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Reconnecting ASEAN:

The Impact of the COVID-19 Pandemic on Trade, Transport, E-Commerce and the Mobility of People

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Reconnecting ASEAN: The Impact of the COVID-19 Pandemic on Trade, Transport, E-Commerce and the Mobility of People

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Chapter 1:

COVID-19 Pandemic: Unprecedented Years

Fauziah Zen

1.1. Introduction

The COVID-19 pandemic tremendously affected lives and disrupted many global activities. Due to its unprecedented spread – and little initial knowledge about the virus – governments were forced to restrict many economic activities and mobility. The waves of infection often exhausted health care resources; no country was prepared for the scale of the pandemic. Although the numbers of infected people and fatalities have dramatically dropped, new variants have emerged.

To cope with the many disruptions in mobility, many activities have been shifted to online modalities. Working from home, conducting and attending online meetings, and taking part in online seminars have become common; e-commerce transactions have replaced many sales in physical stores; and telemedicine is practised broadly. Although some domestic commerce may have had minimal interruptions as lockdowns typically applied for limited times, disrupted shipping services hampered exports and imports.

Association of Southeast Asian Nations (ASEAN) Member States (AMS) were no exception to the COVID-19 pandemic and its impacts. Both domestic and regional activities were affected, including from the multiplier effects of global disruption. This report examines the impact of the COVID-19 pandemic on the trade, transport, mobility of people, and e-commerce of five AMS – Indonesia, Malaysia, Singapore, Thailand, and Viet Nam – plus Japan.

1.2. Regional Economic Overview

The massive impacts of the COVID-19 pandemic crashed the global economy, including those of the ASEAN-5 (i.e. Indonesia, Malaysia, the Philippines, Singapore, and Thailand). The growth rates of the region sank in 2020, including the Philippines (–9.5%), Thailand (–6.1%), Malaysia (–5.6%), Singapore (–2.1%), and Indonesia (–2.0%). Meanwhile, Vietnam's gross domestic product (GDP) grew by 2.9%, putting it amongst the few better-performing economies in the world like China. As a region, South-East Asia, however contracted by about –4.0% in 2020.[1]

A pandemic recession was unavoidable, yet experts suggested that economic growth would bounce back in 2021. The Asian Development Bank (ADB) predicted that South-East Asia would see 4.4% GDP

[1] World Bank, GDP Growth (Annual %), https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

growth in 2021, with projected 5.1% growth in 2022. However, as of March 2022, ADB revised its 2021 outlook for South-East Asia to lower 3.0% growth (ADB, 2022).

While some economies in the region do appear to be recovering, AMS governments are still prioritising the disbursement of stimulus measures for short-term economic relief. As of April 2021, these governments authorised about $642 billion or the equivalent of 6.88% of its GDP (Table 1.1). This stimulus amount is nearly double from almost 1 year ago, in July 2020, when lockdowns began to ease.

Table 1.1: COVID-19 Stimulus Packages amongst ASEAN Countries

Country	Details	Value ($ billion)
Brunei Darussalam	Through two separate announcements of $139 million and $174 million on 21 March and 30 March 2020, the Ministry of Finance and Economy released an interim fiscal package to support small and medium-sized enterprises (SMEs) and self-employed groups in the tourism, hospitality, transport, and food and beverage sectors. The government offered temporary deferment of pension contributions, payroll subsidies, discounts on corporate income tax, and temporary exemption of customs and excise duties. It also developed targeted measures at tax, utility, and social security deductions to assist households and firms.	0.31
Cambodia	Cambodia made eight rounds of budgetary announcements between 10 March 2020 and 29 March 2021, detailing stimulus packages worth $3.1 billion. Measures were aimed at ensuring capital liquidity in the markets, soft loans to SMEs, cash assistance for vulnerable households, tax relief, wage subsidies for garment and tourism workers, aviation and tourism sector tax exemptions, as well as credit guarantees for SMEs in manufacturing and agriculture. Many tax exemptions and cash relief programmes were extended to June 2021. In addition, $123 million was allocated for skills training for workers in the garment and tourism industries.	3.10
Indonesia	Indonesia rolled out 12 stimulus packages between 25 February and 18 November 2020 comprising fiscal monetary and economic measures worth $169.744 billion. The national economic recovery programme disbursed support to the health care sector, social assistance schemes, conditional cash transfer schemes, electricity subsidies, unemployment benefits, capital injections to state-owned enterprises (SOEs), and credit guarantees. Most spending in 2020 went towards immediate health care needs, social safety programmes, and micro and SME and SOE support. In March 2020, the government issued regulations to support the new digital economy. It announced two packages on 4 February and 13 April 2021, totalling $88.623 billion, with some $86.7 million allocated for electricity subsidies. As of June 2021, Indonesia's total stimulus spending was almost $260 billion, nearly 22% of its gross domestic product (GDP).	258.37
Lao People's Democratic Republic (Lao PDR)	The Lao PDR first announced a modest $11 million in measures, including discounted electricity rates, income tax exemptions, micro and SME tax exemptions, salary compensation, and an unemployment allowance in 2020. In 2021, $3 million was allocated that included new fiscal measures such as income tax exemptions for civil servants and private sector employees earning less than $500, micro and SME revenue tax exemptions, road tax deferments, and utility tariffs.	0.014
Malaysia	Malaysia approved eight rounds of measures between 27 February and 6 November 2020, totalling $89.418 billion for health care needs, social security relief, cash transfers, electricity discounts, wage subsidies, grants for micro and SMEs, digitalisation support, and tax relief. Another two budgetary	97.89

Country	Details	Value ($ billion)
	packages were announced on 18 January and 17 March 2021, totalling $8.472 billion, earmarked for accelerated social security payments, extended tax relief, wage subsidies, unemployment benefits, vaccinations, fuel subsidies, and firm financing.	
Myanmar	Myanmar announced four budget allocations between March and June 2020, totalling $613 million. The measures were targeted at providing soft loans to affected businesses in the garment, manufacturing, hotel and tourism, and micro and SMEs sectors; deferred income tax and commercial tax payments; a 2% exemption on advance income tax on exports; waivers on specific goods tax, customs duties, and commercial taxes for critical medical supplies; and cash assistance to 5.4 million households.	0.61
Philippines	The Philippines enacted Bayanihan Acts I and II to cope with the pandemic effects. The Bayanihan Act I allocated $4.5 billion, and the Bayanihan Act II allotted $2.9 billion as immediate funds and $520 million as standby funds. Additionally, through Corporate Recovery and Tax Incentives for Enterprises (CREATE), the government provided about $20.9 billion worth of tax relief to businesses over the next 10 years.	28.82
Singapore	Singapore announced four stimulus packages, the Unity, Resilience, and Solidarity and Budgets, between February and May 2020. These measures comprised cash pay-outs, grocery vouchers, utility rebates, suspension of loans and mortgages, and wage subsidies and totalled $65 billion. Separately, a tourism campaign was also launched in July 2021 to assist the sector. This was supplemented with the $27.135 billion COVID-19 Resilience Package in February 2021 aimed at rolling out a nationwide vaccination programme; jobs support; additional support for the aviation, arts, culture, and sports; and a relief fund for taxi and private hire drivers. The Singapore Green Plan, which was announced in 2021, aims to improve food security, address climate change, and promote clean energy with specific budgets set aside for transformation of the agri-food sector, electric vehicle-related initiatives, and green finance.	92.97
Thailand	Thailand rolled out four announcements between March and December 2020 totalling $75.433 billion including measures such as soft loans; micro and SME wage subsidies; tax reductions; debt moratoriums; debt restructuring; unemployment compensation for workers covered by social security; cash handouts; skills training; income, excise, and tax deferments; land rental deferments; and health care support. Another package of $30.974 billion was announced in January 2021 with additional handouts for workers in the informal sector, a budget to boost domestic spending and tourism, soft loans, debt relief, electricity and utility subsidies, and reduced land and building taxes.	106.41
Viet Nam	Viet Nam's stimulus packages were made over 2020 starting in March with deferments on taxes, land rentals, personal income tax payments, excise tax, support for vulnerable households, persons with meritorious revolutionary services, social protection beneficiaries, zero-interest loans up to 50% of regional minimum wage, and cash assistance for household businesses with taxable revenue of less than D100 million.	19.83

Sources: IMF, Policy Responses to COVID-19, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19 (accessed 15 June 2021).

Due to the shocks on production, many people lost jobs and/or experienced declining incomes. ADB estimated that the pandemic pushed 4.7 million people in South-East Asia into extreme poverty in 2021, as 9.3 million jobs disappeared (ADB, 2022). Governments have thus been funnelling various types of support to impacted groups, especially the poor, the unemployed, micro and small and

medium-sized enterprises (SMEs), and some corporations. The support aims to stabilise the economy, help vulnerable groups, and protect enterprises from bankruptcy. Forms consist of direct cash transfers, various subsidies, tax allowances/exemptions, capital injections, soft loans, and health and education support (Table 1.2). Most fiscal support is targeted, but health care support – vaccines, medicines, and hospital care – has been universal.

Table 1.2: Fiscal and Monetary Policies in ASEAN Economies in Response to the COVID-19 Pandemic

Country	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
Overall Fiscal Measures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Health System Measures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Income Support Measures for Individuals & Households, excluding tax & contribution charges		✓	✓		✓	✓	✓	✓	✓	✓
Tax & Contribution Policy Changes	✓	✓	✓	✓	✓		✓		✓	✓
Public Sector Subsidies to Firms	✓	✓			✓		✓	✓	✓	✓
Deferral of Taxes & Contribution & bringing-forward expenditure within current fiscal year	✓		✓	✓	✓	✓	✓	✓	✓	✓
Public sector loans or capital injections to firms	✓	✓		✓	✓	✓	✓	✓	✓	✓
Loan guarantee by the state, benefitting private borrowers					✓		✓			
Monetary policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prudential regulation	✓	✓		✓	✓	✓	✓		✓	✓

Lao PDR = Lao People's Democratic Republic.
Note: Green cells indicate fiscal stimulus packages, and blue cells indicate monetary and financial sector policies.
Source: Authors.

COVID-19-related assistance has been provided by ADB, Asian Infrastructure Investment Bank, International Monetary Fund, and World Bank (Table 1.3). Six AMS – Cambodia, Indonesia, the Lao People's Democratic Republic (Lao PDR), Myanmar, Philippines, and Thailand – have borrowed a total of $15.6 billion from these entities.

Table 1.3: Estimated COVID-19 Stimulus Packages amongst ASEAN Countries from Multilateral Banks ($ billion)

Country	ADB*	World Bank	AIIB	IMF	Total
Cambodia	0.250	0.021	0.125	0	0.396
Lao PDR	0.020	0.058	0	0	0.078
Indonesia	2.653	1.460	2.750	0	6.863
Myanmar	0.280	0.258	0	0.707	1.244
Philippines	2.758	1.600	1.050	0	5.408
Thailand	1.500	0	0	0	1.500
Viet Nam	0	0.084	0.100	0	0.184
Total	**7.461**	**3.481**	**4.025**	**0.707**	**15.674**

ADB = Asian Development Bank, IMF = International Monetary Fund, Lao PDR = Lao People's Democratic Republic.

Note: As of 31 May 2021.

Sources: IMF, Policy Responses to COVID-19, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19 (accessed 21 June 2021) and ADB (2021).

The majority of this aid was used for immediate, short-term fiscal and monetary measures to accelerate economic recovery by (i) disbursing cash assistance to retrenched workers and vulnerable groups; (ii) supporting micro and SME operations; (iii) providing financial assistance and incentives to critical economic sectors, such as air transport and tourism; and (iv) strengthening emergency health responses, such as COVID-19 testing capacity and vaccine uptake (Martinus and Seah, 2020).

1.3. Progress of Vaccination in ASEAN Member States

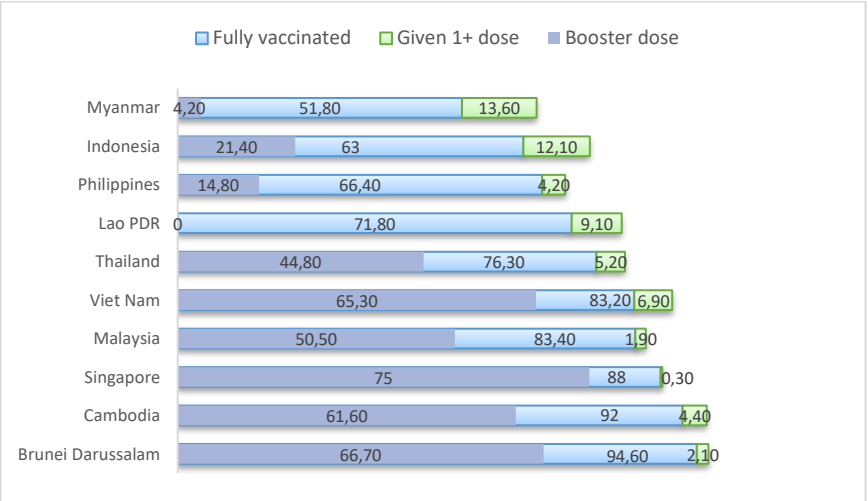
A surge of new COVID-19 cases in mid-2021 again highlighted the need to scale up vaccination programmes in South-East Asia. Many new infections involved the highly contagious Delta variant, and medical experts have warned that without greater vaccine coverage, more virulent strains could emerge, threatening the efficacy of the existing vaccines (ADB, 2021b).

Vaccination progress in Asia and the Pacific varies widely, with China and some smaller countries managing to administer 50 or more doses per 100 people, but around one-half of all economies in the region have administered fewer than 15 does per 100 people, leaving them exposed to new virus outbreaks (ADB, 2021b). Countries of the European Union (EU), the United Kingdom (UK), and United States (US) – all of which have ample access to vaccines and high coverage rates – have seen a decline in hospitalisations and deaths, allowing them to ease containment measures to help reopen their economies.

The majority of AMS have fully vaccinated 70% of their populations, and five have had more than 50% of their populations boosted (Figure 1.1).

Figure 1.1: People in ASEAN Vaccinated against COVID-19, August 2022

(% of population)



Lao PDR = Lao People's Democratic Republic.
Source: Bloomberg, Vaccine Tracker, https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/ (accessed 22 August 2022).

1.4. Reconnecting ASEAN +

COVID-19 forced many countries to implement lockdown policies, which also closed access to the entry and exit of goods. These actions resulted in a drop in the demand for containers, while the supply side was shocked because of this change. The sharp drop in demand led container carriers to cancel numerous sailings and to create blank sailings (i.e. a sailing that has been cancelled by the carrier) as well.

Moreover, a controlled COVID-19 response in China led to an increase in Chinese exports, resulting in a substantial number of empty containers in places such as Europe and North America. With the sudden additional shortfall incapacity due to the blank sailings, carriers became hard-pressed to repatriate the empty containers in combination with actual export cargo, causing container shortages in some places, especially Asia. Economic recovery also began to occur across the globe, causing an increase in the demand side for containers, which has not been balanced on the supply side due to container shortages. The unpreparedness of ports and carriers is resulting in port congestion and an extreme increase in freight rates.

Table 1.4: South-East Asia's Micro, Small, and Medium-Sized Enterprises

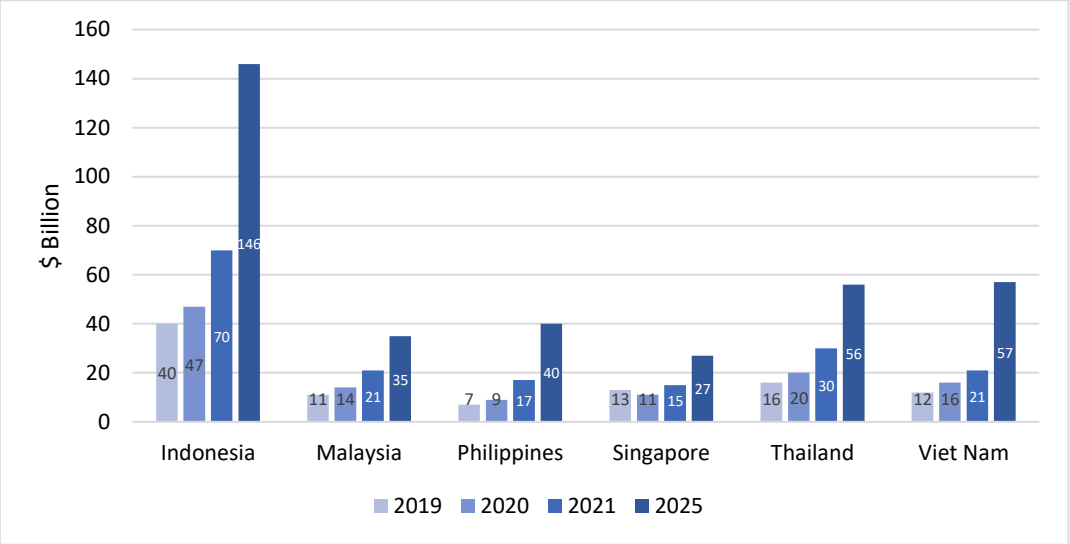
Country	Latest Available Year	Enterprises (number)	% of Enterprises	Employees (number)	% of Employment	Contribution to GDP (%)
Brunei Darussalam	2019	5,990	97.30	64,517	55.6	27.0
Cambodia	2014	512,870	99.80	1,345,100	71.8	
Indonesia	2019	65,465,497	99.99	119,562,843	96.9	60.5
Lao PDR	2020	133,721	99.80	472,529	82.4	
Malaysia	2020	1,151,339	97.20	7,253	48.0	38.2
Myanmar	2019	75,116	89.90			
Philippines	2020	957,620	99.50	5,380,815	62.7	
Singapore	2020	279,700	99.50	2,360,000	70.4	42.8
Thailand	2020	3,134,442	99.50	12,714,916	71.7	34.2
Viet Nam	2019	651,138	97.40	5,681,518	37.5	

GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic, SMEs = small and medium-sized enterprises.
Notes:
1. Employment figures for the Lao PDR are for 2018.
2. Figures for Singapore only cover SMEs, and the contribution to GDP refers to SME contribution to total enterprises nominal value added.
Source: ADB (2022).

