated Japan’s Climate Change Adaptation Plan, to be monitored and updated every 5 years. It outlines the latest impacts of climate change and expands its adaptation intentions to areas such as disaster risk reduction, agriculture, and health. The comprehensive plan for climate change adaptation includes strategies for coordinating policies across relevant ministries; developing climate research, an information infrastructure, implementing localised adaptation measures; improving public awareness; promoting adaptation action in the business sector; and providing aid for climate change adaptation in developing countries.

In addition, the revised plan for 2020 includes a total of 66 key performance indicators for sectoral and fundamental measures to monitor the progress of each measure. The Plan, Do, Check, Act approach has been introduced to manage the plan, specifically by using these key performance indicators and following up the progress of short-term measures implemented by ministries and agencies. The relevant ministries collect a wide range of indicator data, while the climate change adaptation promotion council monitors the progress of medium- and long-term adaptation measures every 5 years.

In addition to national legislation, Japan has been working to implement the institutional capacity for climate change adaptation in several ways. Domestically, municipal and prefectural climate change centres support locally led adaptation. These centres provide climate information to businesses and residents and incorporate local knowledge and capacity building into their plans. As of April 2022, there are active centres in 38 out of 47 prefectures.

In recent years, the Ministry of Environment and the Ministry of Economy, Trade, and Industry (METI) have ramped up support for private sector investments and innovative start-ups that help to manage climate risks. METI has identified seven promising areas where Japanese companies can contribute on an international scale through climate change adaptation businesses: resilient infrastructure against natural disasters; sustainable energy supply; food security and agricultural production; health and sanitation; climate monitoring and early warning; secure resources and sustainable water supply; and climate change finance. In line with these areas, METI compiled a collection of good practices on climate change adaptation (2021).

Japan’s early warning system technologies, particularly against earthquakes/tsunamis, typhoons, and heatwaves, are some of the most advanced in the world. Japan distributes user-friendly climate information nationwide to facilitate adaptation actions by all stakeholders. Its climate change Adaptation Information Platform (A-PLAT) consolidates climate risk information so that local governments can more easily apply it to formulate local adaptation plans. A-PLAT also showcases

innovative measures being carried out in prefectures across Japan. The platform acts as a nexus between national and local research and governance, collaborating on building a cohesive national ecosystem of resilience. Japan also has deep expertise in Disaster Risk Reduction, which is applied internationally through development assistance. Examples include a flood-resilient subway system in Thailand, and erosion-control dams in Indonesia that use Japanese technology. Building infrastructure that is resilient to local disaster risks can alleviate impacts on the economy and facilitate recovery and reconstruction.

Throughout its history, Japan has faced various types of natural disasters. Public financing of climate risk management also increased cumulatively and the development of a wider range of insurance schemes. Against this backdrop, the social impact of disasters has reduced.

Japan's earthquake insurance, established in 1966, provides a means of burden-sharing between the public and private sectors through a three-tiered system. The government also tailors its public budgetary schemes to various recovery and reconstruction needs, in accordance with the magnitude and characteristics of climate change events.

Thus, Japan offers a great deal of climate resilience to Viet Nam and the global community in terms of both technical and financial experiences. Expanding the domestic A-PLAT platform to Viet Nam can promote climate-resilient societies. Three main pillars of cooperation could be: (1) providing easy-to-understand, cutting-edge scientific knowledge on climate change adaptation; (2) developing tools to help co-create regional climate-related risk information infrastructure; and (3) offering capacity-building and training for adaptation policy development and project development. Japan-Viet Nam partnership could focus on sharing knowledge, which in turn informs effective national adaptation plans and policies.

Japan has also committed to doubling adaptation finance to approximately \$14.8 billion from public and private sources from 2021 to 2025. The country also contributed about \$6 million to the Climate Change Adaptation Fund in March 2022 towards the global goal of doubling adaptation finance. Its international development assistance agency, Japan International Cooperation Agency which is mandated to share Japanese adaptation know-how and technology in sectors such as disaster risk reduction, water resources, agriculture, and smart city strategies, could find a key role in the bilateral partnerships.

Based on its experience, Japan should now extend its examination of how to situate climate resilience within the planning and design stages, and environmental impact assessments of specific project design and express its view in this regard as an intellectual contribution to Viet



Nam. Japan should also make extensive use of its outstanding experience in developing early warning systems and raising awareness for developing local-level climate information database management systems.

There is growing interest in the potential of public involvement and public-private partnerships in climate insurance. An example is the catastrophic loss pool and climate bond issuance. There are several successful experiments in the Japanese private sector with Catastrophic Loss Bonds with weather derivatives. These and other initiatives have mostly sprung from a natural disaster area and could be experimented with in terms of their relevance for climate resilience pathways identified in the four sectors, namely agriculture, infrastructure, and industry.

Japan through its Official Development Assistance programmes and foreign direct investment could provide tailored capacity-building support to local government institutions in Viet Nam and social entrepreneurs (private sector) to manage climate risks and the investment needs for resilient growth in Viet Nam.



4. Sectoral Pathways for Building a Climate-Resilient Viet Nam by 2045

4.1. Towards Resilient Agriculture and Forestry

As discussed, rising temperatures and erratic rainfall are likely to shorten plant growth cycles in Viet Nam and severe water shortages could lead to significant reductions in annual yields of major crops. The most productive agricultural area of the country, the Mekong Delta, faces growing threats from sea-level rise and associated saltwater intrusion, which could render the production of some crops impossible. Agricultural losses due to climate change in Viet Nam are projected to reach 5.6%–6.2% by 2030 and 7.6%–10.6% by 2050, depending on the climate scenario. Based on an analysis by the International Food Policy Research Institute, losses are estimated to be from 5.6% to 10.6% under different scenarios (World Bank, 2022b). Notably, without climate change, Viet Nam's overall agricultural output would be projected to increase 25% from 2010 to 2030, and 36% by 2050.

Despite great economic progress and decreasing deforestation, the forest sector in Viet Nam faces challenges from competing land uses, overexploitation of resources, and insufficient capacity for forest governance and management. Although the forest cover continues to increase, that is mostly due to the expansion of plantations and to how 'forests' are officially defined, which includes palm and bamboo plantations, for instance. Meanwhile, the quality of natural forests continues to deteriorate.

Since 2008, the Forest Ecosystem Services Programme has paid out nearly \$400 million to farmers helping to prevent deforestation in Viet Nam. Besides employment and timber and non-timber products, forests provide a range of environmental services involving water resources, biodiversity, and climate protection. Forests are a means for delivering adaptation measures, and well-planned and protected coastal forests can deliver adaptation and economic benefits. Conversely, when forests are burned, their climate adaptation benefits are lost, with substantial amounts of carbon released into the atmosphere.

Key adaptation strategies for resilient agriculture and forestry sectors include:

- Repurpose agricultural subsidies on inputs, such as the use of water and fertilisers, to support the adoption of resilient agriculture production practices. Expenditure realignment is required to increase public spending on research and development of drought-resistant and salt-tolerant crop varieties and other innovations to boost productivity.



Subsidies can be redirected from water and fertilisers into training, local infrastructure, and services to help farmers switch to improved seeds/breeds and adopt practices that bring climate benefits while maintaining or increasing productivity. Increasing the share of public expenditure for operations and maintenance of irrigation and flood control infrastructure can ensure their durability and reduce the frequency and cost of rehabilitation. The focus of these adaptation measures should be on the most productive agricultural landscapes, particularly coastal low-lying areas such as the Mekong Delta, which are particularly vulnerable to the effects of climate change.

- Rehabilitate and upgrade irrigation infrastructure and make it more resilient to climate change to reduce system losses. Expand irrigation infrastructure in selected areas. Rain-fed agriculture is highly vulnerable to droughts and increasingly unreliable precipitation, and floods and salinisation can create problems for irrigation systems. Along with making irrigation systems more climate-resilient, it is important to establish last-mile connections between irrigation infrastructure and low-income farmers' land and to provide irrigation for vulnerable rain-fed smallholders.
- Adopt new fiscal policies and incentives to curb the expansion of agriculture into forested areas. Agricultural expansion continues to be the main direct cause of forest loss in Viet Nam, with the construction of rural infrastructure, in particular roads, also contributing. Agricultural expansion at the expense of forests is often the result of poor planning or fiscal policy privileging food production over the protection of ecosystem services. More protection and sustainable management of forests is needed. Japan has successfully developed its system of biomass town wherein a new resource management and local development approach is formulated that contributes to the reversing of ecological degradation and biodiversity loss, as well as to climate change mitigation and adaptation.
- Support large-scale investments in agriculture by strengthening cooperative farm models and facilitating the entry of big operators. In Viet Nam, small farms remain an important part of the sector, but many are constrained in their capacity to invest in climate adaptation. Capacity-building of farmers is needed so they can be more commercially oriented and transact effectively with large entities. This is also an opportunity to promote climate-smart digital agriculture practices amongst farmers through agriculture cooperatives, as in Japan. Small farmers would also benefit from the adoption of institutional frameworks to promote the digital transformation of the sector and efficiencies in payments and logistics. This is an area in which Viet Nam currently lags many of its peers. Improved weather risk forecasting and early warning systems are also crucial.
- Improve access to finance for smallholder agriculture by removing caps on bank lending and allowing warehouse receipts and crops as collateral. Providers of financial services for the agriculture sector are subject to significant public policy intervention. For example, commercial banks cannot lend to agricultural activities at a rate higher than the cap imposed by the State Bank of Viet Nam. Allowing small farms to use warehouse receipts and crops as collateral would allow them to secure loans to upgrade their operations.

4.2. Towards Resilient Infrastructure Design and Development

Flooding and subsequent landslides are the main hazards threatening Viet Nam's transport, water, and energy infrastructure and services. Although regional vulnerability varies depending on the type of hazard, the risk is particularly high in disaster hotspots that include vulnerable regions along the coast, in the Northern mountains, and in the Mekong Delta. Under a high-emission scenario, events that used to occur once in 1,000 years could start occurring in 5-year cycles.

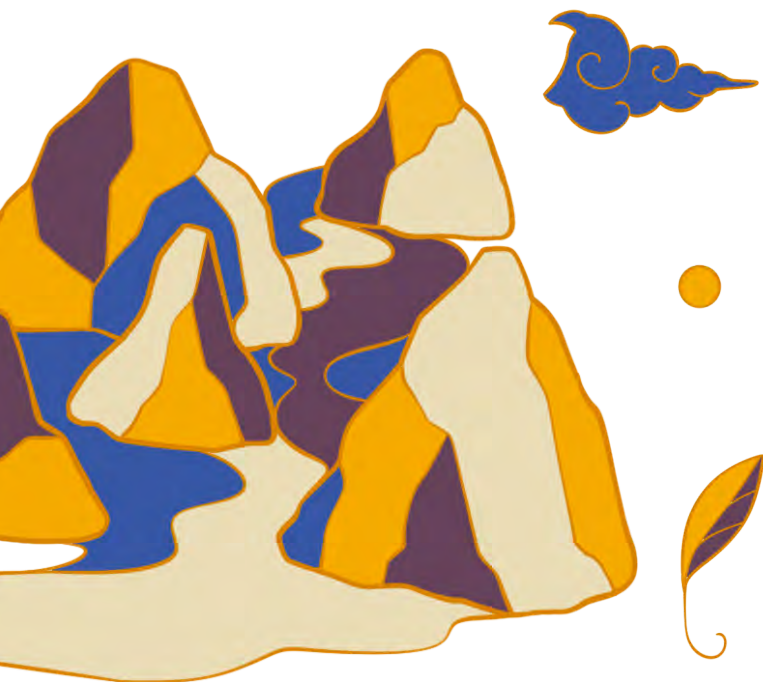
Repairing damage to the power grid from extreme weather events, meanwhile, already takes up to 2% of the power sector's capital expenditures, and those costs are only expected to rise. At the same time, extreme heat will increase cooling needs and thus electricity demand, which translates into higher peak power generation needs. Weather extremes around the world can also impact global fossil fuel markets, with implications for Viet Nam's energy security, as it relies heavily on imported fossil fuels. Damage to physical infrastructure has negative local impacts as well as cascading national macroeconomic impacts. Damage to the interconnected power grid can generate prolonged outages and reduced system reliability that can affect manufacturing and trade. Mountainous regions, where many poor ethnic minority communities are concentrated, rely on a few critical road links and power lines, so the loss of infrastructure connectivity due to climate events could leave them isolated for months. Damage to national-level networks could have major macroeconomic impacts.

Recommended adaptive capacity for the infrastructure sector includes upgrading road and power assets to climate-resilient design standards. Upgrading a typical national highway on flat terrain to very high standards may cost more in the short run but would yield several long-term benefits. In addition, integrating different transport networks, i.e. roads, maritime, inland waterways, and railways, would enable the overall network to function better and to be more resilient to disasters. Shifting just 10% of road freight to other modes could reduce the economic impacts of extreme climate events by 20%–25%. Different networks are often exposed to different hazards; for instance, waterway and domestic



maritime transport is known to be much less affected by flooding than road transport. It also has little exposure to landslide risks. On the other hand, ports are exposed to climate risks and, if poorly planned, may themselves aggravate climate change-linked damages, in particular coastal erosion.

Introducing the life-cycle asset management approach for new infrastructure development as practiced in Japan would contribute to resilient growth. Viet Nam currently allocates well below 20% of its transport expenditure to maintenance, far less than peer countries such as Indonesia and Malaysia. The high-quality infrastructure approach is recognised good practice to sustain the level of service while minimising the overall budget. The approach is especially critical for Viet Nam, which has major network expansion needs and faces significant climate risks. A substantial proportion of the needed finance can be mobilised from the private sector via management contracts or public-private partnerships in which the government retains control over the assets but transfers the day-to-day management and business operations to the private sector. More detailed guidance on Decree 35 (2021) and the Law on Investment in the Form of Public-Private Partnership (2020) can increase private investment in contestable sectors, including transport, as well as electricity transmission connectivity and infrastructure. Updating the technical and operating standards of transport and energy sectors to adapt to climate risks and improve resilience, including designing the assets to better withstand extreme weather events and adding redundancy, where possible, will be crucial. A systematic climate risk review is necessary, followed by the incorporation of such standards into sectoral plans for road, energy, and water infrastructure investments.



4.3. Resilient Industry and Manufacturing Sector

Viet Nam's competitiveness in global supply chains is at risk from climate change. Two of Viet Nam's largest export sectors, i.e. manufacturing and agriculture, are concentrated in coastal lowlands and deltas that are extremely vulnerable to the impacts of climate change.

The vulnerability of global supply chains is particularly apparent in cases of critical industrial parks. A recent Asian Development Bank (2019) report showed that 34% of the country's industrial zones are in coastal provinces at risk of disasters like flooding. In coastal cities like Binh Duong and Dong Nai, where many industrial zones are concentrated, flood-prone areas within the city may increase from 23% to 35% by 2050.

Trade and global supply chains could further be negatively affected by climate change's impacts on physical infrastructure. Maritime shipping, which accounts for about 80% of global trade by volume, could be disrupted by climate change (Box 16.4). More frequent and severe storms, heavy precipitation, and sea-level rise could cause more frequent port closures, affect the speed of passage, necessitate the use of alternative shipping routes or other safety measures, and increase the maintenance costs for ships and ports.

Box 16.4. Assessing Supply Chain Resilience against Flooding or Tropical Storms

Using the balance sheet data collected from 700 firms in Viet Nam, ERIA conducted a survey on supply chain resilience in 2017. The methodology employed a microeconomic and corporate finance approach to analyse the impact of exogenous shocks on the firms' key financial indicators, including liquidity, capital structure, profitability, and the (un)availability of cash buffers to withstand external shocks. This approach made it possible to quantify the firms' debt at risk, from which a relationship could be established to understand employment at risk and government tax revenue at risk. Manufacturing and agriculture – the two main exported products – were amongst the most financially vulnerable sectors. The main risk for manufacturing was from the impact on jobs and insufficient liquidity to sustain a big shock. For the agriculture sector, the main challenge was the number of farms affected, rather than the financial risks to individual establishments. Amongst non-tradable sectors, real estate, construction, and education emerged as the most vulnerable.

Source: Anbumozhi et al. (2020).

The recommended adaptive capacity measures for the industry sector include strengthening and enforcing policies and regulations for industry resilience, including in industrial parks. This should include guidelines on (i) infrastructure solutions that minimise physical damage and disruption of services critical to industries; (ii) financial mechanisms available before, during, and after disasters to secure financial protection of firms and channel investment in resilient infrastructure; and (iii) measures that encourage investment in and implementation of digital technologies to improve data quality, offer predictive analytics, enhance monitoring and communication, and provide real-time information. New investment plans should consider alternative locations and trading channels for the most climate-vulnerable areas and sectors. Companies should systematically assess the vulnerability of their trading environments to floods, droughts, and storms, paying particular attention to areas that have a limited ability to anticipate and adapt to climate change. For example, the most vulnerable will be places where there is limited capacity to build business continuity plans and where local ecosystems are fragile.



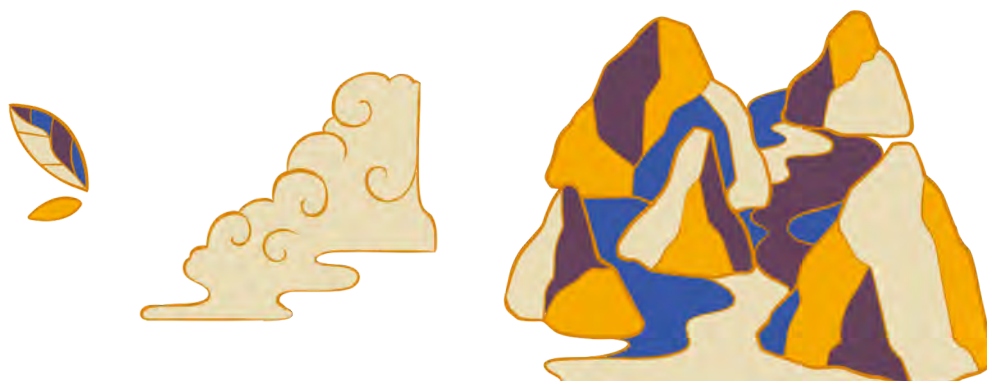
4.4. Resilient Coastal Areas and Smart Cities

Viet Nam's 300 coastal cities are low-lying and frequently affected by climate-induced natural disasters, as discussed. Tourism is also at high risk, with 42% of hotels located near eroding coastal areas. Viet Nam's large industrial sector has developed in high-risk areas, with half of the industrial zones directly exposed to intense flood risks.

The costs of climate-induced disasters are climbing rapidly, taking an increasing toll on human life, assets, and livelihoods, as well as on valuable ecological systems. The expansion of urban areas to accommodate growing populations has reduced green space and increased the extent of impermeable surfaces, which are prone to flooding and put high pressure on water resource management in Viet Nam's cities. Secondary cities in the North and South-Central coast regions have experienced some of Viet Nam's highest urban growth rates since 2012. An approach to urban development that incorporates low-carbon climate-resilient measures through incorporating smart technologies in infrastructure systems and public services will provide a safe and healthy environment for economic development and enhance residents' resilience (Anbumozhi, 2022). However, land markets often fail to fully internalise the cost of smart climate change and natural hazards. As a result, development often occurs in risky coastal areas, especially when developers do not carry the cost of future climate change impacts.

The recommended measure for enhanced adaptive capacity of coastal zones and cities includes developing an integrated coastal resilience investment programme for the main urban centres and connecting infrastructure. Risk-informed zoning and spatial planning is vital to ensure that economic growth in coastal zones does not irreversibly lock in unsafe development. This should be based on the best available risk information. To ensure that lifeline infrastructure systems can deliver their essential services, an integrated coastal resilience investment programme should be developed by integrating risk information into the planning, design, and maintenance stages of all infrastructure investments. Relevant policy, regulatory, and legal frameworks must be strengthened, and lessons from past initiatives should be consolidated to inform technical guidelines and future programmes.

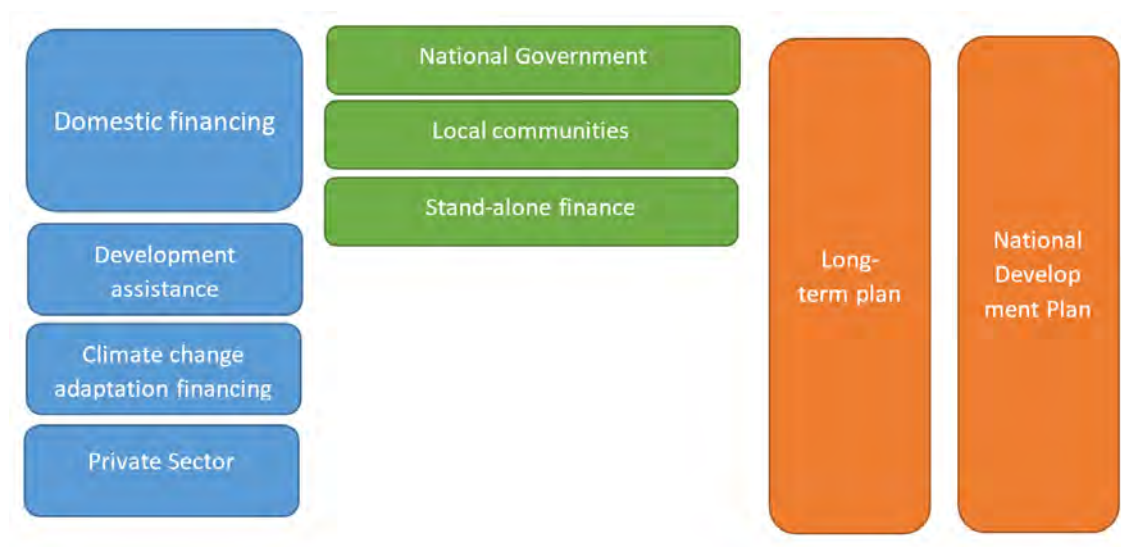
Restricting new developments, including in buffer zones, by strengthening and enforcing land-use regulations are also needed. Regulations are also needed to avoid unchecked urban development. Risk-sensitive land use and urbanisation plans must be enforced through construction norms and building regulations. The quality of construction and the role played by building regulations are key determinants of climate resilience.



5. Conclusions and Recommendations for Climate-Resilient Economic Growth

Despite substantial progress in analysing the climate risks, identifying efficient strategies, and devising sectoral capacity building, most of the current efforts are not enough to adapt to the predicted damages caused by climate change. While devising the strategies for achieving high-income countries by 2040, policies need to recognise climate and disaster risks and the availability of new technologies and finance. Hence, an integrated policy framework for international cooperation, as illustrated in Figure 16.12, is proposed. Future Viet Nam–Japan technical and financial assistance programmes could provide capacity support tailored for national, provincial, and local actors.

Figure 16.12. Climate and Disaster Risk Technology Risk Financing Cooperation Mechanisms



Source: Authors.

To achieve its climate change goals, Viet Nam needs to focus on restructuring the economy towards promoting sustainable growth models. The following are the main specific actions and opportunities for strengthening cooperation between Viet Nam and Japan:

First, integrating the goals of natural disaster prevention and climate change adaptation into regional and local development master plans and plans.

- To carry out a census and inventory to assess and classify the characteristics of natural, financial, infrastructure, human and cultural capital sources in each region and region to provide management and exploitation orientations, use, conserve, and develop those capital resources.
- To improve methods and procedures for forecasting and warning of natural disasters, earthquakes, and tsunamis, monitoring and monitoring of marine environment, climate change, and sea level rise for sustainable socio-economic development. Complete the data information system and inter-sectoral and inter-local sharing mechanism.
- To implement functional zoning based on the advantages and values of each region as a basis for localities to determine priorities in management, allocation, exploitation, and sustainable use of the values of natural capital for green economic development.
- To integrate disaster prevention and climate change adaptation into the goals and contents of restructuring the economy.
- To promote digital transformation in the economy as a key solution to improve added value, resilience, and resilience of production and business sectors and fields in the economy.
- To integrate goals and contents of disaster prevention and adaptation to climate change into the system of development planning at national, sectoral, regional, and local levels based on functional zoning based on advantages of geopolitics, resources, and functions of natural ecosystems according to the characteristics of each region or province.

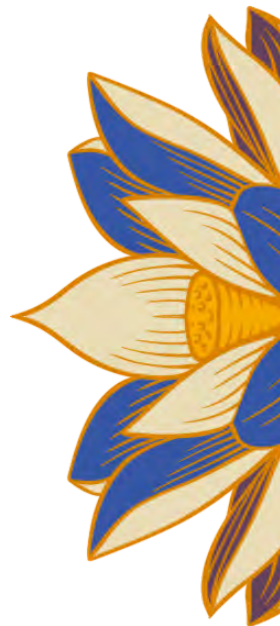
Second, enhancing economic instruments and financial mechanisms to promote disaster prevention and adaptation to climate change.

- To promote restructuring of industries to reduce those that are heavily dependent on the exploitation of natural resources, especially non-renewable resources, with low added value and economic efficiency; outdated technologies, using a lot of energy and consuming resources, and having low competitiveness in the market also need to be considered and gradually eliminated.
- To give priority to industries with high technology, deep processing, efficient exploitation and use of natural resources, and competitiveness in the region and the world.
- To effectively implement preferential policies on taxes, fees, charges, and land for enterprises participating in the network of enterprises for green development, green production, and provision of environmentally friendly products and services. Provide financial support, apply tax, and market support policies to production facilities and localities to improve technology, and import modern technologies to transform into a green economy.
- To develop financial strategies to respond to natural disaster risks. Complete legal frameworks and guiding documents related to disaster risk management to facilitate the implementation of policies. Diversify investment capital sources for environmental protection and climate change response. Arrange separate expenditures from the state budget for climate change response using a variety of financial sources in disaster risk management; at the same time, it is necessary to determine the order of priority when using financial resources for each type of disaster risk.
- To create conditions for localities and businesses to access green financial capital sources such as green credit, and green bonds. Strengthen public-private partnerships to mobilise resources from the private sector in disaster prevention and climate change adaptation.
- To experiment with new economic instruments and financial mechanisms to create related

resources for disaster prevention and response to climate change such as payment for ecosystem services, biodiversity compensation, and disaster risk insurance.

Third, improving the resilience capacity of economic sectors and priority areas in response to natural disasters and climate change.

- To develop climate-smart agriculture to ensure sustainable productivity growth, resilience, adaptation to climate change, and reduction/elimination of greenhouse gas reduction (mitigation) to ensure national food security and achieve development goals. To solve this problem, it is necessary to promote shifting to climate-smart agriculture. Specific contents to be implemented in building smart agriculture to adapt to climate change include land management and improvement of nutrient content in soil; efficient water storage and use; pest assessment and disease control; building and developing smart farming systems; enhancing ecosystem resilience; and conservation of genetic resources.
- To replicate and develop green economic models to adapt to climate change through measures that improve adaptation and recovery capacity of production in business industries, in non-agricultural sectors, and industries such as transportation, and construction. To replicate and develop climate change adaptation models in vulnerable areas through (for instance) water-saving rice irrigation, changing farming methods and diversifying livelihoods to adapt to climate change, developing smart cities; watershed management model with the participation of the community, strengthening coastal ecosystem management and development community livelihoods to respond to climate change; building coastal and island cities to adapt to climate change.
- To ensure energy security in the context of climate change. In the context of climate change, the negative impacts of climate change on energy are mentioned in three aspects: renewable energy, the raw material extraction industry, and energy supply–demand. The key solutions to focus on include: (i) energy saving and efficiency through the implementation of communication activities to mobilise people to be conscious of saving and using energy efficiently; (ii) strengthening the survey and exploration of energy resources to improve the potential and storage is a regular solution, to enhance the ability to exploit and produce primary energy sources, reduce the external dependencies; (iii) diversification of energy sources are solutions to diversify exploitation and use of different types of energy sources; (iv) strengthening domestic capacity in supplying energy products, attention should be paid to building processing facilities, energy storage; (v) applying incentive policies to promote the development of renewable energy including solar energy, wind energy; and (vi) formation and development of a competitive electricity market through price mechanisms within the government orientation.
- Conservation of biodiversity: to increase the area of natural ecosystems that are protected and restored and ensure their integrity and connectivity. Biodiversity is conserved and used sustainably to contribute to a green economy. It is carried out by promoting the National Strategy on Biodiversity through (i) improving the efficiency of management of the system of natural heritage, nature reserves,



and biodiversity corridors; (ii) consolidating and expanding natural areas of national and international importance; (iii) restoring degraded important natural ecosystems; (iv) conserving and restoring endangered wild species, especially endangered, precious, and rare animals prioritised for protection, and migratory species.

Fourth, developing science and technology for natural disaster prevention and response to climate change.

- To improve methods and procedures for forecasting and warning of natural disasters, earthquakes, tsunamis, monitoring and monitoring of marine environment, climate change, and sea-level rise for sustainable socio-economic development, sustainability, disaster prevention, and response to climate change with multiple goals and fields.
- To strengthen linkages amongst the state, scientists, businesses, and people, aiming at scientific products. Green technology learning should be transferred to people and businesses at a reasonable price.
- To continue implementing programmes and projects on science and technology for environmental protection and prevention of natural disasters. Effective use and management of natural resources, protect the environment, and respond to climate change. To prioritise several research topics and programmes in terms of models of integrated regional management towards sustainability. To accelerate the renovation of production and construction technologies towards the application of production and construction technologies that consume fewer raw materials, fuel, and energy. To strengthen the development of modern technologies in exploitation to minimise resource loss.
- To encourage the development of cooperation and transfer of new and advanced technologies that strive for the sustainable use of natural resources, maintenance, conservation, and development of biodiversity associated with regions.
- To prioritise research and investigation of environmental geology and urban geology in service of development planning and prevention of the risks of geological hazards in the context of climate change.

Fifth, investing in high-quality infrastructure to strengthen natural disaster prevention and response to climate change.

- To strengthen the construction and improvement of infrastructure in urban and rural areas towards sustainability, environmental protection, and response to climate change. Focusing on effective adaptation and resilience solutions to climate change impacts in regional integrated management that includes water supply, transportation, energy supply, lighting, collection, and treatment systems of wastewater, solid waste, and cemeteries.
- To increase investment in synchronous infrastructure, create favourable conditions for green technology development, give priority to renewable energy technology, contribute to achieving NDC goals, and transition to an economy based on low-carbon energy sources.
- To invest in infrastructure and human resources for community health care. The health infrastructure has not yet met the standards of medical examination and treatment in the context of epidemics caused by climate change and environmental degradation. The infrastructure for

community health care in the context of climate change for vulnerable social groups such as ethnic minorities and the poor in rural, remote, mountainous areas and islands has not been developed like other regions.

- The state prioritises capital from the budget or public-private partnership mechanisms to mobilise capital in line with the green economic development orientation, adapted to the climate change of each region (e.g., green agriculture, eco-tourism).
- Natural infrastructure is an integral part of natural capital, bringing sustainable economic, environmental, landscape, and social effects. Natural infrastructure needs to be identified, evaluated, and prioritised for protection, use, and development, and replaced only with the use of man-made infrastructure when necessary. Therefore, ministries, branches, and provincial People's Committees integrate the value of natural capital in development strategies, master plans, programmes, and projects; organisations and individuals whose activities are accountable for causing pollution or degradation of natural capital; or those who benefit from investment activities in the restoration and enhancement of the value of natural capital are responsible for making financial contributions as prescribed by law.
- To invest in supporting equipment and strengthening facilities for local management agencies (district and commune levels) to carry out the work of monitoring and inspecting the implementation of regulations on environmental protection in the business establishments and households.

Sixth, mobilising private capital to leverage public financing of climate-resilient growth.

a) Natural capital:

- To integrate the exploitation, use, and development of natural capital resources into strategies, programmes, and planning.
- To develop the detailed criteria, roadmap, action plan, incentive mechanism, and priority for investment in the development of natural capital suitable to the country's socio-economic conditions in each period. Guide the inventory, assessment, and accounting of the value of natural capital to serve as a basis for the formulation and organisation of implementation of development strategies, plans, and projects.
- To prioritise investment resources and encourage organisations and individuals to invest in the conservation, development, and effective use of natural capital sources, promote natural advantages and develop sustainable economic growth models.
- Revenues from natural capital must be prioritised to create concentrated resources for reinvestment, recovery, development, and enhancement of the functions and value of natural capital.

b) Financial capital

- To promulgate policies to support and create favourable conditions for people and businesses to easily access preferential loans to develop production and business projects oriented towards green economic development, circulation, and adaptation to climate change.
- To create conditions for localities and businesses to access green financial capital to implement investment projects in climate change adaptation projects, such as green credit sources, and green bonds; and develop green taxonomy to support for assessing new financial products.
- To prioritise allocation of the state budget to green development projects and programmes; projects to renovate, restore and develop natural capital resources in different regions.

Continue to mobilise and effectively use foreign capital to support the goal of responding to climate change.

c) Human capital and social capital

- To carry out investigation, assessment, and classification of traditional knowledge, indigenous knowledge, and cultural values of each locality and ethnic group to propose a solution for a harmonious combination of available green technologies. To replicate and develop good models and good practices on disaster prevention and response to climate change.
- To assess and identify the values of social capital in each region in terms of disaster prevention and adaptation to climate change; to integrate those values into development strategies and master plans at the national and regional levels. To combine the value of social capital with other capital sources to find models and solutions for harmonious development.
- To create favourable conditions to promote the organisation of social networks, rules, and standards of the community in building a green economy in each region and locality. Therefore, it is necessary to improve the legal framework to encourage socio-political organisations, unions, associations, and groups to participate in environmental protection and response to climate change; mobilise resources for green economic development.
- To organise communication activities, provide information and documents on social capital, factors related to social capital, and ways to use social capital for officials and people to bring social capital to become a resource for sustainable green economic development in each locality under the region.

Seventh, promoting communication, education, and training to disseminate knowledge to improve people's capacity to access knowledge and techniques to develop climate-resilient economic models in the Mekong River basin.

- To develop communication programmes, capacity building in research, and implementation of content related to climate change response. To focus on developing communication materials and integrating education on disaster prevention and climate change adaptation into school curricula and communities.
- To develop guiding documents for officials at all levels, sectors, businesses, and people on how to identify, deploy, and evaluate models for disaster prevention and adaptation to climate change. Suitable to the characteristics of each region or region.
- To diversify communication channels on mass media to introduce and promote good models and good practices.
- To raise awareness of development models that are resistant to natural disasters and climate change.
- To mobilise the participation of mass organisations using various methods of propagating and disseminating knowledge about nature, the environment, and the regional green economy to union members, members, and people.
- To organise staff training, especially grassroots level, on green economy in general and regional green economic models (in particular). To focus on improving the capacity of grassroots officials to identify green economic activities and models suitable to the characteristics of each locality in the region, i.e. building, implementing, evaluating, and replicating the green economic model in the locality.

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Chapter 17

The Circular Economy in Viet Nam

Lai Van Manh and Pham Anh Huyen

1. Introduction

The circular economy is becoming an inevitable global trend, meeting the requirements of sustainable development in the context of increasingly degraded natural resources, a polluted environment, and biodiversity loss due to climate change. Viet Nam has the potential to become a leader in terms of a circular economy in the Association of Southeast Asian Nations (ASEAN).

Prior to 2020, the principle of a circular economy was integrated into some of Viet Nam's economic models, typically those in the agricultural sector, ecological economic models, and waste-recycling craft villages.¹ After 2020, the concept was considered a key orientation for national socio-economic development. Indeed, in the *National Socio-Economic Development Strategy, 2021–2030, with a Vision to 2045*, the circular economy is emphasised as a solution for reconciling the relationship between economic development and natural resources consumption. Provisions for a circular economy were thus promulgated in the Law on Environmental Protection 2020.

This chapter evaluates policy tools that have an important role to play in promoting circular economy adoption in Viet Nam, such as environmental protection taxes and charges, green public procurement, expansion of manufacturer responsibility, and recycling markets. A SWOT analysis looks at current conditions under which a transition to a circular economy can occur, considering three national strategic breakthroughs related to institutions, technology, and infrastructure. These results help assess the success of circular economy models into priority sectors. Furthermore, a national road map for priority sectors, fields, and areas regarding a circular economy is detailed.

2. Overview of a Circular Economy

A circular economy is an industrial system that is restored and regenerated, based on conservation and enhancement of natural capital, optimising resource productivity and promoting system efficiency (Morl, 2015). The value of products, materials, and resources is maintained in the economy for as long as possible, and the economy works to produce minimal waste (EC, 2018). A linear economic model is only concerned with resource extraction, production, and disposal after consumption,

¹ According to Government Decree No. 52/2018/ND-CP dated 12 April 2018 on the development of rural crafts, a 'craft village' refers to one or many residential areas in hamlets, wards, or the equivalent that practices rural craft(s) activities as follows: (i) agro-forestry-fishery product processing and preservation; (ii) production of handicraft products; (iii) processing and preparation of ingredients and materials serving rural crafts; (iv) production of woodwork, straw, ceramic, glass, textile, embroidery, or minor mechanical engineering; (v) production and sale of ornamental animals; (vi) salt production; and (vii) other services serving production and livelihood of rural inhabitants. Moreover, Article 56 of the Law on Environmental Protection 2020 stipulates the requirements for environmental protection in these craft villages. Every craft village must have an environmental protection plan, an autonomous environmental protection organisation, and environmental protection infrastructure. Manufacturing establishments and households in a craft village must seek and implement environmental protection measures as prescribed by law; implement measures for noise, vibration, light, dust, heat radiation, emissions, and wastewater reduction, and in situ pollution remediation; and collect, classify, store, and treat solid waste as prescribed by law.

often leading to the creation of large amounts of waste. In contrast, the circular economy model focusses on resource management and recycling in a closed loop to avoid generating waste. The Law on Environmental Protection 2020 defines a circular economy as an economic model that encompasses the design, production, consumption, and services activities aimed at reducing raw materials, extending product life, reducing waste generation, and minimising adverse impacts on the environment.

Conversion from a linear economic model to a circular economy is a practical approach to solving the fraught relationship between the economy and environment, creating long-term resilience and economic opportunities as well as providing environmental and social benefits.

A circular economy has five components: (i) a design to create green products and to increase repairability, recovery, recycling, and reuse of products and components; (ii) application of cleaner production measures, emission reduction, and the circularisation of materials in the production stage; (iii) more thoughtful consumption through the provision of better services, increasing the responsibility of consumers towards the ecological environment; (iv) better waste management by segregation, end-of-life collection, and waste recycling; and (v) from waste back to resources, including waste recycling and resource reuse (Morl, 2015).

In a circular economy, the value of products, materials, and natural resources are maintained in the economy for longer periods of time, minimising waste generation. Measures to implement a circular economy are diverse, such as refusing to use products harmful to the environment or applying various measures to repair, reuse, remanufacture, and recycle to achieve the goal of reducing the consumption of raw materials and fuel. Enterprises adopt strategies such as (i) closing the loop through design to eliminate waste, pollution, and extraction of materials; (ii) slowing the loop to keep materials in use for longer periods of time; and (iii) narrowing the loop, by using fewer raw materials and for more purposes (Bocken, Miller, Evans, 2016). Based on solutions and strategies for the circular economy, the potential for new business models – such as a circular supply model, recovery model, long-life extension model, and sharing model – will appear (Table 17.1).²



² Waste Reduction Week in Canada, Five Business Models of Circularity, <https://wrwcanada.com/en/get-involved/resources/circular-economy-themed-resources/five-business-models-circularity>

Table 17.1. Value Motivations of a Circular Economy and Benefits for Consumers

Value Driver	Method
Extending the length of an asset's use cycle	<ul style="list-style-type: none"> Designed to last a long time Designed for easy recyclability Designed for easy repair and upgrade Includes clear guidance for maintenance
Increasing the utilisation of an asset or resource	<ul style="list-style-type: none"> Increases the sharing of assets Increases resource productivity Limits negative externalities
Looping or cascading an asset through additional use cycles	<ul style="list-style-type: none"> Reuses material Recycles used material for use as raw material Refurbishes the assets
Regenerating natural capital	<ul style="list-style-type: none"> Returns biological nutrients back to the land Avoids topsoil erosion Regenerates the nutrients of the soil Maintains the marine ecosystem

Source: Anbumozhi and Kimura (2018).

A circular economy also helps address co-benefits related to social inequality and ecological crises. With social equity in mind, a circular economy helps reduce social inequality and works towards inclusive management to achieve decoupling between gross domestic product (GDP) growth and the level of resource use and waste generation into the environment. It requires the participation of all stakeholders from the public sector, mining and raw material enterprises, processors, manufacturers, distributors, retailers, consumers, and garbage collectors. In particular, the public sector plays an important role in creating and promoting a circular ecosystem.

Today, digital technological developments are occurring rapidly, such as those related to cyber-physical systems, internet of things (IoT), simulation, advanced data analytics, robots, augmented reality, and intelligent tools for the support of human resources. New digital technologies can

promote the implementation of a circular economy, including mobile technology, machine-to-machine communication, cloud computing, social media for business, big data analytics, modular designing technology, advanced recycling technology, life and material science technology, trace and return systems, and 3D printing (Anbumozhi, 2022).

Indeed, IoT and the circular economy should be considered as two closely linked components, as IoT helps form and operate digital technology, creating a driving force to promote the application of a circular economy. The parallel development of these two components will create synergies to achieve ambitious economic growth goals while effectively using natural resources and reducing waste generation and adverse environmental impacts. Each level of the circular economy model can apply digital technology (Table 17.2).

Table 17.2. Application of Digital Technology in Business and Waste Management

	Micro (single business model)	Meso (industrial symbolism)	Macro (governance)
Production areas	Cleaner production, eco-design	Industrial park	Industrial network, regional linkage
Consumption areas	Green procurement	Environmentally friendly industrial park, eco-industrial park	Rental services, design services, repair services
Waste management	Recycle system, waste manufacturing	Market for waste and secondary material, second-hand goods	Industrial symbolism, waste collection system
Other support	Policies and legal framework, information foundation, capacity building, digital infrastructure		

Source: Anbumozhi (2022).

There are several potential evolving goods and services that support a transition to a circular economy, such as eco-design services, design for recycling and reuse, refurbishment and repair services, markets for raw and secondary materials, and technologies and products supporting the application of a circular economy. Standards and technical regulations should be set up for these potential goods and services; ensuring appropriate market openness and trade facilitation in circular goods and services is also crucial.

3. Barriers to and Conditions for Implementing a Circular Economy

At the government level, the Organisation for Economic Co-operation and Development (OECD, 2018) identified 13 barriers for countries to transition to a circular economy. In particular, barriers in culture, regulations, finance, and vision are challenges, specifically financial resources, regulatory uncertainty, financial risk, perception, human resources, private sector involvement, political readiness, and technology solutions. From the perspective of a business enterprise, Bianchini, Rossi, and Pellerini (2019) highlighted five groups of internal and external barriers to circular business models: organisational capabilities required, efforts in terms of business definition and corporate structure, technical barriers including expertise, the absence of a legal framework to guide the transition, and financial factors associated with the degree of long-term investment and cost.

In addition, legislation needs to consider factors that play a role in promoting this transition on a national scale. A circular economy platform must be developed by governments synchronously with enough resources to support change. Development strategies and plans play a fundamental role, contributing to stimulating the circular economy process at various scales through a systematic approach similar to the ecological industry approach (i.e. analysis of the flow and possible coordination from near space). To do this, governments must first focus on institutions, because institutions are both barriers to and promoters of the compliance economy. Good governance is also key and can be promoted through equality, participation, consensus, transparency, accountability, and the rule of law in an effective, efficient, and lasting manner.

Lastly, culture is often a major barrier to the launch of a circular economy platform. Culture governs the behaviour of businesses and consumers in dealing with nature; in the economic and efficient use of natural resources; and in waste classification, recycling, and reuse. Economic, social, and environmental benefits should be made clear as well as the desire to improve the quality of life. A circular economy focusses on materials and energy flows to prolong the use of resources and waste management. It helps infrastructure be designed and built in modular and flexible ways and energy systems become resilient and renewable, reducing costs and creating positive impacts on the environment.

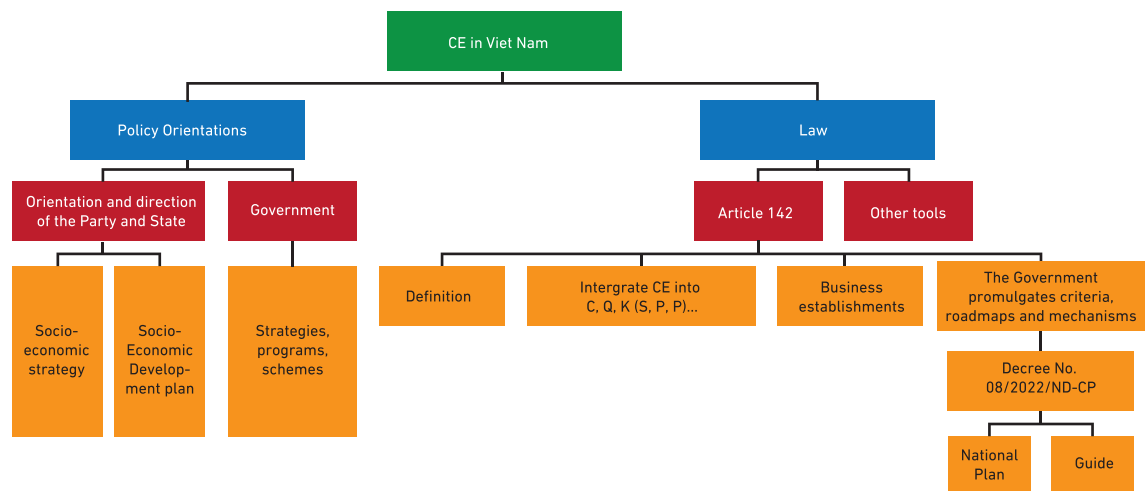


4. Policy and Legal Framework Related to the Circular Economy in Viet Nam

As shown in Figure 17.1, Viet Nam’s policy and legal framework to develop a circular economy consist of two main groups:

- i. policies of the Communist Party and government, reflecting national orientations of the circular economy (e.g. resolutions of the Central Committee, Committee Secretary, National Assembly, and government; socio-economic development strategies and development strategies of various sectors; and national schemes promulgated by the Prime Minister); and
- ii. legal provisions prescribed in existing laws and bylaws (e.g. environmental protection and investment laws and regulations on taxes and incentives).

Figure 17.1. Policy and Legal Framework for the Development of the Circular Economy in Viet Nam



CE = circular economy.
Source: Authors.

4.1. Policies of Communist Party and Government

Regarding the circular economy, the perspectives of the Communist Party and government can be divided as follows:

- i. **Before the 12th National Congress.** Before 2016, the term 'circular economy' had not yet been mentioned in any policy, but there was some movement towards implementing a circular economy.
- ii. **During the 12th National Congress.** From 2016 to 2020, the term 'circular economy' was indicated in several national plans, such as that for the energy sector and the *National Action Plan on Sustainable Production and Consumption, 2021–2030*.
- iii. **During the 13th National Congress.** Since 2021, the concept of a circular economy has been integrated into the *Socio-Economic Development Strategy, 2021–2030, with a Vision to 2045* and *Socio-Economic Development Plan, 2021–2025*. It also has been mentioned in resolutions on agriculture, farmer and rural issues, and the collective economy. Other resolutions and strategies on economic restructuring and the development of industries feature mention of a circular economy. In June 2022, the Prime Minister issued Decision No. 687/QĐ-TTg, approving the scheme for circular economy development in Viet Nam. It aims to decrease greenhouse gas emissions per GDP by at least 15% compared to 2014; to reuse, recycle, and treat 85% of plastic waste; and to reduce 50% of plastic waste in the ocean by 2030 (Table 17.3).³



³ Viet Nam Circular Economy, Decision No. 687/QĐ-TTg dated 7 June 2022 on Approving the Scheme for Circular Economy Development in Vietnam, <https://vietnamcirculareconomy.vn/en/policy-library/decision-no-687-qd-ttg-dated-june-07-2022-on-approving-the-scheme-for-circular-economy-development-in-vietnam/#:~:text=Decision%20No.-,687%2FQD%2-DDTg%20dated%20June%2007%2C%202022%20on%20approving,circular%20economy%20development%20in%20Vietnam&text=On%20June%207%2C%202022%2C%20the,circular%20economy%20in%20Viet%20Nam.>

Table 17.3. Orientations and Policies on the Circular Economy in Viet Nam

STT	Policy	Contents Related to the Circular Economy
I		
Before the 12th National Congress		
1.1	Directive No. 36/1998/CT-TW dated 25 June 1998 on strengthening environmental protection in the period of promoting industrialisation and modernisation	<ul style="list-style-type: none"> - No mention of the term 'circular economy' nor basic solutions of the circular economy, such as recycling and reuse. - Indicated some orientation related to the circular economy: <i>'Continue to promote mass movements for environmental protection such as Green-Clean-Beautiful Environment, VAC system, VACR system, Clean Water and Environmental Sanitation Week for schools and households' and 'use clean technologies that generate low emissions and consume less material and energy'.</i>
1.2	Resolution No. 41-NQ/TW dated 15 January 2004 on environmental protection in the period of promoting industrialisation and modernisation	<ul style="list-style-type: none"> - No mention of the term 'circular economy' but emphasised solutions and models related to the circular economy: <i>'encourage economic use of resources and energy; produce and use clean energy, renewable energy, products and product packaging that are not harmful or less harmful to the environment; recycle and use recycled products' and 'collect and treat all domestic and industrial waste with appropriate methods; priority given to reuse and recycling of waste, minimising landfills, especially in urban areas which do not have enough space for landfills.'</i>

STT	Policy	Contents Related to the Circular Economy
I Before the 12th National Congress		
1.3	Resolution No. 24-NQ/TW dated 3 June 2013 on proactively responding to climate change, strengthening natural resources management, and protecting the environment	<ul style="list-style-type: none"> - No mention of the term 'circular economy', but emphasised solutions and models related to the circular economy: <i>'promote reuse, recycling and production and recovery of energy from waste'</i>.
II During the 12th National Congress		
2.1	Resolution No. 55-NQ/TW dated 11 February 2020 on the orientation of Viet Nam's <i>National Energy Development Strategy to 2030 and Vision toward 2045</i>	<ul style="list-style-type: none"> - Implemented environmental protection policies in the energy sector in association with the goals of reducing greenhouse gas emissions, promoting the circular economy, and sustainable development. - Developed and implemented the scheme to integrate circular economy models into the development strategy of energy enterprises.
2.2	Conclusion No. 56-KL/TW on continuing to implement the resolution of the 7th Party Central Committee, term XI, on proactively responding to climate change, strengthening natural resources management, and protecting the environment	<ul style="list-style-type: none"> - Placed requirements on natural disaster prevention and control, response to climate change, resource management, and environmental protection to be at the centre of all development decisions. - Focussed on handling environmental pollution after 2020, especially in urban areas. - Classified waste at source, especially domestic waste.

STT	Policy	Contents Related to the Circular Economy
II	During the 12th National Congress	
2.3	<i>National Action Plan on Sustainable Production and Consumption for 2021–2030</i>	<ul style="list-style-type: none"> - Promoted the circular economy and sustainable development. - Supported the development and application of popularisation and replication of circular economy models of resources, fuel, and materials in production and consumption activities. - Promoted the application of circular economy models in waste management. - Promoted the application, popularisation, and replication of models of classification, collection, reuse, and recycling of waste and scrap; and developed training documents on circular economy models for waste management in agriculture, fisheries, electronics, chemicals, thermal power, plastic, paper, construction materials, and other economic sectors. - Promoted the supply–demand connection, developing markets for environmental products and technologies, recycling products and technologies, and low-carbon technologies. - Gradually built and applied circular economic models in the field of consumption, encouraging the transition from consumption and ownership of goods to consumption and use of services.

STT	Policy	Contents Related to the Circular Economy
III	During the 13th National Congress	
3.1	Documents of the 13th National Congress	
3.1.1	<i>National Socio-Economic Development Strategy, 2021–2030 with a Vision to 2045</i>	Encourage the development of a circular economy model for integrated and efficient use of the outputs of the production process.
3.1.2	Report on the <i>Socio-Economic Plan, 2016–2020</i> and Resolution No. 16/2021/QH15 dated 27 July 2021 on the <i>Socio-Economic Development Plan, 2021–2025</i>	Develop road maps, mechanisms, policies, and regulations to build and to implement models of green economy, circular economy, and low-carbon economy.
3.2	Resolutions and Directives of the Party and Government	
3.2.1	Resolution No. 19-NQ/TW dated 16 June 2022 on agriculture, farmers, and rural areas to 2030, with a vision to 2045	<ul style="list-style-type: none"> - Encourage the development of green, organic, and circular agriculture. - Encourage the development of circular agriculture; reuse of by-products; and application of new, advanced, and environmentally friendly technologies, attracting enterprises to invest in wastewater and solid waste treatment in villages, industrial and service clusters, and concentrated waste treatment zones.
3.2.2	Resolution No. 20-NQ/TW dated 16 June 2022 on continuing to innovate, develop, and improve the efficiency of the collective economy	<ul style="list-style-type: none"> - Prioritise the development of collective economic organisations associated with the development of green economy, circular economy, and knowledge economy. - Issue synchronised policies to attract resources; apply science and technology; develop a circular

STT	Policy	Contents Related to the Circular Economy
		economy, green economy, and organic agriculture; adapt to climate change and digital transformation; and expand the market for the collective economy.
3.2.3	Resolution No. 43/2022/QH15 on fiscal and monetary policies supporting economic recovery and development programme	Build breakthrough policies, giving priority to encouraging innovation, digital transformation, digital economy, green economy, and circular economy associated with sustainable development.
3.2.4	Resolution No. 11/NQ-CP dated 30 January 2022 on the socio-economic recovery and development programme and implementation of Resolution No. 43/2022/QH15 on fiscal and monetary policies to support the programme	Continue to research and implement breakthrough solutions; encourage innovation; promote digital transformation; and develop the digital economy, green economy, and circular economy associated with sustainable development.
3.3	Decisions of the Prime Minister	
3.3.1	Decision No. 1520/QD-TTg dated 6 October 2020 approving an animal husbandry development strategy for 2021–2030 with a vision to 2045	Promote the expansion of animal husbandry in a closed chain following circular economy models.
3.3.2	Decision No. 450/QD-TTg dated 13 April 2022 approving the <i>National Environmental Protection Strategy until 2030, with a Vision to 2050</i>	Prevent the increasing trend of environmental pollution and degradation; deal with pressing environmental issues; gradually improve the environment; prevent the loss of biodiversity; improve climate change response capacity; ensure environmental security;

STT	Policy	Contents Related to the Circular Economy
3.3.3	Decision No. 1658/QD-TTg dated 1 October 2021 approving the <i>National Green Growth Strategy, 2021–2030, with a Vision to 2050</i>	develop and build circular economy, green economy, and low-carbon economy models; and aim to achieve 2030 sustainable development objectives.
3.3.4	Decision No. 493/QD-TTg dated 19 April 2022 approving the <i>Strategy for Merchandise Exports and Imports to 2030</i>	Transform the growth model in a manner towards 'greenification' of economic sectors, apply the circular economic model through the efficient extraction and use of natural resources and energy that are based on science and technology, apply digital technology and digital transformation, develop sustainable infrastructure facilities to enhance the quality of growth, promote competitive advantages, and reduce adverse impacts on the environment.
3.3.5	Decision No. 687/QD-TTg dated 7 June 2022 approving the scheme for circular economy development in Viet Nam	<ul style="list-style-type: none"> - Contribute to the goal of reducing greenhouse gas emissions. - Raise awareness and concerns of enterprises and investors in Viet Nam regarding the circular economy, and promote the application of the circular economy model to promote the green transition of economic sectors.

STT	Policy	Contents Related to the Circular Economy
		<ul style="list-style-type: none"> - By 2025, circular economy projects are essential in the implementation phase and reaping economic, social, technological, and environmental effectiveness; contribute towards restoration of renewable resources, reduction of energy consumption, and increase of the ratio of renewable energy over total energy supply, forest cover, waste recycling rates, import substitution rates of agricultural, forestry, fishery, and export products. - By 2030, circular economy projects become a primary drive in reducing energy consumption with major or total autonomy in energy demand by utilising renewable energy and in increasing forest cover. - Circular economy models assist the development of green living, encourage waste segregation, and promote sustainable consumption. - By 2025, reuse, recycle, and treat 85% of plastic waste produced; reduce 50% of plastic waste in the ocean compared to the prior period; and gradually reduce production and use of non-biodegradable nylon bags and disposable plastic products. Drastically increase organic waste-recycling capacity in urban and rural areas. Raise awareness regarding the production, consumption, and disposal of plastic waste, non-biodegradable nylon bags, and disposable plastic waste. - By 2030, collect and treat 50% of urban municipal solid waste to standards and regulations

STT	Policy	Contents Related to the Circular Economy
		<p>via circular economy models; recycle 100% of organic waste in urban areas and 70% of organic waste in rural areas; no longer bury municipal solid waste within circular economy models in urban areas; maximise the collection and treatment of urban wastewater to standards and regulations.</p> <ul style="list-style-type: none"> - The circular economy model plays a vital role in improving the quality of life and resistance of the public to climate change and ensuring equality in conditions and opportunities to improve the capacity, productivity, and income of workers from a circular economy.

Note: A VAC system (*vuon, ao, chuong*) refers to a garden/pond/livestock pen, while a VACR system (*vuon, ao, chuong, rung*) denotes a garden/pond/livestock pen/forest.
Source: Authors.

4.2. Regulations on the Circular Economy in Viet Nam

In 2020, the concept of the circular economy was regulated in the Law on Environmental Protection.⁴ Following Clause 11, Article 5 of this law, the government affirmed its commitment to incorporate and to promote a circular and green economy in the formulation and implementation of its socio-economic development strategies, plans, programmes, and projects. Article 142 of the law promulgates a circular economy.

According to the law, a circular economy is officially defined as an economic model that encompasses design, production, consumption, and services activities aimed at reducing raw materials, extending product life, reducing waste generation, and minimising adverse impacts on the environment. The law also assigns responsibilities for a circular economy to relevant government agencies and stakeholders. Ministries, ministerial agencies, and provincial people’s committees must incorporate circular economy principles when formulating development strategies; planning a programme or project; and managing, reusing, and recycling waste. Every business must also establish a

⁴ The Law on Environmental Protection 2020 replaced the Law on Environmental Protection 2014; it took effect 1 January 2022.

management system and take measures to reduce the extraction of natural resources, reduce waste, and increase waste recycling and reuse from setting up a project to designing a product or goods for production and distribution.

In addition, the government is required to detail criteria, road maps, and mechanisms for encouraging the implementation of a circular economy in conformity with national socio-economic conditions. The government has built a relatively strong legal and policy foundation to promote a circular economy in various sectors, through policies on waste segregation at the source, green public procurement, extended manufacturer liability, recycling markets, various preferential and supportive measures, development of environmental industry, environmental services, green purchase, green credit, and green bonds.


Based on the concept outlined under the law, Decree No. 08/2022/ND-CP dated 10 January 2022 provides more detailed regulations on the criteria, road maps, and incentive mechanisms for the implementation of a circular economy in Viet Nam. It identifies three groups of criteria for a circular economy:

- i. reduce the exploitation and use of non-renewable and water resources; increase the efficiency in the use of resources, raw materials, and materials; and save energy;
- ii. extend the useful life of materials, equipment, products, goods, and parts; and
- iii. reduce waste generated, and minimise adverse impacts on the environment, including by reducing solid waste, wastewater, and emissions; reducing the use of toxic chemicals; recycling waste, and recovering energy; reducing disposable products; and developing green purchasing habits.

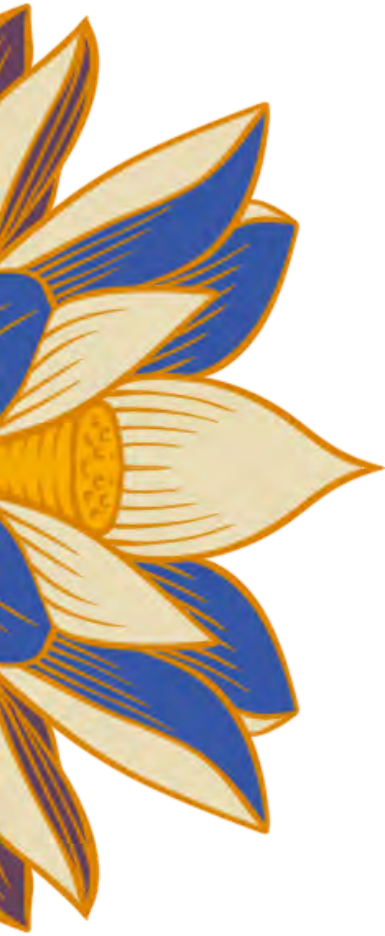
To achieve these objectives, the decree suggests measures for businesses outlined below:

- i. owners of production, business, and service establishments should take one or more measures in the following order of priority: (a) restrict the use of non-eco-friendly products; make the best use of equipment and products; and increase efficiency in product manufacturing or efficiently use natural resources, raw materials, and materials; (b) extend the life cycle of products and their parts through reuse, repair, refurbishment, remanufacture, or repurpose; and (c) reduce waste generated by recycling waste or incineration of waste with energy recovery; and
- ii. owners of investment projects; businesses; dedicated areas for production, business operations, and service provision; and industrial






clusters should undertake one or more of these measures: (a) design an optimal master plan that establishes a connection between investment projects and businesses to improve efficiency in the use and reduction of the consumption of soil, water, minerals, and energy; increase the recycling rate; and reduce the total amount of waste generated; (b) develop and use clean and renewable energy as prescribed by law; (c) collect and store rainwater for reuse; and collect, treat, and reuse wastewater; and (d) carry out industrial symbiosis activities in accordance with the law on the management of industrial parks and economic zones.



Secondly, the decree stipulates that the Ministry of Natural Resources and Environment (MNRE) must preside over and cooperate with ministries, ministerial agencies, and provincial people's committees in formulating and submitting to the Prime Minister a national action plan on the circular economy before 31 December 2023; build and operate a platform for sharing data on the application of the circular economy model; and establish and introduce a methodological framework for assessment of the implementation of the circular economy. Ministries and ministerial agencies must formulate and approve action plans for implementation of a circular economy; organise the dissemination of laws and provision of training on the circular economy; incorporate specific criteria for implementation of the circular economy in development strategies, plans, programmes, and projects and in the management, reuse, and recycling of waste; manage information on the implementation of the circular economy and integrate it with MNRE's information system; and organise pilot applications of the circular economy in the energy, fuel, and waste industries according to the action plans. Provincial people's committees must formulate provincial action plans for implementation in conformity with the national action plan and organise pilot applications of the circular economy to the energy, fuel, and waste industries according to the action plans.



The decree requires three kinds of action plans for the circular economy: a national action plan; provincial action plans; and action plans for various industries, fields, and products. Owners of investment projects and businesses – as well as investors in construction and commercial operations of infrastructure in dedicated areas for production, business operations and service provision, and industrial clusters – are encouraged to apply the circular economy model earlier than the road map specified in action plans as prescribed.

Mechanisms and incentives to encourage the implementation of a circular economy have also been regulated in law. According to Decree No. 08/2022/ND-CP, the government is prioritising the development of a circular economy by conducting scientific research, developing

applications, transferring technologies, producing equipment, and training personnel to implement a circular economy; and providing a platform for connecting information and sharing data on the circular economy. In addition, the government is encouraging the following activities for the development of a circular economy:

- i. developing technologies and technical solutions, and providing circular economy assessment, design, and consulting services as prescribed by law;
- ii. developing models for connecting and sharing the circular use of products and waste; establishing cooperative recycling groups, unions and alliances, and models for regional and rural–urban connections to carry out investment, manufacturing, and business activities, thereby meeting circular economy criteria;
- iii. adopting industrial symbiosis measures in accordance with regulations of law on the management of industrial parks and economic zones;
- iv. developing discarded product reuse and waste-recycling markets;
- v. mobilising social resources for the implementation of a circular economy as prescribed by law; and
- vi. developing international cooperation, exchanging experience, knowledge, and technologies in relation to the circular economy as prescribed by law.

Furthermore, organisations or individuals that carry out activities or have projects applying the circular economy model are entitled to incentives or assistance in environmental protection. Incentives and assistance include exemption and reduction of land levies and rents; incentives from the Viet Nam Environmental Protection Fund, provincial environmental protection funds, and Vietnam Development Bank; corporate income tax incentives; and subsidies for environmental protection products and services. Moreover, organisations and individuals implementing circular economy models are entitled to incentive policies on green credit and green bonds.⁵

5. Practical Application of a Circular Economy in Viet Nam

In Viet Nam, many industries and localities have models that include manifestations of a circular economy, such as eco-industrial parks, cleaner production models, waste-recycling craft villages, or circulation initiatives of enterprises (Table 17.4). However, some initiatives have been unsustainable and even caused significant impacts on environmental protection objectives.

⁵ Article 154, Article 155, Article 156, and Article 157 of Decree No. 08/2022/ND-CP.