Micro and SMEs are crucial economic contributors for AMS, providing the bulk of jobs, especially for low- to middle-income groups (ADB, 2022). About 97% and 82% of employment in Indonesia and the Lao PDR, respectively, are provided by micro and SMEs (Table 1.4). Micro and SMEs are thus too important to be neglected during economic crises, such as that caused by the pandemic, and these are often the last resorts for many new unemployed.

Those who lose jobs or experience declining income try to adjust their consumption behaviours, for example by eliminating the purchase of less-needed goods and services, reducing the quality and quantity of goods and services, and saving for future needs. This changing consumption pattern has multiplier effects. The prices of perceived essential health products, such as masks, hand sanitiser, and certain vitamins, have risen sharply due to a surge in demand. Production capacity could not adjust to this demand during the pandemic, especially when infection rates were high and lockdowns were imposed. With these mobility restrictions came the demand for essential goods and services transacted through online platforms and dispensed by delivery services. Not surprisingly, therefore, e-commerce transactions have been booming, with Indonesia having the highest increasing value market (Figure 1.2).

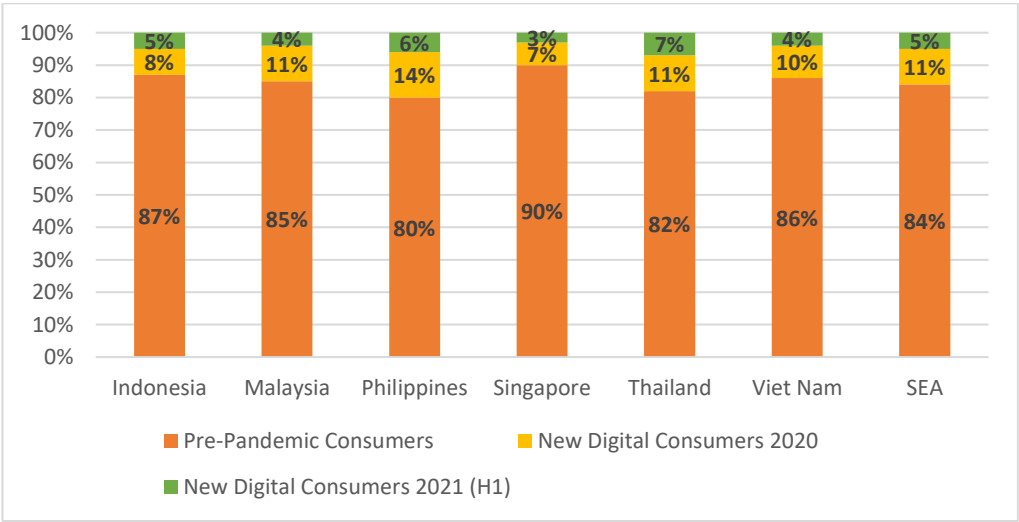
Figure 1.2: South-East Asia Internet Economy Gross Merchandise Value ($ billion)



Source: Google, Temasek, Bain and Company (2021).

Some 40 million new consumers entered the South-East Asia digital market in 2020, and another 20 million in the first half of 2021, making the total number of South-East Asia digital consumers 350 million. This means that about 80% of total internet users in South-East Asia are digital consumers (Figure 1.3). Given the young demographic and increasing middle class, this number is projected to only increase.

Figure 1.3: Digital Consumers, Pre-Pandemic and Pandemic



SEA = South-East Asia.
Source: Google, Temasek, Bain and Company (2021).

Due to various restrictions, the air transport industry has greatly suffered along with tourism-related businesses such as hotels, restaurants, and entertainment during the pandemic. The number of air passengers has drastically dropped, impacting accommodation occupancy rates and related

businesses. In Asia and the Pacific, employment losses in the travel and tourism sector totalled $34.82 million in 2020.[2] The total number of international air passengers in AMS declined to one-sixth of the previous year, from 331,621,000 in 2019 to 54,931,000 in 2020. The value of travel services in AMS declined from $231.457 million in 2019 to $58.373 million in 2020.[3]

1.5. Moving Forwards

The period before the pandemic was characterised by the digitalisation process, including for shopping, financial transactions, working, and communication. The pandemic then created momentum to accelerate this digitalisation process and has added more activities to it. The limitations on movement and physical interactions have pushed experts to create cheap and secure systems for digitalised documents – which has included the accelerated implementation of e-government in many countries. Additionally, telemedicine is now part of medical services in many cities.

Lockdowns also created a surging demand for online shopping, especially to fulfil basic and urgent needs, such as for groceries and health-related goods and services. About 60% of internet users in South-East Asia increased their spending, and 62% increased their shopping frequency for groceries online in 2021 compared to February 2020 (Google, Temasek, Bain and Company, 2021). About 35% of digital merchants believe that they would not have survived the pandemic if not for digital platforms (Google, Temasek, Bain and Company, 2021). Cashless and touchless payment systems have also become solutions to reduce virus spread once lockdowns are eased.

Regarding education and jobs, limited mobility has been countered by online classes and meetings and work-from-home schemes. However, productivity has been mixed due to differences in the characteristics of work/study subjects, support systems (especially hardware infrastructure and affordability), and agility or willingness to move from offline to online modes. The benefits are determined by the access (e.g. sufficient hard infrastructure), usage (e.g. reliable quality and affordable use), and productivity. A digital divide happens because of the differences in these three aspects across groups. It occurs not only between income classes but also between urban and rural areas, gender, and age groups.

The pandemic also emphasised the necessity of having a sufficient and reliable support system for e-commerce. Conducting online transactions still requires support from logistics systems, because most products need to be delivered physically to buyers' doors. A reliable and affordable logistics system – including shipping and local logistics transport – has thus become increasingly important. This is also a part of the support for micro and SMEs as dominant sellers in many developing economies. Challenges come from global and regional shipping disruptions, increasing energy prices, and higher inflation rates that weaken purchasing power.

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[2] Statista, Employment Loss in the Travel and Tourism Sector due to the Coronavirus (COVID-19) Pandemic Worldwide in 2020 and 2021, by Region, https://www.statista.com/statistics/1104835/coronavirus-travel-tourism-employment-loss/ (accessed 2 August 2022).

[3] ASEANStats, Trade in Services, by Reporting Countries and Major Service Categories (in million US$), https://data.aseanstats.org/sits-by-reporters-and-services (accessed 2 August 2022).

To help the tourism sector recover, AMS need to shift towards more sustainable tourism activities and, at the same time, allow COVID-19-safe travel activities. Amongst critical elements are safety regulations, a fast and affordable health-check system, appropriate health care responses, and a smart information system for travellers. Vaccination programmes should be dynamically evaluated and responsive to curb the pandemic situation. ASEAN also needs to strengthen cooperation and coordination in facilitating cross-border movement so that border control does not burden travellers. A transition towards a green transport system can solve many challenges, especially energy prices, climate-change mitigation, inclusiveness, and healthier cities.

As people become more familiar with digitalisation in most economic activities, AMS should move quickly to provide digital infrastructure and connectivity. This requires appropriate hard and soft infrastructure, facilitation and regulation, cybersecurity, sufficient capacity support, connectivity to global platforms, and cross-border e-commerce regional cooperation. Additionally, cooperation with large economies in the region – especially China and Japan – is essential to recovery efforts.

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Chapter 2

Indonesia

Ibrahim Kholilul Rohman

2.1. Economic Overview

Indonesia experienced a growth contraction of –2.07% in 2020 (Indonesian Bureau of Statistics, 2021a). The sectors experiencing the strongest contractions were transport and warehousing by –15.04%, accommodation and food and drink by –10.22%, business services by –5.44%, other services by –4.10%, and retail and automotive repair by –3.72%. Some fields experienced growth, including health services and social activities by 11.60%; information and communication technology (ICT) by 10.58%; water and waste management and recycling by 4.94%; real estate by 2.32%; and agriculture, forestry, and fisheries by 1.75% (Table 2.1).

Spending contractions occurred in almost all components except government expenditure, which grew by 1.94%. The deepest contraction occurred in imports of goods and services at –14.71%, followed by exports of goods and services at –7.70%. Household consumption also decreased by –2.63%. The pandemic created much uncertainty, making people act cautiously and keep their assets. This led to an increase in government spending to reduce a deeper contraction of the economy (Table 2.2).

Table 2.1: Indonesia's Gross Domestic Product Growth by Sector and Expenditure, 2020

	Business Field	Quarter IV-2020 against Quarter III-2020 (*q-to-q*)	Quarter III-2020 against Quarter III-2019 (*y-on-y*)	Quarter IV-2020 against Quarter IV-2019 (*y-on-y*)	Growth Rate 2020	Source of Growth 2020
	(1)	(2)	(3)	(4)	(5)	(6)
A.	Agriculture, Forestry and Fisheries	(20.15)	2.16	2.59	1.75	0.22
B.	Mining and Excavation	1.65	(4.28)	(1.20)	(1.95)	(0.14)
C.	Processing Industry	(0.38)	(4.34)	(3.14)	(2.93)	(0.61)
D.	Electricity and Gas Supply	0.94	(2.44)	(5.01)	(2.34)	(0.02)
E.	Water Supply, Waste Management, Waste and Recycling	3.11	5.94	4.98	4.94	0.00
F.	Construction	3.48	(4.52)	(5.67)	(3.26)	(0.33)
G.	Wholesale and Retail Trade, Car and Motorcycle Repair	(0.87)	(5.05)	(3.64)	(3.72)	(0.49)
H.	Transport and Warehousing	5.08	(16.71)	(13.42)	(15.04)	(0.64)
I.	Provision of Accommodation and Food and Beverage	5.86	(11.81)	(8.88)	(10.22)	(0.31)
J.	Information and Communication	0.99	10.72	10.91	10.58	0.57
K.	Financial Services and Insurance	5.61	(0.95)	2.37	3.25	0.13
L.	Real Estate	0.07	1.96	1.25	2.32	0.07
M,N.	Business Services	2.66	(7.61)	(7.02)	(5.44)	(0.10)

O.	Government Administration, Defence, and Mandatory Social Security	8.95	1.82	(1.55)	(0.03)	0.00
P.	Education Services	7.83	2.41	1.36	2.63	0.08
Q.	Health Services and Social Activities	5.78	15.29	16.54	11.60	0.13
R,S,T,U.	Other Services	2.29	(5.55)	(4.84)	(4.10)	(0.08)
Gross Value Added on Base Price		(1.21)	(2.57)	(1.83)	(1.58)	(1.52)
Tax minus Subsidy on Products		21.37	(23.30)	(9.69)	(13.42)	(0.55)
Gross Domestic Product (GD)		(0.42)	(3.49)	(2.19)	(2.07)	(2.07)

() = negative, c-to-c = GDP at constant prices cumulative up to a quarter compared to the same cumulative period in the previous year, GDP = gross domestic product, q-to-q = GDP at constant prices in a quarter compared to the previous quarter, y-on-y = GDP at constant prices in a quarter compared to the same quarter in the previous year.
Source: Indonesian Bureau of Statistics (2021a).

Table 2.2: Indonesia's Gross Domestic Product by Expenditure, 2020

	Component	Quarter IV-2020 against Quarter III-2020 (*q-to-q*)	Quarter III-2020 against Quarter III-2019 (*y-on-y*)	Quarter IV-2020 against Quarter IV-2019 (*y-on-y*)	Growth Rate 2020	Source of Growth 2020
	(1)	(2)	(3)	(4)	(5)	(6)
1.	Household Consumption Expenditure	0.49	(4.05)	(3.61)	(2.63)	(1.43)
2.	NPOSH Consumption Expenditure	0.22	(1.97)	(2.14)	(4.29)	(0.05)
3.	Government Consumption Expenditure	27.15	9.76	1.76	1.94	0.15
4.	Gross Fixed Capital Formation	4.19	(6.48)	(6.15)	(4.95)	(1.63)
5.	Inventory Change	-	-	-	-	-
6.	Export of Goods and Services	2.41	(11.66)	(7.21)	(7.70)	(1.60)
7.	Minus Import of Goods and Services	16.28	(23.00)	(13.52)	(14.71)	(2.74)
	Gross Domestic Product (GDP)	(0.42)	(3.49)	(2.19)	(2.07)	(2.07)

() = negative, c-to-c = GDP at constant prices cumulative up to a quarter compared to the same cumulative period in the previous year, GDP = gross domestic product, NPOSH = non-profit organisation serving household, q-to-q = GDP at constant prices in a quarter compared to the previous quarter, y-on-y = GDP at constant prices in a quarter compared to the same quarter in the previous year.
Source: Indonesian Bureau of Statistics (2021a).

Regarding 2021, Indonesia's economy shows a recovery from 2020. January to June 2021 – compared to January to June 2020 – experienced growth of 3.10% across all fields. Significant growth was seen by the ICT sector at 7.78%, followed by health services and social activities at 7.38%; water, waste management, and recycling at 5.62%; accommodation and food and drink at 5.35%; and electricity and gas by 5.23% (Table 2.3).

Growth also occurred in all components of expenditure. The highest growth occurred in exports of goods and services by 18.51%, followed by imports of goods and services by 17.30%. Household consumption also grew by 1.72%. The first 6 months of 2021 do show an economic recovery from 2020, but the Delta variant of the coronavirus has become a threat to the Indonesian economy, which will be reflected in the third quarter of 2021 (Table 2.4).

Table 2.3: Indonesia's Gross Domestic Product Growth by Sector and Expenditure, 2021

	Business Field	Quarter I-2021 against Quarter IV-2020 (*q-to-q*)	Quarter II-2021 against Quarter I-2021 *(q-on-q)*	Quarter I-2021 against Quarter I-2020 (*y-on-y*)	Quarter II-2021 against Quarter II-2020 (*y-on-y*)	Semester I-2021 against Semester I-2020 (*c-to-c*)	Source of Growth Quarter II-2021 (*y-on-y*)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A.	Agriculture, Forestry, and Fisheries	10.22	12.93	3.33	0.38	1.75	0.06
B.	Mining and Excavation	(1.56)	3.37	(2.02)	5.22	1.53	0.39
C.	Processing Industry	0.61	1.07	(1.38)	6.58	2.46	1.35
D.	Electricity and Gas Supply	0.98	(1.17)	1.68	9.09	5.23	0.09
E.	Water Supply, Waste Management, Waste and Recycling	(0.59)	1.66	5.46	5.78	5.62	0.01
F.	Construction	(2.10)	(2.51)	(0.79)	4.42	1.72	0.42
G.	Wholesale and Retail Trade, Car, and Motorcycle Repair	1.07	3.36	(1.23)	9.44	3.92	1.21
H.	Transport and Warehousing	(6.05)	1.96	(13.12)	25.10	2.72	0.77
I.	Provision of Accommodation and Food and Beverage	(1.80)	1.91	(7.26)	21.58	5.35	0.54
J.	Information and Communication	0.88	1.64	8.71	6.87	7.78	0.43
K.	Financial Services and Insurance	(0.17)	0.17	(2.97)	8.35	2.38	0.35
L.	Real Estate	0.18	1.59	0.94	2.82	1.88	0.09
M,N.	Business Services	(1.31)	0.56	(6.10)	9.94	1.31	0.17
O.	Government Administration, Defence, and Mandatory Social Security	(9.96)	10.04	(3.05)	9.49	3.14	0.32
P.	Education Services	(13.14)	6.86	(1.71)	5.72	1.99	0.18
Q.	Health Services and Social Activities	(10.37)	3.56	3.32	11.62	7.38	0.14
R,S,T,U.	Other Services	(1.53)	0.21	(5.16)	11.97	2.71	0.21
Gross Value Added on Base Price		(0.18)	3.25	(0.99)	6.98	2.90	6.73
Tax minus Subsidy on Products		(17.68)	4.93	7.80	9.56	8.70	0.34
Gross Domestic Product (GD)		(0.92)	3.31	(0.71)	7.07	3.10	7.07

() = negative, c-to-c = GDP at constant prices cumulative up to a quarter compared to the same cumulative period in the previous year, GDP = gross domestic product, q-to-q = GDP at constant prices in a quarter compared to the previous quarter, y-on-y = GDP at constant prices in a quarter compared to the same quarter in the previous year.

Source: Indonesian Bureau of Statistics (2021a).

Table 2.4: Indonesia's Gross Domestic Product by Expenditure, 2021

Component	Quarter I-2021 against Quarter IV-2020 (*q-to-q*)	Quarter II-2021 against Quarter I-2021 *(q-on-q)*	Quarter I-2021 against Quarter I-2020 (*y-on-y*)	Quarter II-2021 against Quarter II-2020 (*y-on-y*)	Semester I-2021 against Semester I-2020 (*c-to-c*)	Source of Growth Quarter II-2021 (*y-on-y*)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Household Consumption Expenditure	(0.58)	1.27	(2.22)	5.93	1.72	3.17
2. NPOSH Consumption Expenditure	(4.12)	7.50	(4.03)	4.12	0.03	0.05
3. Government Consumption Expenditure	(43.69)	29.07	2.34	8.06	5.49	0.61
4. Gross Fixed Capital Formation	(2.21)	(2.69)	(0.23)	7.54	3.46	2.30
5. Inventory Change	–	–	–		–	–
6. Export of Goods and Services	8.12	6.58	7.03	31.78	18.51	5.81
7. Minus Import of Goods and Services	6.66	5.81	5.46	31.22	17.30	4.83
Gross Domestic Product (GDP)	(0.92)	3.31	(0.71)	7.07	3.10	7.07

() = negative, c-to-c = GDP at constant prices cumulative up to a quarter compared to the same cumulative period in the previous year, GDP = gross domestic product, NPOSH = non-profit organisation serving household, q-to-q = GDP at constant prices in a quarter compared to the previous quarter, y-on-y = GDP at constant prices in a quarter compared to the same quarter in the previous year.
Source: Indonesian Bureau of Statistics (2021a).

Indonesia's total exports from January to July 2021 – compared to January to July 2020 – saw an increase of 33.94%, thanks mostly to the increased exports in both oil and gas (48.33%) and non-oil and gas (33.17%). The manufacturing sector increased by 31.36% in 2021 compared to 2020, due to increased palm oil exports. Exports of agricultural, forestry, and fishery products increased by 8.72% due to more medicinal plant, aromatic, and spice exports. Exports of mining and other products rose 49.13%, especially coal (Table 2.5).

Table 2.5: Indonesia's Exports, 2020 and 2021

	FOB Value ($ million)					Change (%)			
Description	**Jul 2020**	**Jan–Jul 2020**	**Jun 2021***	**Jul 2021***	**Jan–Jul 2021**	**Jul 2021 against Jul 2020** *(y-on-y)*	**Jul 2021 against Jun 2021** *(m-to-m)*	**Jan–Jul 2021 against Jan–Jul 2020** *(c-to-c)*	**Role in Total Exports Jan–Jul 2021** *(%)*
Total Exports	13,689.9	90,019.0	18,542.4	17,703.2	120,573.6	29.3	(4.5)	33.9	100.0
Oil and Gas	660.4	4,588.6	1,232.1	991.2	6,806.4	50.1	(19.6)	48.3	5.7
Non-Oil and Gas	13,029.5	85,430.4	17,310.3	16,712.0	113,767.2	28.3	(3.5)	33.2	94.4
Agriculture, Forestry, and Fisheries	349.6	2,060.2	326.1	286.7	2,239.8	(18.0)	(12.1)	8.7	1.9
Processing Industry	11,287.6	72,034.4	14,072.4	13,561.5	94,622.0	20.2	·3.63	31.4	78.5
Mining and Others	1,392.3	11,335.8	2,911.8	2,863.8	16,905.4	105.7	·1.65	49.1	14.0

() = negative, * = temporary, FOB = free onboard (i.e. the buyer is the responsible entity for the shipping and logistic costs).
Source: Indonesian Bureau of Statistics (2021b).

Table 2.6 shows that China remained the largest export destination country, with a value of $53.8 billion (23%) in 2021. Other main export destination regions are AMS with a value of $48 billion (21%), the US with a value of $31.9 billion (14%), and the EU with a value of $23.1 billion (10%). The main commodities exported to China during this period were iron/steel, coal, and palm oil.

Table 2.6: Export Destination Countries from Indonesia, FOB Value ($ million)

Destination Country	2019	2020	2021
Asia			
ASEAN	**41,464.5**	**36,420.2**	**48,021.6**
Thailand	6,218.4	5,110.3	7,088.0
Singapore	12,916.7	10,661.9	11,635.8
Philippines	6,770.1	5,900.7	8,604.3
Malaysia	8,801.8	8,098.8	11,971.0
Viet Nam	5,153.4	4,941.4	6,850.1
Other ASEAN	1,604.1	1,707.3	1,872.3
Other Asia			
Japan	16,003.3	13,664.7	17,872.7
Hong Kong	2,501.7	2,034.9	2,063.5
Republic of Korea	7,234.4	6,507.6	8,981.9
Taiwan	4,034.8	4,097.4	6,960.2
China	**27,961.9**	**31,781.8**	**53,765.5**
Others	21,908.3	20,001.1	27,588.9
Africa	**4,603.4**	**4,614.7**	**7,065.5**

Australia and Oceania	**3,065.9**	**3,290.2**	**4,285.0**
United States	**22,034.7**	**22,644.2**	**31,869.7**
European Union	**16,870.1**	**18,134.8**	**23,135.1**
Total	**167,683.0**	**163,191.8**	**231,609.5**

ASEAN = Association of Southeast Asian Nations, FOB = free onboard (i.e. the buyer is the responsible entity for the shipping and logistic costs).
Source: Indonesian Bureau of Statistics, Nilai Ekspor Menurut Negara Tujuan Utama https://www.bps.go.id/statictable/2014/09/08/1010/nilai-ekspor-menurut-negara-tujuan-utama-nilai-fob-juta-us-2000-2021.html (accessed 30 March 2023).

Indonesia's total imports from January to July 2021 – compared to January to July 2020 – saw an increase of $24.79 billion (30.46%) due to an increase in oil and gas imports by $4.82 billion (56.74%) and non-oil and gas imports by $19.97 billion (27.40%). The increase in the value of oil and gas imports was triggered by a surge in imports of crude oil of $1.73 billion (77.44%), oil yields of $2.54 billion (53.75%), and gas of $0.55 billion (35.86%) (Table 2.7).

Table 2.7: Indonesia's Imports, 2020 and 2021

	CIF Value ($ million)					Change (%)			
Description	**Jul 2020**	**Jun 2021**	**Jul 2021***	**Jan–Jul 2020**	**Jan–Jul 2021***	**Jul 2021 against Jul 2020 (y-on-y)**	**Jul 2021 against Jun 2021 (m-to-m)**	**Jan–Jul 2021 against Jan–Jul 2020 (c-to-c)**	**Role in Total Imports Jan–Jul 2021 (%)**
Total Imports	10,464.3	17,218.4	15,114.3	81,367.5	106,154.3	44.4	(12.2)	30.5	100.0
Oil and Gas	958.2	2,297.8	1,786.0	8,488.4	13,304.4	86.4	(22.3)	56.7	12.5
- Crude Oil	248.6	971.9	274.5	2,228.9	3,955.0	10.4	(71.8)	77.4	3.7
- Oil Yield	543.8	1,098.7	1,082.6	4,725.2	7,265.0	99.1	(1.5)	53.8	6.8
- Gas	165.8	227.2	428.9	1,534.3	2,084.4	158.7	88.8	35.9	1,96
Non-Oil and Gas	9,506.1	14,920.6	13,328.3	72,879.1	92,849.9	40.2	(10.7)	27.4	87.5

() = negative; * = temporary; CIF = cost, insurance, and freight (i.e. the price of a good delivered at the frontier of the importing country).
Source: Indonesian Bureau of Statistics (2021b).

China has been the main origin country for Indonesia's imports as shown in Table 2.8, with a value of $56.2 billion in 2021 – 29% of total Indonesia imports. Other major import source regions are AMS at $39.9 billion (20.0% of total imports), the US at $18.98 billion (9.7%), and the EU at $16.3 billion (8.2%).

Table 2.8: Indonesia's Imports by Country, 2019–2021, CIF Value ($ million)

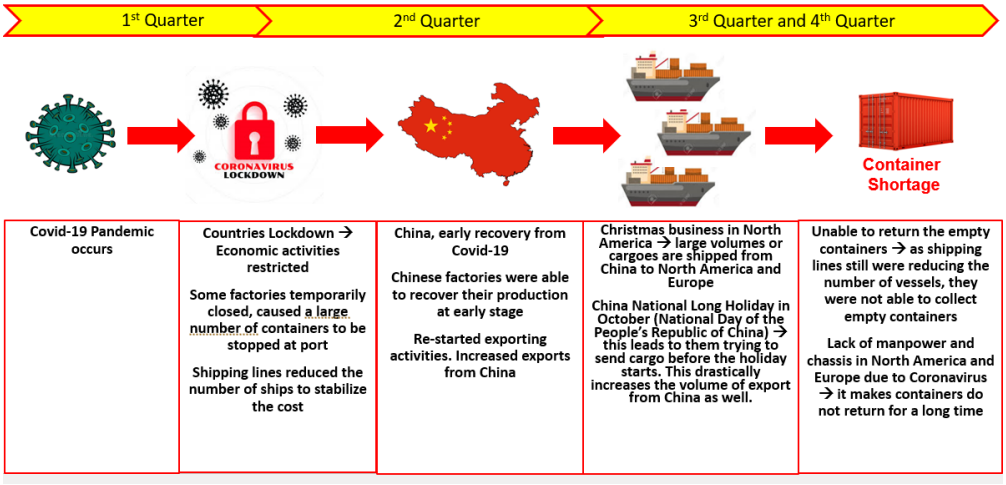
Country of Origin	2019	2020	2021
Asia	**128,999.0**	**103,785.0**	**144,238.6**
ASEAN	**39,791.3**	**29,832.8**	**39,951.4**
Thailand	9,469.1	6,483.8	9,146.5
Singapore	17,589.8	12,341.2	15,451.7
Philippines	821.9	592.0	1,273.3
Other ASEAN	8,062.30	7,285.20	9,866.90
Viet Nam	3,848.2	3,130.6	4,213.0
Other Asia			
Japan	15,661.8	10,672.1	14,644.3
China	**44,930.6**	**39,634.7**	**56,227.2**
Republic of Korea	8,421.3	6,849.4	9,427.2
Others	20,194.0	16,796.0	23,988.5
Africa	**4,086.1**	**2,566.0**	**6,301.9**
Australia and Oceania	**6,487.8**	**5,559.2**	**10,408.8**
United States	**15,714.2**	**15,358.5**	**18,981.8**
European Union	**15,988.6**	**14,300.1**	**16,258.9**
Total	**171,275.7**	**141,568.8**	**196,190.0**

ASEAN = Association of Southeast Asian Nations, CIF = cost, insurance, and freight (i.e. the price of a good delivered at the frontier of the importing country).
Source: Indonesian Bureau of Statistics, Nilai Impor Menurut Negara Asal Utama, https://www.bps.go.id/statictable/2014/09/08/1036/nilai-impor-menurut-negara-asal-utama-nilai-cif-juta-us-2000-2021.html (accessed 30 March 2023).

2.2. Containerised Cargo

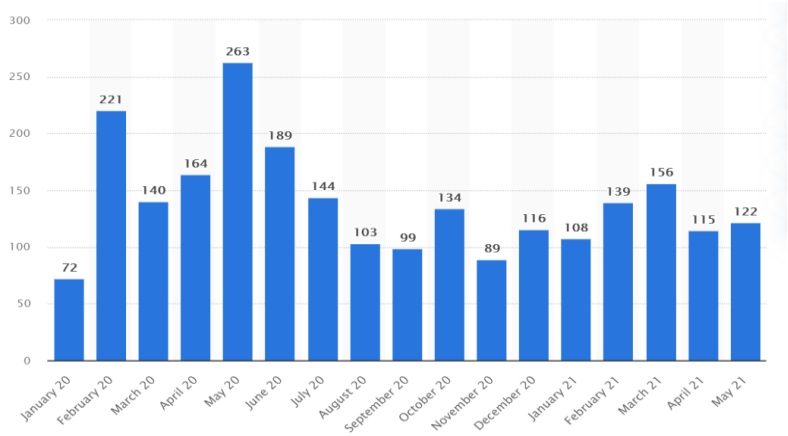
As the container shipping industry entered 2020, disruptive effects were expected from the new International Maritime Organization regulation that mandated a maximum sulphur content of 0.5% in marine fuels globally. The goal is to reduce the air pollution created from the shipping industry. However, as COVID-19 emerged in China, a series of dominoes began to topple for the shipping industry (Figure 2.1). The first was the failure to reopen Chinese manufacturing facilities following Chinese New Year closures as well as lockdowns in several countries that closed access to the entry and exit of goods. This created a massive shortfall in Chinese exports and, therefore, a drop in container demand. That sharp drop in demand then led container carriers to cancel numerous sailings. As of the end of February 2020, the number of blank sailings announced by carriers created a total demand shortfall of 1.7 million 20-tonne equivalent units (TEUs) (Sea-Intelligence, 2021). The number of blank and skipped sailings from January 2020 to February 2020 increased 206.94% (Figure 2.2).

Figure 2.1: Timeline of COVID-19 Pandemic Impacts on Containerised Cargo in 2020



Source: Authors.

Figure 2.2: Blank and Skipped Sailings, Worldwide, 2020–2021



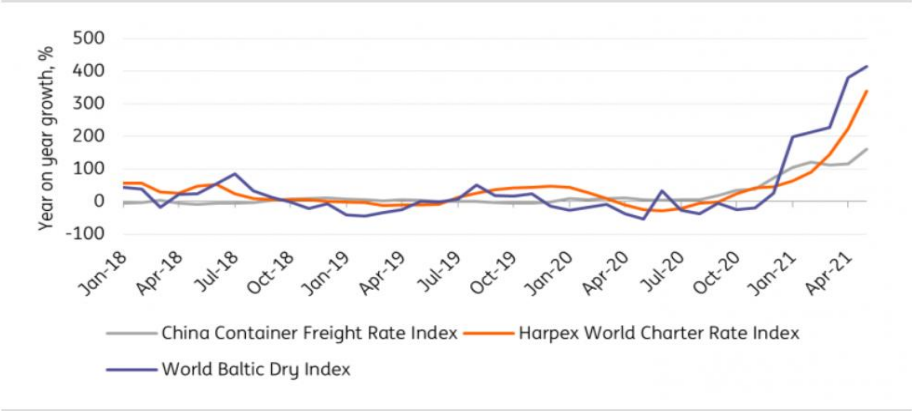
Source: Statista (2022c).

The new blank sailings led to a raft of blank sailings for export cargo to Asia from 3 to 10 weeks, depending on transit times and the timing of the blank sailings. Blank sailings caused an increase in the container rollover ratio, which is the percentage of cargo at the port that should be retransmitted via transhipment. For example, the main maritime trade hubs in Asia – Busan, Hong Kong, and Singapore – recorded a rollover ratio of 30% in August 2020, a sharp increase from the normal ratio of 15%–20% (Lloyd's List, 2020).

The pre-Chinese New Year peak, when cargo was being delivered, resulted in a substantial number of empty containers building up in Europe and North America. With the sudden additional shortfall incapacity due to the blank sailings, carriers became hard-pressed to repatriate empty containers in combination with the actual export cargo to Asia; this caused shortages of containers in some places, especially Asia. As economic recovery began to occur across the globe, the demand for containers increased, which was not balanced from the supply side due to shortage of containers. The unpreparedness of ports and carriers thus resulted in port congestion and an extreme increase in freight rates. Baltic Dry Index data – which show average prices paid for the transport of dry bulk

materials that can reflect supply and demand for important materials used in manufacturing – increased by more than 100% compared to the previous year.4 The China Container Freight Rate Index increased by around 100% compared to the previous year as well (Figure 2.3).

Figure 2.3: Global Shipping Costs, 2018–2021 (%)

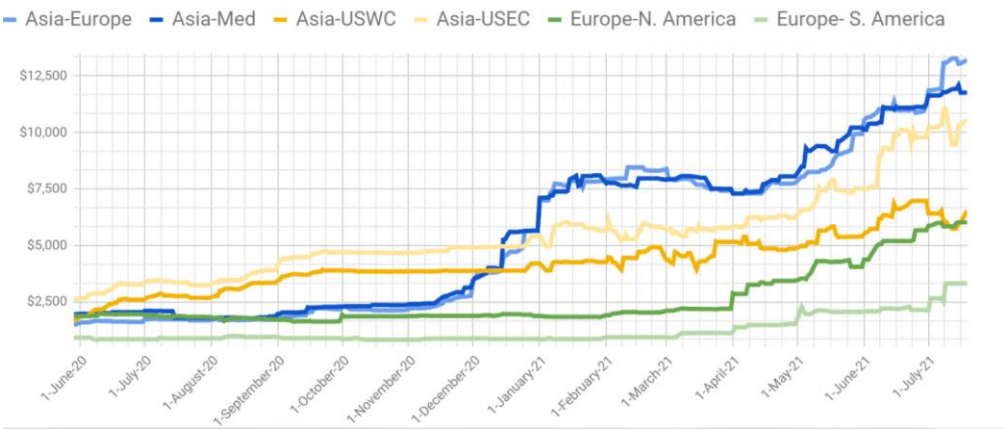


Sources: Freightos Data, Freightos Baltic Index (FBX): Global Container Freight Index, https://fbx.freightos.com/ (accessed 5 August 2022)

The year 2021 still presented challenges and remained full of uncertainty. To April 2021, the Baltic Dry Index increased by around 400% compared to the previous year. China's Container Freight Rate Index also rose by around 300% compared to the previous year. Until July 2021, the Asia–Europe, Asia–Mediterranean, and Asia–US West Coast routes reached more than $10,000 per 40-foot equivalent unit (FEU), which was less than $7,500 per FEU in early 2021 (Figure 2.4).

[4] Freightos Data, Freightos Baltic Index (FBX): Global Container Freight Index, https://fbx.freightos.com/ (accessed 5 August 2022).

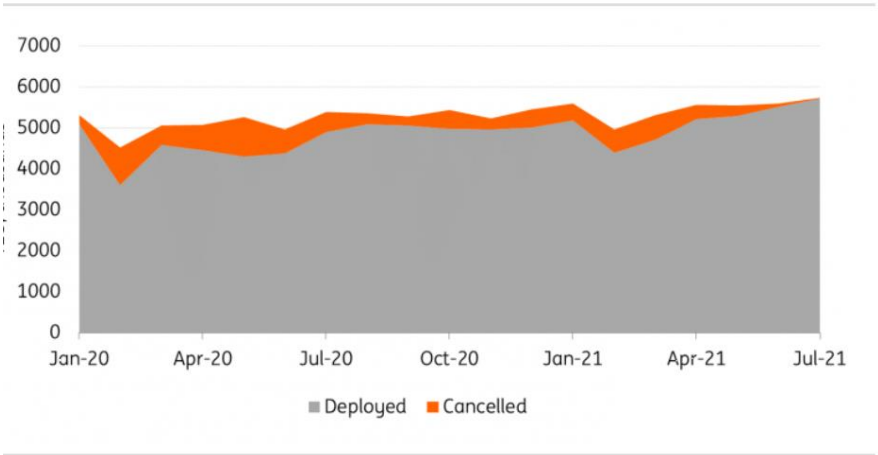
Figure 2.4: Ocean Container Spot Rates, 2020–2021 ($)



USEC = East Coast of the United States, USWC = West Coast of the United States.
Source: Freightos Data, Freightos Baltic Index (FBX): Global Container Freight Index, https://fbx.freightos.com/ (accessed 5 August 2022).