Table 17.4. Models Embedding the Principles of the Circular Economy in Viet Nam

Category	Circular Economy-Related Principles
Production	
Agriculture, forestry, and fisheries	<p>Several circular models exist in many provinces (e.g. VAC and VACR models to make use of biomass; models of collecting agricultural waste such as tree trunks, straw, and rice husks; a bioaquatic model; and an organic farming model). In cultivation, the by-products of peanut shells, corn stalks, rice straw, cassava stalks, soybean hulls, firewood from perennial plants, and firewood from annual plants are used. Straw is also used as food for cattle, biological padding, mushroom cultivation, and for composting as traditional organic fertilizer and burning. Regarding livestock, by-products are used in traditional composting, biogas production, microbial manufacturing biological padding and for commercial purposes such as earthworm farming. In aquaculture, the collection rate is more than 90%; by-products are used for the extraction process of biological compounds; food products, such as fish oil; and producing organic fertilizer.</p>
Mining	<p>Mining activities have the potential to apply the principles of the circular economy to make efficient use of waste from mining, minimising adverse impacts on the environment.</p>
Manufacturing and processing	<p>Circulation of water, raw materials, and materials in production and business establishments has been applied (e.g. in the pulp and paper industry and metallurgy).</p>
Water supply, management, and treatment	<p>Waste collection, classification, and treatment units act as intermediaries in promoting recycling, reuse, and waste reduction. There are models of</p>

Category	Circular Economy-Related Principles
Production	
Construction	<p>plastic waste treatment, composting, and energy recovery from waste as well.</p> <p>Waste generated from construction activities, such as rocks, bricks, tiles, mortar, concrete, and adhesive materials, are used, reused, and recycled.</p>
Transport	<p>The model of transforming from products to services, such as leasing batteries and sharing models, is popular.</p>
Repair and trade of second-hand goods	<p>Repair and refurbishment are quite common in Viet Nam.</p>
Energy	<p>There are current waste-to-energy models and renewable energy models in Hau Giang, Ha Noi, and some localities.</p>
Other services	<p>Consulting services on evaluating and providing technologies, equipment, and solutions related to a circular economy – as well as training on the circular economy – have been deployed by many universities.</p>
Meso Level	
Industrial parks, industrial clusters	<p>Some eco-industrial parks have applied industrial symbiosis and circularity initiatives within their limits (e.g. Nam Cau Kien Industrial Park).</p>
Urban areas, residential areas	<p>Some pilot activities in residential clusters have begun, such as wrapping vegetables and fruits with banana leaves, using glass bottles and bamboo or paper straws, and using paper cups instead of plastic cups and cloth bags instead of plastic bags.</p>

Category	Circular Economy-Related Principles
Consumption	
Intermediate consumption	The market for raw materials and fuels for the recycling and reuse of products has been formed.
Governmental consumption	Legal regulations on green public procurement have been finalised; the government and private sector aim to integrate environmental criteria into the procurement process.
Household consumption	By promoting the consumption of eco-labelled, energy-saving products, renewable energy tends to increase.
Waste Management	
Solid waste	Some models demonstrating the circular economy approach in the field of waste recycling include recycling iron, aluminium, copper, zinc, glass, paper, and plastic from scrap in large, medium, and small-scale industrial production or craft villages; plants producing micro-organic fertilizers from domestic waste, and clean soil from dredging sludge and sewage sludge collected from domestic wastewater treatment plants; establishments using agricultural waste to grow mushrooms and produce livestock feed; plants producing building materials from ash, slag, and gypsum generated from coal-fired thermal power, fertilizer, and chemical plants; plants producing refuse-derived fuel and refuse, derived paper, and plastic densified fuel from domestic industrial waste; energy recovery and electricity from waste incineration plants; and hazardous waste recycling plants.
Wastewater	Wastewater circulation in some industrial zones (e.g. Nam Cau Kien Industrial Park); wastewater treatment stations with reverse osmosis technology to provide treated wastewater

Category	Circular Economy-Related Principles
Waste Management	for production; and wastewater treatment to meet the requirements of watering plants and aquaculture.
Emissions	Emissions treatment systems use cloth-bag dust filtration technology to recover products. Plants are recovering carbon dioxide (e.g. breweries) and sulphur dioxide (e.g. thermal power plants).

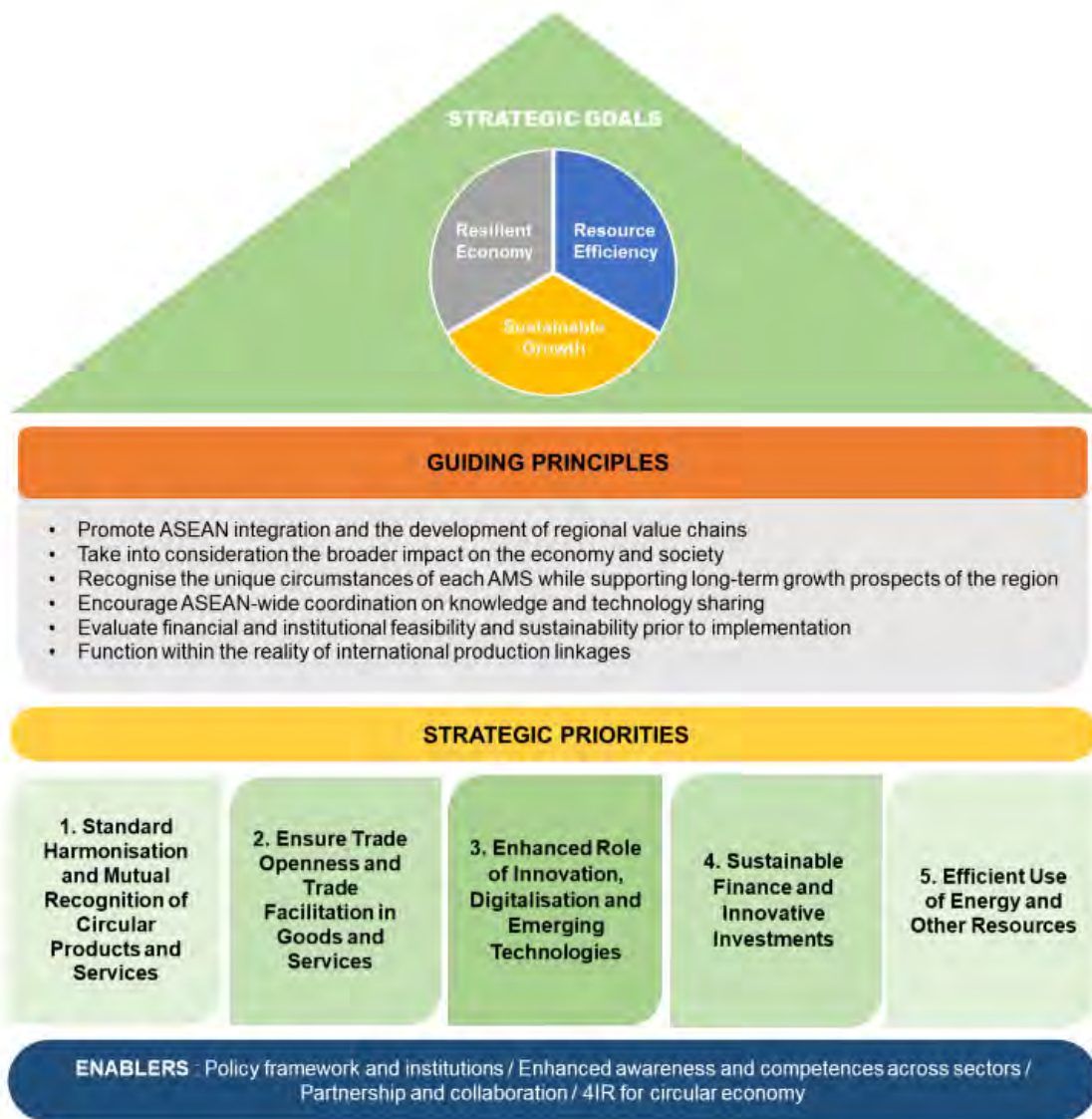
Note: A VAC system (*vuon, ao, chuong*) refers to a garden/pond/livestock pen, while a VACR system (*vuon, ao, chuong, rung*) denotes a garden/pond/livestock pen/forest.
Source: Authors.

6. The Circular Economy in ASEAN and Japan: Requirements and Opportunities for Viet Nam

6.1. Framework for a Circular Economy in the ASEAN Economic Community

The transformation from a linear economy model to a circular economy model is happening in ASEAN as several ASEAN Member States (AMSs) have issued strategies, policies, and road maps to address the sustainability challenges of resource depletion, plastic waste, and climate change. In 2021, ASEAN adopted the *Framework for Circular Economy for the ASEAN Economic Community* (Figure 17.2). It sets up a long-term vision for a circular economy based on existing initiatives and identifies focus areas for action (ERIA, 2021). It has three strategic goals: a resilient economy, resource economic efficiency, and sustainable and inclusive growth. To create a common context for circular economy initiatives for AMSs, the framework provides six guiding principles: (i) promote ASEAN integration and the development of regional value chains; (ii) consider broader impacts on the economy, sectors, and society; (iii) recognise the unique economy of each AMS whilst supporting long-term growth prospects of the region; (iv) encourage ASEAN-wide coordination on knowledge, technology transfer, and capacity building; (v) evaluate financial and institutional feasibility and sustainability; and (vi) aim to function within the reality of international production networks and linkages prior to implementation.

Figure 17.2. Framework for a Circular Economy for the ASEAN Economic Community



AMS = ASEAN Member State, ASEAN = Association of Southeast Asian Nations.

Source: ERIA (2021).

According to the framework, five strategic priorities are key for the transition to a circular economy:

- i. **Strategic Priority 1.** Harmonise standards, and mutually recognise circular products and services.
- ii. **Strategic Priority 2.** Encourage trade openness and trade facilitation in circular goods and services.
- iii. **Strategic Priority 3.** Enhance the role of innovation, digitalisation, and emerging/green technologies.
- iv. **Strategic Priority 4.** Foster competitive sustainable finance and innovative environmental, social, and governance (ESG) investments.
- v. **Strategic Priority 5.** Use energy and other resources efficiently.

Despite the many initiatives undertaken, they have been fragmented, with insufficient collective targets and a lack of a synergetic approach. Indeed, the transition to a circular economy at the regional level demands cooperation amongst sectoral bodies; collaboration amongst the public and private sector and communities; as well as preservation of the efforts with commitment. The process must be built upon emerging best practices at the national level and tips for those AMSs devising their own road maps to facilitate an ASEAN-wide transition to a circular economy.

6.2. Legislation and Policy Framework for a Circular Economy in Japan

Japan's approach to a circular economy is a typical example at the national level. Since 1991, it has implemented a circular economy by formulating legal provisions to transform the country into a recycling-based society. The legal core is the Basic Law for Establishing a Recycling-Based Society, which entered into force in 2002, and set out quantitative targets for recycling in the long term. As a result, Japan quickly achieved the highest recycling rate in the world. In 2007, only 5% of Japan's waste went to landfills, compared with 48% of that of the United Kingdom in 2008. Since 2010, the recycling rate for metals in Japan reached 98% (MOE, 2010). Its recycling law for electrical home appliances ensures that over 50% of electronic products are recycled, compared with 30%–40% in Europe (METI, 1998; Hotta, Santo, Tasaki, 2014). About 74%–89% of the materials contained in these devices have been recovered to produce similar products, helping save costs and reduce dependence on mining resources (WEEForum, 2012).

At the national level, the implementation of a circular economy is examined by using (i) a resource productivity indicator that measures material use as a proportion of GDP; (ii) an indicator for the cyclical use rate of materials in the economy, measured by the material reused as a proportion of total material used by the economy; and (iii) an output indicator, measuring how much waste is buried in landfills. These indicators are associated with specific targets.

The legislation and policies on the circular economy in Japan have been collected, examined, and summarised in Table 17.5.

Table 17.5. Overview of Legislation and Policy on the Circular Economy in Japan

Name	Year	Overview
Legislation		
Basic Act on Establishing a Sound Material-Cycle Society	2000 (Revised in 2013)	Promotes policies for establishing a sound material-cycle society and formulating the <i>Fundamental Plan for Establishing a Sound Material-Cycle Society</i> .
Waste Disposal and Public Cleansing Act	1970 (Revised in 2017)	Preserves the living environment and improves public health through the restriction of waste discharge; appropriate sorting, storage, collection, transport, recycling, disposal, and clarification of waste; and conservation of a clean environment.
Act on the Promotion of Effective Utilisation of Resources	1991 (Revised in 2001)	Ensures the effective use of resources, reduces the generation of used products and by-products, and promotes the utilisation of recyclable resources and reusable parts to contribute to waste reduction and environmental preservation.
Act on Recycling Home Electrical Appliances	1998	Regarding specified post-consumer home appliances, stipulates the roles of each player: collection from consumers by retailers, recycling by manufacturers or importers as well as payment of fees for collection, and transport and recycling by consumers when they discard those appliances.
Act on Recycling of End-of-Life Automobiles	2002	Promotes recycling and proper disposal of end-of-life vehicles by clarifying the roles of car owners, collection operators, fluorocarbon-recovery operators, dismantling operators, shredding, and sorting operators, and vehicle manufacturers and importers.

Name	Year	Overview
Legislation		
Act on Promotion of Sorted Collection and Recycling of Containers and Packaging	1995	Promotes the reduction of waste containers and packaging discharged and the sorted collection thereof as well as the recycling of waste containers and packaging that are obtained through the sorted collection that conform to sorting standards to ensure proper management of waste and effective use of resources through reduction of municipal solid waste and adequate use of recyclable resources.
Act on Promotion of Resource Recycling on Plastics	2022 (Scheduled to be enacted)	Promotes the circulation of plastics in a comprehensive manner.
Act on Promotion of Recycling of Small Electrical and Electronic Equipment	2012	Considering circumstances where a considerable portion of metals or other useful materials used in electrical and electronic equipment is disposed of without being recovered, promotes the recycling of small electrical and electronic equipment, thereby ensuring proper disposal of waste and effective use of resources.
Act on the Recycling of Construction and Demolition Waste	2000	Requires contractors to sort and to recycle waste generated in construction and demolition work.



Name	Year	Overview
Visions and plans		
Circular Economy Vision 1999	1999 (developed and published by METI)	Consists of four chapters: (i) the way forward to a circular economy, (ii) reconstruction of waste management and recycling measures towards the establishment of a circular economy, (iii) future challenges and policy responses towards the establishment of a circular economy, and (iv) status and issues in individual areas. Priority sectors include containers and packaging, home appliances and batteries, automobiles and bicycles, construction material, general industrial waste, and others (waste oil, gas and oil equipment, and aerosol cans).
Circular Economy Vision 2020	2020 (developed and published by METI)	To demonstrate the strengths that Japanese companies have developed through their 3R efforts in the global market and to strengthen industrial competitiveness in the medium and long term, shows the basic direction of Japan's circular economy policy from three perspectives: (i) the transition towards more circular business models, (ii) appropriate evaluation from the market and society, and (iii) early establishment of a resilient resource circulation system. Priority sectors include plastics, textiles, carbon fibre reinforced polymers, batteries, and photovoltaic panels.
First Fundamental Plan for Establishing a Sound Material-Cycle Society	2003	Accelerates the transition to sustainable production and consumption models through (i) conservation of nature and enhancement of a virtuous socio-economic cycle, (ii) shift in consciousness and behaviours in daily life, (iii) shift in consciousness and behaviours toward manufacturing, (iv) activation of various entities' activities for establishing a sound material-cycle society,

Name	Year	Overview
Visions and plans		
Second Fundamental Plan for Establishing a Sound Material-Cycle Society	2008	and (v) enhancement of systems for proper circulation and disposal of waste. Priority sectors include biomass, appropriate circulation and disposal of waste, treatment of waste containing hazardous substances, and monitoring of illegal dumping of waste.
Third Fundamental Plan for Establishing a Sound Material-Cycle Society	2013	Formulated in consideration of the results of past efforts, progress in achieving targets, and changes in socio-economic conditions such as global resource constraints and the need to cope with environmental issues such as global warming. The main directions were (i) conserving nature and enhancing a virtuous socio-economic cycle; (ii) realising a circular society based on the characteristics of each region; (iii) establishing a socio-economic system with minimal resource consumption and high energy efficiency; (iv) establishing a lifestyle based on the concept of <i>Mottainai</i> , and accelerating partnerships amongst related entities; (v) promoting the 3R concept in economic activities such as manufacturing; and (vi) enhancing the system for appropriate circulation and disposal of waste. Priority sectors include biomass, appropriate circulation and disposal of waste, appropriate treatment of waste containing hazardous substances, and monitoring of illegal dumping of waste.

Name	Year	Overview
Visions and plans		
Fourth Fundamental Plan for Establishing a Sound Material-Cycle Society	2018	<p>the various entities constituting society. The main directions included (i) a society where circulation in the environment and circulation in the economy are harmonised, (ii) establishment of a concept of a 3R lifestyle and a regional circular sphere, (iii) establishment of a socio-economic system with high resource efficiency, (iv) realisation of safety and security, and (v) international initiatives. Priority sectors included plastics; biomass; household food loss; base metals, rare metals, and other metals; appropriate treatment of waste containing hazardous substances, mercury, waste containing mercury, and agricultural chemicals stored underground; monitoring of illegal dumping of waste; and strengthening waste management systems in case of disaster.</p> <p>Aims for the integrated improvement of environmental, economic, and social aspects. A vision, indicators, and planned measures have been set for seven pillars: (i) integrated measures towards a sustainable society, (ii) regional circular and ecological sphere, (iii) resource circulation throughout the entire life cycle, (iv) proper waste management and environmental restoration, (v) disaster waste management systems, (vi) international resource circulation, and (vii) sustaining fundamentals for 3R and waste management. Priority sectors include plastics; biomass; base metals, rare metals, and other metals; earth and rocks; construction materials; products and materials introduced widely as a measure against global warming and</p>

Name	Year	Overview
Visions and plans		
		other environmental problems, lithium-ion batteries, and carbon fibre-reinforced plastics; POPs, mercury, waste containing mercury, and agricultural chemicals stored underground; waste electronic substrates; and household food loss.

3R = reduce, reuse, recycle; METI = Ministry of Economy, Trade and Industry.
Source: Nippon Koei Vietnam International (2022).

Japan has developed several well-known circular models in urban and rural areas, including eco-towns and eco-villages. Kawasaki is one eco-town where resources are reused and recycled. During Japan’s era of high economic growth (i.e. 1950s to 1970s), Kawasaki was a leading industrial city that suffered from air and water pollution as well as poor waste disposal. The local government joined with residents to solve this environmental contamination by signing agreements with companies over air pollution control. Today, Kawasaki is building an economy and society based on circulating resources, taking advantage of its expertise in promoting environmental industries and recycling. *The Fundamental Strategy of the Kawasaki Sustainable-Energy City Plan* was thus developed. It consists of four pillars:

- i. Companies contribute to improving their green credentials through the construction of advanced recycling facilities and processes of eliminating factory effluent and industrial discharge.
- ii. Companies develop sustainable, environmentally friendly districts through research on energy savings and recycling, management plans, and promotion of research and development of the industry.
- iii. Business alignment encourages the area’s ecology with the construction of the Kawasaki Zero-Emission Industrial Complex, hybrid cars, and synergic recycling activity in the area.
- iv. Companies announce their achievements and convey their ideas to society and developing countries by constructing an eco-town centre, implementing ecology studies and sharing information on achievements and ideas. The model also contributes to local employment and effective land utilisation by attracting businesses to eco-town areas, branding the area and overall industrial promotion and regional revitalisation (GEC, 2005).

Another related circular model in rural areas is an eco-village (Ogata, 2014). *Satoyama* – areas between foothills and arable land – is a production ecosystem featuring secondary forests, farmlands, irrigation ponds, grasslands, and human settlements. Humans create such areas to produce food and fuel, conserve land and headwaters, and provide places for leisure. The initiative intends harmony with nature, comprising human communities where the maintenance and development of socio-economic activities align with natural processes. The initiative is based on five ecological

and socio-economic perspectives: (i) resource use within the carrying capacity and resilience of the environment; (ii) cyclic use of natural resources; (iii) recognition of the value and importance of local traditions and cultures; (iv) multi-stakeholder participation and collaboration in sustainable and multi-functional management of natural resources and ecosystem services; and (v) contributions to sustainable socio-economies including poverty reduction, food security, sustainable livelihoods, and local community empowerment (Matsuya, 2013).

To promote a transition to a circular economy, innovation also plays an important role. Japan is a world leader in eco-innovation, and the environmental market in Japan has been rapidly expanding since the second half of the 1990s. The Ministry of the Environment; Ministry of Economy, Trade and Industry; Ministry of Education, Culture, Sports, Science and Technology; and Council for Science and Technology Policy are major contributors to eco-innovation in Japan. The main policies include Economic and Fiscal Reform (2007), Economic Growth Initiative (2007), *Becoming a Leading Environmental Nation in the 21st Century: Japan's Strategy for a Sustainable Society* (2007), *Keys to Create Innovation and Promote Eco-Innovation* (2007), Cool Earth Innovation Energy Technology Program (2008), *Third Science and Technology Basic Plan* (2013), and Intellectual Property Strategic Program (various years). Many policy instruments, such as mobilisation of financing, have already been mentioned, including the Industrial Cluster Policy, which illustrates how public support can be used to access market and private financial resources; eco-town projects, which demonstrate how central government initiatives can generate local action; market-based instruments that focus on subsidies and public support schemes for renewables; the Japan Voluntary Emissions Trading Scheme; green public procurement, which became mandatory in 2001; and awareness raising and training (Leflaive, 2008).

6.3. Requirements and Opportunities for Viet Nam's Circular Economy

Based on the case study of Japan and *The Framework for Circular Economy for the ASEAN Economic Community*, several requirements and opportunities for Viet Nam to promote a circular economy model are suggested:

- i. A legal system should be established, which specifies the objectives and tasks to be performed, measures and incentives, and responsibilities and coordination amongst stakeholders to develop a circular economy. It is necessary to consider revising and supplementing other modes as well, such as the environmental protection tax and laws on consumer protection and public investment.
- ii. A national action plan and implementation road map should be detailed to transition from a linear to a circular economy. Specific actions and tasks should be aligned with implementing a circular economy, such as product design, manufacturing, consumption, disposal, waste management, secondary material management, investment innovation, and initiatives.
- iii. Businesses should play a central role in implementing a circular economy. They can enjoy relevant preferential policies and incentives from the government, as well as voluntarily re-innovate their businesses towards protecting the environment, saving resources, and improving competitiveness.
- iv. All stakeholders should be engaged in the transition to a circular economy since it is considered

- a systemic change – requiring all stakeholders from the public and private sectors, citizens, knowledge institutions, and non-governmental organisations to play roles. Accordingly, formal stakeholder engagement mechanisms are essential to inform circular economy policymaking. For example, forums and websites that are certified by the government should provide knowledge and services as well as undertake public consultation on circular economy issues.
- v. A monitoring framework should be built to show progress towards predefined circular economy targets. The data collected allow policymakers to monitor progress towards the achievement of targets to evaluate and to adjust circular economy policies. Furthermore, the framework could promote transparency by allowing all interested stakeholders to monitor the progress towards achieving a circular economy.
 - vi. A national circular economy information system should be established to monitor and to adjust policy. Collecting and analysing data related to the circular economy inform policymakers, assessing the effectiveness of circular economy policies and adjusting them when needed. To enhance policymaking based on robust evidence and data, local governments and relevant stakeholders should actively harmonise and streamline data collection, ensuring better data quality and timeliness. This also encourages data sharing from the private sector to enable comprehensive assessment and projections on waste, resources, and socio-economic and environmental impacts caused by economic activities.
 - vii. Japan and Viet Nam should work together to share experiences and best practices in the adoption and monitoring of circular economy implementation, especially in waste management, digital technologies, eco-cities and eco-villages, and trade promotion of environmental goods.

7. SWOT Analysis of Implementation of a Circular Economy in Viet Nam

A SWOT analysis provides insights for policymakers to take advantage of opportunities by employing strengths and avoiding threats by correcting weaknesses. The following SWOT analysis was conducted based on comprehensive research on the national context and consultation with relevant experts. This section summarises the strengths and opportunities for the implementation of a circular economy in Viet Nam, followed by an analysis of weaknesses and threats. It examined regulations, the market, culture, entrepreneurship support, financing and capital, industry, and technology.

7.1. Strengths and Opportunities

The main strengths and opportunities for Viet Nam to transit to a circular economy include the following.

- i. The development of a circular economy has been affirmed in key documents of the 13th National Congress, especially in the Strategy for Socio-Economic Development, 2021–2030. Laws and bylaws regulate requirements and methods for implementing a circular economy as well. The legal system has been gradually revised with a market-based approach, and the development of legal documents is increasingly consistent and synchronised, respecting the principles and laws of a market economy.

- ii. The rapid development of science and technology, particularly the Fourth Industrial Revolution and the internet, have contributed to the formation of new solutions and business models that exploit resources more efficiently.
- iii. Greener financial capital continues to grow. Over the last 20 years, green credit and bonds have become important tools to raise capital for projects that benefit the environment, respond to climate change, and support sustainable development goals and the Paris Agreement. Viet Nam's green capital market has great potential to attract domestic and international investors in renewable energy, waste management, green agriculture, low-carbon transport, and water management.⁶
- iv. The awareness and demand of domestic consumers have been a considerable driving force for innovation in the manufacturing and services sectors. Accordingly, this requires cleaner production and supply of more environmentally friendly goods and services.
- v. The international integration and implementation of trade commitments in new-generation free trade agreements have created transformational pressures on the manufacturing and business sectors, since standards and technical regulations on products and goods are associated with promoting recycling, reuse, and compliance with environmental regulations.
- vi. In Viet Nam, many new markets have been formed, such for environmental goods and services, secondary materials, environmentally friendly products, and green bonds and green credits.
- vii. The transition to a circular economy has occurred in many countries, including developed and developing countries. Lessons from such transitions provide valuable experience for Viet Nam in formulating and implementing a circular economy model.

7.2. Weaknesses and Threats

Viet Nam still has many challenges and obstacles that need to be overcome, including the following.

- i. A systematic approach to governance, as well as in economic activities, has not been recognised. A holistic approach that cuts across sectoral policies is key to a circular economy. It also requires shared responsibility across levels of government and stakeholders. Viet Nam shows a lack of synchronisation in developing and implementing strategies, master plans, and plans. There has been ineffective coordination amongst all levels and sectors as well as limited cross-sectoral and inter-regional perspectives in formulating and approving development master plans and plans.
- ii. The effectiveness and enforcement of legal provisions are still limited. Although Viet Nam has built up a comprehensive system of policy tools to promote the transition to a circular economy, the implementation of such regulations has been low.
- iii. Some sectors still take short-term profit goals without considering long-term and sustainable benefits from environmental protection and circular production. For example, some enterprises have violated environmental regulations to reduce their costs for handling pollution. Others intend to implement a circular economy, but their motivation comes from enjoying the incentives and support of the government instead of their social responsibility.

⁶ From 2016 to 2030, Viet Nam could attract about \$753 billion of investment in climate, with the majority (about \$571 billion) for transport infrastructure construction. Investment in renewable energy could attract \$59 billion, of which more than half (\$31 billion) is in solar projects, and \$19 billion is in small hydro projects. About \$80 billion will be invested in the green building sector (IFC, 2016).

- iv. The markets for environmental goods and services, environmentally friendly products, and recycled products are not a focus and do not operate in line with international markets. One of the reasons is that there has not been a complete set of standards and technical regulations on environmentally friendly and recycled products in Viet Nam.
- v. The government has not taken a prominent role in supporting the development and regulation of the markets and the behaviour of actors towards the goal of efficient use of natural resources and promoting production and consumption of environmental goods and services and environmentally friendly products.
- vi. Some policy tools, such as public investment, consumer rights, the value-added tax, and environmental protection tax, have not been synchronised to ensure transparency, fairness, and sustainability in using natural resources. Also, these have not created the financial pressure and motivation to promote technological innovation, improving the social responsibility of businesses and consumers to realise circular economy goals.
- vii. The apparatus, information and data system, and mechanism for monitoring the implementation of a circular economy have not yet been formed. At present, many ministries, line ministries, associations, universities, and research institutes have engaged in the development of a circular economy in Viet Nam, but there is still a lack of an agency guiding and coordinating the overall activities related to the circular economy.
- viii. The production and consumption of environmentally friendly products and services have not been popular. Clean production and consumption and sustainable consumption are recognised as concepts in policy and legal documents rather than widely applied in practice. There has been low awareness and responsibility for the efficient exploitation, use, and management of natural resources, as well as the collection, classification, recycling, and reuse of waste in economical and daily activities.
- ix. Financial resources for the implementation of the transition to a circular economy are estimated to be huge. However, their mobilisation has not been effective. For instance, mechanisms and policies for investment incentives in solid waste treatment have been institutionalised, but access to loans has been limited, failing to attract different economic stakeholders.
- x. The existing infrastructure has not satisfied the practical requirements for environmental management. It lacks synchronisation in technologies of waste collection, treatment, recycling, and reuse. Viet Nam's position in terms of readiness for the Fourth Industrial Revolution compared to other countries is low. In addition, the small and fragmented scale of production and business has not been proportionate to the high technology investment. The linkages between production and business are still weak.



Table 17.6. Viet Nam and Other Countries in Promoting Implementation of a Circular Economy

	GDP		Global Innovation Index	Governance Indicator		Environmental Performance Index	
	Total (\$ million)	Rank		Score	Rank	Score	Rank
	ASEAN						
Singapore	396,987	35	8	57.8	8	58.1	39
Malaysia	372,701	37	36	41.9	36	47.9	68
Thailand	505,982	24	43	37.2	43	45.4	80
Viet Nam	362,638	39	44	37.0	44	34.4	141
Indonesia	1,186,093	16	87	27.1	87	37.8	117
Philippines	394,086	36	51	35.3	51	38.4	111
Cambodia	26,961	106	109	22.8	109	33.6	139
Lao PDR	18,827	118	117	20.2	117	34.8	130
Myanmar	65,068	80	127	18.4	127	25.1	179
Brunei Darussalam	14,007	133	82	28.2	82	54.8	46

ASEAN = Association of Southeast Asian Nations, GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic. Sources: World Bank, GDP (current US\$), <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (accessed 15 June 2022); World Bank, Worldwide Governance Indicators, <https://databank.worldbank.org/source/worldwide-governance-indicators> (accessed 15 June 2022); WIPO (2022); Wolf et al. (2022).

8. Solutions and Road Map for Promoting a Circular Economy in Viet Nam

Viet Nam is considered a leader in ASEAN that has a strong legal basis for a transition to a circular economy. Implementing a circular economy requires a road map and development priorities based on market and social demands. It is essential that specific goals and targets be defined with feasible actions/measures.

8.1. National Circular Economy Criteria

Shifting to a circular economy requires the government and stakeholders to make collective efforts. Referring to international experience, a market-based approach to the transition is best. The development of policies and regulations on the circular economy in Viet Nam has been in line with the positive trend of the region and the world.

In compliance with the identification of three groups of common criteria in Decree No. 08/2022/ND-CP guiding the implementation of Law on Environmental Protection 2020, specific indicators are proposed to measure the progress of the transition to a circular economy at the macro level in Viet Nam (Table 17.7).

Table 17.7. Criteria and Indicators for the Implementation of a Circular Economy in Viet Nam

Criteria		Indicator
A	Reduce the exploitation and use of non-renewable resources and water resources; increase efficiency in the use of resources, raw materials, and materials; save energy	
A1	Reduce the exploitation and use of non-renewable resources and water resources; increase efficiency in the use of resources, raw materials, and materials	
1	Minerals	<ul style="list-style-type: none"> - Consumption norms of mineral resources - Consumption efficiency of mineral resources
2	Fossil fuels	<ul style="list-style-type: none"> - Consumption norms of fossil fuels - Consumption efficiency of fossil fuels
3	Consumption of raw materials, fuel, and materials	<ul style="list-style-type: none"> - Consumption rate of raw materials, fuel, and materials of some main production industries
4	Water resources	<ul style="list-style-type: none"> - Consumption norms of water resources - Consumption efficiency of water resources

Criteria		Indicator
A2		
5	Mineral resources use efficiency	
6	Water use efficiency	Amount of water consumed per unit of GDP Amount of water consumed per unit of industrial value added Amount of water consumed per unit of output of main industries
A3 Energy savings		
7	Energy use	Primary energy consumption per GDP
8	Energy savings	Primary energy consumption per average GDP
9	Exploiting and using renewable energy	Ratio of renewable energy sources in total primary energy supply (%)
B Extend the useful life of materials, equipment, products, goods, parts		
10	Eco-friendly products	Number of eco-friendly products certified with eco-labels
11	Recovery and recycling of discarded products	Percentage of discarded products that are recovered and recycled
12	Recovery and recycling of material	Rate of recycling metal, non-metal, paper, plastic, rubber, and food waste
13	Water reuse	Rate of reused wastewater meeting the requirements
C Reduce waste generated, and minimise adverse impacts on the environment		
C1 Reduce solid waste, wastewater, and emissions		
14	Solid waste	<ul style="list-style-type: none"> - Amount of hazardous solid waste collected, transported, and handled that meets environmental protection requirements - Amount of municipal solid waste collected, stored, transported, and handled that meets environmental protection requirements - Percentage of municipal solid waste that goes to landfills

Criteria		Indicator
		<ul style="list-style-type: none"> - Amount of ordinary industrial solid waste collected, reused, recycled, and handled that meets environmental protection requirements - Average per capita municipal waste generation
15	Wastewater	Percentage of wastewater collected and handled that meets national technical regulations
16	Emissions	Emissions causing air pollution and spatial distribution of emissions
C2 Reduce the use of toxic chemicals		
17	Good management of the life cycle of chemicals and waste according to signed international commitments	Number of production and business establishments applying the environmental management system according to ISO 14000 standards
18	Use of inorganic fertilisers, chemical pesticides, and antibiotics in cultivation, animal husbandry, and aquaculture	Amount of inorganic fertilisers, chemical plant protection products, and antibiotics
C3 Waste recycling, energy recovery, and reducing greenhouse gas emissions		
19	Waste recycling, energy recovery	<ul style="list-style-type: none"> - Amount of waste recycled, reused, and treated combined with energy recovery - Amount of waste recycled, reused, and treated combined with composting
20	Reduce greenhouse gas emission	Intensity of greenhouse gas emissions per GDP
C4 Reduce single-use products, green shopping		
21	Reduce single-use products	Amount of single-use plastic products, non-biodegradable plastic packaging and products and goods containing microplastics produced and imported
22	Green shopping	Percentage of public investment works and projects that apply green economic standards

GDP = gross domestic product.