Globally, 2021 capacity on major shipping routes recovered to levels before the 2020 lockdowns, although blank sailings continued to cut 10% of scheduled capacity through the first quarter. There are signs of improvement in the next quarter, which may average 4% (Figure 2.5).

Figure 2.5: Deployed and Cancelled Shipping Capacity ('000 TEUs)

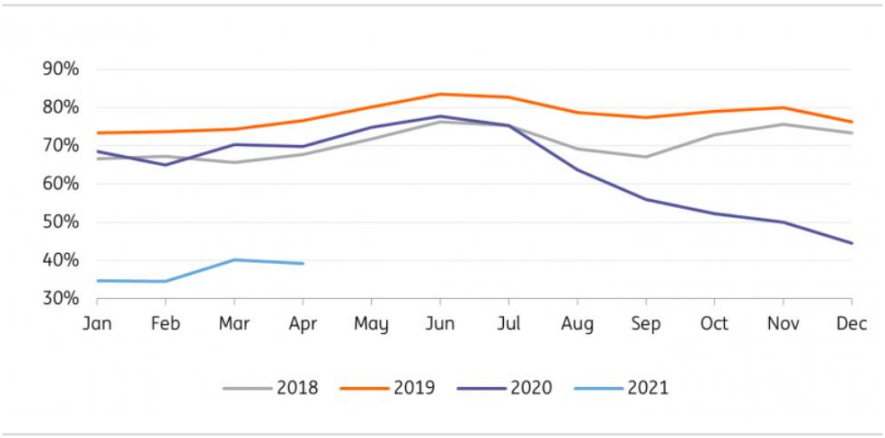


TEU = 20-foot equivalent unit.
Source: eeSea (2021).

In 2021, there were also lower rates of vessels on schedule and rising delays for vessels. The average share of ships arriving on time in 2021 was around 40%, the lowest value within a 10-year period (Figure 2.6). This occurred because of the high uncertainty from the Delta variant, such as the sudden closing of China's Yantian International Container Port, which is the world's fourth-largest container port, in June. Although operations have resumed, congestion and the need for measures to stop the spread of COVID-19 mean delays continue to mount. Although China and other major trading

countries are making progress with vaccination programmes, creating immunity will take time; consequently, interruptions will remain a risk over the coming months.

Figure 2.6: Share of Vessels Arriving on Time, 2018–2021 (%)

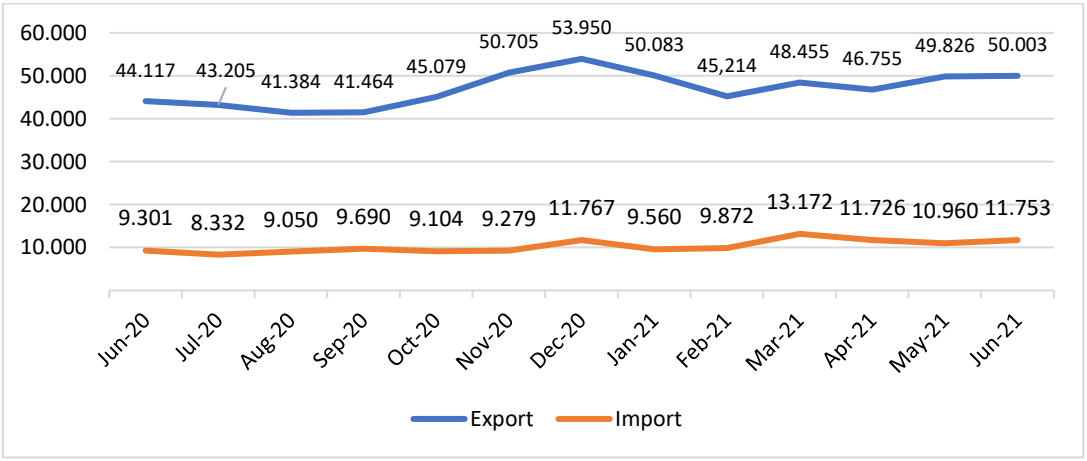


Source: Sea-Intelligence (2021).

2.3. Domestic Trade

Overall, Indonesia's trade balance for the period from January to July 2021 recorded a $14.42 billion surplus, well above the $8.65 billion surplus recorded in the same period of 2020. In terms of trade volume, Indonesia's exports from January to July 2021 tended to be stable at 45 million to 50 million tonnes, while imports tend to be stable at around 10 million tonnes (Figure 2.7).

Figure 2.7: Indonesia's Export and Import Volume, 2020–2021 ('000 tonnes)

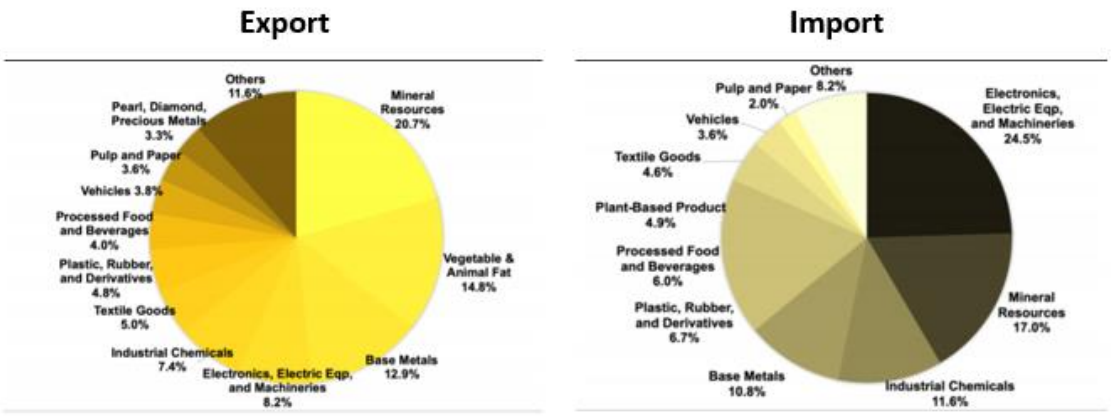


Source: Indonesian Bureau of Statistics (2021c).

Exports are still dominated by raw commodities, consisting of mineral resources, vegetable fat, and precious metal. The significant jump in commodity prices due to the continuation of demand recovery from the pandemic has contributed to a more significant share of Indonesia's commodity exports. There was a two-fold increase from March 2020 to August 2021, recording the highest level in the last decade. Coal commodity prices increased from $86 per metric tonne in January 2021 to $160 per metric tonne in August 2021. Copper prices also grew rapidly from $3,900 per pound in January 2021 to $4,300 per pound in August 2021. Coal exports fell from 38 million tonnes in January 2021 to 37 million tonnes in May 2021, but foreign exchange contributions increased from $1.8 billion to $2.2 billion.[5] The increase in coal prices is beneficial for Indonesian exports considering that coal is one of Indonesia's largest export commodities. However, this makes Indonesian exports dependent on commodity prices, which can easily decline.

Imports of capital goods remain the main contributor to total imports. Capital goods, which consist of machinery and electronic products, cover around 25% of total imports (Figure 2.8). Industrial chemical products also remain the third-most imported because of the high demand for medical supplies and equipment during the pandemic. The share of industrial chemical imports is expected to increase soon, as Indonesia has been battling the resurgence of COVID-19 cases.

Figure 2.8: Indonesia's Export–Import Profile, May-June 2021



Source: LPEM FEB UI (2021).

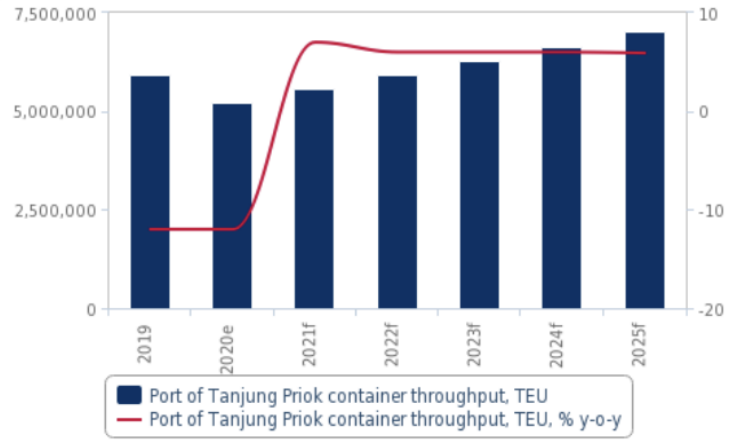
In 2020, shipping volumes at Indonesia's main ports contracted in line with a slowdown in the country's economic activity. The pandemic caused slower economic growth and thus imported demand for bulk and containerised products. The shutdown of many major construction projects – along with social-distancing measures – also undermined imports of construction materials and capital equipment.

Indonesia is predicted to experience an increase in container throughput growth by 7% in 2021 to reach 5.6 million TEUs, while tonnage throughput will grow by 3% to 23.0 million tonnes in the medium

[5] S&P Dow Jones Indices, Dow Jones Commodity Index, https://www.spglobal.com/spdji/en/indices/commodities/dow-jones-commodity-index/#overview (accessed 10 January 2022).

term (i.e. 2021–2025), along with a general rebound in global and domestic and economic growth. The largest port in Indonesia, Tanjung Priok, is set to register average annual tonnage and container throughput growth of 2.8% and 6.2%, respectively, over 2021–2025 (Figure 2.9). However, this will largely depend on how the pandemic is controlled, vaccination rates, and the economic conditions of other countries.

Figure 2.9: Port of Tanjung Priok Container Throughput (TEU)



TEU = 20-foot equivalent unit.
Source: Fitch Solutions (2021).

In the long run, Tanjung Priok will see throughput and box volume growth of 3.0% and 6.0% year on year, respectively, over 2021–2030. The major problem facing Indonesia's container sector is the comparatively underdeveloped level of its port infrastructure in the short term. According to the *Global Competitiveness Index Report 2019*, the country's ports ranked 36th globally in 2019 (Schwab, 2019). Although the maritime sector is of immense strategic and economic importance to the archipelago nation, Indonesia's ports have suffered from perennial underinvestment and are highly inefficient.

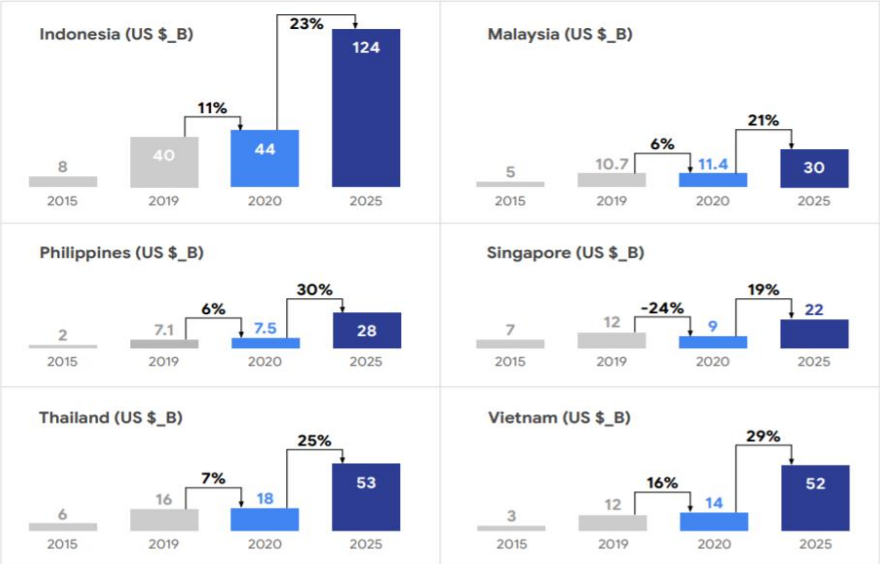
Thus, the Joko Widodo Administration has emphasised improving port efficiency and competitiveness as part of its initiative to transform the country into a global maritime axis. To achieve this, the government will require about $55.4 billion to develop 24 commercial seaports and more than 1,000 domestic ports and to procure vessels for its marine highway programme (GOI, 2015). The administration is also pursuing a network of sea toll roads – a domestic maritime corridor that aims to improve logistics flows and to reduce the costs of transporting goods amongst Indonesia's many islands, especially to and from the eastern provinces of Maluku, North Maluku, Papua, and West Papua. The network will be centred on six major seaports near five cities: Batam, Belawan near Medan, Makassar, Sorong, Tanjung Perak in Surabaya, and Tanjung Priok in Jakarta (GOI, 2015).

Indonesia began a $3 billion project in August 2018 to develop Patimban Deep Sea Port in Subang, West Java (Reuters, 2020). Penta-Ocean Construction, PT Pembangunan Perumahan (Persero) Tbk, PT Wijaya Karya (Persero) Tbk, Rinkai Nissan Construction, and TOA Corporation are implementing the three-phase scheme, which is expected to reduce congestion at Tanjung Priok in Jakarta. The project will conclude in 2027.

2.4. E-Commerce

According to Google, Temasek, and Bain and Company (2020), all countries in South-East Asia experienced an increase in gross merchandise value (GMV) from e-commerce; Indonesia experienced the most significant increase, reaching $44 billion in 2020 and $124 billion in 2025 (Figure 2.10).

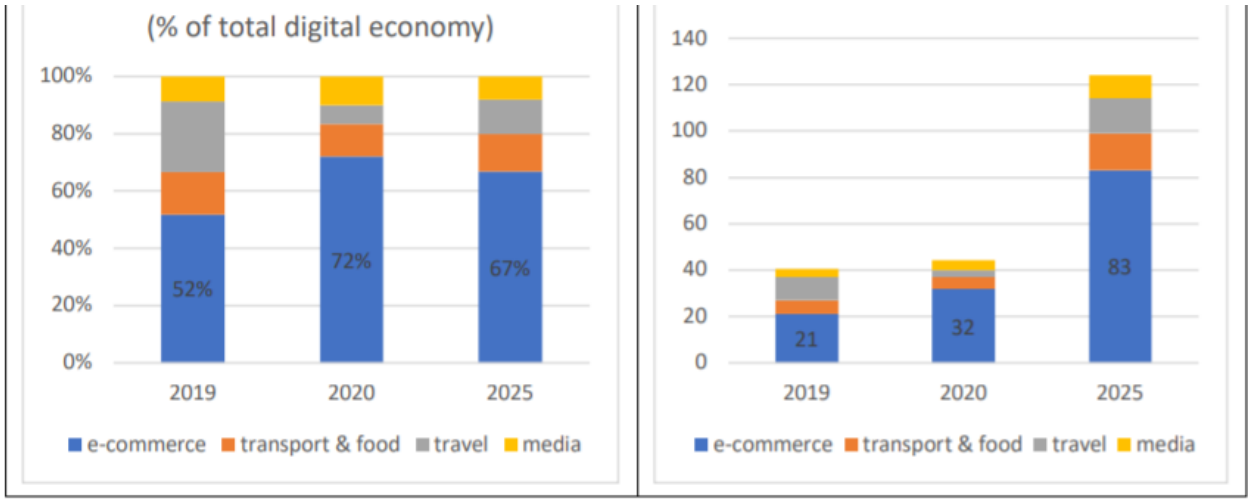
Figure 2.10: South-East Asia Internet Economy Gross Merchandise Value ($ billion)



Source: Google, Temasek, and Bain and Company (2020).

Looking at the specifics of the digital economy, e-commerce plays the biggest role. In 2019, e-commerce accounted for 52% of the contribution to Indonesia's digital economy. During the pandemic, e-commerce experienced a significant increase to 72% in 2020, projected to be 67% in 2025. E-commerce transactions in Indonesia are expected to increase by almost 160% in the next 5 years, with GMV projected at $83 billion in 2025, up from $32 billion in 2020. It can thus be concluded that e-commerce will continue to hold the largest contribution to Indonesia's digital economy (Figure 2.11).

Figure 2.11: Gross Merchandise Value of the Digital Economy in Indonesia

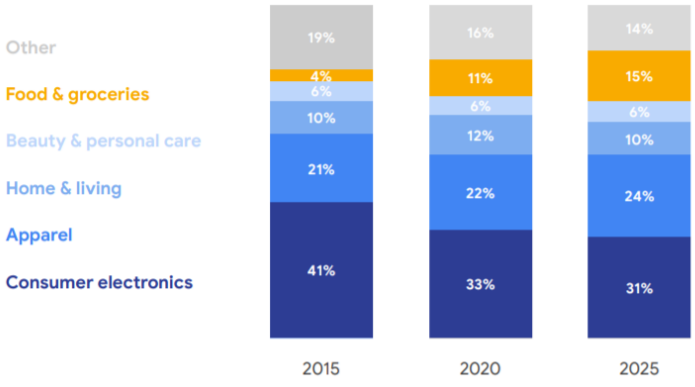


Source: Google, Temasek, and Bain and Company (2020).

Several factors have contributed to the rapid growth of the e-commerce industry in Indonesia. Rising smartphone and internet penetration and more middle-class consumers – combined with a young, tech-savvy population – are amongst the key determinants for this growth. About 213.09 million internet users were in Indonesia in 2021 (Statista, 2022a). Indonesia's number of internet users increased by 27 million (16%) between 2020 and 2021, and internet penetration in Indonesia stood at 70% in July 2021 (Statista, 2021).