Source: Article 138 of Decree No. 08/2022/ND-CP guiding details of the implementation of the Law on Environmental Protection 2020.

8.2. Specific Solutions for Promoting Implementation

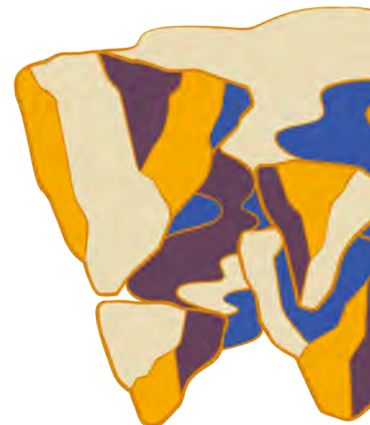
Viet Nam aims to shift from a linear economy towards a circular economy, targeting sustainable economic development for a more competitive economy. To realise that goal, a range of solutions are suggested based on governance, institutions, and infrastructure in Viet Nam.

Institutionalisation of the circular economy. Policy approaches for the transition to a circular economy may include key categories of policies: market-based policies, regulatory policies, and information policies. Regarding the market-based approach, it is important to promote the institutionalisation of market principles and the polluter-pays principle so that environmental costs are incorporated into the pricing for environmental pollution remedies and environmental rehabilitation. Also, it should use existing economic tools and financial mechanisms to regulate and to enhance the transition to the circular economy.

The use of regulatory instruments is central to circular economy policymaking in Viet Nam. Accordingly, it is necessary to enforce relevant provisions on the circular economy as prescribed in Law on Environmental Protection 2020, particularly the development of a national action plan; provincial action plans; and action plans for implementation of the circular economy in industries, fields, and products; and the establishment of criteria for assessment of progress on the transition to a circular economy. Also, ministries, ministerial agencies, and provincial people's committees must incorporate a circular economy immediately when creating a development strategy, plan, programme, or project.

At the same time, the government may take appropriate steps to enforce other policies supporting the transition to the circular economy, including green public procurement, green credit, green bonds, environment industries, and environmental services. Furthermore, it needs to revise the current environmental protection tax, value-added tax, consumer protection, and public investment.

The circular economy is a shared responsibility across levels of government and stakeholders. The government is both a management entity – creating a legal corridor for the formation and operation of markets and playing fields for all economic actors participating in the circular economy – and the entity engaging in market relations. It is vital for Viet Nam to formulate a national road map and to develop an inter-sectoral coordinating agency to integrate the relevant goals and strategies of the implementation of the circular economy into the strategies and action plans of various sectors and industries.



Promote material recovery, and minimise non-recyclable waste. In the circular economy, material recovery is crucial. There are three main ways to promote material recovery – segregating waste at the source, expanding producer responsibility, and enhancing the development of new markets (e.g. recovery and recycling markets of plastic, paper, and metal, and the market for recycled products). Public procurement has an impact on such markets since it can direct the production and consumption of recycled products.

Along with material recovery, the government should consider the restriction of non-recyclable waste, particularly single-use plastic products. It is necessary to formulate and implement policies to promote the development of a circular economy in the field of production and consumption of plastic products, regulating the recycling responsibilities of manufacturers and importers of plastic products and plastic packaging. MNRE could take primary responsibility to develop a circular economy in line with the net-zero emissions target. It could use modern technologies to produce plastic products; optimise the use of raw materials and fuel in the production of plastic products; recycle plastic waste into raw materials and fuel for industrial and domestic use; support the construction and formation of the waste-recycling market; and build and update the plastic management database and integrate it into the national environmental database.

Apply science and technology, and strengthen international cooperation in the transition to a circular economy. Institutes, universities, and professional associations are encouraged to participate in researching, consulting, and evaluating the implementation of the circular economy. It is also recommended to implement technological innovations, gradually applying clean and environmentally friendly technologies and building a road map to eliminate outdated technologies causing environmental pollution, especially in the industries that pose a high risk of contamination like textiles, footwear, paper, and detergents. To promote the formation of linkage mechanisms based on science and technology, models of eco-industrial parks, urban ecological areas, and circular cities (green cities) should be developed.

Research and cooperation in science and technology transfer can be strengthened to develop appropriate measures and solutions for the implementation of a circular economy, giving priority to the economic and efficient use of resources and prolonging the lifespan of materials and equipment. The cooperation could be enhanced between Viet Nam and countries that share the common goal of developing a circular economy, particularly AMSs. Viet Nam could actively take advantage of capacity building and training, research cooperation, and science and technology transfer for the implementation of the circular economy.



MNRE can cooperate with the Ministry of Science and Technology in developing and providing technical guidance on the application of the best available techniques. Also, MNRE can review, update, and supplement the list of best available techniques in a manner that is relevant to the current situation and level of science and technology development, providing technical guidance on the application of the best available techniques for each type of production, business, or service causing environmental pollution.

Raising awareness on the circular economy. Transitioning to a circular economy requires awareness and behavioural changes from all sectors of society. Positive practices and behaviours need to be promoted, while negative habits that are built up over many years need to be discouraged or prohibited. In a circular economy, traditional consumption patterns need to be replaced by reuse, repair, and exchange models. The government plays an important role in effective communications in the drive to implement such behavioural change.

Enterprises, consumers, and their behaviours play a major role in the transformation process to the circular economy. Production and consumer awareness and knowledge are important factors determining responsible consumption and production behaviours. Additionally, raising awareness is key to accelerate the implementation of circular economy strategies at the national, regional, and community levels and to allow stakeholders to provide their feedback on circular economy-related issues.

Communicating, educating, and raising awareness about policies and legal regulations on the circular economy target not only governmental officials at national and local levels but also enterprises and communities. Accordingly, it is necessary to develop and to implement communication programmes with appropriate content and forms for each target group in society. When doing this, it needs to strike a balance between effective communication and avoiding information overload.

In Viet Nam, the communication and dissemination of knowledge and laws relating to the circular economy could be carried out regularly and widely. MNRE could preside over and cooperate with other ministries, ministerial agencies, socio-political organisations, communication agencies, and press agencies in communicating and disseminating knowledge and laws relating to a circular economy to ensure the delivery of a consistent and continuous national message.

The government could issue a mix of incentivisation and enforcement to increase good behaviours as well. The benefits of changed behaviours must be emphasised and encouraged. The requirements and standards





of labelling in providing information to consumers need to be regulated so that the products carry a message on their environmental impacts and how they are dealt with at the end of their lives. At the same time, the government should continue to consult and to engage with the public, industries, and other stakeholders when designing new policies and interventions on the circular economy to ensure their effectiveness.

In the long term, educational programmes can include knowledge of the circular economy. The government could give priority to human resources for circular economy development; invest in the training of officials, managers, and technical personnel in charge of the application of circular economy; and encourage entities to train human resources for the circular economy. The Ministry of Education and Training can have primary responsibility and cooperate with MNRE in providing educational content and developing human resources for the circular economy.

Develop technical infrastructure and information and data systems.

In Viet Nam, the circular economy transition is centred around the 10R principles as prescribed in Decree No. 08/2022/ND-CP, including (i) restriction of the use of non-eco-friendly products; (ii) best use of equipment and products; (iii) increased efficiency in product manufacturing or use of natural resources, raw materials, and materials; (iv) reuse by another consumer; (v) repair or maintenance of a product to prolong life; (vi) refurbishment by restoring an old product; (vii) remanufacture by using parts of the discarded product in a new product with the same function; (viii) repurpose by using a discarded product or its parts in a new product with a different function; (ix) reduction of waste generated, including recycling waste; and (x) incineration of waste with energy recovery.

To support circular economy activities, it is crucial to improve existing infrastructure and to invest in new assets such as recycling facilities, sharing networks, reverse logistics, and marketplaces. One of the priorities in Viet Nam is to improve the system of waste collection, classification, and treatment infrastructures. MNRE could submit to the Prime Minister for consideration and approval a national master plan on environmental protection that includes master plans for concentrated waste treatment zones at the regional and national levels. The Ministry of Construction could strengthen its management of the technical infrastructure of waste collection points, transfer stations, and treatment facilities.

There are many opportunities for Viet Nam to provide infrastructure that enhances the transition to a circular economy. For example, conventional infrastructure can be replaced with green, climate-resilient, and nature-based solutions. The new infrastructure can be more efficiently

designed and planned to reduce the demand for materials and environmental impacts. Regarding infrastructure for waste management, waste collection and sorting infrastructure needs to be in place to enable the reuse, repair, refurbishment, and recycling of materials.

Digital infrastructure is an emerging solution to enable connectivity and optimisation of the value chain in the circular economy. Digital platforms can connect resource suppliers with the demand for secondary materials. Furthermore, building comprehensive and accessible data systems is key to informing circular economy policymaking, assessing the effectiveness of circular economy policies, and adjusting them when needed. In Viet Nam, the General Statistics Office of Viet Nam is assigned to conduct statistical activities and to provide social and economic information domestically and internationally. It could coordinate with MNRE to undertake data collection, monitoring, and sharing on the circular economy. MNRE could provide additional data and analytical insights on national circular economy indicators.

In the long term, a national circular economy information system should be built to centralise the data required to assess and to fully inform circular economy policymakers. Data collection is not only limited to waste-related, environmental, economic, and social data but also covers economic–social dimensions such as value added and employment. More importantly, monitoring the achievements of the implementation of a circular economy requires a standardised set of indicators feeding into the national circular economy information system. This emphasises the necessity of issuance of national circular economy criteria for Viet Nam.

Financing the transition to a circular economy. The transition to a circular economy needs both public and private investment. The government should allocate a budget to support the implementation of circular economy policy objectives, plans, and schemes. In particular, priority is given to restructuring public investment into greener investment. Governments at different levels could mobilise financial resources and allocate them efficiently, for example, by expanding access to financial opportunities. The government should develop mechanisms and incentives to encourage and support enterprises to innovate their manufacturing towards resource efficiency, energy savings, and environmental protection, particularly enterprises applying cleaner production and circular economy principles. It also prioritises supporting the production and supply of products and services that meet the criteria of the circular economy. To promote the consumption of such products and services, it can build up distribution systems and markets of environmentally friendly products and services.

The government can apply a mix of price-based tools to ensure a coherent set of incentives for the development of a circular economy, for instance, environment-related taxes, fees, and charges that increase the cost of polluting activities; and extended producer responsibility policy instruments.

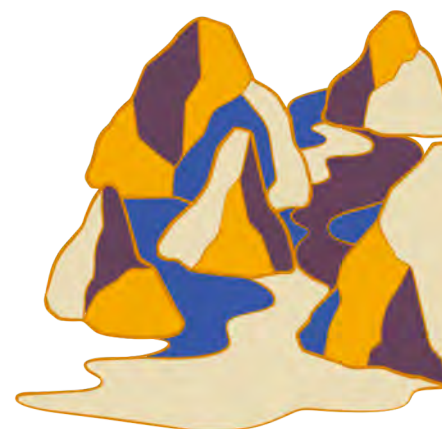
In the transit to circular economy and the context of climate-change adaptation measures, Viet Nam should prepare for the shift in demand of resources. For example, to reduce greenhouse gas emissions, it is necessary to reduce the use of energy from fossil fuels and to increase the use of renewable energy. The effects of primary and secondary markets of resources and materials need to be considered.

At the same time, the government should foster private investment in developing a circular economy through various funding methods, including crowdfunding, leasing, equity participation, grants, loan guarantees, green bonds, and loans for circular economy projects and businesses. It should attract private investment in public–private partnerships for infrastructure development for green industries and eco-industrial parks, circular urban areas, organic agriculture, and environmental services.

To diversify capital sources, the government can also call for financial aid and foreign investment from other countries. The government should enhance the ability to attract official development assistance (ODA) and increase the investment rate for circular economy development from ODA. Localities can set up specific circular economy development projects in their provinces to attract ODA capital, supporting projects related to the efficient and economical use of natural resources and waste reduction.

Develop a road map. *The Framework for Circular Economy for the ASEAN Economic Community* sets out an ambitious long-term vision of the circular economy, building on the strengths of existing ASEAN initiatives, and identifies priority focus areas for action, along with enablers, to accelerate the realisation of a circular economy in ASEAN. It guides ASEAN in achieving its long-term goals of a resilient economy, resource efficiency, and sustainable and inclusive growth.

To set a pathway for the transition to a circular economy in line with the region, the government should consider the comprehensive integration of five strategic priorities in the framework into the relevant national policies, strategies, and action plans. The integration should focus on possible short-term, medium-term, and long-term initiatives in priority areas and refer to the potential funding, institutional coordination, and regulations to support the transition to the circular economy in Viet Nam. The government should call for the support of ASEAN in facilitating knowledge sharing, identifying areas for possible collaboration, and providing policy recommendations to integrate ASEAN's visions into the transition to the circular economy in Viet Nam.



8.3. Road Map for a Circular Economy in Viet Nam

Based on the analysis of the existing orientation, policies, and legal regulations in Viet Nam; consultation results with organisations and individuals in specific industries and fields; assessment of opportunities and challenges in application of a circular economy in specific industries and fields; the authors propose a road map with strategic measures to promote the transition to a circular economy in Viet Nam (Table 17.8).

Table 17.8. Proposed Plan for Priority Products, Sectors, and Fields in the Circular Economy Road Map for Viet Nam

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
A Products					
	Plastic	x			<ul style="list-style-type: none"> Ban the use of single-use plastic products and non-biodegradable plastic packaging (including non-biodegradable plastic bags, Styrofoam containers for packaging and containing food) at shopping malls, supermarkets, hotels, and tourism areas, except for the products and goods containing non-biodegradable plastic packaging. Gradually reduce the production and import of single-use plastic products (except for Vietnam Ecolabel certified products), non-biodegradable plastic packaging and products and goods containing microplastics. Implement the regulations on responsibility for recycling and treatment of producers and importers of single-use plastic products and non-biodegradable plastic packaging. Assign provincial people's committees to promulgate regulations on and to organise management of plastic waste, and organise inspections at establishments producing single-use plastic products and non-biodegradable plastic packaging within their provinces. Reuse, recycle, and treat 85% of plastic wastes produced. Reduce 50% of plastic waste in oceans compared to prior period. Design circular economy models in Viet Nam with an orientation towards reducing the use of non-biodegradable disposable plastic products and plastic bags; increasing the reuse, recycling, and disposal of plastic waste; and encouraging reuse-refill models. Develop technical regulations for secondary plastic raw materials. Facilitate the development of secondary raw material markets. Raise awareness of the production, consumption, and disposal of non-biodegradable plastic waste, plastic bags, and single-use plastic products in daily life amongst agencies, organisations, businesses, communities, and people.
	Paper	x			<ul style="list-style-type: none"> Design master plans for areas supplying materials for pulp production. Promote the paper-recycling industry. Restructure small and medium-sized enterprises to replace poor-quality machines with modern and large-scale machines, technologies, and techniques to efficiently use raw materials, energy, waste, and chemicals and to reduce waste in paper production. Support enterprises to invest in paper collection and recycling systems and to harmonise and to promulgate standards for wastepaper and secondary materials

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
	Batteries				<ul style="list-style-type: none"> Promote the application of circular business models and the model of turning products into services through leasing and applying extended producer responsibility tenets. Expand extended producer responsibility in the retrieval and recycling of batteries.
	Timber	x			<ul style="list-style-type: none"> Efficiently implement the schemes for sustainable forest management and forest certification. Build and efficiently operate a national forest certification system to promote sustainable forest management and the issuance of forest certifications. Foster cooperation and association models for the development of large timber forests granted sustainable forest management certification and associated with forest-product processing and consumption. Encourage and create conditions for mechanisms and policies for enterprises to effectively use by-products generated in the production process. Implement pilot models of the circular economy in the timber-processing industry.
	Biomass	x			<ul style="list-style-type: none"> Prioritise resources to develop biomass energy sources to produce electricity, biogas, and biomass pellets for direct use as fuel and liquid biofuel. Apply technologies to promote a circular breeding industry (e.g. livestock waste treatment for organic fertiliser or aquaculture production). Invest in the development of waste-to-energy plants. Design master plans for areas supplying raw materials. Issue incentives to support the production and export of wood pellets, coconut fibre pellets, and pellets from sawdust. Promote models to make use of agricultural, forestry, and fishery by-products, and biomass sources
	Electronic equipment	x			<ul style="list-style-type: none"> Complete mechanisms and policies for e-waste management. Create supporting conditions for the development of e-waste recycling. Build a synchronous and transparent database system on e-waste. Raise awareness and enhance engagement of the community, businesses, and society at large in e-waste management.
B Industry					
	Agriculture		x		<ul style="list-style-type: none"> Develop policies to create a legal corridor for the formation and development of a circular economy in agriculture and rural development. Conduct research, and implement solutions for increasing recycling and reusing agricultural by-products and scraps. Train and improve personnel for research and implementation of agricultural by-product and scrap-processing technology, research investment, and science and engineering transfer in processing agricultural scraps. Develop and implement programmes and projects utilising the circular economy in developing primary agricultural value chains to increase competitiveness; create value; and effectively use land, water, and materials in reducing environmental degradation and pollution. Promote the participation of private sector, nongovernmental organisations, and agricultural households in circular agricultural product chains. Build models for increasing the effective use of water, land, and fisheries. Develop and implement programmes for green agriculture and the circular economy in agriculture and rural development.

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
	Construction		x		<ul style="list-style-type: none"> Promote the implementation of plans for green urban development, schemes for urban areas adapting to climate change, and schemes for the development of smart urban areas. Promote the development of environmentally friendly products and recycled products from construction waste. Develop new environmentally friendly materials for construction. Promulgate technical and regulations for green buildings. Develop circular models in the construction industry.
	Transport	x			<ul style="list-style-type: none"> Create regulations and policies for developing green traffic infrastructure; encourage vehicles utilising clean, efficient, effective energy and environmentally friendly technology; and encourage green traffic and traffic planning. Prioritise resources for investment, completion, and extraction of green traffic infrastructure in a manner that guarantees economic effectiveness and environmental protection, reduces greenhouse gas, and increases resistance to climate change and rising sea levels. Implement programmes for research and the application of science and technology that guarantees the effective use of construction materials and energy in implementation of projects for investment in public traffic infrastructure. Adjust economic tools, such as environmental protection taxes and environmental incentives, to promote the use of low-carbon and green transport means. Encourage the formation of circular business models in the field of transport such as sharing models, product-to-service models, and public transport. Build a green transport infrastructure system, and promote intelligent traffic monitoring systems. Create favourable conditions for localities and transport enterprises to access to green credits and green bonds. Apply green public procurement in the field of transport.
	Energy	x			<ul style="list-style-type: none"> Develop circular economy models to promote effective and efficient energy use. Develop policies for energy transition in a manner that guarantees green, clean, sustainable energy. Increase percentages of renewable energy and energy from waste, and reduce dependency on imported energy and fossil fuels. Increase technological solutions for ensuring harmonious development of new energy and renewable energy, increase integration of renewable energy into the electrical grid, and reduce energy consumption. Develop supporting infrastructure for renewable energy.
	Water and wastewater	x			<ul style="list-style-type: none"> Make full use of the value of wastewater generated from production, business operations, service provision, and domestic activities by adopting measures in the following order of priority: (i) treat and reuse wastewater directly in production, business operation and service provision as prescribed by law, (ii) treat and transfer wastewater to reuse wastewater in production, business operations, and other services as prescribed by law, (iii) transfer wastewater to another unit for treatment and reuse as prescribed by law, and (iv) treat and discharge wastewater in accordance with environmental technical regulations.
	Chemicals		x		<ul style="list-style-type: none"> Formulate and promulgate technical regulations on the environment in chemical industry to ensure sustainable development and environmental protection. Refuse applications for investment licenses for chemical projects that apply obsolete technologies and have high levels of resource consumption. Encourage and adopt incentives and support mechanisms/policies for chemical projects that apply advanced, modern, and eco-friendly technologies. Ensure that hazardous or toxic chemicals are not found in recycled products. Promote chemical recycling (e.g. using chemicals in waste conversion and treatment).

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
	Waste management	x			<ul style="list-style-type: none"> Enhance the management of discarded products and solid waste to minimise the exploitation and use of natural resources and adverse impacts on the environment according to the circular economy criteria specified in laws. Minimise waste generated by applying measures to improve efficiency in production or in using products. Make full use of the value of discarded products and solid waste generated from production, business operations, service provision, and consumption by adopting measures in the following order of priority: (i) recycle discarded products; (ii) repair, maintain, or upgrade defective and old products to extend their useful life; (iii) make use of parts of discarded products; (iv) recycle solid waste to recover raw materials, fuel, and materials in service of manufacturing activities as prescribed by law; (v) treat solid waste in combination with recovering energy as prescribed by law; and (vi) bury solid waste as prescribed by law. Apply digital transformation, and develop and apply platform-based business models to promote the minimisation, reuse, classification, collection, transport, recycling, and treatment of waste generated.
	Services	x			<ul style="list-style-type: none"> Prioritise the development of eco-design services and design for circulation and reuse; and encourage the development of the environmental service industry, environmental industry, and opening of markets and facilitation of trade in environmental goods. Develop policies related to warranties, insurance, and consumers' rights on repair and refurbishment. Develop eco-design services. Promote trade liberalisation for environmental services according to a road map consistent with international commitments. Encourage investment in, research, and provide environmental services towards (i) collection, transport, recycling, and treatment of waste; (ii) environmental monitoring, analysis, and environmental impact assessments; (iii) improvement and remediation of the environment and ecosystems in polluted and degraded areas; (iv) consulting and transfer of environmentally friendly production technologies, energy-saving technologies, and production of clean and renewable energy; (v) environmental consulting and training, and provision of information about the environment; (vi) clean energy, renewable energy, and energy savings; (vii) environmental assessment for goods, machinery, equipment, and technologies; (viii) environmental and biodiversity damage assessments and assessments of pollutants that directly affect human health; and (ix) other environmental protection services as needed.
	Environmental industry	x			<ul style="list-style-type: none"> Identify the potential types of technology, equipment, and products to support the circular economy transition. Establish an effective coordination mechanism across ministries and agencies to implement environmental industry-related policies. Implement a system for maintaining the relevance of environmental industry-related policies and monitoring their implementation. Increase the proportion of domestically supplied environmental technology, equipment, and products for the local market. Improve linkages with local manufacturers in the environmental sector. Promote the export of environmental technology, equipment, and products. Improve the capacity of local enterprises, their support environments, and their access to finance (with a focus on small and medium-sized enterprises). Establish a road map for trade openness and trade facilitation for the environmental industry to support the green transition.

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
C Locations					
	Industrial parks, industrial clusters		x		<ul style="list-style-type: none"> Encourage industrial parks to design optimal overall premises; promote linkages amongst production, business, and service establishments to improve the efficiency of use and to reduce the consumption of land, water, mineral, and energy resources; and improve the recycling rate and reduce the total amount of waste generated. Develop and use clean energy and renewable energy bylaws. Develop infrastructure for the collection and storage of rainwater and infrastructure for the collection, treatment, and reuse of wastewater. Promulgate technical regulations to implement industrial symbiotic networks and the reuse of waste and wastewater. Issue financial incentives for eco-industrial parks and eco-enterprises (e.g. tax exemptions and reductions). Apply industrial symbiosis measures in accordance with the law on the management of industrial parks and economic zones.
	Urban areas, residential areas				<ul style="list-style-type: none"> Build a platform to share information and data on application of the circular economy in cities. <ul style="list-style-type: none"> Enhance the development of zero-waste and smart cities. Integrate the criteria of circular cities into master plans on urban development. Design and build urban infrastructure, applying new and breakthrough technologies to develop smart and circular urban areas. Promote urban waste management through the application of management measures to promote reuse and recycling of solid waste, particularly metal and plastic waste, e-waste, food waste, wastewater, and biomass. Promote the development of circular business models in urban areas through solutions to support the development of raw material and secondary material markets, creating favourable conditions for symbiotic production, business and service activities, and urban–rural linkages.
D Consumption					
	Intermediate consumption	x			<ul style="list-style-type: none"> Develop standards on secondary raw materials. Support the informal sector, and promote linkages between businesses and the informal sector. Develop a road map to open and to facilitate trade for goods and services related to the circular economy. Develop markets for the reuse of discarded products and waste recycling.
	Public consumption	x			<ul style="list-style-type: none"> Complete a legal framework on green public procurement. Apply pilot green public procurement to central procurement agencies. Promote green shopping and eco-labelling programmes.
	Household consumption	x			<ul style="list-style-type: none"> Strengthen communication and education to raise awareness and to change behaviours on sustainable consumption. Create preferential policies for enterprises producing environmentally friendly products to encourage and to expand the scale of production and business of environmentally friendly products.

No.	Area	Goal			Strategic Measure
		2025	2030	2045	
E	Strengthening the role of micro, small, and medium-sized enterprises	x			<ul style="list-style-type: none"> Promote productivity, technology, and innovation through measures to enhance micro, small, and medium-sized enterprise productivity by understanding key trends in productivity. Promote innovation and disruptive technologies as a key competitive advantage through technology use and application to business and business academia linkages.
	Linkage models in production and business towards circular economy	x			<ul style="list-style-type: none"> Develop linkage models, and share models in use of materials and waste. Encourage the establishment of cooperative groups, cooperatives, unions of cooperatives, recycling alliances, regional linkage models, urban-rural linkages, and other models as prescribed by law that satisfy circular economy criteria.



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Chapter 18

Challenges for Inclusive Growth in Viet Nam

Emi Kojin



1. Introduction

The concept of inclusive growth – which refers to economic growth that provides equitable benefits and opportunities for society as a whole – has been gaining attention in academic research and policy discussions related to economic development since the 2000s. Inclusive growth, however, does not have an exact definition; thus, appropriate targeting for its realisation is challenging. According to Ranieri and Ramos (2013), inclusive growth in existing studies is multifaceted – both poverty and inequality are reduced; all groups in society, including the poor, the middle class, and the rich, are targeted for growth; participation in the process is equitable, and development outcomes are equitably distributed; and emphasis is placed not only on income but also on other development outcomes. Indeed, Ranieri and Ramos (2013) stated that inclusive growth is an elusive concept.

Equality in income distribution is an important condition for sustainable economic growth (Berg and Ostry, 2011). The equal distribution of benefits and opportunities of economic growth – not just income – is important for social stability and sustainable growth. Yet some groups are unquestionably left behind. For inclusive growth to lead to sustainable development, it is necessary to examine the reality of inequality and to identify the boundary between inclusion and exclusion.

During the 13th National Party Congress in 2021, Viet Nam set a goal of becoming a high-income country with social stability by 2045; inclusive growth is key to achieving this goal. The country's economic growth to date may be evaluated as growth without increasing inequality if looking at only the Gini coefficient at the national level. The income-based Gini coefficient has remained relatively unchanged over the past 15 years, from 0.424 in 2006 to 0.423 in 2019. In addition, the consumption-based Gini coefficient has also remained steady since the 1990s – 0.354 in 1997 to 0.357 in 2018.¹ The reality is, however, that there are various forms of inequality that do not show up in the Gini coefficients, and these appear to be magnifying in Viet Nam.

As of the early 2010s, there was already a growing perception amongst the Vietnamese that inequality in the country is widening (World Bank, 2012). The number of the super-rich in Viet Nam – that is, those whose net assets are \$30 million or more – has increased from only 34 in 2003 to 1,234 in 2021 (World Bank, 2014; Knight Frank Research, 2022). The increase in their numbers is remarkable worldwide, and some articles provide glimpses into their lavish lifestyles (e.g. *VietnamNet Global*, 2022). It appears that the gap between the top and bottom is growing wider. Although there is no doubt that poverty was significantly reduced through the 2010s, many people

¹ World Bank, World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators> (accessed 31 October 2022).

still move abroad to work under various adverse conditions to escape the poverty in Viet Nam (World Bank, 2021a). The Vietnam Household Living Standards Survey (VHLSS) – which is used to calculate the Gini coefficients – tends to underestimate inequality, because the super-rich are either missing from the sample or, when included, do not provide accurate information on their assets (World Bank, 2014; 2021a). Therefore, to clarify which groups are left behind from inclusive growth, it is necessary to examine Viet Nam's economic growth from a more multifaceted angle, referring to qualitative as well as quantitative information.

Kimura and Oikawa (2022) presented a framework that captures inclusiveness from three dimensions: geographical, industrial, and social. Geographical inclusiveness mainly considers inequality between urban and rural areas, industrial inclusiveness considers inequality amongst companies due to their sizes and ownership structures, and social inclusiveness considers individual inequality due to differences in attributes. Using this framework, this chapter examines Viet Nam's economic growth from two angles – the regional level (i.e. geographical inclusiveness) and individual/household level (i.e. social inclusiveness) – to reveal inequalities at each level. Next, socio-economic structural problems are discussed that provide the background for inequality at each level; this is closely related to the issue of industrial inclusiveness in Kimura and Oikawa (2022). Based on the realities identified in the discussion, the chapter concludes by highlighting challenges for inclusive growth, taking into account factors such as digitalisation and climate change that may further increase inequality in the future.

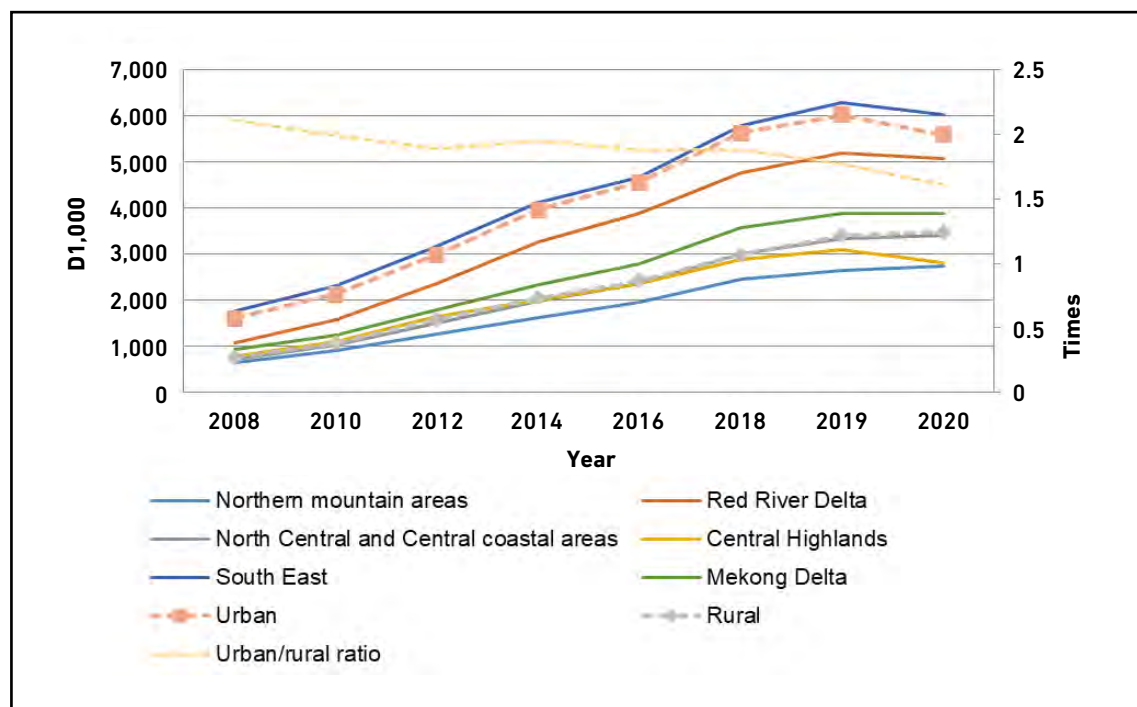
2. Inclusion and Exclusion

2.1. Inequality at the Regional Level

In Viet Nam, when economic growth is viewed from the perspective of regional development, rural areas and mountainous and highland areas – with large ethnic minority populations – are viewed as being left behind from growth. However, statistics show that the inequality between urban and rural areas has not increased significantly. Although the income gap between urban and rural areas widened in absolute terms through the 2010s, it has been shrinking in percentage terms (Figure 18.1). In addition, the poverty rate remains higher in rural areas than in urban areas, but the gap between the two is steadily narrowing (Table 18.1).



**Figure 18.1. Monthly per Capita Income by Region, 2008–2020
(D1,000)**



Note: The urban–rural ratio is the urban per capita income divided by the rural per capita income.
Sources: GSO (2016, 2021b).

Table 18.1. Multidimensional Poverty Index by Region

Region	2016	2018	2020
Whole country	9.2	6.8	4.8
Urban	3.5	1.5	1.1
Rural	11.8	9.6	7.1
<hr/>			
Region			
Red River Delta	3.1	1.9	1.3
North mountain areas	23.0	18.4	14.4
North-central and central coastal areas	11.6	8.7	6.5
Central Highlands	18.5	13.9	11.0
South-east	1.0	0.6	0.3
Mekong Delta	8.6	5.8	4.2

Note: The criteria for measuring the index for 2016–2020 is set forth in Decision No. 59/2015/QĐ-TTg.
Source: GSO (2021b).

Urban–rural inequality has not worsened, largely thanks to the economic development in rural areas. From the 2000s to the 2010s, agriculture and non-agriculture developed significantly in rural areas, and many rural people improved their household incomes by combining various income opportunities. In addition, labour mobility from agriculture to non-agriculture within rural areas increased. In 2002, 70% of the rural population ages 15 years and over was engaged in agriculture; but by 2020, that percentage shrank to 40% (GSO, 2016; 2021b). This situation is related to the fact that some areas – which have experienced de-agrarianisation – are practically urban but still maintain their rural status, as the change of classification from rural to urban occurs on an application basis (Sakata, 2017b).

However, looking at income trends in the six regions shown in Figure 18.1, there are marked disparities. While incomes in the South–East and Red River Delta show almost the same trends as urban areas, the trends in the other regions are closer to those of rural areas. Amongst these four regions, the northern mountain areas – where many ethnic minorities² live – have remarkably low-income levels. In addition, the Central Highlands – which also has a large ethnic minority population – has had stagnant average incomes since the late 2010s. Indeed, the income gap between these ethnic minority regions and other regions is widening. The northern mountain areas and Central Highlands also have significantly higher poverty rates than other regions (Table 18.1).

It can thus be inferred that poverty in Viet Nam is concentrated in rural areas inhabited by ethnic minorities. In fact, a comparison of the communes³ of Kinh (i.e. ethnically Vietnamese people) and the Hoa (i.e. ethnically Chinese persons living in Viet Nam) – a relatively affluent ethnic minority group – with those of other ethnic minorities reveals considerable disparities in the socio-economic conditions amongst them.

Table 18.2 shows the changes in the percentage of communes with non-agricultural wage employment opportunities in enterprises or craft villages⁴ in communes or within commuting distance of communes. Although non-agricultural wage employment opportunities have increased amongst all ethnic communes since 2010, non-agricultural employment opportunities in ethnic minority communes are significantly lower than in Kinh and Hoa communes.



² In Viet Nam, there are an estimated 53 ethnic groups (e.g. Hmong, Khmer, Lao, Tay, and Thai) in addition to the Kinh, who make up just under 90% of the population. Ethnic minorities refer to those 53 ethnic groups.

³ Commune (*xã*) is an administrative unit regarded as rural.

⁴ Craft villages (*làng nghề*) are clusters of small- and medium-sized entities engaged in the production of specific industrial products (Sakata, 2017a).

Table 18.2. Communes with Non-Agricultural Employment Opportunities (%)

Commune	2010	2020
Kinh and Hoa	82.7	91.0
Ethnic minority	41.4	57.0

Note: Specifically, this shows the percentage of communes with non-agricultural employment opportunities within the communes or commuting distance.
Source: GSO (2021).

As shown in Table 18.3, the communes of ethnic minorities have witnessed poorer development than those of Kinh and Hoa communes. In particular, the presence of private pharmacies, radio relay stations, and markets is significantly less in ethnic minority communes than in Kinh and Hoa communes, indicating that ethnic minority communes tend to be left behind in the flow of goods and information. This situation may be related to the locations of ethnic minority communes, as ethnic minorities tend to live in remote areas.

Table 18.3. Commune-Level Economic and Social Infrastructure, 2020
(% of communes possessing)

Infrastructure	Kinh and Hoa	Ethnic Minority
Primary school	95.4	85.6
Lower-secondary school	89.2	78.5
Health station	99.6	98.4
State-owned pharmacy	16.3	12.1
Private pharmacy	92.3	58.4
Electricity	99.9	99.5
Post office	91.3	84.6
Radio relay station	93.3	70.9
Market	72.6	47.0

Source: GSO (2021 a).

Such disparity is part of the background for the growing inequality in rural areas. The discussion based on Figure 18.1 and Table 18.1 above, together with the trends in the Gini coefficients by urban and rural areas (Table 18.4) – suggest that growing inequality in rural areas is a more serious problem than the inequality between urban and rural areas. Inequality in rural areas can be viewed from two aspects – inequality within the same region (i.e. intra-rural inequality) and inequality amongst regions (i.e. inter-rural inequality). The inequality between Kinh and Hoa communes can be considered and ethnic minority communes can be considered is the main background for inter-rural inequality.

Table 18.4. Gini Coefficients, Viet Nam

Year	Whole Country	Urban	Rural
2006	0.424	0.393	0.378
2008	0.434	0.404	0.385
2010	0.433	0.402	0.395
2012	0.424	0.385	0.399
2014	0.430	0.397	0.398
2016	0.431	0.391	0.408
2018	0.424	0.372	0.407
2019	0.423	0.373	0.415
2020	0.375	0.330	0.373

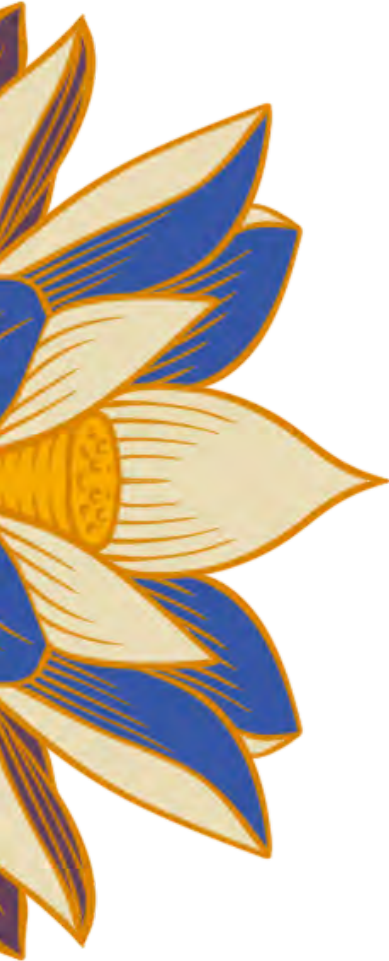
Source: GSO (2021b).

Inequality in rural areas can be better explained by intra-rural inequality, however. The World Bank (2012) broke down the overall inequality in Viet Nam by the following five factors: (i) urban–rural inequality, (ii) inter-rural inequality in different regions, (iii) intra-rural inequality in the same region, (iv) inter-urban inequality in different regions, and (v) intra-urban inequality in the same region. The analysis showed that intra-rural inequality in the same region is the largest contributor to overall inequality (World Bank, 2012:151). Intra-rural inequality, therefore, best demonstrates inequality at the individual and household level.

2.2. Inequality at the Individual and Household Level

Benjamin, Brandt, and McCaig (2017) – who analysed the determinants of rural inequality without distinguishing between inter-rural and intra-rural inequality – found that while agricultural income remains a determinant of rural inequality, non-agricultural wage income is gaining importance. This is probably due to the acceleration of de-agrarianisation in rural areas, as noted in the previous subsection. The percentage of rural households whose main income comes from the non-agricultural sector increased from 42.5% in 2011 to 59.2% in 2020 (GSO, 2021a). Yet in some areas of the Mekong Delta, while non-agricultural income is becoming increasingly important as a determinant of income inequality, the inequality is mostly rooted in the size of farmland holdings from the previous generation (Kojin, 2020).⁵ In general, access to non-agricultural income opportunities and access to agricultural land appears to be the main factors defining intra-rural inequality.

⁵ As the determinants of intra-rural inequality have become more diverse and complex with the diversification of livelihoods in rural areas, regional differences have emerged. In particular, the importance of the size of farmland holdings in intra-rural inequality is exceptionally observed in the Mekong Delta, according to Ravallion and van de Walle (2008) and Đõ (2018).



According to various studies (World Bank and MPI, 2016; Oxfam, 2017; Benjamin, Brandt, McCaig, 2017), ethnic minorities, migrant workers, women, people with disabilities, and smallholder farmers have been disproportionately behind in economic growth. These groups are generally economically poor; face poor infrastructure and institutional constraints; and do not fully benefit from growth in terms of education, health, and sanitation. They are also physically and institutionally disadvantaged in terms of access to productive capital, often unable to find employment opportunities that would lead to higher incomes and are thus unable to escape poverty.

The situation is particularly serious for ethnic minorities. According to the World Bank (2021a), the poverty rate amongst ethnic minorities in Viet Nam was as high as 66.3% in 2010, but it shrunk significantly to 37.1% in 2018.⁶ The gap with the Kinh and Hoa is large (i.e. the Kinh and Hoa poverty rate was 12.9% in 2010, falling to only 1.1% in 2018); thus, poverty is becoming concentrated amongst ethnic minorities. Indeed, as of 2018, ethnic minorities accounted for only 15% of the total population, but their share of the poor was 86% (World Bank, 2021a:9). Compared to the Kinh and Hoa, ethnic minorities tend to have lower levels of educational attainment and nutritional status as well. They are more prone to disease due to this poor nutritional status, while they often lack adequate access to sanitation, clean water, and health care. Low educational attainment and poor health status are factors that prevent them from obtaining employment opportunities in the non-agricultural sector that would lead to higher incomes.

This vicious cycle seems to persist across generations. As of 2020, the percentage of communes with child malnutrition problems stood at 12.4% in Kinh and Hoa communes, compared to 27.4% in ethnic minority communes (GSO, 2021b:770). Many ethnic minorities were unable to escape poverty in the 2000s and 2010s, when Viet Nam's economy experienced rapid economic growth (World Bank, 2012; Oxfam, 2017; Mbuya, Atwood, and Huynh, 2019). Although the labour force shift from agriculture to industry has basically occurred across all ethnic groups in Viet Nam, ethnic minorities remain highly dependent on agriculture and forestry (Table 18.5).

⁶ World Bank (2021a) defined a per capita daily consumption expenditure of \$3.34 at 2011 purchasing power parity as the poverty line.

Table 18.5. Main Economic Activities, Aged 15 Years and Over (%)

Year	Ethnicity	Agriculture	Forestry	Fishery	Industry	Construction	Wholesale and Retail	Other Services
2010								
	Kinh, Hoa	35.0	0.5	2.9	19.1	7.5	13.8	21.4
	Other	75.6	1.6	1.0	11.0	2.3	2.4	6.2
2020								
	Kinh, Hoa	19.0	0.4	3.0	27.5	8.9	15.4	25.9
	Other	59.5	5.3	1.1	14.4	7.9	4.2	7.7

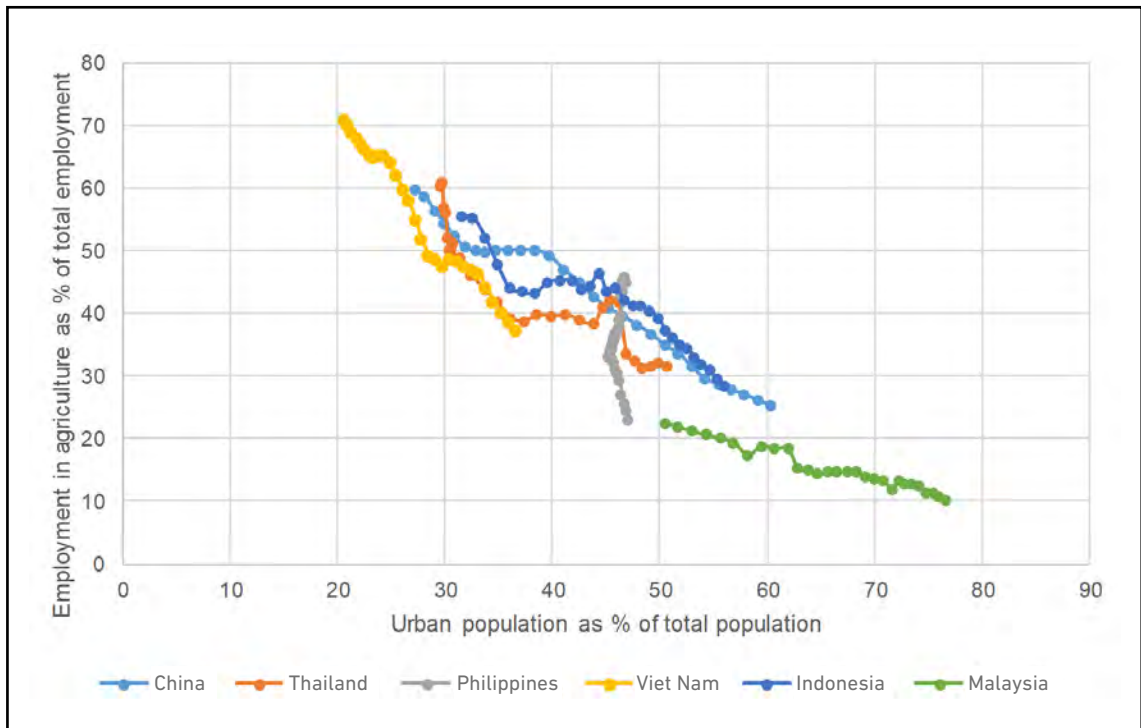
Source: GSO (2021).

Along with ethnic minorities, rural-to-urban migrant workers often have low standards of living. In Viet Nam, the rural-to-urban population inflow has not been as rapid as it could have been, given the labour force shift from agriculture to non-agriculture, probably due to the development of rural areas (Figure 18.2). Nevertheless, inequality within rural areas is growing, and many people who cannot earn sufficient incomes in rural areas migrate to big cities such as Ha Noi and Ho Chi Minh City or to emerging cities such as Da Nang, Dong Nai, and Binh Duong. Therefore, the urban population as a percentage of the total population has increased by nearly 20 percentage points in about 30 years (Figure 18.2). The presence of rural-to-urban migrant workers is the main factor explaining this trend.⁷



⁷ However, according to Luong (2018), from the 2000s to the early 2010s, the pattern of migration changed. While migration for the purpose of higher education rose, migrant workers were increasingly returning to their native rural communities for economic reasons as well as out of a sense of obligation to take care of their parents and/or children.

Figure 18.2. Labour Force Shift from Agriculture due to Urbanisation



Note: Data are from 1991 to 2019.

Source: World Bank, World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators> (accessed 31 October 2022).

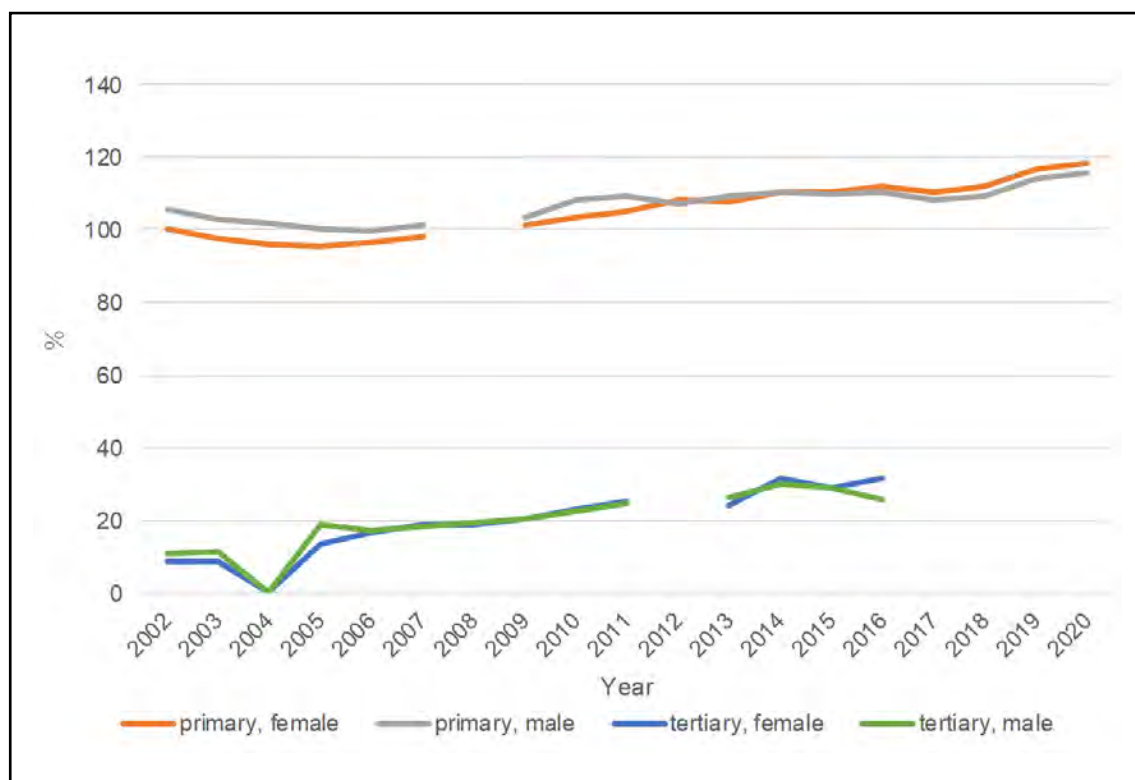
Many migrants are engaged in informal low-wage work – such as street peddling, garbage collection, and day labour at construction sites – and their lives are far from affluent, both in terms of housing and consumption levels, especially in the face of high urban living costs. Numerous studies have pointed out that migrant workers face many difficulties in accessing better housing and public services, such as schools and hospitals, because it is difficult to obtain the necessary permanent household registration (*hộ khẩu*) in their urban destinations (Luong, 2009; World Bank and MPI, 2016; La, Tran, Nguyen, 2019). Migrant workers without permanent household registration are also not eligible for support measures for the poor, such as discounted electricity rates (De Luca, 2017).

Furthermore, the plight of left-behind children in rural areas should not be overlooked. While migrant labour can have the positive effect of increasing educational investment in children through higher incomes, negative impacts on left-behind children due to the absence of parents – especially mothers – can cancel out such economic benefits. According to Ligg (2016) and Nguyen (2021), children left behind in rural areas tend to perform poorly academically, because they are working, are not cared for, and/or suffer psychologically from parental absence. In addition, the nutritional status of these children is generally poor because caregivers are often unable to prepare enough food, or the children are too depressed to eat.

As the situations of ethnic minorities and migrant workers demonstrate, the vicious cycle of poverty tends to persist from generation to generation. The Great Gatsby Curve shows that there is, in general, a negative correlation between income inequality and intergenerational social mobility – that is, the greater the income inequality, the less likely intergenerational social mobility is to occur (Kruger, 2012; Corak, 2013). Oxfam (2018) noted that Viet Nam is not far off this curve; intergenerational mobility in Viet Nam is low given its Gini coefficients. According to Oxfam (2018), those left behind from growth tend to have less intergenerational social mobility, whether by income, occupation, or skill.

Regarding gender inequality in Viet Nam, women have less access to education and assets – such as land – than men, putting them at a disadvantage in obtaining wage employment opportunities or starting businesses (Oxfam, 2017). Concerning education, however, the situation has improved (Figure 18.3). At both the primary and higher education levels, males had higher enrolment rates than females in the 2000s, but in the 2010s, females began to outnumber males.

Figure 18.3. Gross School Enrolment Rate by Sex, 2002–2020 (%)



Source: World Bank, World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators> (accessed 31 October 2022).

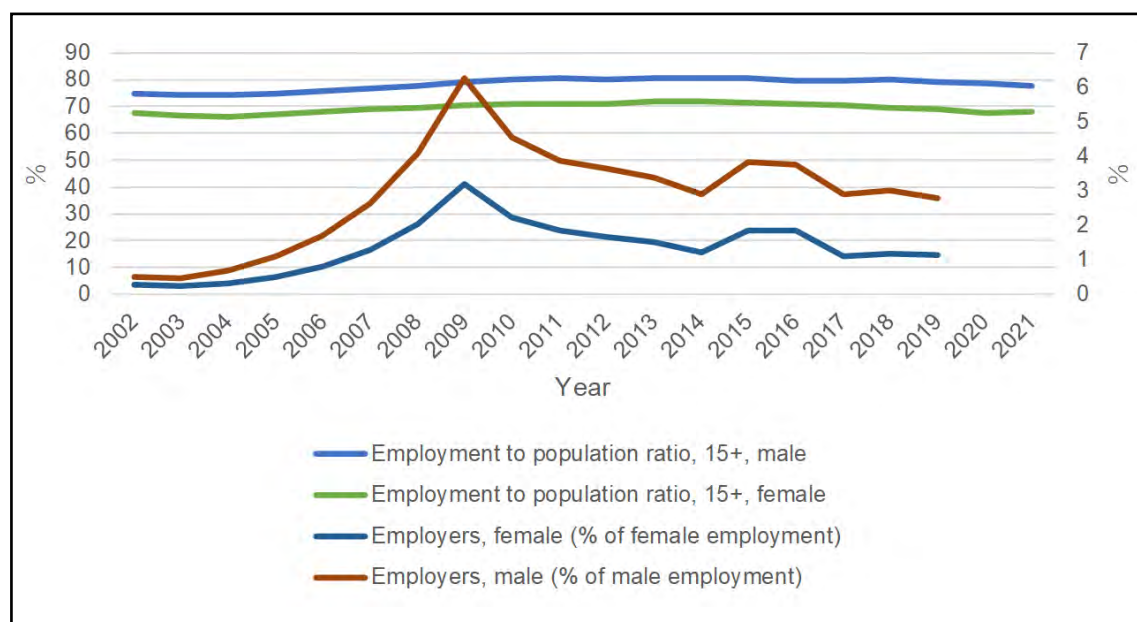
Yet female attainment rates are still lower than those of males at all stages of education (Table 18.6). There is also a clear difference between males and females in terms of employment status after finishing school. Females are less likely than males to be employed, and their share as employers is notably smaller (Figure 18.4). Overall, women still tend to be left behind economically, although this situation is moving in the direction of improvement.

Table 18.6. Educational Attainment Rate in the Population over Age 25 Years (%)

Degree	Sex	2009	2019
Lower secondary	Male	71.2	69.6
	Female	59.4	61.3
Upper secondary	Male	30.4	34.5
	Female	21.4	29.5
University (Bachelor's)	Male		11.0
	Female		9.5

Source: World Bank, World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators> (accessed 31 October 2022).

Figure 18.4. Employment Status by Sex, 2002–2021 (%)



Source: World Bank, World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators> (accessed 31 October 2022).

3. Structural Challenges

The government has taken steps to address those who are left behind in growth, such as through increased spending on education and social security, continued increases to the minimum wage, farmland-use tax exemptions, and poverty reduction programmes. However, these policies and programmes have not necessarily led to fundamental solutions to inequality due to the following socio-economic structural problems.

3.1. Large Share of State Sector in Upper Social Strata

The Vietnamese social stratification framework presented by Đõ (2012) divides Vietnamese society into nine occupational strata, with each stratum ranked according to schooling, consumption, assets, and occupational prestige: (i) political leaders, (ii) managers of enterprises, (iii) high-level professionals, (iv) office clerks, (v) services and sales workers, (vi) technical workers, (vii) craft workers, (viii) non-agricultural unskilled workers, and (ix) farmers/farm labourers. Đõ (2012: 62), using the VHLSS, demonstrated that the higher the hierarchy, the lower the number of people included – and the larger the share of the state sector.

However, since the 2000s, with the development of the market economy and globalisation, elite positions in the non-state sector have also increased, allowing some opportunities for people without formal connections to the state sector to enter into elite positions (Fujita, 2020). As a result, dual pathways to socio-economic advancement have emerged – the state pathway, which tends to require educational credentials and familial connections, and the private pathway, in which entrepreneurship and risk tolerance are important (Kojin and Coxhead, 2020).

Nevertheless, the expansion of elite jobs in the non-state sector has not – so far – resulted in enough change to overturn the situation where many elite jobs that require education are within the state sector. According to Phan and Coxhead (2013, 2020), the expansion of the unskilled labour market in the non-state sector associated with the foreign investment boom has led to a lower rate of return on education, especially for low-income groups. The expansion of the unskilled labour market instead increased the opportunity costs associated with higher education for low-income groups. While opportunities to obtain a full return on educational investments outside of the state sector are still scarce, employment in the state sector often requires conditions beyond an individual's ability and effort, such as familial connections. Thus, poor families without such conditions – especially ethnic minority families – tend to refrain from investing in education because of the low likelihood of earning a return on their educational investments (Phan and Coxhead, 2013, 2020).

Moreover, according to Coxhead, Nguyen, and Vu (2019), due to these labour market conditions as well as the customs of traditional societies, geographic mobility – through migration and other means – is low amongst ethnic minorities. Those who remain within the community are thus highly dependent on agriculture. Coxhead, Nguyen, and Vu (2019) noted that this is one of the factors contributing to the persistence of poverty in ethnic minority communities.

3.2. Significant Presence of the Informal Sector

Although the Vietnamese economy has experienced rapid high growth since the 2000s, the informal sector remains significant – even in the 2020s (Table 18.7). Almost all employment in the agricultural sector is informal. Even in the non-agricultural sector, the share of informal employment of the population never fell below 50% throughout the 2010s, and informal employment continues to account for around 70% of the economy. The share of informal employment in the non-agricultural sector had been gradually declining, but after the COVID-19 pandemic, it has grown again (VOV, 2022).

The informal economy is composed of workers without education or skills as well as small and low-productivity entities. While there is a notable disparity amongst enterprises – specifically disparity between a very small number of large enterprises and most small enterprises – there is even greater disparity amongst the entities that make up the informal economy and these enterprises. The entities that make up the informal economy are micro entities – not even small enterprises. As the informal economy is not covered by labour laws and social security, working conditions and business conditions tend to be very poor (ILO, 2018). Although the minimum wage has been raised repeatedly in Viet Nam, informally employed workers are not covered by this measure; their wages are generally very low.⁸ In addition, small and micro entities in the informal economy are not eligible for business support measures. Many lack financial resources and are unable to raise funds from banks, making it difficult for them to expand the scale of their operations and to introduce new technology and equipment. As a result, the working environment is poor from the standpoint of health and safety.

Table 18.7. Informal Employment by Economic Activity
(%)

Year	Total	Agriculture	Non-Agriculture
2013	79.5	99.2	62.2
2014	76.9	99.2	57.6
2015	75.5	98.9	57.1
2016	74.1	98.8	56.3
2017	73.3	99.1	56.1
2018	71.4	98.7	54.9
2019	69.7	99.1	54.2
2020	69.2	98.8	54.9
2021	70.4	98.7	60.1

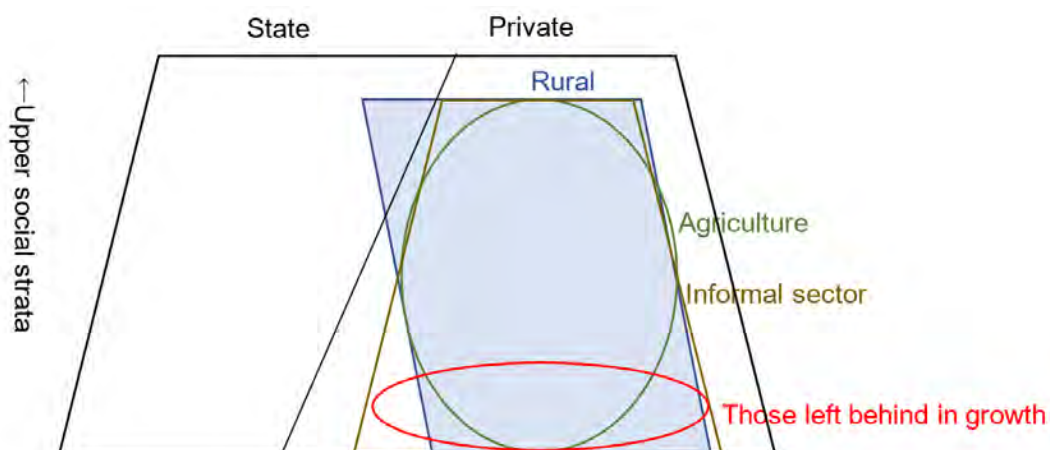
Source: ILO, Statistics on Employment, ILOSTAT, <https://ilostat ilo.org/topics/employment/> (accessed 31 October 2022).

⁸Some informally employed workers appear to receive relatively high wages. Sakata (2017a) found that informally employed workers in craft villages engaged in steel production receive higher wages than the average worker. However, this is compensation for working under poor conditions that may put their lives at risk.

3.3. Structural Barriers around Those Left Behind

Figure 18.5 examines the position of those left behind from growth in Vietnam's socio-economic structure. In Vietnamese society, there are spheres in which social upward mobility can be achieved through the state pathway as well as spheres in which it can be achieved through the private pathway. Although there is some mobility between the two (Kojin and Coxhead, 2020), many of the occupations that are positioned in the upper social strata are in the state sector; these can only be reached through the state pathway. In addition, there are more opportunities for economic upward mobility in rural areas than in urban areas – even without education or connections – but many of these occur in the informal sector. Although they are exempt from taxation, they are not covered by social security or other formal benefits. Some people have achieved economic advancement by starting businesses or developing large-scale farms in the rural informal sector. Yet those left behind from growth have not seized these opportunities and are either farming on small plots of land or working in unskilled non-agricultural jobs in rural or urban areas with low wages and poor working conditions.

Figure 18.5. Socio-Economic Structure around Those Left Behind



Source: Author.

It is noteworthy that those left behind may voluntarily choose low-wage informal employment. As noted by Phan and Coxhead (2013, 2020), the poor who have been left behind have decided that it is a rational choice to refrain from investing in education and to work in the low-wage unskilled labour market, given the socio-economic structure. Sakata (2017a) also noted the reality that informally employed workers in craft villages – who often work under harsh conditions – are not necessarily forced to stay there, but rather choose these flexible forms of employment that are not bound by contracts, taking into account the division of labour within a household. These arguments suggest that inclusive growth will not be achieved simply by providing direct support in education and other areas to those left behind.

4. Conclusions

Viet Nam has always suffered from various disasters, but in recent years, the country has been hit by historic typhoons, torrential rains, floods, erosion, droughts, and salinity intrusion. According to Bangalore, Smith, and Veldkamp (2019), coastal areas – that are home to about 70% of Viet Nam's population – are at risk of residential erosion and major flooding. Floods often damage employment for those involved in agriculture, aquaculture, and tourism, many of whom are already poor. The Mekong Delta, with its low elevation, is particularly vulnerable to climate change. The increase in natural disasters associated with climate change has already imposed restrictions on agri-based livelihood activities in the delta, and many poor people whose livelihoods are threatened have been forced to migrate out of the Mekong Delta (Vu et al., 2021).

During the COVID-19 pandemic, the increased burden of household chores and caregiving associated with school closings and other circumstances limited women's labour market participation, as women reduced their working hours or retired from the workforce (World Bank, 2021b). While the digital economy developed rapidly during the pandemic, those left behind – such as poor households, small businesses, and non-metropolitan areas – were also left behind in terms of adapting to digital technology and continuing education (World Bank, 2021b; Trần, 2021).

Thus, amid new trends, such as climate change and digitalisation, the vulnerability of the groups and regions left out of growth is becoming amplified. To include them in growth and to achieve inclusive growth, direct support for these groups and regions is needed.

Short-term measures include income redistribution through the expansion of social protection. Under the current social protection system, public insurance – social insurance, health insurance, and unemployment insurance – does not cover all citizens, partly because informal employment accounts for a large proportion of the workforce. Support through family and kinship ties has supplemented such deficiencies, but the nature of family is changing. The challenge is to expand public insurance coverage to all segments of the population, including informally employed workers. There will also be a continuing need to provide social assistance to the poor, persons with disabilities, and other groups left behind. Given that many of those left behind live in remote areas with limited access to banking infrastructure, the introduction of e-payments in the provision of social insurance and assistance should also be considered, as noted by the World Bank (2019).

In addition to these short-term measures, medium- and long-term measures include supporting the education of those left behind and encouraging infrastructure improvement and industrial development in regions left behind.

The World Bank and MPI (2016) noted that improving access to education for ethnic minority children is a top priority. Oxfam (2018) and World Bank (2021a) emphasised the importance of promoting upper-secondary education, which is required for upwards skills mobility. In addition to improving access to education, improving its quality is also an important issue. Due to the low quality of existing education in areas with large ethnic minorities, education does not always lead to high-income jobs (Oxfam, 2018). In particular, the expansion of digital education for those groups and regions left behind is key, given the recent progress of digitalisation.

For migrant workers, obtaining permanent household registration in urban areas should be made easier (World Bank and MPI, 2016). However, a rapid increase in urban populations may cause problems in keeping up with the development of urban infrastructure. Also, based on lessons from the pandemic, it would be wise to avoid population concentration in urban areas (Trần, 2021). As a trend is emerging of migrant workers returning to their native villages out of an obligation to care for children and/or parents, employment opportunities should be expanded that allow people to commute from such rural areas. Several companies are already operating commuter busses (*Xe chở công nhân*) from rural areas to industrial parks. In addition to these efforts, the development of public transport infrastructure, such as roads and railways, would enable more people to commute. It is also important to strengthen agriculture and to encourage the development of non-agricultural activities in regions left behind.

Furthermore, a long-term commitment to socio-economic structural change is required. Specifically, the expansion of the formal sector is crucial. To achieve this, the formalisation of the informal sector, as pointed out by Sakata (2017a), should be considered. The conversion of individual business establishments (*cơ sở cá thể*) – the main constituents of the informal sector – into enterprises will expand the number of entities and workers eligible for social security and other public support, as well as open possibilities for financing and technology adoption (Sakata, 2017a:156–7). Sakata (2017a) pointed to this as a challenge in the development of craft villages, but it will also be an important challenge to inclusive growth.

In addition, it is necessary to support the development of private enterprises through improvement of the business management environment. If private enterprises continue to expand white-collar jobs – such as high-level professionals and office clerks – this will increase opportunities for diverse groups, including those with disadvantaged family backgrounds, to achieve social upward mobility.