With regard to the types of goods purchased through e-commerce, before the pandemic, people tended to be specific about buying goods online, with most purchasing consumer electronics (41%) and apparel (21%) (Google, Temasek, Bain and Company, 2020). Entering the pandemic in 2020, goods purchased through e-commerce began to vary, including food and groceries (11%) and home goods (12%) (Google, Temasek, Bain and Company, 2020). It is predicted that the purchase of goods through e-commerce will become more diverse due to people's newly created behaviour of shopping online in the future (Figure 2.12).

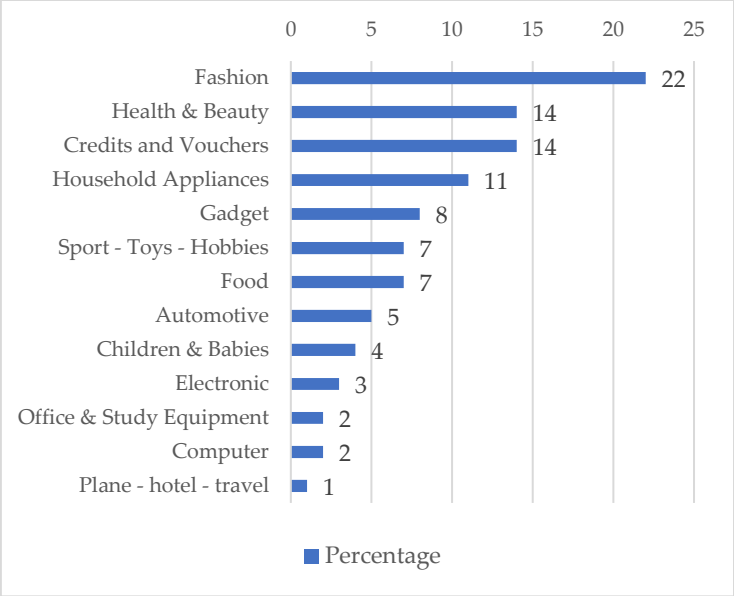
Figure 2.12: E-Commerce Gross Merchandise Value, Indonesia (%)



Source: Google, Temasek, Bain and Company (2020).

The largest proportion of goods purchase online in Indonesia is clothing (22%), while the second highest is health and beauty items (14%), followed by phone credit and vouchers (14%) (Katadata Insight Center, 2020). Thus, the most goods bought by Indonesians online are for daily life (Figure 2.13). This is in line with Maslow's hierarchy of needs theory, which reflects how the pandemic is returning consumers' behaviour to a focus on basic needs – physiological needs (i.e. food, drink, clothing, and shelter) and safety needs (i.e. health, insurance, and security) (Figure 2.14).

Figure 2.13: Product Transactions in E-Commerce, Indonesia (%)



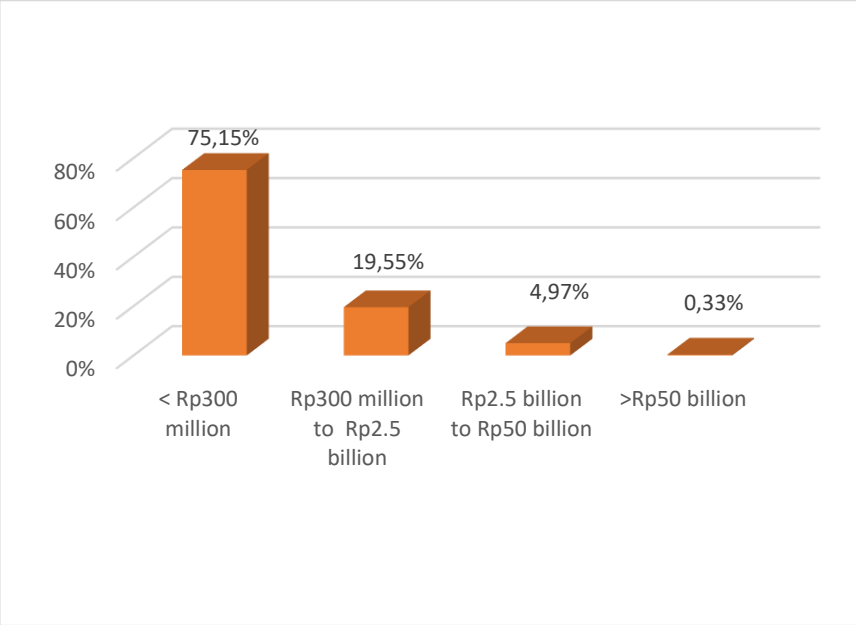
Source: Katadata Insight Center (2020).

Figure 2.14: Maslow's Hierarchy of Needs

Source: McLeod (2007).

Vendors in Indonesian e-commerce are dominated by micro and SMEs. In 2020, 75.15% of e-commerce sellers in Indonesia earned below Rp300 million, and 19.55% earned Rp300 million to Rp2.5 billion. Those who earned more than Rp2.5 billion constituted only 5.3%. Therefore, it can be concluded that Indonesian e-commerce is dominated and highly dependent on micro and SMEs (Figure 2.15).

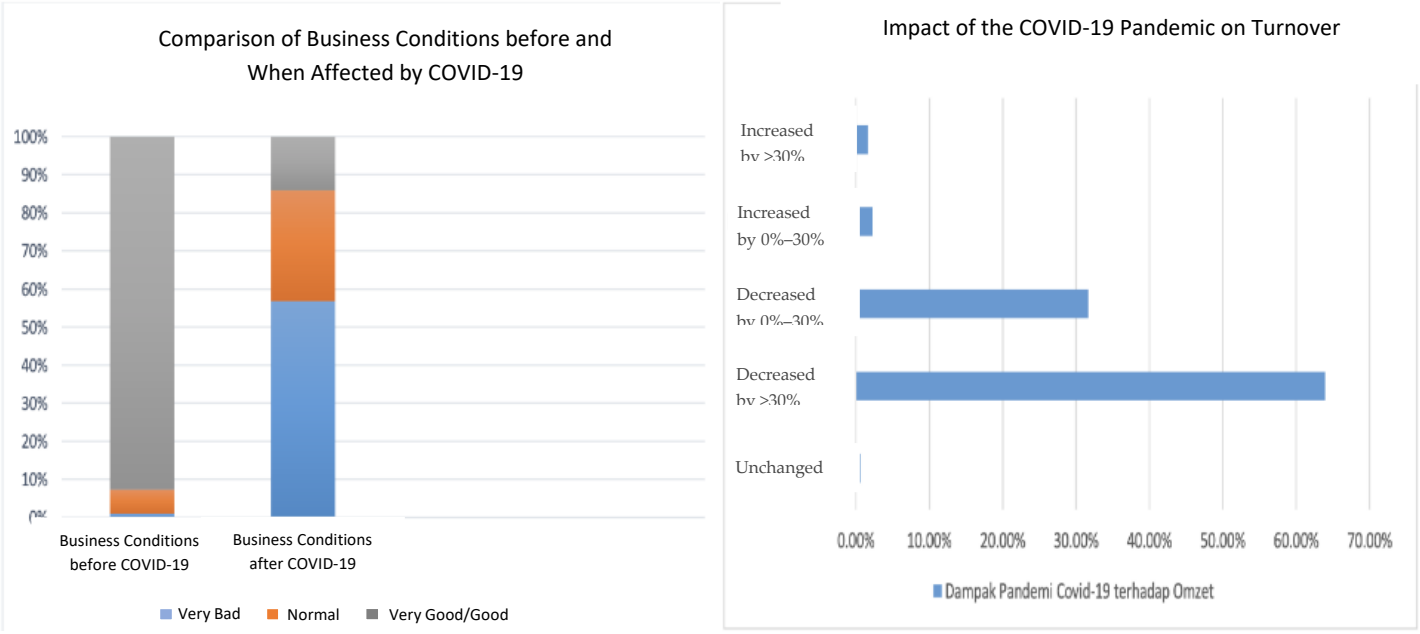
Figure 2.15: E-Commerce Enterprises by Total Revenue Value, Indonesia



Source: Indonesian Bureau of Statistics (2020).

The pandemic has had significant impacts on micro and SMEs in Indonesia, adversely impacting more than 50% of them. More than 60% of micro and SMEs experienced a decline in revenue by more than 30%, and another 30% experienced a decrease in income between 0% and 30% (Figure 2.16).

Figure 2.16: COVID-19 Impacts on Micro, Small, and Medium-Sized Enterprises in Indonesia

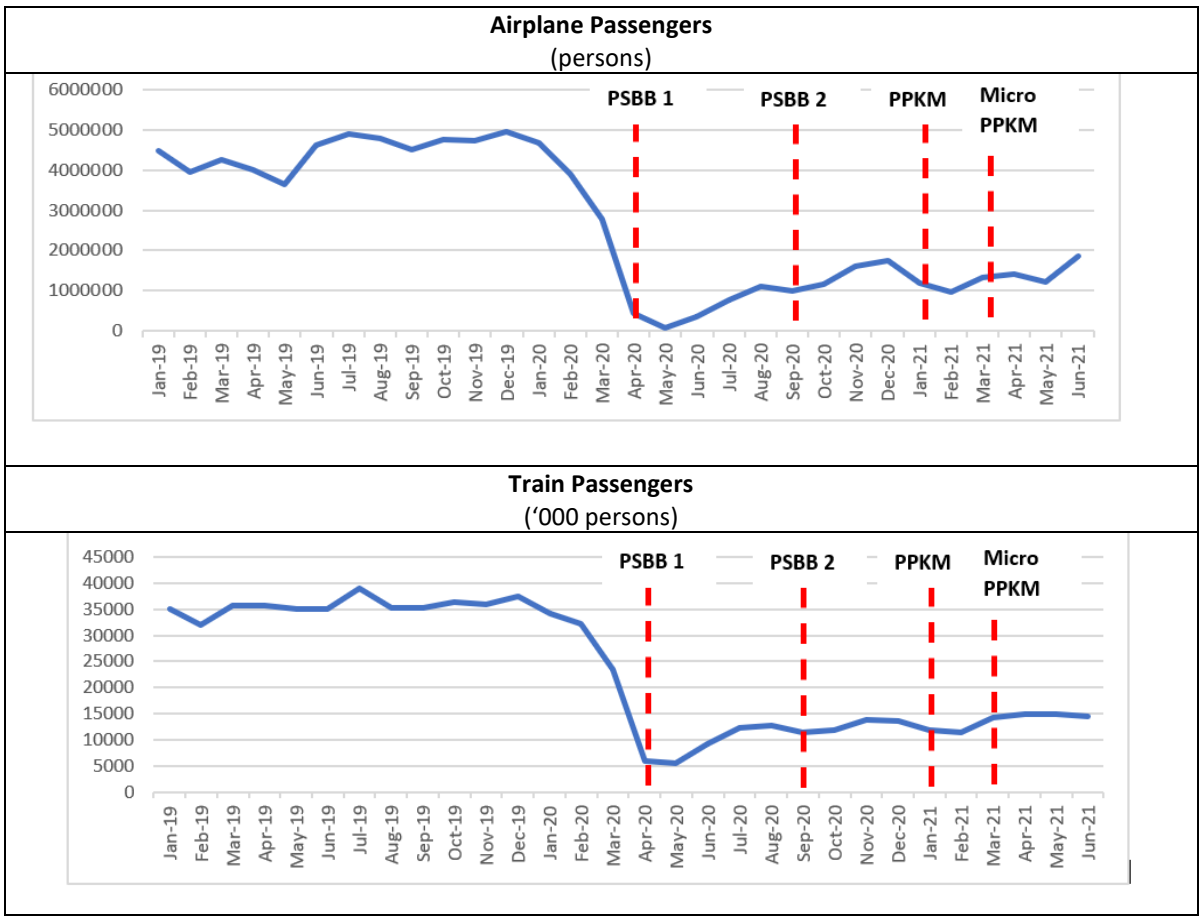


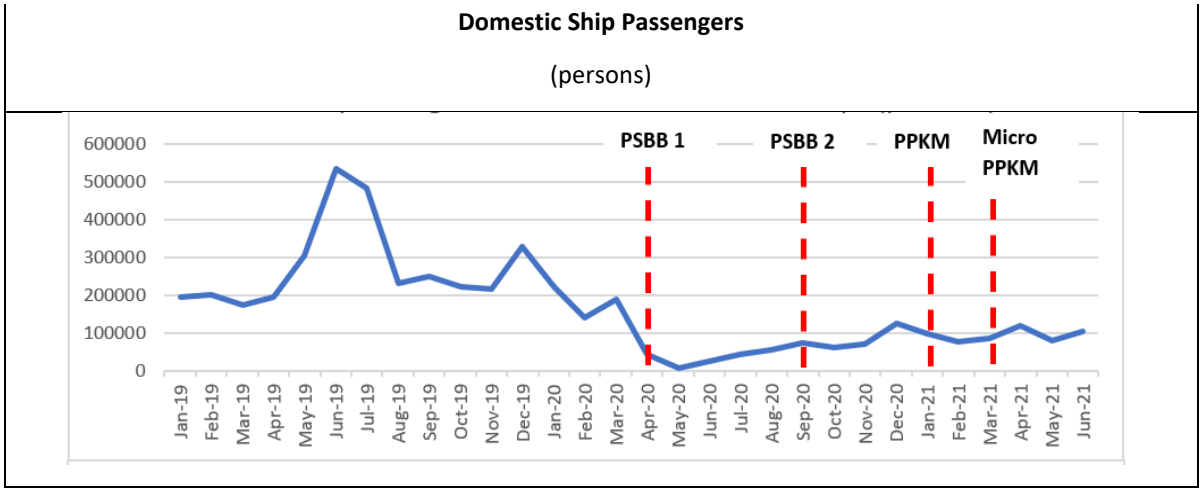
Source: Katadata Insight Center (2020).

2.5. Mobility of People

The pandemic has resulted in a drastic reduction in people's movement by land, sea, and air. People's movement via land decreased by some 85% from the *Pembatasan Sosial Berskala Besar* (PSBB, movement restriction) when it was announced in April 2020. People's movement by sea decreased by 70%, while that by air decreased by 98% (Figure 2.17). People's mobility increased after the first PSBB was lifted but did not return to its pre-pandemic levels due to the new COVID-19 variants.