The above measures are expected to benefit the newly expanding middle class. Although in terms of income level it has expanded significantly, according to Bonnet and Kolvev (2021), the middle class in Viet Nam is more like the poor than the affluent class in terms of education level, number of children, and incidence of informal employment. Therefore, it can be assumed that the measures for the groups and regions left behind are consistent with the demands of the middle class. Demands specific to the middle class – specifically greater political transparency, broader civic participation, and avoidance of excessive inequality – are also expected to become increasingly apparent (World Bank and MPI, 2016). The inclusion of the middle class in growth is essential for maintaining political and social stability; thus, these must be properly identified and addressed.

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Chapter 19

Social Issues in Viet Nam's Ageing Society

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1. Background and Overview

Viet Nam has experienced a social and economic transformation since the reunification of the North and South in 1975. A policy of economic reforms – known as Doi Moi – started in 1986, helping modernise the country in various spheres (Irvin, 1995).

One drastic social transformation has been the country's demographic changes. When Viet Nam became independent from France in 1954, its population numbered about 27.4 million; in 2020, it had grown to 96.2 million (GSO, 2020). A high fertility rate has contributed to this rapid population growth; in 1975, the total fertility rate was about 6.0 children per woman.¹ However, fertility control policies – as a part of Doi Moi – brought the rate down to the population replacement level by the early 2000s (Pham et al., 2012). It is now projected that Viet Nam's population will only rise to about 109.0 million in 2045 (DESA, 2019).

The lower fertility rate has been paralleled by improved longevity of the population. Total life expectancy at birth in 2020 stood at 75.5 years – a significant change from 61.4 years in 1975.² Causes-of-mortality patterns have shifted from infectious to non-infectious diseases, with strokes, ischemic heart disease, and chronic obstructive pulmonary disease (COPD) constituting the major causes of death in 2019.³ These observations suggest that – in line with the theory of demographic transition (Kirk, 1996) – Viet Nam has experienced demographic changes from high fertility and mortality to lower rates since Doi Moi.

Low fertility and mortality have resulted in changes in the age structure of the population. The median age of the population rose from 18.3 years to 32.5 years between 1975 and 2020, suggesting a shift from a younger to an older population (DESA, 2019). Indeed, continued reductions in fertility have led to declines in the young population (i.e. ages 0–14 years) as well as the working-age population (i.e. ages 15–64 years). The percentage of the working-age in the total population reached its peak at 70.5% in 2013, falling to 68.9% in 2020.⁴ Yet the older population (i.e. ages 65 years and over) has grown, from 4.9% of the population in 1975 to 7.9% in 2020; they are expected to total 18.3% in 2045 (DESA, 2019).

¹ World Bank, World Bank Open Data, <https://data.worldbank.org/> (accessed 14 February 2023).

² Ibid.

³ WHO, Global Health Estimates: Leading Causes of Death, The Global Health Observatory, Geneva, <https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-leading-causes-of-death> (accessed 14 February 2023).

⁴ World Bank, World Bank Open Data, <https://data.worldbank.org/> (accessed 14 February 2023).

Furthermore, the share of the older population is projected to increase from 7% to 14% within 18 years (i.e. 2016–2034), compared to 24 years in Japan (i.e. 1970–1994), 23 years in China (i.e. 2002–2025), and 20 years in Thailand (2002–2022) (Table 19.1).

Table 19.1. Number of Years for the Proportion of Older Persons to Increase from 7% to 14% of the Total Population, Selected Countries

Country	Years	Span
France	115	1864–1979
Italy	61	1927–1988
United Kingdom	46	1929–1975
Germany	40	1932–1972
United States	72	1942–2014
Spain	45	1947–1992
Russia	50	1967–2017
Japan	24	1970–1994
Korea	18	1999–2017
Thailand	20	2002–2022
China	23	2002–2025
Sri Lanka	19	2007–2026
Viet Nam	18	2016–2034
Malaysia	25	2020–2045
Myanmar	27	2023–2050
Indonesia	26	2025–2051
Philippines	36	2032–2068
India	22	2037–2059

Source: Hayashi (2018).

These recent demographic changes have had important implications for social policy in Viet Nam. The old-age dependency ratio has increased and was 11.4 in 2020, indicating future increases in medical and care expenditures for the growing older population.⁵ To sustain the country’s welfare system, in 2021, the government revised the retirement age. According to the Labour Code (Decision No. 45/2019/QH14 dated 20 November 2019), the official retirement ages – 60 years for men and 55 years for women – were extended to 62 years



⁵ *Ibid.*

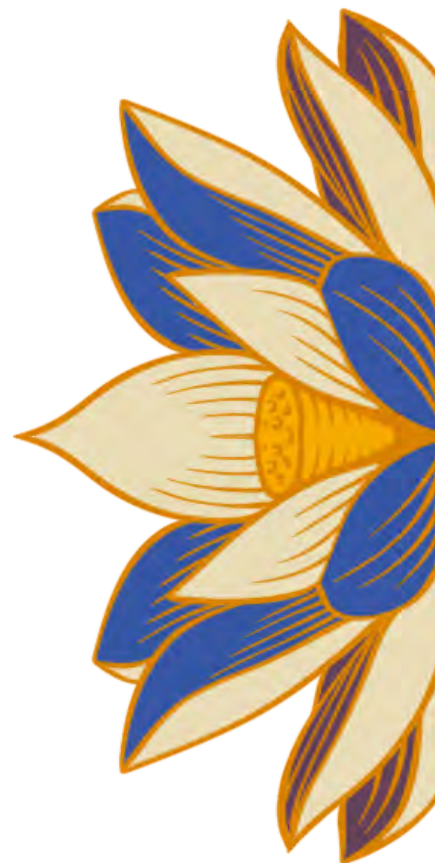
for men, with a 3-month annual increase until 2028, and to 60 years for women, with a 4-month annual increase until 2035. The logic behind this policy approach is based on an understanding that improved longevity is accompanied by improvements in the population's health status, a phenomenon known as the 'compression of morbidity' (Fries, 2005).

Empirical testing of this assumption, however, is scant, and several questions remain unanswered, including regarding the overall health status of the older population in Viet Nam, concerns over the well-being of older adults, and care options available. The remainder of this chapter aims to answer these questions, with particular attention given to the results of the baseline survey of the Longitudinal Study of Ageing and Health in Viet Nam (LSAHV) from 2018 (Vu et al., 2020).

2. Older Adults in Viet Nam

The LSAHV contains the most recent survey data on the well-being of the older population and provides a nationally representative sample of men and women ages 60 years and over. The overall objectives of the survey were to investigate the health and well-being of older people and to assess factors related to health and associated changes. The baseline LSAHV survey, based on the multistage probability sampling approach, was conducted in 2018 across 654 villages as well as urban areas from 10 provinces in 6 regions, with a total sample size of 6,050 individuals. Those ages 70–79 years and ages 80 years and older were oversampled by the factors of 2 and 3, respectively. Data were collected via in-person interviews using tablets. Questions asked included individual-level socio-demographic information as well as a range on the lives of older adults.

The baseline sample was 42.8% men (57.2% women), and the mean age was 70.6 years. Of the respondents, 62.4% were currently married, and 66.2% were out of the labour force. About 70.0% resided in rural areas. The most common living arrangement was co-residence with at least one child (61.3%), followed by living only with a spouse (19.4%) and living alone (8.6%). Educational attainment was low amongst older men and women; 78.9% had less than a secondary school education, and 20.8% had no formal education (Vu et al. 2020).



2.1. Physical Health

Self-rated health provides a summary of overall physical health status (Jylhä, Volpato, Guralnik, 2006). It is predictive of mortality, future health problems, and health-care utilisation (Idler and Benyamini, 1997; Idler, Russell, Davis, 2000). According to the LSAHV results, male respondents had better self-rated health than their female counterparts; 30.0% of men reported that they were either very healthy or healthier than average, while 21.9% of women answered similarly. In total, 47.7% of the sample rated their current health status as average (47.0% of men and 48.3% of women). Self-rated health was distributed in a graded fashion across age groups: 32.3% ages 60–69 years rated their health either as very healthy or healthier than average, 17.3% of those ages 70–79 years, and 9.3% of those ages 80 years and older. Differences between men and women – as well as across age groups – were statistically significant.

The LSAHV asked respondents about their overall health condition. Major chronic illnesses included arthritis (45.8%), back pain (30.3%), and cataracts (12.3%). About 40.9% of the sample had high blood pressure, which was prevalent especially amongst those ages 70 years and older; 9.6% had had heart attacks, with the mean age of a heart attack at 64.3 years. The average number of natural teeth was 22.3, and 4.5% had no teeth. Regarding health behaviours, 15.0% were current smokers and 12.4% former smokers. About 21.8% of older individuals were current drinkers.

Functional health is particularly important for understanding the ageing process (WHO, 2015). The socio-medical framework of the 'disablement process' (Verbrugge and Jette, 1994) focusses on the experience of disability and assesses its impact on the lives of older persons. In the LSAHV, disability was assessed via activities of daily living (ADLs) and instrumental ADLs (IADLs). ADLs referred to bathing, dressing, eating, getting out of bed, moving around the home, toileting, and going outside; IADLs comprised preparing meals, using the telephone, managing money, shopping for groceries, doing light chores, taking medications, and using public transport. Results showed that 15.0% of the respondents reported at least one ADL difficulty. The most common was going outside (11.7%), followed by getting out of bed (8.3%) and bathing (7.5%). While none of the differences between men and women in terms of the prevalence of ADLs was significant, substantial differences were noted across age groups. The prevalence of difficulty in ADLs rose with age; differences across the three age groups of 60–69 years, 70–79 years, and 80 years and above were statistically significant.

Difficulty in performing IADLs was more prevalent than ADLs amongst older people, since 29.5% of the respondents reported at least one IADL difficulty. Using the telephone was the most common type of IADL difficulty for men (12.8%) and women (20.1%). Women reported greater difficulty in managing money, shopping for groceries, and using the telephone compared to men. Just like ADLs, age is related to increases in difficulty in performing IADLs. Respondents ages 80 years and older faced greater difficulty in all IADLs than their younger counterparts.

2.2. Mental and Cognitive Health

Much literature has investigated the relationship between age and mental health status. While evidence to date is mixed – with some studies showing deterioration in mental health status over the life course and others refuting them – it is a consistent finding that depression is prevalent amongst older people (Blazer, Hughes, George, 1987). Various factors are related to the heightened risk of depression in later life, including declines in functional health, a loss of valued social roles, and death of family members (Yang and George, 2005).

The LSAHV included 11 questions on the presence of depressive symptoms during the past week, based on the Center for Epidemiologic Studies-Depression (CES-D) scale. The short version of the CES-D was devised by Kohout et al. (1993), based on the full 20-item scale by Radloff (1977). In the LSAHV, respondents were asked how often they experienced each of the 11 symptoms – such as feeling sad, feeling depressed, and having trouble getting to sleep – over the past week, with responses ranging from 'rarely' to 'most of the time'. Using the baseline LSAHV data, an analysis by Tran et al. (2022) found that 31.3% of the respondents reported depressive symptoms.

The levels of depressive symptoms markedly varied by socio-demographic variables. Depressive symptoms were more prevalent amongst women (36.1%), those ages 80 years and above (44.9%), residents of the central coastal region (46.8%), those not married (42.7%), those less educated (43.4%), those without religious affiliations (34.4%), and economically disadvantaged households (40.6%). In addition, physical health status was closely associated with depressive symptoms, and major risk factors included poor self-rated health, low body mass index, and functional impairments. These results suggest that social circumstances in which older people in Viet Nam are embedded – as well as their current physical health conditions – are related to their risk of experiencing depressive symptoms.

Another key indicator of mental health in later life is dementia, i.e. a severe form of cognitive impairment (Hugo and Ganguli, 2014). Previous studies found that developing countries tend to have lower prevalence rates of dementia than developed countries, but this difference can be explained by a lack of systematic documentation and lower chances of survival into advanced ages in developing countries (Ferri et al., 2005).

The LSAHV measured cognitive impairment via the 10-item Short Portable Mental Status Questionnaire (Pfeiffer, 1975). Results showed that women had a higher prevalence of cognitive impairment than men, and the risk of poor cognitive functioning increased with age. Amongst women ages 80 years and older, the probability of cognitive impairment reached 21.6%, while the result for men was 9.0%. These results are consistent with other research on dementia prevalence in Viet Nam, which identified correlates of cognitive decline amongst people ages 55 years and older in Da Nang, including being a woman, older age, low educational attainment, and adverse living conditions (Leggett et al., 2013).

2.3. Socio-Economic Well-Being

Sociological research has established the importance of social support – or lack of thereof – for physical and mental health outcomes (Thoits, 2011). Older age is associated with limited access to support, as functional impairment makes it difficult for older people to maintain independent lives, engage in social relationships, and receive support from their networks (Yang and George, 2005; Yang, 2006). Past research has reported poor health consequences of social isolation at advanced ages, as in higher risk of mortality (Minagawa and Saito, 2015), morbidity (Seeman, 2000), depressive moods (Heikkinen and Kauppinen, 2004), and cognitive decline (Wilson et al., 2007).

The results of the LSAHV indicated high levels of social well-being amongst older men and women in Viet Nam, however. About 7.5% of the respondents attended religious services outside of the home, and 12.6% participated in religious activities, such as bible study groups. Moreover, 23.6% of older men and women belonged to non-religious organisations – amongst which groups for retired individuals were the most popular (85.6%) – and 9.8% did volunteer work. These results showed that levels of loneliness were low amongst older people in Viet Nam. Most of the respondents reported that they rarely or never felt a lack of companionship (74.8%), left out (86.0%), or isolated (87.7%), and more than 90.0% were satisfied with relationships with relatives (92.1%) and friends (90.0%).

The increased use of information and communication technology may help older people stay connected with their social networks despite geographic distance or mobility restrictions as well. While the percentage of older people with internet access was small (14.7%), 58.4% of the LSAHV sample used cell phones, with the main purpose to call friends and family. In addition, older people in Viet Nam enjoyed high levels of life satisfaction; 92.3% of the respondents said that they were satisfied with life (i.e. 'very satisfied' and 'somewhat satisfied'). Life satisfaction declined with age, but more than 90.0% of the respondents ages 80 years and above also answered that they were satisfied with life.

The results also suggested favourable economic situations amongst older persons. Despite low educational attainment and childhood poverty (e.g. 42.1% of the sample experienced poverty while growing up), about 80.0% of the respondents reported that they had enough financial resources to cover expenses. Major sources of income included children living in the country (38.5%), earnings from work (37.3%), and government pensions (23.8%), while 14.7% of the sample reported economic hardships in the household. At the time of the survey, 38.0% of male and 31.0% female respondents were in the labour force.

3. Burden of Mental Disorders

3.1. Mental Health Care in Viet Nam

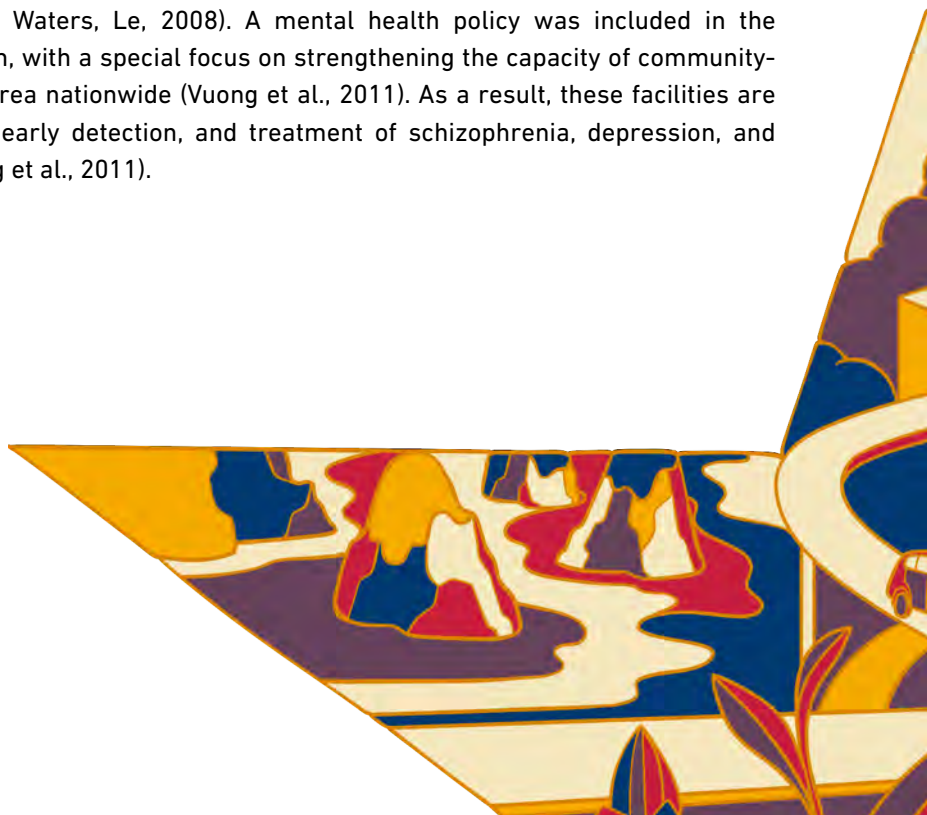
The evidence reviewed to this point suggests improvements in the population's welfare in Viet Nam, but public health challenges remain, such as the increased prevalence of mental disorders. Indeed, the high burden of mental disorders has become evident worldwide. In 2019, mental disorders contributed to 4.9% of disability-adjusted life years worldwide, up from 3.1% in 1990 (Ferrari et al., 2022). Mental disorders have also become predominant in developing countries; researchers now

argue that they are no longer 'diseases of affluence' (Desjarlais et al., 1995). An analysis by Lund et al. (2010) reported associations between mental disorders and various dimensions of poverty – such as low education, low incomes, poor housing conditions, and unemployment – in low- or middle-income countries. Issues of poverty – including financial worries, worsened physical health statuses due to lack of economic resources, exposure to crime and violence, childhood poverty, and social isolation – may yield deleterious effects on mental health status (Ridley et al., 2020). It is also likely that mental disorders reduce one's ability to work, making upwards social mobility difficult.

While causality needs to be explored, past evidence has established the strong association between mental disorders and socio-economic adversity, indicating that populations in developing countries may be at greater risk of experiencing mental disorders compared to their more affluent counterparts. Moreover, mental health services tend to be underfunded in developing societies. According to Ridley et al. (2020), high-income countries, on average, spent more than 3% of total health expenditures on mental health services, whereas the result for low- and lower middle-income countries was less than 1%. Inadequate budgets for mental health services may lead to a situation in which persons in need of care do not receive appropriate treatment, a phenomenon known as a 'treatment gap' (Lund et al., 2012).

Viet Nam is no exception, as the need for mental health care services remains high yet largely unmet. Common mental disorders in the country include substance abuse, depression, and anxiety, and the number of people with these conditions has gradually increased (Vuong et al., 2011). Suicide attempts occur frequently amongst the population, especially amongst young people in urban areas (Thanh et al., 2005). Anxiety and depression – also common in Viet Nam – are closely linked to suicidal thoughts and plans (Thanh et al., 2006).

Since Doi Moi, the government has worked to reform the health care system by, for example, introducing a user fee system, legalising private medical practices, and commercialising the pharmaceutical industry (Dao, Waters, Le, 2008). A mental health policy was included in the National Health Target Program, with a special focus on strengthening the capacity of community-based health facilities in this area nationwide (Vuong et al., 2011). As a result, these facilities are responsible for the scanning, early detection, and treatment of schizophrenia, depression, and epilepsy in communities (Vuong et al., 2011).



The government has further invested in improving Viet Nam’s mental health care sector. For instance, there were 4.16 mental health workers per 100,000 population in 2020, up from 3.91 in 2014, as well as 4,015 mental health professionals, including 951 psychiatrists, 2,791 mental health nurses, and 102 psychologists (WHO, 2021). There were 43 mental hospitals for inpatient care, and 4 facilities focussed on such treatment for children and adolescents. In addition to mental health care facilities managed by the Ministry of Health, there are long-term care facilities for severely mentally ill patients managed by the Ministry of Labour, Invalids and Social Affairs (MOLISA). According to MOLISA, Viet Nam has 45 such centres that can host 20,000 patients nationally. Most of these patients have severe schizophrenia and dementia, are unresponsive to regular medical treatments, and have no familial caregivers. These centres are in 35 provinces, and the government plans to expand this network in the next 10 years by one to two centres each year, depending on the state budget.⁶

Despite the government’s commitment, several important issues remain unaddressed, however. First, there are inequalities in access to health care services across regions and income groups, and out-of-pocket payments make a significant contribution to health care costs (Vuong et al., 2011; Witter, 1996; Niemi et al., 2010). Second, mental health services remain underresourced. Moreover, there is a lack of human resources in the mental health care sector. In 2020, there was less than 1.0 psychiatrist per 100,000 population in Viet Nam, compared to 12.6 in Japan, 7.9 in Korea, and 4.3 in Singapore; figures were also low for mental health nurses, clinical psychologists, and social workers (Table 19.2). Although there are educational programmes in psychiatry in Viet Nam, it is one of the least popular concentrations for post-graduate training (Vuong et al., 2011).

Table 19.2. Mental Health Care Workers, Selected Countries, 2020
(per 100,000 persons)

Country	Psychiatrists	Mental Health Care Nurses	Psychologists	Social Workers	Total
Japan	12.55		27.81	71.56	111.92
Rep. of Korea	7.91	13.96	1.89	9.70	45.00
China	2.55	5.68	0.37		8.60
Thailand	0.94	5.54	0.61	0.19	7.87
Malaysia	1.21	2.88	0.56	1.08	5.86
Singapore	4.27	21.86			26.14
Philippines	0.22	0.78	0.08	0.48	1.68
Viet Nam	0.99	2.89	0.11	0.04	4.16

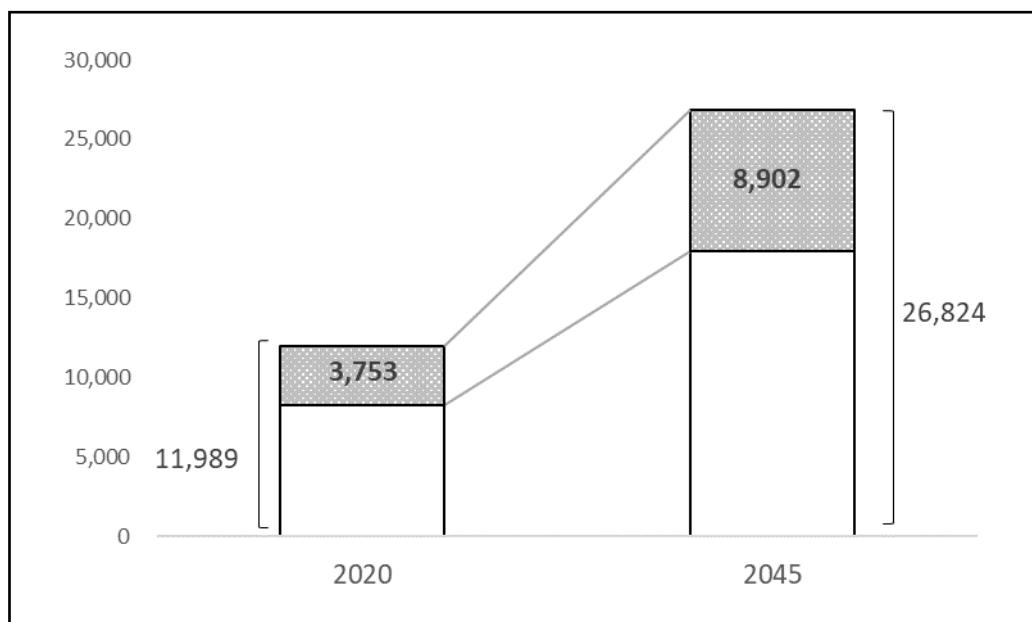
Source: WHO (2021).

⁶ See Decision No. 1929 (1929/QĐ-TTg, dated 25 November 2020) on the National Programme to Support People with Mental Disorders in Viet Nam.

3.2. Implications for the Future

These observations indicate that – although the infrastructure of mental health care services in Viet Nam have improved over time – a substantial gap still exists between the demand for care and available resources. This has an important bearing on future social policy in Viet Nam, given its rapidly ageing population. Based on the assumption that the current prevalence of depressive symptoms in older LSAHV respondents will remain unchanged, it is expected that, in 2045, about 8.9 million older people in Viet Nam will be suffering from depression, versus about 3.8 million in 2020 (Figure 19.1).

Figure 19.1. Expected Changes in the Number of Those Ages 60 Years and Older with Depressive Symptoms, 2020–2045

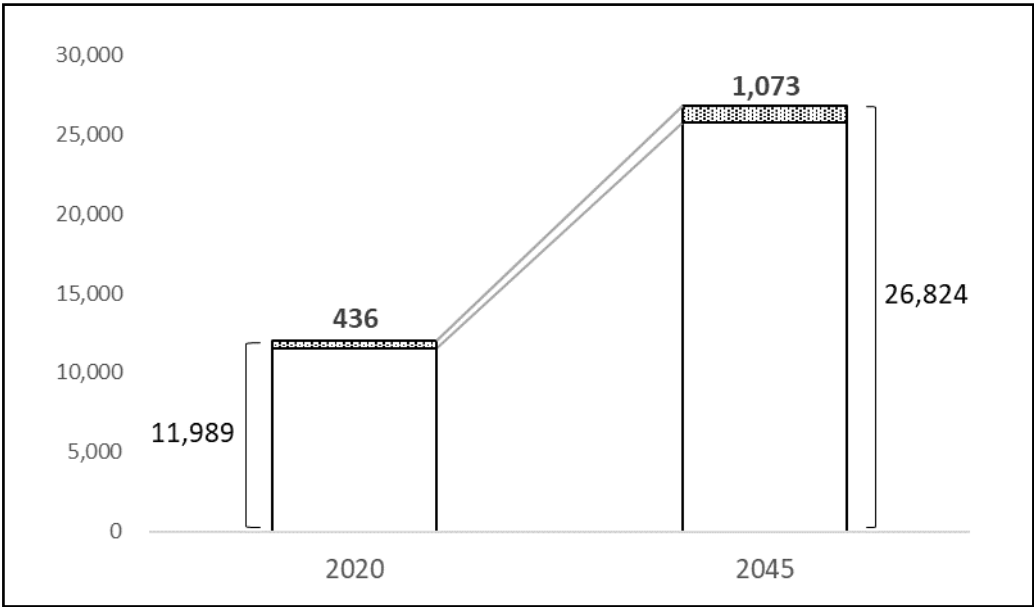


Source: Authors' calculations based on the data from DESA (2019) and Vu et al. (2020).

While these estimates indicate expected increases in demands for mental health care services, given the current state of mental health care infrastructure, a treatment gap for mental disorders may further widen – especially for older adults. Also, inadequate budgets in the mental health sector may accelerate the practice of informal or out-of-pocket payments for mental health care, exacting a high toll on the financial welfare of the older population (Niemi et al., 2010).

Many studies have indicated that late-life depression is co-morbid with dementia (Green et al., 2003; Jorm, 2000; Steffens and Potter, 2008). The number of older people with cognitive impairments is expected to increase between 2020 and 2045, as well, reaching about 1.1 million in 2045 (Figure 19.2). These estimates raise the possibility that the increase in cognitive impairments in Viet Nam's older population will come with an even larger prevalence of depression.

Figure 19.2. Expected Changes in the Number of Those Ages 60 Years and Older with Cognitive Impairments, 2020–2045



Source: Authors’ calculations based on the data from DESA (2019) and Vu et al. (2020).

Researchers suggest that mental health should be integrated into primary care services in developing countries, which allows for early detection and treatment of mental disorders (Lancet Global Mental Health Group et al., 2007).⁷ Support from international development agencies and donors will thus play a key role in addressing the unmet need for mental health care in Viet Nam, and cooperation should include the establishment of mental health care facilities and the development of learning and training programmes for mental health care professionals. In addition, efforts to develop mental health legislation are vital, given that Viet Nam does not currently have any mental health care laws (WHO, 2021).

More research should be directed towards the topic of mental health in Viet Nam as well. In 2019, 5.59% of research publications in Viet Nam focussed on mental health, down from 9.21% in 2016, compared to 12.76% in Singapore and 6.54% in Korea (WHO, 2021). Importantly, research findings can be translated into policy actions and practices to address the needs of people with mental disorders. Further, it is essential to provide support for strengthening the capacity of non-governmental organisations that offer mental health services. Although their numbers are limited in Viet Nam, some do organise workshops and help those with mental disorders receive mental health care services (Nguyen et al., 2019).

⁷ The Programme for Improving Mental Health Care (PRIME), for example, is targeted at scaling up care for mental disorders in primary and maternal care settings in Ethiopia, India, Nepal, South Africa, and Uganda (Lund et al., 2012).

Raising awareness about mental disorders is essential in the Vietnamese context. Van et al. (2021) found that barriers to seeking mental health care amongst older people in Viet Nam include stigma attached to mental disorders, fears of being judged by others, and emotional concerns about seeking help. These factors may further delay the detection and diagnosis of mental disorders and complicate the process of treatment. Stigma and prejudice associated with mental disorders remain strong in many Asian societies, including Viet Nam; thus, efforts to change the public's perceptions about mental disorders through education and social media are needed.

4. Care Provision in Viet Nam

4.1. Familial Care

With the rapidly ageing population, greater longevity, and increased prevalence of chronic conditions, more people in Viet Nam require care at older ages. Viet Nam provides an interesting context to examine the issue of care, given the strong influence of Confucianism, best exemplified by the norm of filial piety – expectations that adult children provide care for their parents in exchange for sacrifices previously made by the parents (Koyano, 1996). The norm of filial piety is even stipulated in the Law on the Elderly (No. 39/2009/QH12), which states that children, grandchildren, and other relatives have the duty to ensure the well-being of older adults in a family (Laguna, 2020). It is important to note, however, that in East Asian patrilineal societies, actual care is often provided by daughters-in-law rather than sons (Lan, 2006; Iwai, Emiko, Atsuko, 2022).

The LSAHV contained many questions on the needs and expectations of care in later life. Several findings emerged. First, 73.2% of respondents had primary caregivers, and the percentage increased with age, reaching 81.7% amongst those ages 80 years and older. Second, children (44.4%) and spouses (43.2%) were primarily responsible for providing care for older adults. The percentage of respondents who received care from their children increased with age, indicating the high likelihood of being widowed and reliant on children for care at advanced ages. In the LSAHV sample, 8.6% of the respondents identified their sons- and daughters-in-law as primary caregivers. Other arrangements, such as caregiving by relatives and siblings, remained at less than 1.0%. Regarding the characteristics of caregivers, the mean age was 52.4 years, and most of them were married (82.9%) and working (66.9%), and the modal educational attainment was less than high school (64.9%). Third, in terms of the content of care, household tasks constituted the bulk of the care work (49.5%), followed by assistance with mobility, such moving around the home or visiting friends (20.3%). Amongst people ages 80 years and above, assistance with household tasks occupied 70.9% of the primary caregiver's work, indicating increased difficulty in managing daily household chores at older ages. Lastly, while more than half of the caregivers (57.7%) were satisfied with the provision of care, some reported difficulty in interacting with older persons (18.1%) or experienced conflict in managing care (16.8%). These results indicate how caregiving for older adults can be a challenging task for primary caregivers.

Respondents were also asked about potential caregivers. About 26.8% of the respondents answered 'yes' to the question, 'Do you have a person in mind whom you think will take care of you when you need one?'; more than half (56.3%) identified their sons and daughters as potential caregivers,

followed by their spouses (29.1%). Adult children and spouses together constituted more than 80.0% of potential caregivers (85.4%), whereas 9.1% of the respondents expected to receive care from sons- and daughters-in-law.

Taken together, these results demonstrate how the traditional norms of filial piety remain pervasive in the Vietnamese family context. Although society has gone through a fundamental transformation during the past few decades – with profound influences on family life – the findings suggest that the ideal of familial support is unchanged amongst older people. The responsibilities of caregiving still largely fall on adult children and spouses.

4.2. Long-Term Care Needs

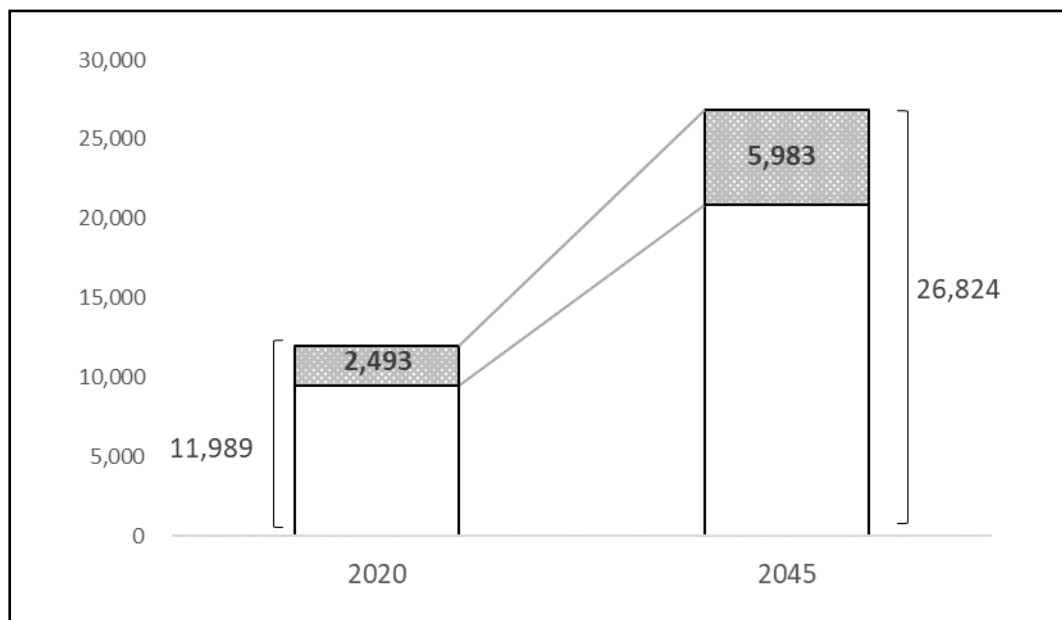
The LSAHV asked participants about their long-term care needs; 20.4% of the sample received long-term care due to ill health or disability (21.3% of men and 19.8% of women). Respondents with long-term care needs totalled 16.1% in the 60–69-year age group, increasing with age, reaching 34.3% amongst those ages 80 years and above. Spouses (44.9%), sons (31.0%), and daughters (13.7%) bore responsibility for providing long-term care, compared to sons- and daughters-in-law (6.8%). Amongst respondents ages 60–69 years, spouses (59.4%) provided long-term care, falling to 21.3% for those ages 80 years and above. Instead, sons assumed primary roles as long-term caregivers (39.5%) in this age group, followed by daughters (13.7%).