Figure 2.17: Movement of People by Land, Sea, and Air Transport in Indonesia



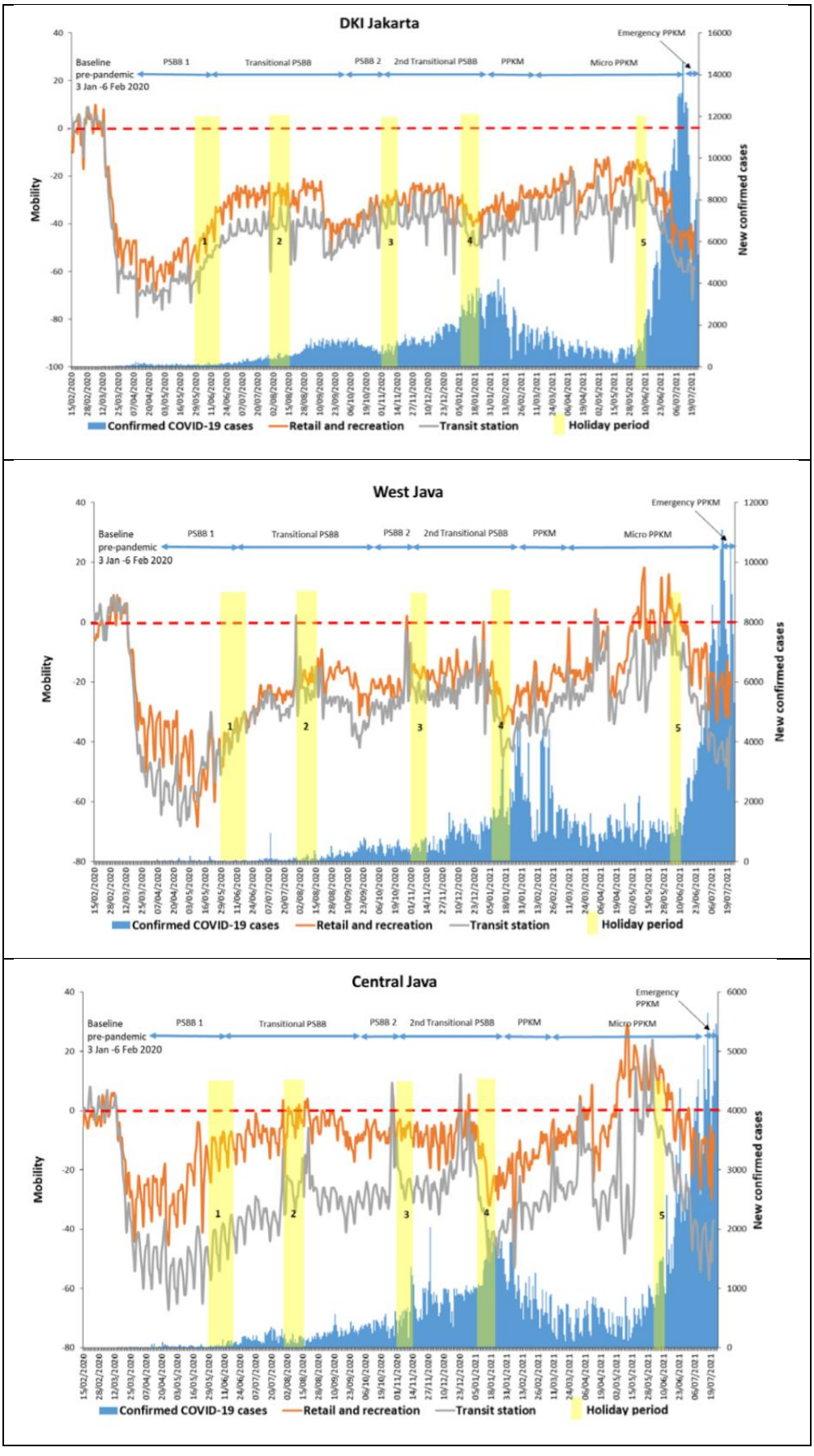


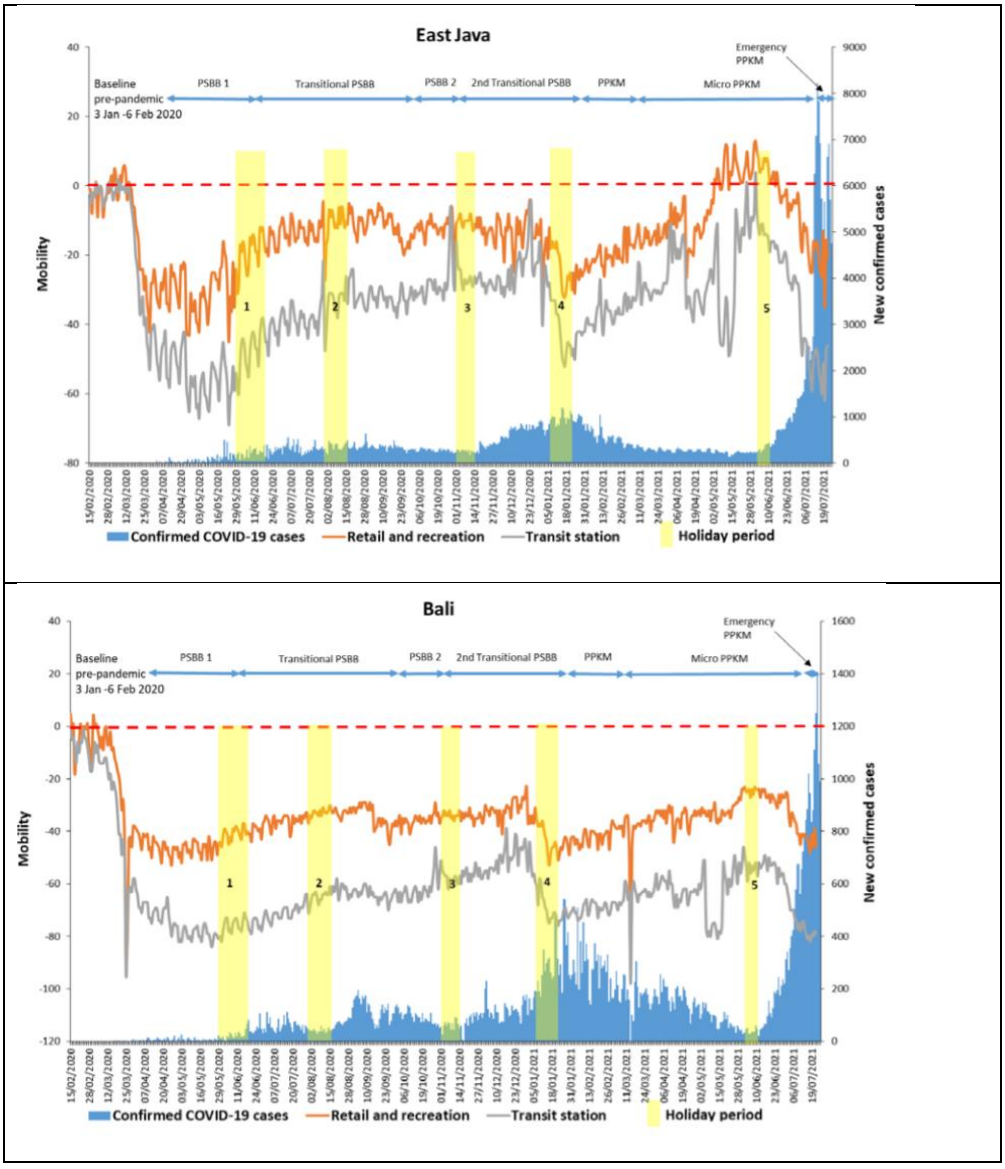
PPKM = *Pemberlakuan Pembatasan Kegiatan Masyarakat* (community activities restrictions enforcement), PSBB = *Pembatasan Sosial Berskala Besar* (movement restriction).
Source: Indonesian Bureau of Statistics, 'Transportasi' https://www.bps.go.id/subject/17/transportasi.html

According to a mobility analysis on the islands of Java and Bali – the islands with the largest numbers of COVID-19 cases in Indonesia in March 2020 – the mobility of people for business, recreation, and transit declined by around 40%–60% in all cities on both islands even before the first PSBB was announced in April 2020 (Figure 2.18). The PSBB then included large-scale community activity restrictions, including closures of schools, offices, public centres, and transport modes. In June 2020, the PSBB was changed to a transitional PSBB, during which community activities in public places, offices, industrial areas, and tourist attractions were allowed with strict implementation of health protocols, including mandatory mask use, physical distancing, and a 50% capacity limit.

Thus, until October 2020, there was an increase in retail, recreation activities, and transit. This also led to more confirmed cases of COVID-19 on Java, which, in turn, caused the re-enactment of a second PSBB until November 2020. The government implemented the *Pemberlakuan Pembatasan Kegiatan Masyarakat* (PPKM, community activity restrictions enforcement) in March 2021, which slowly increased community activity, leading to another surge in confirmed COVID-19 cases on Java in July 2021. Responding to the surge, the government announced an emergency PPKM.

Figure 2.18: Mobility Analysis in Java and Bali

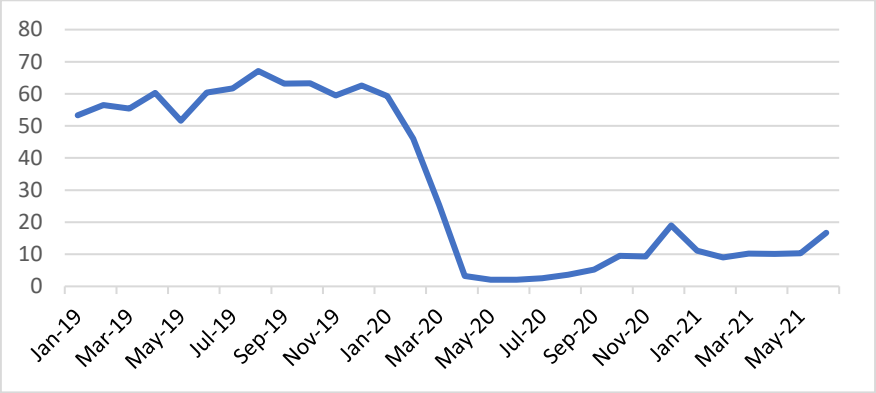




PPKM = *Pemberlakuan Pembatasan Kegiatan Masyarakat* (community activities restrictions enforcement), PSBB = *Pembatasan Sosial Berskala Besar* (movement restriction).
Note: Holiday periods comprise Eid al-Fitr 2020, Eid al-Adha 2020, Mawlid 2020, Christmas and New Year's 2021, and Eid al-Fitr 2021.
Source: WHO (2021a).

The most severely pandemic-affected sector has been tourism, which is because people have been deterred from going on vacation for fear of contracting COVID-19. Bali, the largest tourist destination in Indonesia, always had above a 50% hotel room occupancy rate prior the pandemic. However, since the pandemic, it has never exceeded 20% (Figure 2.19). The government has intervened by providing incentives and subsidies to the tourism industry in Bali and has encouraged people to work from Bali.

Figure 2.19: Hotel Room Occupancy Rate in Bali (%)



Source: Indonesian Bureau of Statistics, Pariwisata, https://bali.bps.go.id/subject/16/pariwisata.html#subjekViewTab3.html

2.6. Recommendations

Cooperation within ASEAN must be strengthened in the health sector, such as through a more equitable vaccine programme. In the economic and trade sector, AMS can increase incentives and subsidies in trade activities to increase the flow of goods and services. In the cargo and container sector, negotiations should be carried out with main-line operators to reduce freight rates and to facilitate trade. In the e-commerce sector, the government can provide subsidies to Indonesian micro and SMEs and create simpler regulations for them to export and to import. Optimising the use of data to help make efficient business decisions is also key. Regarding people's mobility, the government needs to ensure control of COVID-19 cases to make people feel safe to move. These measures will help every AMS recover, which will raise the flow of goods and services again.

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Chapter 3:

Malaysia

Suhaiza Zailani

3.1. Introduction

Examining the reliance of Malaysia's economy on the freight logistics, transport, and e-commerce sectors, it was certain that the COVID-19 pandemic would have significant impacts on individuals and organisations. This chapter investigates these impacts as well as the economic stimulus packages that were introduced to ensure the sustainability of business sectors.

3.2. COVID-19 in Malaysia

The first case of COVID-19 in Malaysia was reported on 25 January 2020, involving three Chinese nationals who had been at a conference in Singapore and then travelled to Malaysia (*New Straits Times*, 2020). This report was followed by the first Malaysian to test positive on 3 February 2020 (*Bernama*, 2020b). By the end of December 2020, Malaysia recorded 2,525 new cases, totalling 113,010 cases overall (Abdullah, 2020).

By mid-March 2020, the Government of Malaysia decided to close all borders and to institute a nationwide lockdown under which only essential services were allowed to operate. From this time, Malaysia's economy has undergone a downturn, with many losing their jobs and livelihoods. Many businesses began to close, as they were unable to sustain operations without any capital during the lockdown period. It has been reported that Malaysia was initially hit by two waves of COVID-19; under the first phase (25 January to 15 February 2020), no deaths were reported (Hashim et al., 2021). The second wave (from 27 February 2020) involved a large cluster in Sri Petaling, which registered a total of 34 deaths (*Malaysia Kini*, 2021).

On 16 March 2020, a movement control order (MCO) was announced by the Prime Minister following increased COVID-19 cases. Under the MCO, six main regulations were enforced: (i) prohibition of any mass gatherings, (ii) prohibition of Malaysians from going abroad, (iii) prohibition of movement of foreigners into Malaysia, (iv) closure of all schools, (v) closure of higher educational institutions and skills development centres, and (vi) closure of all government and private premises except for those involved in essential services. The first phase of the MCO was initially until 30 March 2020 but was extended several times until 12 May 2020. To strike the balance between public health concerns and economic needs, on 1 May 2020, the Prime Minister announced a conditional MCO, which allowed

most economic sectors to begin operations, subject to strict standard operating procedures. However, businesses and other recreational activities that involved mass gatherings were not allowed.

Following this, a recovery MCO was introduced due to a lower number of daily cases. It was supposed to take place from 10 June 2020 until the end of August 2020. During this phase, most activities and business operations were allowed but had to adhere to strict standard operating procedures, including maintaining a physical distance of 1 metre, wearing a mask in close public premises, and temperature monitoring before entering any premises. Personal details, such as names and contact numbers, were also recorded via MySejahtera, an app developed by the government to help authorities conduct contact tracing in the event of a new COVID-19 case.

During this period, many people opted to work from home. Many also turned to shopping online to avoid crowded supermarkets and shops. This brought new opportunities for businesses that had not previously had an online presence to set up on online platforms such as Shoppe, Lazada, or their own websites. Moreover, to prevent the spread of the disease, the Ministry of Health began enforcing health screening at all points of entry to the country. Malaysians returning from Wuhan were identified, screened, and isolated at designated quarantine stations. This also applied to Ministry of Health staff and airline crews.

3.3. Pre-Pandemic Sector Assessments

3.3.1. Freight Logistics

In this review, the focus is on freight carried via sea. Logistics is a vital industry in Malaysia, as it is trade-dependent, and its economy relies on large volumes of trade to be brought in, especially from Asia (Mordor Intelligence, 2020). Thus, Malaysia's logistics industry needs to increase its workforce by 41% to 554,000 workers by 2022 (MATRADE, 2020).

In Malaysia, there are 11 main ports: Bintulu, Johor, Klang, Kuantan, Kuching, Miri, Penang, Rajang, Sabah, Tanjung Bruas, and Tanjung Pelepas. Low docking costs add to the strategic geographical location, making Malaysia a good hub for freight logistics. Because Malaysia is only segregated into two major parts (i.e. Peninsular Malaysia and East Malaysia) and does not have topological challenges like other South-East Asian players, freight logistics are easier and more cost-effective there. China is Malaysia's closest trading partner; the country's exports to China contribute 14.2% to total exports (Government of Malaysia, Prime Minister's Office, 2020a).

3.3.2. Public Transport

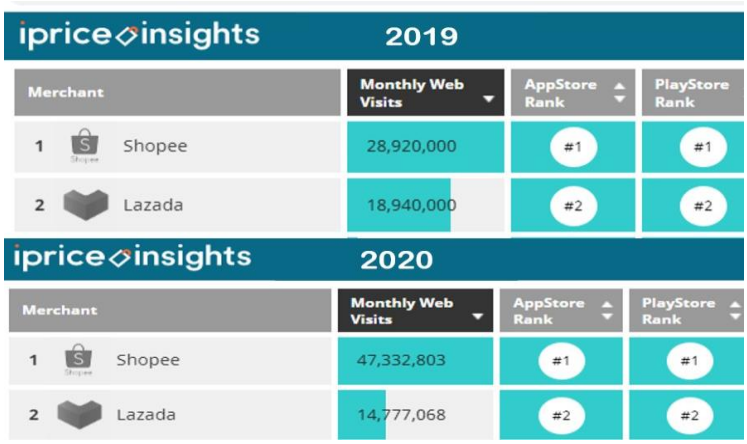
The pandemic has had a significant impact on livelihoods of communities in Asia – including Malaysia – that have had to live without public transport methods (UNCRD, 2020). Bus, flight, rail, and ferry services were first restricted in China on 23 January 2020, and this move was followed by similar moves

in other countries, including Malaysia (UNCRD, 2020). With China being the second contributor, after Singapore, towards Malaysia's tourism industry, the pandemic also crippled the tourism industry of Malaysia due to the lack of transport (Government of Malaysia, Prime Minister's Office, 2020a).

3.3.3. E-Commerce

Some of the most popular e-business sites in Malaysia are Lazada, Mudah, Shopee, and Zalora. Shopee and Lazada were the most visited online platforms in 2019 and 2020. Monthly web visits exploded for Shopee from 2019 to 2020 and increased marginally for Lazada (Figure 3.1).

Figure 3.1: Top E-Commerce Platforms in Malaysia, 2019–2020



Source: iPrice, The Map of E-Commerce in Malaysia, https://iprice.my/insights/mapofecommerce/en/

As of January 2019, Malaysia boasted 16.53 million online shoppers, 50% of the population. This was due to the internet and mobile connectivity as well as a push by the government (Government of the US, ITA, 2020). Malaysians prefer to shop online because of the ease of doing so compared to going to a physical store. In addition, the frequent deals, free shipping, promotions, and reviews further encourage buyers to choose online purchasing. The preferred mode of payment is through online money transfer, and more than 95% of Malaysians were satisfied with their online shopping experiences (ASEAN Up, 2019). As of January 2019, 75% of the population had purchased a product or service online (Government of the US, ITA, 2020). The top three most purchased products were fashion and beauty, electronic, and sport and hobby items (ASEAN Up, 2019).

3.3. Pandemic Sector Assessments

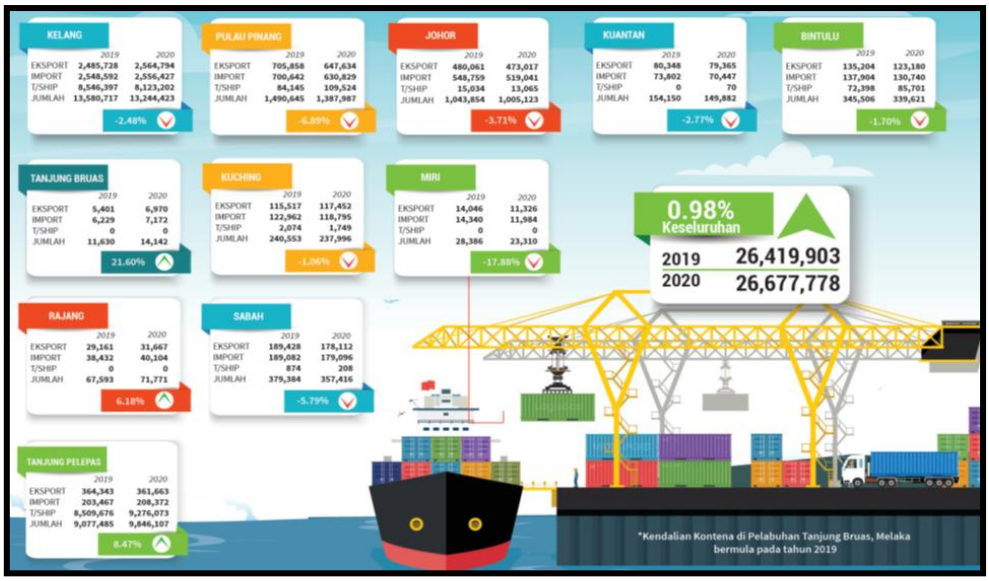
3.3.1. Freight Logistics

Due to the pandemic and movement restrictions, many containers have been left at ports much longer than usual. Moreover, a workforce shortage, disrupted shipping schedules, and decreased shipping

capacity have severely affected the turnaround of freight logistics (Leng, 2021). Once goods are listed as non-essential, they are barred from delivery, incurring demurrage charges and adding to the final delivery cost of the goods (Wing et al., 2020).

In 2020, many ports saw a decrease in the number of containers being imported and exported (Figure 3.2). Due to the MCO, many containers and freight were not allowed to move, especially those that carried non-essential goods. The goods that were imported were mostly face masks, supplements, and canned goods. It has been noted that shipping companies suffered an average of RM15 million to RM30 million losses in revenue during the MCO (Menhat et al., 2021).