The overwhelming majority of respondents – 86.3% – received long-term care daily, and major types of assistance included preparing meals (79.9%), taking medications (46.0%), and self-care such as bathing (25.7%). The LSAHV also asked about potential long-term caregivers. Results indicated that older persons relied on their family members for the provision of long-term care, not public care options like nursing homes. About 88.8% of respondents said that they would like to receive care from immediate family members (e.g. spouses and children) even when they develop dementia, while only 0.3% cited nursing homes. Similar patterns were observed if bedridden (88.3% versus 0.6%).

These results show how older persons in Viet Nam rely on their immediate family members for long-term care provision, but this model may not be sustainable in the future. It is estimated that, in 2045, approximately 6.0 million Vietnamese people ages 60 years and older will require long-term care, significant growth from 2.5 million in 2020 (Figure 19.3). These projections imply that – even within the context of filial piety – informal family caregiving may not be sufficient to support the growing demands for long-term care.



Figure 19.3. Expected Changes in the Number of Those Ages 60 Years and Older with Long-Term Care Needs, 2020–2045



Source: Authors' calculations based on the data from DESA (2019) and Vu et al. (2020).

Although women's educational attainment has increased in recent years, women still bear the brunt of domestic labour, making it difficult to navigate both family and career development (Luong, 2016). Further, Viet Nam has become a major source of international labour migration, and these upturns in labour migration reflect the country's socio-economic development under Doi Moi (Ishizuka, 2013). Since 2014, for instance, based on the Japan–Viet Nam Economic Partnership Agreement, Japan has accepted more than 1,500 trainees for nurses and care workers from Viet Nam.⁸ The agreement aims to boost economic activities between the two countries, but it also addresses the problem of a shortage of personnel working in Japan's health care sector.⁹ It is important to note, however, that Viet Nam may also soon face a lack of health care workers, due to increases in future care needs. This point further confirms the importance of establishing a mechanism through which nurses and care workers are trained domestically and contribute to the growing needs for care in their own country.

Japan introduced a long-term care insurance policy in April 2000. The traditional Japanese model of caregiving was also based on familial care provided by women, but recent increases in Japan's female labour force participation have revealed the limit of informal family caregiving (Yong and

⁸ MHLW, Acceptance of Vietnamese Nurse/Care Worker Candidates <https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000049737.html> [in Japanese].

⁹ Since 2012, Viet Nam has had a similar agreement with Germany (Peters and Braeseke, 2016).

Saito, 2012). In response, the Government of Japan implemented a long-term care insurance policy to provide home- and institution-based care services for older eligible people, moving caregiving into the public sphere (Iwagami and Tamiya, 2019). Other countries, such as Germany and Canada, also have similar long-term care programmes, and lessons from these countries may provide valuable insights to Viet Nam on dealing with the issues of long-term care (Campbell, Ikegami, Gibson, 2010; Grignon and Spencer, 2018).

4.3. Health Care Utilisation amongst Older Adults

Based on the LSAHV, slightly less than 30% of older adults reported that they received medical care for an illness/accident from any medical facility or practitioner without staying overnight in the past 12 months. As age increases, the percentage of older adults receiving medical care grew – 1 in 4 amongst those ages 60–69 years, and 1 in 3 amongst those ages 80 years and over. More than 40% of older adults received outpatient health care services at commune health centres, and another 30% visited district hospitals.

The LSAHV also showed that more than 1 in 5 older persons ages 60 years and above stayed overnight in a hospital or other health care facility over the past 12 months. As age increases, the percentage of older adults using inpatient health care also grew, reaching more than 1 in 4 for those ages 80 years and above. Amongst older adults hospitalised, 42.1% were admitted by district hospitals and 23.3% by provincial general hospitals. District hospitals seem particularly important for outpatient health care services amongst older adults, as less than 5% of older adults used private clinics/hospitals for inpatient health care services. About half of older adults paid for expenses related to the hospitalisations themselves or through their spouses. However, more than 40% relied on their children for these payments, although most of the sample reported that they received benefits from health insurance.

Although 91% of older adults in Viet Nam have health insurance, insurance type needs to be considered. Amongst older adults, 37.5% have health insurance for retired persons, veterans, and 'meritorious persons'; 11.3% because they are poor; and 11.3% because they are an ethnic minority. In total, 60.0% of older persons are covered by health insurance provided by the government. As economic development in Viet Nam continues, the percentage of older adults covered by health insurance for poor persons may decrease, as well as that due to being a veteran or meritorious person. The increased mandatory retirement ages for men and women may also lead to a slower increase in the number of retired persons.



Although the percentage is relatively small (9.0%), older adults who do not have health insurance exist. The lack of insurance coverage for this group should be examined to understand why they do not have health insurance. Moreover, as the number of older adults increases, the number of those without health insurance may also grow.

About 12.7% of older adults also reported that they did not visit health care facilities even when they felt sick over the past 12 months; 35.7% cited financial constraints as the reason. Older adults who do not have health insurance and do not visit a health care facility due to finances may become seriously ill before they are treated. Older adults' well-being will thus worsen, and medical expenditures may grow.

5. Another Side to Population Ageing¹⁰

Viet Nam's rapid population ageing has been largely caused by the rapid reduction in the fertility rate, which began in 1988 following the introduction of the Two-Child Policy (Ngo, 2020). The future population age structures discussed so far are based on population projections that assume declining fertility rates from the trends observed in Viet Nam. Further population ageing can be eased, however, if fertility rates increase in the coming years. While it is important to formulate policies maintaining or improving the well-being of older adults given their increasing absolute and relative number, the government should also consider ways to sustain the current level of fertility or to prevent it from plunging into a below-replacement level. Around the globe, many developed countries are struggling to keep fertility around the replacement level. If a country does not maintain the replacement-level fertility rate, the population in the country eventually decreases.

The total fertility rate in the 2010s in Viet Nam ranged between 2.0 and 2.1 children per woman during the reproductive ages of 15–49 years and exceeded 2.1 during the COVID-19 pandemic (GSO, 2022). Rates differed greatly between urban and rural areas and across regions. The total fertility rate for the whole country in 2020 was 2.1 children per women, and 1.9 for urban and 2.3 for rural areas. The rates in two regions in the south were very low – 1.6 children for the South-East and 1.8 for the Mekong River Delta – while they exceeded 2.3 children in other regions. The two largest cities in Viet Nam – Ha Noi and Ho Chi Minh City – showed an interesting contrast. The total fertility rate for Ha Noi was 2.3 children in 2020, whereas it was 1.5 for Ho Chi Minh City (GSO, 2022).

The share of the working-age population has already started to decline in Viet Nam, and unless the number of babies born increases, the decline in the working-age population will continue. Even if the country succeeds in increasing current fertility rates, the working-age population will not increase for a few decades. In 2017, the government reversed the Two-Child Policy to increase the number of births. However, a recent news report suggested that couples still do not often have more than two children – not because of the policy but because of the cost of raising children (Tomiyama, 2017).

¹⁰This section was added after a workshop conducted in September 2022. In a personal conversation with Dr. Tokuaki Shobayashi, health policy advisor to the Ministry of Health, Government of Viet Nam, he pointed out that population ageing is the flip side of the declining birth rate. He also emphasised that studies are needed to examine the factors behind the declining birth rate. The authors recognise that policies dealing with the low birth rate need to be considered for the country.

To formulate effective policies to deal with the low fertility rate, several potential factors of declining fertility need to be examined: (i) the difference between desired and intended number of children amongst couples of reproductive age, (ii) age at first marriage by sex, (iii) ages of mothers at first births, (iv) number of married couples of reproductive age, (v) number of divorces during reproductive age, (vi) number of babies born out of wedlock, (vii) number of abortions, (viii) contraceptive practices amongst those of reproductive age, (iv) labour force participation rates amongst women, and (x) educational attainment of young women.

If there is a difference between the desired and intended number of children amongst couples, reasons for the difference should be identified. If the cost of having children or raising children is a reason for limiting the number of children, effective policies can be formulated to ease burdens. However, if there is no difference between the desired and intended number of children and the desired number of children is declining, it will be difficult to deal with low fertility. Opinions and values about having babies amongst young generations may simply be changing.

The difference between the desired and intended number of children may also be affected by the cultural son preference in Viet Nam. Son preference is represented in the sex ratio of babies; in 2021, the sex ratio was 112 baby boys to 100 baby girls (GSO, 2022). The ratios in developed countries were around 105 to 100 (Orzack et. al., 2015). Couples with son preferences may try to have another baby until they have a son, but they may have only one child if their first baby is a son. Son preference may also affect the number of abortions.¹¹ Currently, the abortion rate in Viet Nam is very high (Nguyen, 2022). Although abortion for the reason of sex selection is illegal, it does occur amongst couples with very strong son preferences. Abortions also seem to be increasing amongst young females in urban areas due to unintended pregnancies and pregnancies out of wedlock (Lundberg, 2021). In addition, repeated abortions seem to be common (Ngo et. al., 2014). Sexual and reproductive health amongst women can be improved by providing family-planning services and disseminating accurate information on contraceptive practices.

The cultural values of son preference and sexual and reproductive health behaviours appear to be related to the status of women in general. Gender inequality in Viet Nam is high, as it was ranked 83 amongst 147 countries on this metric by the World Economic Forum (2022). To become a developed country by 2045, the government must address gender inequality existing in the society.

¹¹ The right to abortion is protected under Article 44 of the 1989 Public Health Protection Law.

6. Conclusions and Policy Implications

More than 45 years have passed since the reunification of Viet Nam, and since that time, the country has experienced drastic social and economic changes. Socio-economic development has yielded profound shifts in people's values, beliefs, and behaviours. The country's lower population growth rate may help Viet Nam avoid adverse consequences of rapid population expansion faced by many developing countries, such as environmental degradation, competitions for scarce employment opportunities, and political instability (Bongaarts and Sidening, 2011). However, the shift toward an ageing population requires support from international development agencies and donors, as the country is not fully equipped with the knowledge and experience necessary to face the fast pace of population ageing.

Regarding physical health, the LSAHV revealed that older people in Viet Nam suffer from various kinds of chronic illnesses; thus, the ability to function physically later in life was assessed. Roughly one in six people reported at least one ADL difficulty, while about 30% of the sample had difficulty in performing IADLs. The prevalence of difficulty in ADLs and IADLs rose with age, indicating a high burden of disability in later life.

Mental health issues have also become increasingly prevalent. In the LSAHV, 31.3% of the respondents experienced depressive symptoms over the past week, and socio-economic factors, such as sex, rural residency, marital status, and household income, as well as physical health conditions were closely linked to depressive symptoms amongst older adults.

LSAHV results did show high levels of social participation amongst older men and women in Viet Nam, characterised by dense social networks and participation in various activities, however. One key factor has been the use of cell phones. Also, despite lower educational attainment, older individuals in Viet Nam seemed to have enough financial resources, suggesting how recent socio-economic development has contributed to the economic well-being of the population.

Mental disorders have become a pressing public health concern especially in developing countries like Viet Nam, since poverty is closely associated with mental disorders (Lund et al., 2010). In Viet Nam, a lack of human resources working in the mental health care sector is evident. International support is needed in developing the mental health care infrastructure in Viet Nam, through providing training programmes for mental health care professionals, strengthening the capacity of governmental and non-governmental agencies working on the provision of mental health services, and raising awareness about mental disorders. Given that the number of older individuals with mental disorders is expected to increase, the health care and social support systems need to be equipped with the knowledge necessary to address the challenges of mental disorders in the ageing population.

Care needs are also expected to increase. Most older respondents were currently receiving or expected to receive care from their immediate family members, and adult children tend to bear the responsibility of caregiving as parents grow older. Informal care may not be sufficient to support the growing demands for care, however, thereby suggesting the importance of expanding institutional support for caregiving.

Economic inequality still exists in the country, and the government needs to recognise that not all older adults in the country can afford to pay for adequate medical treatment. Health care expenditures for older adults who need long-term care or hospitalisation may be a significant burden for their households, too. As noted, shortly after the population of Japan became an ageing population, the Government of Japan implemented policy measures to ease the burden of medical expenditures amongst the older population.¹² Policy makers in Viet Nam may benefit by reviewing and taking lessons from such health care policies.

The levels of fertility in both Japan and Viet Nam around the time of becoming an ageing population were also similar.¹³ The Government of Japan has been trying to increase the total fertility rate but has never been able to alter it. Policymakers in Viet Nam may also learn valuable lessons from these policies, as well.

While Viet Nam has made major strides towards modernisation and socio-economic development over the past few decades, the country still faces various challenges, and population ageing is one of them. The government has instituted a wide range of programmes and policy measures to support its new population demographics, but there are distinct limitations. Major recommendations and policy implications include:

- i. **Continue to reform the health care sector, with a special focus on the development of geriatric medicine.** The government should establish a geriatrics department in every provincial hospital and provide associated geriatric medical training for primary health care workers as mandatory continuing education through short and online training programmes. Topics to be considered include hypertension management at the primary care level, diabetes management at the primary care level, home-based care, and support for older adults living with disabilities.
- ii. **In the face of a shortage of personnel working in the mental health care sector, allocate more financial resources to develop mental health infrastructure, provide training opportunities for mental health professionals and/or professional caregivers, and raise awareness of mental disorders.** The government should ensure that continuing mental health education is required for those working at primary care facilities such as district hospitals and commune health centres. Health insurance law should also be updated allowing basic mental health medicines to be prescribed at the primary health care level.

¹² The population age structures in Viet Nam and Japan were very similar when both countries exceeded 7% in their proportion of older adults ages 65 years and over in 2015 and 1970, respectively. The percentages of the three broad age groups – ages 0–14 years, 15–64 years, and 65 years and over – were 23.4%, 69.6%, and 7.0% for Viet Nam, respectively; and 23.9%, 69.0% and 7.1% for Japan, respectively.

¹³ The total fertility rate in Viet Nam in 2015 was 2.10 (GSO, 2020) and 2.13 in Japan. However, after the rate in Japan plunged to a below-replacement level in 1974 and reached the lowest level of 1.26 children per woman in 2005, it never returned to a replacement level. See MHLW, Vital Statistics, <https://www.mhlw.go.jp/english/database/db-hw/vs01.html> (accessed 14 February 2023).



- iii. **Introduce long-term care insurance for older persons, and pilot this in Ha Noi, Da Nang, and Ho Chi Minh City.** Professional caregiver services may also be tested in these areas.
- iv. **Strengthen cooperation with international development agencies as well as countries that have experienced the ageing population process.** Cooperation should include information exchanges about developing health care infrastructure, implementing a public long-term care insurance system, and training personnel working as nurses and caregivers.
- v. **Coordinate closely with the governments of neighbouring countries to further develop regional cooperation networks to address the social and economic challenges of population ageing.**
- vi. **Monitor health care utilisation amongst older adults, in particular those in low-income households, as well as health care insurance types amongst older adults.** In addition, health care policies implemented in Japan in the 1970s should be reviewed for best practices.
- vii. **Establish a mechanism to monitor factors associated with trends in the birth rate in a centralised manner to formulate effective pro-natal policies to deal with population ageing.**

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Part IV:
**Conclusion and Policy
Recommendations**







Chapter 20

Developing a New Approach to Japan–Viet Nam Industrial Cooperation

Fusanori Iwasaki, Keita Oikawa, and Yasuhiro Yamada



1. Introduction¹

In 2023, Japan and Viet Nam celebrate the 50th anniversary of the establishment of diplomatic relations.² The purpose of this chapter in this commemorative publication is to define the role of industrial cooperation in deepening and developing the partnership between Japan and Viet Nam, and to sketch out possible directions for cooperation content. Japan is actively engaged in bilateral partnerships in the Mekong region (Shiraishi, 2014), especially in the Japan–Viet Nam relationship, with a high level of interaction between the two leaders. This includes a visit to Viet Nam by Prime Minister Yoshihide Suga in October 2020, a visit to Japan by Pham Minh Chinh, Prime Minister of Viet Nam in November 2021, and Prime Minister Fumio Kishida’s visit to Viet Nam in May 2022. Regular visits continued even as the coronavirus disease (COVID-19) pandemic hit the world. This is an important bilateral relationship for both countries. At the November 2021 Japan–Viet Nam summit meeting, Prime Minister Kishida mentioned the launch of the Digital Transformation (DX) Initiative, the Supply Chain Diversification Initiative, and the Technology Innovation Cooperation Partnership between the two countries for the post-COVID-19 economic revival (MOFA, 2021a). The summit meeting adopted the Joint Statement: Toward the Opening of a New Era in Japan–Viet Nam Extensive Strategic Partnership for Peace and Prosperity in Asia, which stated that the countries’ Extensive Strategic Partnership would be substantive and effective in all areas (MOFA, 2021b). In 2022, Prime Minister Kishida visited Viet Nam and held a seminar on Japan–Viet Nam cooperation in technological innovation, DX, and supply chain diversification, where he spoke about the steady deepening of cooperation in each initiative and stated that new initiatives such as the Asian Future Investment Initiative would benefit Viet Nam (Prime Minister’s Office of Japan, 2022).

Progress has also been made in ministerial discussions. On 23 August 2022, the Fifth Meeting of the Japan–Viet Nam Joint Committee on Cooperation in Industry, Trade and Energy was held in Tokyo and a Joint Ministerial Statement between the Japanese Ministry of Economy, Trade and Industry (METI) and the Vietnamese Ministry of Industry and Trade (MOIT) was adopted. The statement lists four areas of industrial

¹ The authors conducted several interviews with the Japanese Ministry of Economy, Trade and Industry (METI) in March 2022 and January 2023, and the content of these interviews was reflected in this chapter. The authors would like to take this opportunity to thank all the organisations that provided valuable inputs to finalise this chapter. Errors are attributable to the authors. The views expressed are solely those of the authors, and represent neither the organisations to which the authors belong nor the Economic Research Institute for ASEAN and East Asia (ERIA).

² The authors use the sequence of ‘Japan and Viet Nam’ or ‘Japan–Viet Nam’, following alphabetical order.

cooperation to be pursued by Japan and Viet Nam: deepening cooperation to strengthen resilient supply chains, strengthening industrial competitiveness through digital technology, fostering supporting industries, and strengthening human resources cooperation to improve industrial capacity and competitiveness (METI, 2022a). A fact sheet was also issued to help develop such cooperation, confirming the objectives and discussing the points to be achieved in each cooperation item (METI, 2022b). As mentioned above, discussions on deepening cooperation for the development of the two economies in the post-COVID-19 period are being conducted today amongst heads of state and ministers in the context of the 50th anniversary.

This chapter is structured as follows. First, it presents an overview of the industrial cooperation undertaken between Japan and Viet Nam. This is followed by a detailed discussion of new technologies and ideas that could benefit from Japan–Viet Nam cooperation, mainly in digital and cyber technologies and supply chain resilience. Finally, it provides policy recommendations for future directions. It analyses a single case study dealing with economic and industrial cooperation between Japan and Viet Nam. The data used for the analysis are mainly based on information from government publications and online government and media sources. The discussion on new technologies regarding the future direction of industrial cooperation is mainly structured using information from interviews at METI, conducted by the authors in March 2022 and January 2023, each lasting about 20 hours.

2. Development of Japan–Viet Nam Cooperation

Since the 2000s, Japan–Viet Nam relations have made a lot of progress, particularly in summit diplomacy. In October 2006, the Joint Statement on Strategic Partnership for Peace and Prosperity in Asia was issued, and in November 2007, the Agenda for a Strategic Partnership between Japan and Viet Nam was released. In April 2009, the Joint Statement on the Strategic Partnership for Peace and Prosperity in Asia between the General Secretary of the Communist Party of Viet Nam Central Executive Committee Nong Duc Mainh and Prime Minister Taro Aso was released (MOFA, 2009). Specific industrial references included investment promotion and improvement of the investment environment, followed by cooperation in the traditional areas of infrastructure development, energy, manufacturing, supporting industries, logistics, information and communication technology (ICT), disaster prevention, and environmental protection, as well as cooperation in new areas such as the peaceful use of nuclear energy, space exploration, and environmentally friendly aircraft.

In March 2014, President Truong Tan Sang visited Japan and it was agreed that the partnership would be developed into an Extensive Strategic Partnership. This included support for Viet Nam’s industrialisation strategy, with close collaboration to implement action plans in six key areas – agro-fishery processing, electronics, automobiles and parts, agricultural machinery, environmental industry and energy conservation, and shipbuilding – as well as cooperation in developing supporting industries, formulating industrial policies, and support for the formulation of industrial policies and capacity building for their implementation (MOFA, 2014).

In June 2017, Prime Minister Nguyen Xuan Phuc visited Japan and held a summit meeting with Prime Minister Abe, where a Joint Statement on Deepening the Japan–Viet Nam Extensive Strategic Partnership was issued. The statement confirmed support for the implementation plan in six areas of Viet Nam’s industrialisation strategy, as well as support for the automotive and supporting industries, with the objective of maintaining and expanding domestic production of complete build units as a priority (MOFA, 2017).

In November 2021, Prime Minister Chin visited Japan and held a summit meeting with Prime Minister Fumio Kishida. During the meeting, Prime Minister Chin stated that Viet Nam wanted to take the Extensive Strategic Partnership to a new level (MOFA, 2021a). The Joint Statement: Toward the Opening of a New Era in Japan–Viet Nam Extensive Strategic Partnership for Peace and Prosperity in Asia specified cooperation in areas such as economic revival in the post-COVID-19 era, supply chain resilience, DX, diversification of production bases, and fostering supporting industries. The statement also specified cooperation in areas such as the development of the digital economy, ICT, smart cities, and strengthening information security (MOFA, 2021b). As stated in the introduction, Prime Minister Kishida mentioned the launch of three initiatives and partnerships, which were highlighted during his visit to Viet Nam in May 2022. During the summit meeting in May 2022, President Phuc expressed his expectation of a revitalisation of people-to-people exchanges between the two countries in the post-COVID-19 period and stated that he would like to strengthen cooperation in all fields, as befits an Extensive Strategic Partnership.

In February 2023, Prime Minister Kishida and General Secretary of the Communist Party Central Committee Nguyen Phu Trong held an online meeting. After noting that the two countries have cooperated with each other over the past 50 years to build a good relationship, they agreed to take bilateral relations to a higher level in the next 50 years and develop Japan–Viet Nam relations, especially in the area of the economic affairs and cooperation such as investment, green transformation (GX), and DX, as well as strengthening cooperation on the political and security fronts (MOFA, 2023).

In addition to examining exchanges at the leaders’ level, we review interactions at the ministerial level between relevant economic ministries and agencies, with emphasis on industrial cooperation, which is the scope of this report. We focus on the Japan–Viet Nam Joint Committee on Cooperation in Industry, Trade and Energy, which was established in July 2015. It was set up as a forum to discuss pending issues on industry, trade, and energy between the two countries (METI, 2015).³ On 5 June 2017, at the second meeting, an automobile and support industry working group was established and the compilation of a joint action plan between the two countries was confirmed (METI, 2017). In October 2018, the third meeting continued cooperation on the automobile and supporting industries and discussed cooperation on the food industry (METI, 2018).

³The establishment of the committee was agreed after a meeting between the then Minister of METI Mogi and the Minister of Industry and Trade Hoang in December 2013, when Hoang proposed that a working group be formed by METI and the Vietnamese Ministry of Industry and Trade to discuss a range of pressing issues. Both parties decided that the committee would be ministerial level and a deputy director general-level task force meeting would be set up under the ministerial-level meeting.

Ministerial statements have been issued since the fourth meeting in August 2020, which discussed the challenges identified by COVID-19, such as resilient supply chains, as well as the use of digital technologies (METI, 2020b). The Joint Ministerial Statement adopted at the time specified three perspectives on industrial cooperation: deepening cooperation towards strengthening supply chain resilience, strengthening cooperation in upgrading industrial capacity and competitiveness, and facilitating DX and Industry 4.0 (METI, 2020a). Then, in August 2022, the fifth meeting listed four items as the field of industrial cooperation: 1) deepening cooperation to strengthen resilient supply chains, 2) strengthening industrial competitiveness through digital technology, 3) fostering supporting industries, and 4) strengthening human resources cooperation to improve industrial capacity and competitiveness (METI, 2022a).

Having reviewed the items related to industrial cooperation at the Viet Nam–Japan Summit and in ministerial dialogue over the past decade, a number of features can be noted. First, in the early years around 2009, only a list of major areas of cooperation was listed. However, the development of the automotive and component industries, as well as supporting industries, was a consistent focus during this period. Second, new items such as DX and supply chain resilience appeared around 2020. This was clearly stated in the Joint Statement of the Fourth Meeting of the Joint Committee on Cooperation in Industry, Trade and Energy, and was listed as an initiative of Japan and Viet Nam to be focused on at the 2021 summit.⁴ As mentioned in the ministerial and summit statements, themes such as the digital economy and supply chain resilience have come to the forefront of cooperation since the impact of the COVID-19 pandemic, pointing to discontinuity in the policy focus from earlier years. At the same time, these policy developments suggest that it is appropriate to suggest a direction for the major themes of Japan–Viet Nam industrial cooperation to be addressed in this report, such as DX, supply chain issues, and the development of new industrial human resources capable of implementing them. In the following sections, the authors focus on these themes and mention the direction of technological development and policy development.

3. Theoretical Background of Digital Technology and Supply Chain Resilience

The driving force behind the economic development of the Association of Southeast Asian Nations (ASEAN) Member States, including Viet Nam, since 1990 has been foreign direct investment in the manufacturing sector, mainly from developed countries (see Chapter 6). This is due to the global optimisation of production bases by multinational corporations in developed countries and the acceleration of the relocation of multinational corporations' manufacturing bases in ASEAN Member States, which have abundant labour forces. Global production base optimisation has been made possible by the development of ICT, which has dramatically reduced the cost of communication amongst regions, resulting in goods that are built through multi-stage manufacturing processes that no longer require the same or nearby locations. More labour-intensive processes have moved

⁴ Supply chain resilience was discussed during Prime Minister Suga's visit to Viet Nam in October 2020, but it is not possible to confirm whether topics such as the promotion of a digital society and DX were mentioned (MOFA, 2020; Prime Minister's Office of Japan, 2020).

to regions where labour is plentiful and labour costs are lower. Baldwin (2016) described this movement as the second unbundling, which encourages the fragmentation of production processes and the global relocation of fragmented processes, following the first unbundling where the development of the internal combustion engine dramatically reduced the cost of transporting goods and separated production and consumption areas.

In the context of the second unbundling, the East Asian region, including ASEAN and Japan, has built a robust international production network (IPN). This resilience was demonstrated during the COVID-19 pandemic. For example, the export dynamics of the East Asian region's machinery industry since 2020 have shown that the bottom of the decline was shallow compared with that of other IPNs such as the United States (US) and Europe, and the timing of the return to the previous year's level was quicker (Ando and Hayakawa, 2021). ERIA (2022) emphasised the importance of maintaining and strengthening the competitiveness of this robust IPN for the sustainable development of the ASEAN region.

Interregional connectivity is important for the resilience of IPNs. There are two main types of connectivity: physical connectivity, through the development of infrastructure and the reduction of customs clearance costs, and digital connectivity, through the reduction of the cost of moving information, including internationally (ERIA, 2022). Physical connectivity is responsible for reducing the cost of transporting goods between regions. Digital connectivity, on the other hand, facilitates the interregional distribution of ideas and complements physical connectivity. With digital connectivity, even sophisticated ideas that utilise state-of-the-art information processing technologies, such as artificial intelligence (AI), the internet of things (IoT), and robotics, can reach remote areas instantly, supporting everything from production to transport. By deepening both physical and digital connectivity, the competitiveness of East Asia's IPN can be maintained and strengthened.

Supply chain digitalisation is one concrete measure to strengthen IPNs. For example, supply chains can be mapped and monitored digitally to instantly identify risks and bottlenecks. Facilitating freight customs clearance and investing in e-commerce platforms can help to ensure the security of cross-border trade.

The wave of digitisation is also changing the nature of innovation. Digitalisation is shifting its weight from incremental innovations, mainly in manufacturing, to disruptive innovations that can significantly change the market order in all industries, including services. Digital technologies are creating new business opportunities. Digital technologies also have the power to leapfrog the economy and society, e.g. by simply implementing them in society, such as e-payments, where people who do not have a bank account can use similar services in real terms through digital technology (ERIA, 2022).

Following this theoretical background, the next section examines the path that industrial cooperation between Japan and Viet Nam should take to contribute to the development of the digital sector and new industrial human resources, and to further development of growth-driving industries, as discussed in previous chapters.

4. Developing a New Approach to Japan–Viet Nam Industrial Cooperation

Industrial cooperation in the new era is found in two directions, as discussed in the previous section: (i) towards dramatic technological innovation using digital technologies; and (ii) transforming supply chains to be resilient to all risks, such as disasters and infectious diseases. Amongst others, Nishimura et al. (2019) stated that the Fourth Industrial Revolution has achieved various technological and industrial innovations through IoT, big data, AI, and robotics. Now, however, the prerequisite for implementing the reforms associated with these digital technological advances is to thoroughly implement the principles in the digital society that seem to underlie all reforms, and to change the judiciary, administrative structures, and the state of society on this basis (see Chapter 8).

The following sections are based on the findings of interviews conducted by the authors at METI in March 2022 and January 2023 on the potential for industrial cooperation between Japan and Viet Nam on digital technology and the nature of industry and society based on digital technology and supply chain resilience.

4.1. Digitalisation and AI Technology

Chapters 6 and 8 of this publication discuss Viet Nam’s ambition to become a high-income country by 2045, and state that the new driving force will be the development of the digital economy. In fact, the spread of robotics and new forms of digital technology is not just a matter of various manufacturing industries and services being converted to IoT and AI but is moving into a phase of creating new value by combining digital tools. For example, Gojek in Indonesia started with a mobility dispatch app but has expanded into grocery and housekeeper dispatch as well as payment services (Gojek, n.d.). These needs are not uniform across the world, and it is important to customise services according to the specific circumstances of a country or region. We are beginning to see that the development of products addressing the lack of infrastructure in emerging economies is capturing market needs and becoming a prerequisite for the growth of unicorn companies locally in Southeast Asia. ‘Reverse innovation’, where products developed for emerging markets are imported to developed countries and spread in developed markets, is also becoming more widespread.

There are also cases, mainly in Southeast Asia, of further development by incorporating financial services, as in the case of Gojek. In some cases, these services are provided by acquiring companies in regulated industries, such as banks and other financial institutions or telecommunications companies, but the relatively loose regulation of such industries is another reason for the low barrier to entry.



Low-cost products that sell well in emerging economies may also increase sales in developed economies, as developed economies are preoccupied with the development of high value-added, high-quality products. Furthermore, bringing the concept of services developed in loosely regulated emerging economies to developed economies may promote deregulation in developed economies.⁵ Aiming for such a 'co-creating relationship' between Japan and Viet Nam could be considered as industrial cooperation in the digital age.

4.2. Digital Regulations

To ensure the smooth operation of a digital society, it is necessary to establish the infrastructure required for digitisation across all socio-economic activities. In terms of laws and other regulations, the development of some laws and responses to them have become an obstacle to digitalisation, along with the rapid development of society (Digital Agency, 2022).

In addition, although the administration of many regulations requires human intervention, others may be monitored more accurately by machines. In the wake of COVID-19, the conduct of face-to-face operations, visual safety checks, and many other processes mandated by law or government decree should be deregulated to allow machines and AI to perform them. Japan could support Viet Nam's efforts, if called upon, in relation to initiatives such as deregulation and harmonisation.

4.3. Cybersecurity

Another necessary element of the foundation for a digital society is measures to increase security in cyberspace. In recent years, the increasing number and sophistication of cyberattacks, combined with the fact that everything is connected to the network (i.e. IoT), has increased the number of attack origins, creating a situation where cyberattacks can have a significant impact on society and industry.⁶

On the other hand, cybersecurity has not reached the level where it is perceived to be a digital divide, especially for small and medium-sized enterprises (SMEs) in the ASEAN region.⁷ Therefore, it cannot be said that digitalisation is being held back by cybersecurity measures. Nonetheless, attacks from vulnerable points in the supply chain have affected the stability of the supply chain as a whole. In this context, METI has taken measures to support cybersecurity for SMEs (Information-Technology Promotion Agency, Japan, 2021). Viet Nam could make use of such SME cybersecurity guidelines through Japanese companies operating in the country.