Figure 3.2: Containers in Malaysia's Ports, 2020 (number)

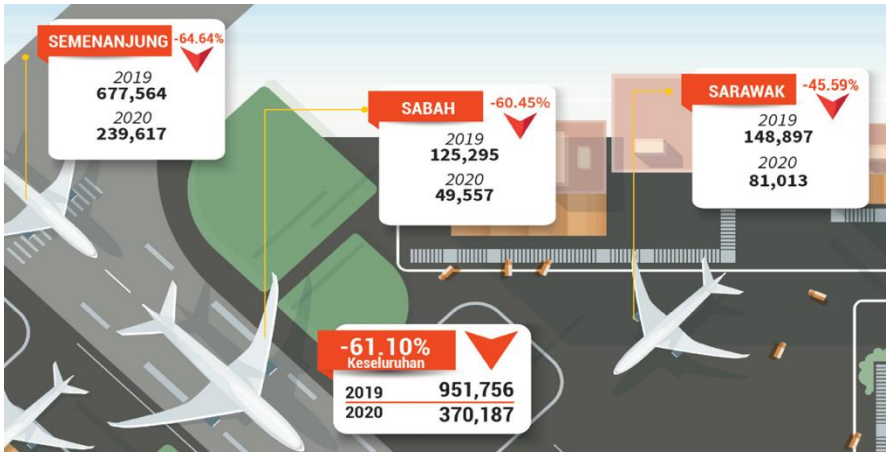


Source: Ministry of Transport Malaysia.

3.4.2. Transport

On the first day of the MCO on 18 March 2020, Malaysia Airlines reported that it had cancelled 4,000 flights. Many other countries were also instituting lockdowns, leading to a decrease in the supply of international flights as well (Yusof, 2020). Malaysia's major airlines – AirAsia, Malaysia Airlines, and Malindo Air – initiated salary cuts and unpaid leave to its employees (Foo et al., 2020). The number of aircraft that was handled in Peninsular Malaysia dropped to 239,617 in 2020 as compared to 677,567 in 2019. The overall number of aircraft handled in all of Malaysia in 2020 was 370,187, a decrease of 61.10% from the previous year.

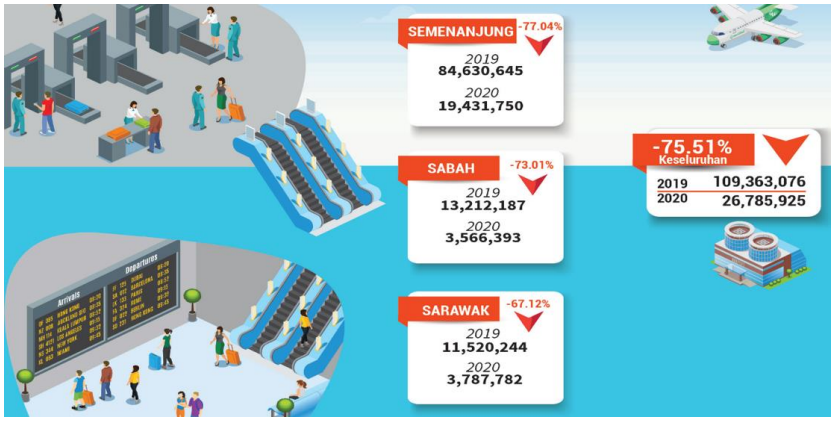
Figure 3.3: Aircraft in Malaysia, 2020 (number)



Source: Ministry of Transport Malaysia.

As for the number of passengers in Malaysia, only 26,785,925 passengers were handled in 2020 compared to a total of 109,363,076 passengers in 2019 (Figure 3.4). The reduction of 75.51% was caused by the MCO.

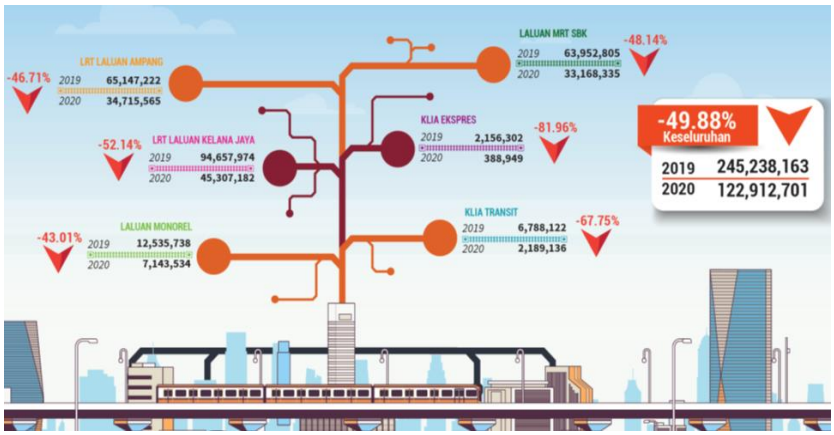
Figure 3.4: Airline Passengers in Malaysia (number)



Source: Ministry of Transport Malaysia.

In April 2020, the Express Rail Link suspended its services due to low ridership, as all flights had been halted (*Bernama*, 2020). Indeed, Figure 3.5 shows that due to the pandemic, there was a 50% reduction in the ridership of rail transport nationwide. In 2019, there were 245,238,163 rides made, while in 2020, there were only 122,912,701, a reduction of 49.88% (Government of Malaysia, MOT, 2021). Amongst all rail lines, the KLIA Ekspres and KLIA Transit were affected the most. The KLIA Ekspres – between the airport and city centre – had ridership of 2,156,302 in 2019, falling to 388,949 or 81.96% of its past total in 2020 (Government of Malaysia, MOT, 2021). As for KLIA Transit, in 2020, the total number of rides totalled 2,189,136, falling 67.78% from 2019's 6,788,122 (Government of Malaysia, MOT, 2021) (Figure 3.5). This rail service is served by six stations between KLIA2 and KL Sentral. Therefore, people who work on or near these routes still used the KLIA Transit.

Figure 3.5: Rail Passengers, 2020 (number)



Source: Ministry of Transport Malaysia.

Keretapi Tanah Melayu (KTM) is the first and oldest train service in Malaysia, providing intercity and interstate transit. In 2019, the ridership on KTM was 3,746,000; in 2020, this figure dropped to 1,041,000. KTM Commuter Services for intercity connectivity saw a drop of 61.2% in ridership in 2020 from 2019, while the KTM Electric Train Service – the interstate train service – recorded a 2,255,000 drop in ridership from 2019 (Figure 3.6).

Figure 3.6: Passengers on KTM Trains (number)

JADUAL 2.1: BILANGAN PENUMPANG, TRAFIK BARANGAN DAN KONTENA YANG DIKENDALIKAN OLEH KERETAPI TANAH MELAYU, 2011-2020
Table 2.1: Number of Passenger, Freight Traffic and Container by Malayan Railways Limited, 2011-2020

TAHUN *Year*	PERKHIDMATAN KERETAPI *Rail Services*					KTM KOMUTER *KTM Commuter*		PERKHIDMATAN KERETAPI ELEKTRIK *Electric Train Service (ETS)*	
	PENUMPANG *Passenger*		BARANGAN *Freight*		KONTENA *Container*	PENUMPANG *Passenger*		PENUMPANG *Passenger*	
	BIL *No* ('000)	KM PENUMPANG *Passenger Km* ('000,000)	TONNE *Tonnes* ('000)	TONNE KM *Tonnes Km* ('000,000)	TEU *Teus*	BIL *No* ('000)	KM PENUMPANG *Passenger Km* ('000,000)	BIL *No* ('000)	KM PENUMPANG *Passenger Km* ('000,000)
2011	3,685	1,426	5,914	1,535	313,113	35,599	821	912	227
2012	3,056	1,216	6,096	1,564	331,871	34,847	735	1,180	276
2013	2,703	1,081	6,622	1,760	343,395	43,942	961	1,563	371
2014	2,223	618	7,136	1,741	318,033	46,957	1,045	1,692	323
2015	2,015	428	6,205	1,474	283,063	49,690	1,116	2,060	441
2016	2,791	272	5,991	1,349	331,901	41,469	1,110	3,565	966
2017	3,092	180	5,617	1,234	331,059	37,274	1,100	4,148	1,189
2018	3,527	178	5,944	1,315	351,222	32,078	1,012	3,933	1,127
2019	3,746	183	5,973	1,142	243,468	30,404	905	3,902	1,112
2020	1,041	72	4,551	818	198,857	11,796	364	1,647	415

SUMBER: KERETAPI TANAH MELAYU BERHAD (KTMB)
Source: Malayan Railways Limited

Source: Ministry of Transport Malaysia.

As of November 2020, Rapid KL terminated 13 bus routes in the Klang Valley in a bid to cut costs, citing low ridership (*Free Malaysia Today*, 2020b).

3.4.3. E-Commerce

In 2019, the income of e-commerce rose 22.8% to RM675.4 billion from 2017. In 2020, the annual rate was 32.7%, marking an income of RM896.4 billion (Department of Statistics Malaysia, 2021). Prior to the pandemic, there were no strong reasons for many brick-and-mortar businesses to go digital. Many were happy with how their businesses ran and saw very little – if no – reason to have an online presence or to join an e-commerce platform. All this changed when the pandemic hit in 2020; the trend towards e-commerce saw a spike of $1.21 billion from pre-pandemic times (Figure 3.7).

Figure 3.7: E-Commerce Income, Malaysia, 2017–2020

Source: Department of Statistics Malaysia (2021).

Businesses that focussed on babies, toys, stationary, hair, weddings, music, and clothes remained closed in Malaysia until September 2021. During the MCO, only 38.1% of establishments were allowed to operate; these percentages grew as the phases changed to the conditional MCO (76.3%) and recovery MCO (92.4%) (Department of Statistics Malaysia, 2021) (Figure 3.8). To stay profitable, many used social media to promote various goods or services online. For example, hairdressers sold shampoo, hair colour, and tools online since they could not provide services. Some also sold vouchers for their services that could be redeemed once the MCO was lifted.

Businesses also made use of social media platforms. YouTube, WhatsApp, Facebook, and Instagram are the top four social media channels that help determine online purchasing decisions. They assist decision making by 93%, 91%, 91%, and 70%, respectively (Government of the US, ITA, 2020).

In 2018, e-commerce sales globally totalled almost $26 trillion, in which the US was the largest market (UNCTAD, 2021). In Asia, higher-income countries have greater online shopping habits than lower-income countries, possibly due to lower broadband penetration rates and less disposable income in lower-income countries (UNCTAD, 2021). One survey reported in OECD (2020) that the demand in e-commerce spiked 60% in April and May 2020. Indeed, in Malaysia, the purchase of food and groceries

online increased during the pandemic, leading to its e-commerce market to spike to $4.46 billion in 2020 compared to $3.25 billion in 2019 (Figure 3.8).

Figure 3.8: E-Commerce Revenue in Malaysia ($ billion)

Source: Mordor Intelligence (2020).

3.5. Implications from the Pandemic

3.5.1. Freight Transport

China has been Malaysia's primary trading partner for 12 consecutive years, and most foreign investment is sourced from there (MATRADE, 2020). This exposes Malaysia to the supply and demand of the Chinese economy, so the pandemic shock has been severe (Cheng, 2020). The original outbreak in China created a worldwide supply and demand shock that had global effects, even before the partial lockdown measures taken by Malaysia. As Chinese factories shut down, manufacturers globally faced production cuts, and commodity exporters braved lower prices (Cheng, 2020).

3.5.2. Public Transport

With the travel restrictions on both inbound and outbound travel, huge financial losses were incurred in the transport sector. Apart from that, the need to observe social distancing and hygiene further reduced the ridership of public transport – perceived as riskier than private transport. The virus can spread through various surfaces such as seats, doors, handrails, and ticket machines as well as by being near and around other commuters and employees who may have COVID-19 symptoms (UNCRD, 2020). E-hailing apps, which have grown during the pandemic, book transport electronically. Although these cars can usually take up to four passengers a time, only one passenger was allowed during the MCOs.

3.5.3. E-Commerce

E-commerce platforms boast thousands of products from Malaysia and overseas. When all non-essential shops and malls around the country were not allowed to operate under the MCO, the population turned to online shopping to obtain goods, especially since the government declared e-commerce to be an essential service and thus allowed to operate. Items that were purchased varied.

Despite the pandemic, Malaysia's external trade performed well, especially in the second quarter of 2020 (Figure 3.9). In December 2020, Malaysia recorded the highest monthly value, demonstrating that the opening of economic sectors gradually made a positive impact on external trade (MATRADE, 2020). Although overall for 2020, total trade recorded a contraction of –3.6% at RM1.777 trillion from 2019 and imports totalled RM796.19 billion in 2020, it is hoped that the economy will recover in the coming years.

Figure 3.9: Malaysia's Total Trade, 2020

Source: Department of Statistics Malaysia (2021).

3.6. Policy Responses

3.6.1. Freight Logistics

Port operators were exempted from import duty and sales tax on machinery and equipment bought for port operations, regardless if the machines were bought in Malaysia or overseas. This applies from April 2020 to March 2023. In addition, a double deduction on pre-commencement expenses for regional office setup was given to international shipping companies that establish their businesses in Malaysia no later than December 2021.

3.6.2. Transport

To further reduce costs to affected sectors, air travel and domestic ground transport were granted exemptions from the Human Resources Development Fund levy for 6 months, from April 2020 to September 2020. To assist with reducing costs for tenants at the airport, Malaysia Airports Holdings

Berhad agreed to give a rebate on rent at the airport and landing areas. Aircraft parking charges were also reduced. At the same time, a 15% electricity discount on monthly bills was provided. As an initiative to stimulate domestic tourism, travel discount vouchers up to RM100 were offered, which included collaborations with air transport providers. Tour bus operators and taxis have been allocated a one-off cash incentive of RM600 for those have been active and registered since December 2019.

3.6.3. E-Commerce

To encourage businesses to invest in e-commerce, incentives were provided for their equipment that qualified under capital expenditure, including equipment for ICT from March 2020 to December 2020. Further enhancing this is Bank Simpanan's SME Automation and Digitalisation Facility, which helps SMEs purchase ICT-related tools to upgrade their businesses. The duration of the finance facility is 10 years, and RM3 million is offered to each SME. For SMEs concerned with food production and agriculture, the government has also set aside RM40 billion to assist them in marketing their products on e-commerce platforms. Further, the eUsahawan Programme is facilitating Pusat Internet Desa into becoming an e-commerce centre to enable SMEs to sell to a larger group of buyers.

To assist employers in retaining their workforce, the government has introduced a wage subsidy programme, whereby RM600 per month will be provided to employees who have faced a pay cut of more than 50% since January 2020. This applies to workers who earn less than RM4,000 per month. E-hailing drivers were also given RM500.

As the e-commerce market began grow when MCO regulations were put into place, logistics players helped advance the e-commerce market in Malaysia. GD Express, J&T Express Malaysia, and Pos Malaysia have assisted in delivering the high volume of e-commerce goods. Moreover, e-commerce marketplaces have used the pandemic as a business opportunity and begun to offer logistics, apart from operating their e-commerce platforms. One such example is Lazada's logistics effort, Lazada eLogistics.

3.7. Strengthening the Economy

The government introduced various economic stimulus measures to ease the burden of individuals and businesses affected by the pandemic. In general, the stimulus packages serve three main purposes: to protect the nation, to support businesses, and to strengthen the economy. The first aim is designed to reduce the burden of the nation affected by the pandemic through one-off cash infusions. Other efforts include providing special monthly allowances to motivate frontline workers as well as towards various agencies enforcing the MCOs. There is also a moratorium for 6-month periods on specific loans. The second aim, supporting businesses, includes financing facilities for all SMEs, a moratorium on loan repayment, and other grants to encourage business sustainability. Several efforts are directly focussed on the fishery sector, including a RM40 million grant to enable fishers and other agriculture businesses to sell their products directly to the consumer, RM1 billion towards the Food Security Fund to increase domestic production, and RM100,000–RM200,000 for the development of

agro-based products. These initiatives not only to ensure the survival of fishers but also help achieve food security in Malaysia.

Various initiatives also concentrate on the tourism sector, including microcredit facilities with a 4% interest rate, with delayed instalment repayments, and 15% discounts for electricity bills. In addition, there is a RM500 million provision for discount travel vouchers, tourism encouragement through matching grants, and tourism promotions. The government has also introduced some tax-related initiatives; for instance, individuals and businesses can postpone their income tax payments. Tax deductions on the purchase of personal protective equipment will ensure staff safety. To encourage international shipping, companies that established and operate businesses in Malaysia have also been granted a double tax deduction.

Under the Special Relief Facility of the Central Bank of Malaysia, TEKUN Nasional and Bank Simpanan Nasional initiated a microcredit scheme for all business sectors, including taxi and bus operators. The interest rate and loan eligibility were relaxed to encourage more businesses to apply. In addition, the Employees' Provident Fund has allowed employers to defer, restructure, and reschedule their contributions beginning in April 2020. Banking institutions have been encouraged to offer a 6-month moratorium for credit card balances into term loans and corporate loan restructuring to enable SMEs to continue their businesses and to avoid workers being retrenched.

Under the third objective, the government has created measures to ensure that the economy continues to grow despite the pandemic. Related efforts include the continuation of public transport projects such as the East Coast Rail Link, Mass Rapid Transit Line 2, and the National Fiberisation and Connectivity Plan.

Another stimulus package was announced on 6 April 2020 to further support SMEs. Property owners could waive or lower rental fees for 3 months after the MCO. In return, these owners are given tax deductions that are the same as the waived rental fees (Deloitte, 2020). This is hoped to give SMEs some relief from their monthly commitments while easing cash flow. Companies, such as MARA, PETRONAS, PLUS Expressways Berhad, and UDA Holdings, together with various state-owned enterprises, also agreed to reduce or to not charge rent (Dayangku, 2020). The wage subsidy that was introduced in the previous stimulus package was also increased and expanded to RM13.8 billion to enable businesses to retain their workers for at least 6 months. For companies who have 76–200 workers, RM800 in wage relief was given per employee, while those who have 75 workers or below received RM1,200 per worker. Eligible micro and SMEs received grants of RM3,000. At the same time, the Inland Revenue Board of Malaysia extended the income tax return submission for 2019 by 2 months.