⁵ This idea encourages the use of so-called 'regulatory sandboxes' and other such measures. For more information on regulatory sandboxes, see Cabinet Secretariat of Japan (n.d.).

⁶ See, for example, *Yomiuri* (2021). Ransomware attacks have led to the suspension of emergency services and surgeries, and restrictions on outpatient care. The attacks were minor until 2017, such as interfering with the sending and receiving of emails on hospital PCs. However, from 2018, *Yomiuri* (2021) noted that damage to core systems, such as electronic medical records and CT image management, began to emerge.

⁷ Based on interviews with SMEs by the ERIA research project on Digital Divide in ASEAN MSMEs (August 2022).

Of particular importance for the development of cross-border digital technologies is the safe implementation of the free movement of trusted data, which requires an established national data ecosystem (World Economic Forum, 2022). This requires investment in hardware infrastructure, as well as regulatory and institutional reform efforts. The free and secure exchange of data between Japan and Viet Nam could further expand business opportunities.

4.4. Digital Education

The need for digital education and human resources development is identified as infrastructure to support the full realisation of the digital society. In this context, Chapter 11 highlights the shortage of human resources related to digital technologies and business models. Today, the threat of job loss is more in the foreground with the introduction of robots and AI, but attention is also beginning to focus on the need to enhance human technology and skills to work with and complement robots and AI (Goldman Sachs, 2023).

The combination of digital tools and education needs to consider two aspects: (i) the development of digital education opportunities and methods, and (ii) education for mastering digital technologies. Students also need to learn how to use digital technologies in the context of autonomous learning, such as solving problems, beyond the learning of traditional subjects. Similarly, Chapter 11 describes the necessity of developing DX human resources through formal university education courses as well as part-time learning while continuing to work.

4.5. Supply Chain Resilience

The spread of robotics and new forms of digital technology will drastically reduce the cost of people-to-people communication (Kimura, 2018; ERIA, 2022). This will make it possible to build IPNs that are resilient to various shocks because the digitalisation of logistics information, procedures, and know-how makes it easier to rebuild supply chains, even if they are disrupted, through digital assets, as the information and technology accumulated is instantly available.

Until now, data sharing in the Japanese supply chain has often been limited to individual companies or affiliated companies. If supply chain resilience in Asia is to be considered, it is important to consider data sharing and collaboration in Asia.

Defining the nature of the supply chain has also been discussed in recent years. Efforts have been made to establish principles for supply chains, considering not only supply chain resilience, but also sustainability, environmental and human rights considerations, transparency, and data reliability in view of the use of digital technology.⁸

These initiatives will initially be bilateral and gradually evolve to multilateral. The resulting Japan–Viet Nam institutional model could then serve as a model for Asia.

⁸ An example is the G7 Leaders' Statement on Economic Resilience and Economic Security, agreed at the G7 Hiroshima Summit (G7, 2023).

4.6. Automobile Manufacturing and Parts and Components Industries

Strengthening automobile manufacturing and supporting industries has been the main theme of bilateral industrial cooperation between Japan and Viet Nam. As mentioned in Chapter 13, the term 'supporting industries' often gives the impression of subcontracting to an original equipment manufacturer in the automobile industry. In fact, most of what are referred to as supporting industries are parts and component industries, and the way to strengthen these is to increase the export competitiveness of the component industries. Now, most of them are processing firms, such as plastics, so upgrading them to components for the automotive and electrical and electronics industries is crucial.

In automobile manufacturing, as detailed in Chapter 9, Viet Nam is characterised by the momentum of local automobile manufacturers (e.g. Thaco and VinFast) as opposed to the prevalence of foreign companies (e.g. Toyota and Nissan) in other ASEAN Member States. VinFast is aggressively pushing the production of electric vehicles to tap the North American and European markets (Johnson, 2022). Therefore, Viet Nam's local component industries could cooperate with the Japanese automobile industry in the production of electric vehicles.

Another strategy is to utilise not only electric vehicles, but also connected, autonomous, shared/service, and electric (CASE) and Mobility as a Service (MaaS) concepts. CASE and MaaS can be seen as effective means of reducing the social costs of such vehicles (Iwasaki and Ueki, 2022). Considering that Japan's industrial and economic development has been achieved through the development of such automobile-related peripheral technologies, the potential for further economic growth in Viet Nam is likely to increase through collaboration with Japan in automobile and related technologies and services.

4.7. Energy and Decarbonisation: Initiatives in the Asian Zero Emission Community

While Chapter 15 discusses the energy and decarbonisation agenda in Viet Nam, this section describes the Asian Zero Emission Community (AZEC), an initiative for Viet Nam–Japan cooperation. In January 2022, Prime Minister Kishida announced the concept of AZEC, with the aim of encouraging Asian countries to share the idea of decarbonisation and work together to advance the energy transition. Subsequently, the Government of Japan hosted the AZEC Ministerial Meeting in Tokyo on 4 March 2023 and the AZEC Public–Private Investment Forum on 3 March 2023 to establish and accelerate concrete cooperation under the AZEC concept. The AZEC Public–Private Investment Forum was held on 3 March to create and accelerate concrete cooperation within the AZEC framework (METI, 2023). The chair of the Ministerial Meeting, the Minister of METI Yasutoshi Nishimura, spoke about the importance of decarbonisation in Asia, the concept of AZEC, and Japan's initiatives, while the Minister of Environment Japan Akihiro Nishimura and participants from other countries and international organisations spoke about their approaches to decarbonisation and their expectations of AZEC. A video message was also received from Prime Minister Kishida in support of the AZEC concept. A joint statement with three common views was agreed: (i) advancing cooperation towards carbon

neutrality/net zero emissions while ensuring energy security, (ii) promoting the energy transition while achieving economic growth, and (iii) recognising that there are various and practical pathways towards carbon neutrality/net zero emissions depending on the circumstances of each country (METI, 2023b).

In the future, the Asian Energy Transition Initiative will support the development of a roadmap towards carbon neutrality, encourage the financing of transition technologies and projects based on the Asian Transition Finance guidelines and other standards, and support the development of human resources for decarbonisation technologies, amongst others. The Cleaner Energy Future Initiative for ASEAN combines the introduction of decarbonisation technologies with policy and institutional recommendations to promote their diffusion and deployment. Support for human resources development related to carbon-neutral technologies, and the promotion of flagship projects through the Cleaner Energy Future Initiative, comprehensively promote cooperation with ASEAN Member States. The AZEC initiative supports balanced decarbonisation that fully ensures energy security and sustainable economic growth while addressing climate change.

5. Conclusion

Industrial cooperation between Japan and Viet Nam is undergoing a period of transformation due to international developments (e.g. COVID-19, the Sino–US trade war, and global uncertainties). Enhancing supply chain resilience and addressing issues related to the supply chain are important to overcome the most pressing challenges.

Digital technology is a key pillar for both countries to overcome the challenges they face. Both countries can cooperate in social transformation and regulatory harmonisation to fully realise the benefits of digital technologies. Platforms for cooperation mechanisms will be important to promote such cooperation on DX and GX between the two countries.

The automobile and components industry remains the core of Japan–Viet Nam industrial cooperation and a sector with the potential to become a major driving force in Viet Nam’s aspiration to become a high-income country by 2045, with the domestic market likely to grow to 2 million units by 2030. Developing an export-oriented components industry will contribute to Viet Nam’s industrial competitiveness, increase the potential for collaboration with Japanese companies, and strengthen the supply chain. In relation to electric vehicles, CASE, and MaaS, where the negative effects of motorisation could be mitigated, Japanese technology could contribute not only to vehicle manufacturing but also to social welfare through contributions in many automobile-related fields.

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Chapter 21

Conclusion: Policy Recommendations for Achieving High-Income Status by 2045

Keita Oikawa

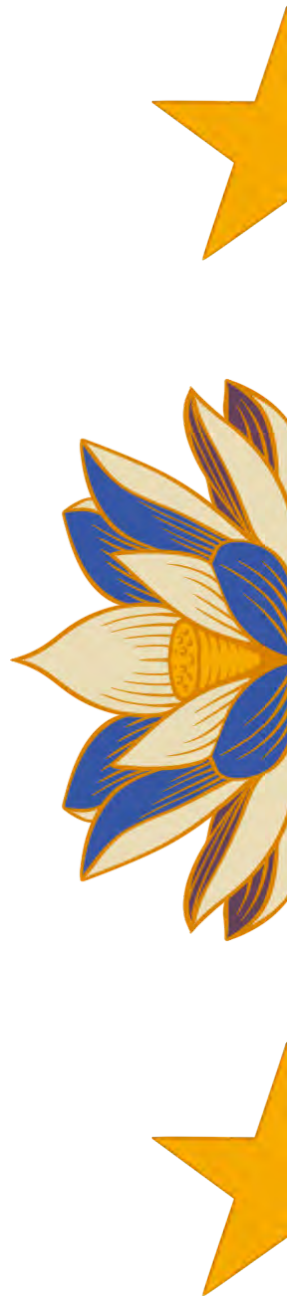
1. Challenges in the Vietnamese Economy: Transitioning from an Input-Driven to an Innovation-Driven Economy

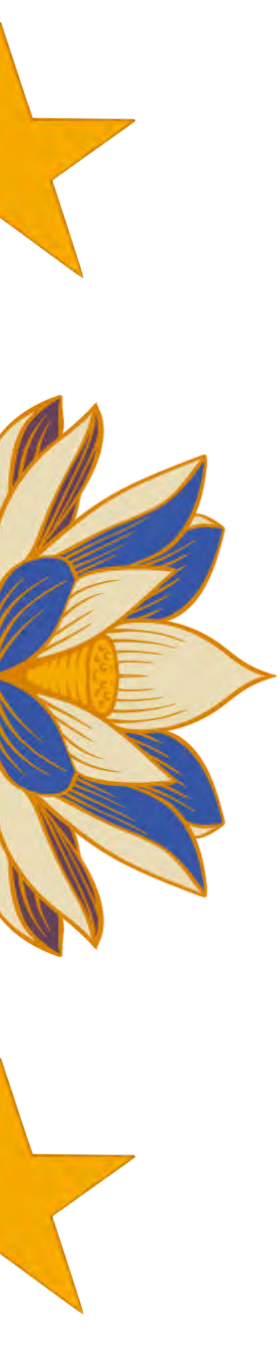
The Vietnamese economy has achieved relatively high economic growth rates since the early 1990s. This development followed a few years after the adoption of the 'Doi Moi' policy, which encompassed comprehensive economic reforms and external openness, initiated during the 6th National Congress of the Communist Party of Viet Nam in 1986. The annual per capita real gross national income growth rate consistently hovered around 5.0% from 1995, when Viet Nam became a Member State of the Association of Southeast Asian Nations (ASEAN), to the eve of the coronavirus disease (COVID-19) pandemic in 2019. This growth trajectory significantly outpaces the average growth rate witnessed in advanced economies, which stood at a more modest 2%. Notably, Viet Nam has consistently worked towards diminishing the income disparity with advanced economies since it transitioned from low middle-income status in 2008.

In this context, the objective of achieving high-income status by 2045, marking the centennial of independence, was established during the 13th National Congress of the Communist Party of Viet Nam in January–February 2021. To attain this objective, given Viet Nam's per capita gross national income of \$4,010 in 2022 as a baseline, it is imperative to achieve an average annual growth rate of 5.4%, slightly surpassing the average rate observed over the past 25 years. This growth trajectory is essential to reach the minimum income threshold for advanced nations, as defined by the World Bank, amounting to \$13,206, by 2045.

Considering the demographic trends in Viet Nam, the ratio of working-age population to the total population is expected to continue to rise until the late 2020s, a phase referred to as the 'population bonus' period. Subsequently, a transition is projected into the 'population onus' phase, characterised by a declining ratio. This transition holds implications for macroeconomic growth, signifying that the demographic factor – previously a catalyst for growth – is undergoing a transformation into a limiting factor. Consequently, Viet Nam needs to markedly enhance the output per working-age population, which translates to productivity.

To expedite the increase in macroeconomic productivity, industrial upgrading is imperative. Viet Nam has attained economic growth, fuelled by input factors, through strategic utilisation of foreign direct investment (FDI) and engagement in global value chains (GVCs). In the initial phases of economic development, capitalising on the comparative advantage of labour-intensive industries, supported by a plentiful domestic labour force, achieving industrialisation aligns with economic principles and is devoid of issues. Nonetheless, as depicted in Chapter 6, Viet Nam's participation in GVCs has not notably augmented domestic





value added. If the present trajectory of input-driven economic growth persists, the productivity growth rate could gradually decelerate, potentially leading to stagnation of income levels at the middle-income threshold, thus succumbing to the so-called middle-income trap. To evade this trap, Viet Nam's economy needs to transition from being input-driven to being innovation-driven, harnessing industrial enhancement that elevates the contribution of domestic value added to GVCs.

To achieve the transition towards an innovation-driven economy, several measures are imperative. First, the enhancement of human capital takes precedence. Viet Nam is currently grappling with a shortage of skilled labourers, necessitating the empowerment of individuals capable of driving advanced industrial structural transformations. This can be accomplished by attracting skilled workers from abroad, including Japan, while simultaneously expanding engineering, economics, and business administration departments within universities to bolster the supply of engineers and management-level professionals. Additionally, establishing mechanisms for reskilling and upskilling the existing workforce will be effective. Although time-intensive, fortifying fundamental workforce development through school education improvements – including robust science, technology, engineering, and mathematics (STEM) education – remains imperative.

Second, enhancing labour market efficiency is pivotal. In Viet Nam, an oversupply of labourers in rural areas contrasts with labour shortages in urban centres, indicating an inadequately functioning labour market. Rooted in challenges such as constrained access to education and healthcare services for rural-origin individuals due to household registration systems, as well as subpar living conditions, addressing these issues and creating a labour market that facilitates the seamless movement of labour resources to growth industries is essential.

Third, improving capital market efficiency is fundamental. Financial institutions like banks face limitations in accessing information that influences the performance of borrowing enterprises and in monitoring their activities (information asymmetry), resulting in market inefficiencies such as demanding high interest rates from borrowing enterprises. Small and medium-sized enterprises (SMEs) in Viet Nam experience particularly elevated interest rates and stringent collateral requirements, impeding the growth of vital SMEs that contribute to domestic employment. It is advisable to establish specialised financial institutions for SMEs, staffed with experts to evaluate investment projects, and to adopt systems like the Japanese Certified Management Consultant system, which assists in SME management improvements, investment project planning, and loan application preparations. Encouraging the formalisation of the informal sector, such as self-employed workers, to foster transparent accounting practices is also recommended.

Fourth, ensuring a conducive environment for inter-firm competition is paramount. Elevating turnover within and between industries is pivotal for achieving advanced industrial structural transformations while adapting adeptly to domestic and international business landscapes. In the pursuit of elevating Viet Nam's industrial structure, the government may implement industry promotion policies. Although such policies can be misconstrued as safeguarding existing firms within specific industries, successful industrial policies, akin to those observed in Asia's success stories, concentrate on fostering competition and encouraging the entry of new and young businesses rather than protecting specific entities. Ensuring a competitive environment remains vital, even in the context of industry promotion.

Last, promoting technology adoption that contributes to industrial progress is imperative. As technology is essentially universally accessible knowledge, the implementation of globally beneficial technologies domestically assumes paramount importance. While promoting FDI effectively introduces advanced overseas technologies, it is equally vital to integrate an FDI perspective that aligns with the vision of achieving advanced industrial structural transformation. Simultaneously enhancing the capabilities of domestic SMEs and fostering vertical collaboration between foreign-owned companies and SMEs are desirable to expedite technology dissemination.

In summary, this section delineates the indispensable measures through a backward-looking approach from the 2045 goal of advanced country status, recognising the urgency of transitioning from the prevailing input-driven economy to an innovation-driven paradigm. It addresses policies for augmenting human capital, enhancing labour and capital market functionality, ensuring a competitive environment, and facilitating technology adoption from a macroeconomic perspective. The rest of this chapter will elucidate the tangible manifestation of an innovation-driven economy, spotlighting changes in the industrial structure up to 2045, challenges specific to pivotal sectors, and the trajectory of policy strategies.

2. Concrete Form of an Innovation-Driven Economy: Digital Nation Viet Nam

To achieve the transition towards an innovation-driven economy, attention should be directed towards pivotal technologies within the contemporary technological landscape, including artificial intelligence (AI), the Internet of Things (IoT), robotics, blockchain, and other advanced information and communication technologies collectively referred to as digital technologies. Since digital technologies are versatile tools that wield influence across not only specific industries but also the entirety of industries and economic activities, the extent of integrating digital technologies decisively shapes the productivity and competitiveness of all sectors. Consequently, in its pursuit of an innovation-driven economy, Viet Nam should embrace the concept of becoming a digital nation, given its significance as a foundational principle.

In the pursuit of a digital nation, the key is to smoothly implement digital technologies into the economy and society. For this purpose, institutional arrangements to overcome the social concerns brought about by digital technologies are necessary. For instance, rapidly evolving AI has the

potential to dramatically improve the productivity of fundamental processes such as prediction, automation, quality control, and environmental impact measurement in production and business activities. However, computer-based thinking and inference are unprecedented phenomena, and the development and use of AI involve ethical standards, integrity, and the validity of content provided by chatbots, raising many concerns. Overcoming such concerns while promoting the rapid implementation of digital technologies is essential to realise Digital Nation Viet Nam. The measures to be taken are discussed in the section dedicated to digital transformation (DX) industries.

3. Projected Changes in the Industrial Structure

As the industrial structure advances and income levels rise, it is anticipated that the composition of key industries within the economy will undergo transformation. By pursuing greater sophistication and incorporating policy recommendations from each chapter, it is envisioned that industries such as electronics, advanced agriculture, and textiles and garments, which contribute significantly to the economy's fundamental productivity and are poised for export expansion, will emerge as driving forces. Additionally, DX-related industries are expected to undergo substantial growth, further enhancing overall productivity. Furthermore, tapping into the potential of the automobile and parts industry will strengthen the foundation of economic growth. Moreover, industries contributing to the enhancement of quality of life in alignment with income level improvement, especially the medical and caregiving sectors, are predicted to experience significant expansion.

4. Challenges and Strategic Orientations for Key Industries

4.1. Automobile Industry

In the context of the ASEAN automotive and parts industry, Viet Nam's position is approaching that of the Philippines in the automobile market, and its manufacturing capacity is rivalling that of Malaysia. Notably, Viet Nam outperformed other countries in terms of automobile parts exports in 2020, particularly excelling in wire harness production.

There are two approaches to developing the automobile industry. The first aims to increase complete vehicle production by attracting investments from complete vehicle manufacturers, with a focus on catching up with leading countries in the Southeast Asian automobile industry like Thailand and Indonesia. The second approach focuses on promoting the export of automotive parts and strengthening the industrial clustering and international competitiveness of automotive parts manufacturers. This second approach is expected to enhance the international competitiveness of domestic complete vehicle manufacturers, as the strengthened automotive parts industry is likely to boost the competitive positioning of vehicle assembly manufacturers within Viet Nam.

Given the current situation, with a small domestic market for complete vehicles and the inability to fully realise economies of scale in complete vehicle production, it is appropriate to prioritise the development of the automotive parts industry, which has better access to foreign markets. Policy

formulation should consider international political and economic factors, along with the current market situation and future prospects.

Viet Nam's automobile parts industry could be developed via the following strategies. First, to enhance technological capabilities, the Vietnamese government should promote measures such as tax incentives for equipment investments, improvements in labour conditions, comprehensive skills education for skilled labourers, and bolstering advanced technology education through industry–academia collaboration to enhance the capabilities of parts companies. Second, market expansion is equally pivotal. Vietnamese automobile parts companies, leveraging global supply chains, export to Japanese and Western markets, making it crucial to secure market share. Third, the potential of the two-wheeler parts industry deserves attention. The government should provide suitable technical guidance, financial support, tax incentives, and market access to encourage the transition of two-wheeler parts companies to four-wheeler parts production. Fourth, in establishing the supply system for electric vehicle parts, the development of composite industries such as motors, inverters, e-Axles, and batteries, in conjunction with expanding charging facilities, necessitates the integration of information and software technologies, along with strengthening industry–academia collaboration.

Furthermore, based on these strategies, it is advisable to formulate specific policies for promoting the automobile industry. This includes promoting the electrification and digitisation of automobiles through motorisation advancement, fostering open trade and investment, creating new opportunities through digital technologies, and enhancing the capabilities of local suppliers. In the context of Japan–Viet Nam cooperation, it is recommended to prioritise the development of industrial talent, facilitate collaboration between Japanese and Vietnamese companies, establish digital infrastructure to enhance supply chain coordination and resilience, remain adaptable to the evolution of electric vehicles, foster the creation of sustainable mobility systems, craft a comprehensive mobility vision, and create organisations dedicated to facilitating dialogue and cooperation between the Japanese and Vietnamese governments and private sectors.

4.2. Electronics Industry

Viet Nam's electronics industry has undergone rapid growth, making it the largest export industry in the country in less than 30 years. This sector has witnessed significant evolution and gained global attention. Through the Fourth Industrial Revolution, technologies like IoT, big data, AI, and automation have converged, propelling the electronics industry into rapid transformation. Viet Nam's electronics sector has seen a surge in the number of companies and workers, contributing to gross domestic product (GDP) growth and establishing its position as a global exporter of electronic products. However, high dependence on foreign companies and challenges related to growth persist.

The challenges faced by Viet Nam's electronics industry encompass various aspects. These include excessive reliance on FDI and imported components due to rapid expansion, intensified competition, and a decline in domestic value addition. Additionally, environmental impact and labour (human rights) risks are pressing concerns, necessitating appropriate measures. Furthermore, Viet Nam's electronics industry exhibits lower competitiveness compared with other nations. Given the predominance of FDI, it is imperative to enhance domestic skills, capabilities, and collaboration.

The electronics industry's growth could be sustained through the following strategies. First, establishing a domestic supply chain and reinforcing collaboration between domestic and foreign enterprises are crucial. This not only advances domestic technology and skills, fostering enhanced competitiveness, but also reduces undue reliance on imported components. Second, addressing environmental and labour risks involves implementing sustainable manufacturing practices and labour conditions, in compliance with regulations and guidelines. Establishing a legal framework aligned with international standards is pivotal to strengthening the position of domestic companies and fostering sustainable growth. Third, amid geopolitical tensions, the advantageous patterns for locating high-tech industries are also experiencing significant changes. It is imperative to create and maintain international relationships that contribute to competitive positioning and the attraction of advanced technologies from overseas.

4.3. DX Industries

Viet Nam aims for high-income status, with a focus on the digital economy as a new growth driver. Digital technology is reducing the distances required for communication, enabling novel forms of the international division of labour, and giving rise to new business models. The government is establishing a digital governance structure and advancing an environment conducive to DX in emerging sectors like the sharing economy, e-commerce, and online tourism. Despite the challenges posed by the COVID-19 pandemic, the acceleration of this trend remains evident.

Progress in digital utilisation faces challenges such as aligning legal frameworks with innovation, addressing policy gaps, overcoming delayed technological development in educational institutions, securing sufficient financial resources, addressing the lack of specific tools, and ensuring consumer protection. Furthermore, as the sharing economy expands, the need for appropriate policies and regulations becomes pronounced. The following outlines measures for promoting DX industries.

First, enhancing the alignment of legal frameworks with innovation is pivotal. To address rapid changes in the digital economy, an environment facilitating swift and flexible adaptation of legal regulations is necessary. Balancing the promotion of innovation with legal constraints mandates a review and revision of legal frameworks.

Second, concrete implementation of policies to support DX industries and the provision of adequate financial resources are essential. Formulating specific policies to bolster digital technology companies and fostering their growth and competitiveness is imperative. Additionally, securing ample financial resources for investment and research and development, integral for digital economic progress, is pivotal.



Third, bolstering DX-related educational institutions is vital. To nurture talent capable of adapting to the rapid evolution of digital technologies, universities and educational establishments should introduce curricula and training programmes focused on innovative start-up ventures, strengthening skills in technology development, and entrepreneurial models.

Fourth, evaluating data localisation and cybersecurity is paramount. Safeguarding data security and privacy necessitates a thorough assessment of the implications of cybersecurity laws and provisions related to data localisation across trade, investment, and exports, ensuring harmonisation.

Last, implementing competition policies and tax reforms targeting digital technology companies is essential. To promote healthy competition amongst these companies and enhance the competitiveness of individual firms, it is crucial to simplify regulations that foster a fair competitive environment that encourages new entrants, improve consumer protection, and strengthen the provision of statistical data related to the digital economy for assessing market competition conditions. In addition to implementing competition policies, establishing a tax system that supports the growth of highly competitive digital technology companies is crucial.

4.4. Textile and Garment Industry

The textile and garment industry in Viet Nam encompasses a wide economic sector with various subsectors. In the 1990s, Viet Nam's garment industry began substantial development with the involvement of Japanese companies, and access to the United States (US) market increased through agreements like the 2001 US–Viet Nam trade agreement. The number of companies and workers in both the textile and garment sectors has risen since then, with garment products constituting a significant portion of exports, following electronics and machinery. Nonetheless, textile exports remain relatively small, underscoring Viet Nam's limited presence in the global textile and garment value chain.

One key challenge for Viet Nam's textile and garment industry is the lack of competitiveness in textile products. Viet Nam's textiles lag in both quality and price competitiveness, inducing dependence on imports. Enhancements in technological capabilities and production capacity within the textile sector are imperative. Additionally, reliance on low-wage labour poses a concern. Although Viet Nam's textile and garment industry has long relied on low-wage labour, this approach is reaching its limits. Sustaining competitiveness requires augmenting labour skills and productivity. Moreover, addressing environmental and social impacts presents a challenge. Similar to other industries, indiscriminate environmental and labour risks could result in exclusion from the textile and garment value chain.

To tackle these challenges, the following strategies are proposed. First, fostering industries through FDI is critical. Drawing FDI from economies like China, Taiwan, and the Republic of Korea to bolster the textile sector and strengthen ties with the garment industry is pivotal. This would strengthen the supply of textile materials and introduce technology, fostering sophistication in the overall industrial structure. Second, adherence to international standards and the introduction of guidelines are recommended. Globally, norms for business models that minimise social and environmental burdens, such as the Due Diligence Guidance of the Organisation for Economic Co-operation and Development (OECD) and the European Union's European Supply Chain Act directive, are being

established. Utilising these international standards and guidelines as references to promote sustainability and socially responsible corporate actions will contribute to sustained international competitiveness.

4.5. Advanced Agriculture

Since the inception of the Doi Moi policy, Viet Nam's agricultural sector has expanded, transitioning from self-sufficiency to becoming one of Southeast Asia's major agricultural exporters. Policies that liberalise agricultural production and sales, coupled with technological advancements, have notably increased rice production, establishing Viet Nam as a prominent player in the global agricultural market. Furthermore, government policies have led to significant expansion in the production of non-rice crops, contributing to the increased output of high-value export commodities.

Challenges for the future include enhancing safety and quality. With free trade agreements, overseas market requirements are escalating, requiring producers to meet these benchmarks. Moreover, the development of modern and efficient agricultural techniques capable of providing year-round supply irrespective of seasons is imperative. Additionally, concerns arise from the ageing rural population, potentially resulting in labour shortages. Environmental conservation is also a pivotal challenge, as responding to consumers' increasing environmental consciousness will influence long-term growth prospects.

To address the future of Viet Nam's agricultural sector, several strategies are necessary. First, enhancing readiness for overseas markets' safety and quality requirements warrants considering standards higher than the prevailing domestic Vietnamese Good Agricultural Practices (VietGAP). Second, promoting the adoption of digital and advanced technologies to ensure year-round supply of agricultural products and supporting efficient agricultural production and value chain development is essential. Third, addressing labour shortages necessitates devising agricultural development models that consider the implications of an ageing rural population. In this context, Japan's experience in agricultural mechanisation serves as a valuable resource. Lastly, intensifying efforts in environmental conservation and encouraging the adoption of resource-efficient and low-chemical-dependent production techniques should be encouraged.

4.6. Medical and Caregiving Industry

Viet Nam's population, which was around 27.4 million at the time of independence from France in 1954, rapidly increased to about 97.3 million in 2020 due to a high birth rate. However, government policies aimed at controlling birth rates led to a significant decrease in the total fertility rate, approaching replacement levels by the 2000s. As a result, birth rates are declining while the population is ageing. Consequently, the age composition of the population is changing, with a decrease in the young and working-age population and an increase in the population of older persons. The leading causes of death have shifted from infectious diseases to non-communicable diseases – stroke, ischaemic heart diseases, and chronic obstructive pulmonary disease.

Challenges for Viet Nam's healthcare industry include the close relationship between mental disorders and poverty, making mental health a pressing public health issue. There is a shortage

of professionals in mental healthcare. Moreover, given the rapid ageing of the population, demand will increase for specialised medical services for older persons. Furthermore, in the care industry, challenges include the possibility that family care alone may not be sufficient to meet the increasing caregiving needs of the ageing population, due to factors such as declining birth rates and rural-to-urban migration.

Proposed measures for Viet Nam include, first, improving the healthcare and care delivery system. Addressing the shortage of professionals in the mental health care sector, enhancing the infrastructure for mental health care, and providing training opportunities for specialists are necessary. Additionally, in response to the ageing society, promoting active ageing measures such as caregiving prevention to maintain physical function, advancing geriatric medicine, and reforming the healthcare system for early detection and treatment of diseases through health check-ups should be considered. Furthermore, examining appropriate institutional frameworks to meet future caregiving needs and starting pilot programmes in urban areas could be considered.

Second, enhancing international cooperation is vital. Strengthening cooperation with countries that have already experienced ageing and facilitating the sharing of experiences and expertise is crucial. Furthermore, developing regional cooperation networks to address the social and economic challenges associated with ageing should be promoted.

4.7. Energy Industry

While pursuing economic growth, Viet Nam's energy demand has increased, with significant reliance on coal and oil imports. Dependence on energy imports has also risen, posing challenges to energy security. Additionally, from a climate change perspective, reducing carbon emissions and adopting renewable energy are imperative. Demand for coal and oil is anticipated to increase, particularly from the late 2030s to the 2040s. Addressing this requires urgent action for sustainable energy supply and carbon reduction.

Proposed responses to challenges in Viet Nam's energy sector include, first, promoting energy efficiency policies. To reduce energy consumption, especially in oil and electricity, the Vietnamese government should formulate policies to support and implement energy-saving action plans through obligations and incentive systems.

Second, transitioning from coal-fired to natural gas power generation is important. To address the increasing electricity demand, consideration should be given to converting the power source of coal-fired power plants to natural gas. This would reduce emissions and achieve sustainable energy supply.

Third, reducing energy import dependency is essential. To decrease the reliance on imported petroleum products, promoting the shift from petroleum to electricity and hydrogen in road transport is recommended. Achieving sustainable energy supply by decreasing energy imports is crucial.

Fourth, prioritising the development of renewable energy is crucial. The development of renewable energy sources such as wind power, solar power, and natural gas power, which combine system

safety and economic feasibility, should take precedence. This is a significant step towards ensuring sustainable energy supply and promoting decarbonisation.

Fifth, active participation in multilateral electricity transmission networks is recommended. The ASEAN Power Grid initiative being pursued in the ASEAN region aims to optimise investments on a regional scale, thereby reducing the development costs of transmission networks and accelerating the introduction of renewable energy. Participation in such initiatives is expected to contribute to Viet Nam's future decarbonisation efforts and the provision of affordable and stable electricity supply domestically.

Sixth, transitioning from coal to hydrogen is important. To align with global carbon neutrality efforts, utilising carbon capture and storage technology to produce hydrogen by capturing and storing carbon dioxide from coal is crucial. Constructing a hydrogen value chain network would secure a new source of energy exports. In this regard, further promotion of international cooperation, including collaboration with countries like Japan, is recommended.

Last, accelerating the adoption of carbon capture, utilisation, and storage (CCUS) technology is essential. Rapidly establishing policies and regulations for enhanced oil and gas recovery is necessary. Viet Nam, with the ability to store carbon dioxide in aquifers, could collaborate with the ASEAN region to accelerate the deployment of CCUS technology. Similar to the sixth recommendation, fostering international cooperation, including cooperation with countries like Japan, is crucial for promoting the development and implementation of this technology.

5. Conclusion

It is a viable vision to surmount these diverse challenges, attain sustainable economic growth centred around the circular economy and inclusive development, and continue comprehensive diplomacy while building upon the foundation of a socialist-oriented market economy. Progress, social justice, and the status of a high-income country by 2045 are within the realm of possibility if well-rounded and sustainable economic growth is achieved.

As we commemorate the 50th anniversary of diplomatic relations with Japan this year, collaborating with Japan, particularly in the realm of DX, holds promise in striving towards achieving high-income country status by 2045. Furthermore, collaborative endeavours are recommended in sectors such as the automotive industry, advanced agriculture, climate change, circular economy, and an ageing society. On the diplomatic front, Japan and Viet Nam both need to surmount a multitude of contemporary challenges. We are confident that the leaders and citizens of both nations will harness their wisdom to further fortify the elevated camaraderie and cooperation.