In June 2020, the Prime Minister introduced yet another stimulus package, *Pelan Jana Semula Ekonomi Negara* (National Economic Recovery Plan). Three thrusts were identified: empowering people, propelling businesses, and stimulating the economy. The wage subsidy programme was further enhanced, and the period was lengthened to 3 months. All employers who are eligible received RM600 for each worker. To encourage more people to work from home, both employers and workers were given incentives. Companies received additional tax deductions, and individuals received income tax relief up to RM5,000. Under the Employment Injury Scheme, coverage for accidents while working from home is now included. To assist with low public transport use and to increase mobility, the government introduced the MY30 Public Transport Pass, an unlimited travel pass for RM30 per month on all rail services.

The second thrust is aimed at encouraging micro and SMEs to increase their target market by adopting e-commerce. Eligible businesses received training, seller subsidies, and sales support from the Malaysia Digital Economy Corporation. In addition, e-commerce platforms are working with the government to promote local online sellers. To help lessen the burden of the shift towards digitalisation, SMEs and mid-tier companies have been offered SME Digitalisation Matching Grants, SME Technology Transformation Grants, and Smart Automation Grants. To ensure public health and safety, tax relief can be claimed for COVID-19 screening tests, personal protective equipment, and thermal scanners for businesses.

3.8. Policy Review

To encourage more ridership on public transport, as mentioned above, the MY30 Public Transit Pass can be used with unlimited access by riders in Klang Valley across all bus and rail services. However, this contradicts the sales tax exemption for car purchases under the same stimulus package. No doubt that this was to stimulate the automotive sector, but it does not help increase public transport ridership. The *National Transport Policy, 2019–2030,* also aims to have more than 40% public transport usage by 2030 (Aziz, 2019; Intelligent Transport, 2019). At present, only 20% of Malaysians use public transport. Looking into ways to encourage public transport while ensuring health is one area that the government should investigate.

This may also be an ideal time to carry out upgrading and maintenance works on public transport. The government and public transport providers need to ensure that there is better connectivity between different types of transport and to ensure that safety, comfort, and social distancing can still be practised post-pandemic. Punctuality should also be improved to increase confidence and eventually ridership. Although many Malaysians own cars or motorcycles, public transport remains relevant to students, the elderly, foreign workers, and those wanting to avoid jammed roads.

The constant change in procedures and announcements has also created confusion. When Rapid KL announced returning to usual ridership capacity on 9 June 2020, this decision was chided by Senior Minister (Security Cluster) Datuk Seri Ismail Sabri Yaakob (Daim, 2020). However, 2 days later, the same minister announced that all public transport can resume at full capacity, although with safety measures in place (*Free Malaysia Today*, 2020b). The lack of coordination between government agencies and service providers creates not only lack of confidence but increases fear amongst travellers.

As for air transport, the Malaysian Aviation Commission predicted that 2021 will see passenger traffic rebound. It predicted a 94.2% to 100.3% year-on-year rebound, which translates to 51.7 million to 53.3 million passengers. The forecast is heavily dependent on external factors, however, especially COVID-19 status, public health measures, and industry performance (Kang, 2021).

With increased demand of e-commerce comes another challenge, as customers begin to face delays in receiving their goods. The disruption in China caused e-commerce in Malaysia to be affected, and many e-commerce platforms sent out notices about delays in receiving orders from China (Hasanat et al., 2020). MCO restrictions heightened the delay and doubled the delivery time, as many merchants were forced to look for alternative logistics services. However, maritime freight is slowly picking up

again. Containers that have been stuck at port are being cleared to make room for new cargo. As more and more people transact online for their goods from all over the world, the maritime sector will continue to grow.

3.9. Way Forwards

Although the e-commerce sector is relatively strong and is growing, there is still room for improvement. Latest trends, tools, cybersecurity, and logistics are some of the areas that can be investigated to enhance it. The future of public transport remains unclear; yet technology can boost rider trust and safety. It is expected that there will be an increase in touchless technology to speed up boarding processes, for example. Recently, the Istanbul Airport in Turkey introduced the use of antiviral and antimicrobial uniforms (Kang, 2021). KLIA has implemented the use of ultraviolet disinfection systems in its restrooms to stop the spread of airborne infectious diseases (*Bernama,* 2020). The increased use of open data to help public transport users plan their journey and give feedback would be a good way to enhance the public transport experience and usage as well as services.

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Chapter 4:

Singapore

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4.1. Introduction

Due to its strategic location and its historical role as a British colonial entrepot, Singapore has – over its relatively short history – emerged as one of the busiest trade and business hubs in the world. This is despite its relatively small population size of 5.7 million and its limited land area of 728 square kilometres. Singapore has the second-largest container port in the world (Lloyd's List, 2020). It also has the second-busiest airport in the world (*The Business Times*, 2021). Lastly, its financial centre is the fifth-most competitive in the world (Wardle and Mainelli, 2021).

Singapore's role as a hub in global flows of trade, capital, and people has also made it vulnerable to the disruptions that the COVID-19 pandemic has brought forth. This chapter discusses the impacts of COVID-19 on Singapore's economy and connectivity as well as the policy responses introduced to address the pandemic.

4.2. COVID-19 in Singapore

COVID-19 severely impacted Singapore's economy and connectivity, with the economy shrinking by –5.8% in 2020 (Phua, 2021). Changi Airport saw an 82.8% drop in passenger traffic, falling from 68.3 million in 2019 to 11.8 million in 2020, and a 23.3% decline in air freight, from 20 million tonnes in 2019 to 15.4 million tonnes in 2020 (Ng, 2021b). From a public health perspective, the pandemic has, at time of writing, resulted in more than 87,000 infections and 78 deaths in the country.

In response to these economic and public health impacts, the Government of Singapore implemented a wide range of policy initiatives to support its economy as well as to minimise further spread of COVID-19. This began in January 2020, when the initial entry of COVID-19 into Singapore prompted it to impose border restrictions on inbound travellers. The subsequent deterioration of the COVID-19 situation across the world eventually resulted in a complete closure of its borders.

At the heart of Singapore's policy response is a set of five budgets that were progressively rolled out over 2020 and 2021, which totalled more than S$100 billion, approximately half of which was drawn from Singapore's reserves. A substantial amount was devoted to the Jobs Support Scheme (JSS), which provided varying levels of wage support to employers in accordance with the pandemic's impact on their respective industries. The aim of the JSS was to encourage employers to retain their employees and hence to prevent retrenchment.

In April and May 2020, the JSS provided wage support for 75% of gross monthly salaries (capped at the first S$4,600) paid to all resident employees across all industries. Levels of wage support would subsequently be adjusted as the economy recovered, although these adjustments were not equally applied across industries. For instance, badly hit industries – such as air transport – continued to receive high levels of wage support, while industries that experienced a stronger rebound – such as finance or technology – were provided with lower levels of wage support.

JSS wage support levels were also tweaked whenever Singapore needed to implement restrictions on socio-economic activity as COVID-19 cases surged (Table 4.1). For instance, levels were raised for industries such as food and beverage and retail when Singapore tightened its rules on social gatherings in September 2021 due to a sudden rise in infections. This support was provided in anticipation of lower footfall at shopping malls that arose from the government's announcement that social gatherings were restricted to no more than two persons from 27 September to 23 October 2020.

Table 4.1: Jobs Support Scheme Wage Support Levels, 2020 (%)

	16 May–11 July	12–21 July	22 July–18 August	19–31 August	27 September–24 October
Food and Beverage Gyms and Fitness Studios Performing Arts and Arts Education	50	10	60	10	25
Retail Cinemas Museums, Art Galleries, Historical Sites Family Entertainment Tourism	30	10	40	10	25

Source: Inland Revenue Authority of Singapore, Jobs Support Scheme, https://www.iras.gov.sg/irashome/schemes/businesses/jobs-support-scheme--JSS-/

The government also provided a range of financial support and incentives to businesses and households. These included cash pay-outs to households, rental waivers, bridging loans and tax rebates for businesses, as well as grants and funding support for the retraining and reskilling of workers. Lastly, Singapore implemented a wide range of public health measures that sought to reduce the further spread of COVID-19 (Woo, 2020a; 2020b). While these public health measures are less relevant to this report, they nonetheless worked to minimise further disruptions to Singapore's economy and connectivity.

4.3. Connectivity

Given the lockdowns that were instituted in countries across the world as well as the Government of Singapore's efforts to reduce the risk of more COVID-19-infected persons entering the country, the impacts of the pandemic were especially significant for Singapore's connectivity and cross-border movement of people.

Singapore's air transport and air passenger volume were significantly affected by the travel restrictions that were implemented by its government as well as by other countries across the world. As global travel slowed down, the volume of air passengers who were arriving to or departing from Singapore fell as well (Table 4.2).

Table 4.2: Airline Passengers in Singapore, 2020 (number)

	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Jan–Jul 2019	Jan–Jul 2020
Arrivals	3,000,922	1,687,083	828,317	5,776	3,976	13,996	34,261	19,615,520	5,574,331
Departures	2,893,053	1,718,033	791,383	17,340	20,400	34,190	51,415	19,115,494	5,525,814

Source: Department of Statistics Singapore, Civil Aircraft Arrivals and Departures, Passengers, Air Cargo Tonnage, Direct and Transhipment Tonnage and Mail – Changi Airport, https://tablebuilder.singstat.gov.sg/table/TS/M650601 (accessed 20 March 2022).

Singapore experienced a drastic decline in air passenger volume at the onset of the pandemic. In January 2020, the number of air passenger arrivals was slightly more than 3 million, while that of departures stood at 2,893,053 (Table 4.3). The onset of the pandemic halved these numbers in February 2020 and again in March 2020. Air passenger volumes fell to 3,976 arrivals and 20,400 departures in May 2020 before experiencing a slight and gradual rebound.

As Singapore shares a land border only with Malaysia, the bulk of its movement of people across this border is composed of Malaysian nationals who enter Singapore either for work or leisure. As Table 4.3 shows, arrivals from Malaysia fell from 90,720 in January 2020 to 40,829 in February 2020. This decline would reach its trough in April 2020, when arrivals from Malaysia fell to 96. While arrivals from Malaysia saw a rebound from May 2020 onwards, a return to pre-pandemic levels remains far from certain. The number of arrivals from Malaysia stood at 554 in August 2021.

Table 4.3: Airline Arrivals to Singapore from Malaysia

Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020
90,720	40,829	14,887	96	157	464	626

Source: Department of Statistics Singapore, https://www.singstat.gov.sg/

Given the ongoing travel restrictions in Singapore and also in other countries across the world, Singapore's air passenger volumes still remain far from pre-pandemic levels. According to the data from Singapore Department of Statistics,[6] the number of air passenger arrivals to Singapore in August 2021 stood at 98,300, while the number of departures in the same month was 111,014. As comparison, air passenger arrivals to Singapore in August 2019 were 2,926,617, while air passenger departures were 2,911,530.

[6] Department of Statistics Singapore, https://www.singstat.gov.sg/

This decline in air travel was particularly deleterious to Singapore's position as an aviation hub. The onset of the pandemic prompted Changi Airport to close two of its terminals, with the airport handling 1.5% of its usual passenger volume; Changi Airport also fell from being the 7th busiest airport in the world to being the 58th (Chua, 2020). Changi Airport Group , which manages the airport, also saw its operating profit fall by 6% from 2019 to 2020 (Chua, 2020).

Despite being the second-busiest port in the world, Singapore does not receive many sea passengers. Rather, most inbound travellers enter Singapore through its airport. As a consequence, most of Singapore's sea passenger traffic arises from cruise ships. The number of calls fell from 414 in 2019 to 143 in 2020 (Table 4.4). Passenger throughput similarly fell from 1,818,351 in 2019 to 409,564 in 2020. This drastic decline was largely due to a broader fall in tourism, exacerbated by several incidents of COVID-19 infection clusters on cruise ships, with the most prominent being the Diamond Princess in Japan.

Table 4.4: Cruise Ship and Passenger Throughput Volume, Singapore, 2017–2020

Year	Number of Calls	Passenger Throughput
2020	143	409,564
2019	414	1,818,351
2018	401	1,865,621
2017	421	1,380,486

Source: Department of Statistics Singapore, Cruise Ships and Passenger Throughput Volume, https://tablebuilder.singstat.gov.sg/table/TS/M550381 (accessed 20 March 2022).

4.4. Connectivity Policy Responses

Given its key position as an air transport hub, Singapore's initial policy responses to the impacts of COVID-19 on people movement and connectivity were largely focussed on supporting its aviation industry and national air carrier. In its 2021 budget, the government announced the S$870 million OneAviation Support Package, which provided extensive wage support for aviation companies and rebates on fees and charges at Changi and Seletar airports (Government of Singapore, MOT, 2021a).

Singapore also sought to develop alternative channels through which international business meetings could take place within Singapore. This involved the creation of Connect@Changi, a short-stay facility that allowed international business travellers to stay and to conduct meetings without having to quarantine on arrival. The facility included meeting rooms with separate entrances and exits as well as different ventilation systems that allowed face-to-face meetings without any physical comingling between business travellers and local businesspeople.

As the pandemic began to stabilise, Singapore sought to re-establish international travel through various schemes. The first of these was a set of reciprocal green lane arrangements that allowed essential business and official travellers to enter Singapore, subject to pre-departure and on-arrival COVID-19 tests; these travellers were also subject to 'controlled itineraries' to minimise risk of community transmission (Mohan, 2021). Reciprocal green lane arrangements were established with

Brunei Darussalam, China, Germany, Japan, Malaysia, and Republic of Korea, although many of these have since been suspended either due to rising COVID-19 cases or when the partner countries announced temporary bans on international travel (Yusof, 2021).

Singapore also sought to establish quarantine-free travel arrangements for all travellers. This began with discussions to establish a 'travel bubble' with Hong Kong. The travel bubble did not, however, come to fruition due to differing COVID-19 strategies in the two jurisdictions, with Singapore choosing to move towards an endemic COVID-19 situation and Hong Kong committed to maintaining zero or low levels of COVID-19 cases (Government of Singapore, MOT, 2021b).

Subsequent attempts to establish vaccine-free travel arrangements were more successful, with Singapore approving vaccinated travel lanes with Brunei Darussalam and Germany on 19 August 2021 (Qing, 2021). Under these arrangements, fully vaccinated travellers from the two countries can use the lanes to enter or to exit Singapore for both business and leisure; travellers are nonetheless required to take pre-departure and on-arrival COVID-19 tests as well as to abide by the destination country's public health measures.

Further efforts to open up Singapore's borders while minimising the risk of COVID-19 infections include the introduction of vaccination-differentiated border measures, with differentiated border measures applied to travellers based on their 14-day travel histories prior to entry into Singapore. For instance, travellers who had been to countries that were experiencing higher levels of COVID-19 infections must undergo longer periods of quarantine or 'stay-home notice' orders, as well as more frequent COVID-19 testing.

Countries are categorised according to levels of COVID-19 infections or risks, with travellers from Category 1 countries not required to undergo any quarantine and isolation measures, although they are required to undergo several pre-departure and on-arrival COVID-19 tests. Travellers from Category 2 to Category 5 countries are required to quarantine, with higher-category countries requiring more stringent quarantine and testing measures.

4.5. Trade

Like its connectivity, Singapore's trade was severely affected by the pandemic. Singapore's total merchandise trade declined from S$86,299,048 to S$75,825,424 between March 2020 and April 2020, with a further decline to S$67,940,479 in May 2020 (Table 4.5). This suggests an impact lag time of 2 months, since Singapore's first case of COVID-19 was detected at the end of January 2020.

Table 4.5: Singapore's Total Merchandise Trade, 2020 (S$ current prices)

Jan	Feb	Mar	Apr	May	Jun	Jul
85,681,881	82,984,957	86,233,048	75,825,424	67,940,497	75,761,658	80,736,330

Source: Department of Statistics Singapore, Merchandise Trade by Commodity Section, (At Current Prices), https://tablebuilder.singstat.gov.sg/table/TS/M451001 (accessed 10 January 2022).

The severe decline in total merchandise trade in April 2020 and May 2020 can be attributed to Singapore's 'circuit breaker' lockdown, which took place from 7 April 2020 to 1 June 2020. This severely disrupted business activity by mandating remote working and telecommuting for all companies and limiting all social movement to essential activities only. Singapore's total merchandise trade nonetheless rebounded to S$80,736,330 in July 2020. Total merchandise trade for July 2021 stood at S$96,074,766. This dip in net exports has also been reflected in Singapore's container trade volumes, with container throughput experiencing steep declines in February 2020 and April 2020. Container throughput only rebounded in July 2020 and has since returned to pre-pandemic levels, standing at 3,123,6000 TEUs as of July 2021 (Table 4.6).

Table 4.6: Container Throughput in Singapore, 2020 ('000 TEUs)

Jan	Feb	Mar	Apr	May	Jun	Jul
3,182.6	2,898.7	3,197.9	2,843.5	2,806.7	2,907.7	3,016.3

TEU = 20-foot equivalent units.
Source: Department of Statistics Singapore, Sea Cargo and Shipping Statistics, https://tablebuilder.singstat.gov.sg/table/TS/M651101 (accessed 10 January 2022).

Singapore's trade in petroleum and bunker oil were also severely affected. Trade volumes in petroleum dipped significantly from January 2020 to May 2020. It would subsequently rebound in June 2020; as of July 2021, it was S$13,116,341. For bunker oil, trade volumes experienced similar sharp declines from February 2020 to June 2020, rebounding only in July 2020; as of July 2021, it was S$2,253,322 (Table 4.7).

Table 4.7: Petroleum and Bunker Oil Trade, 2020 (S$ current prices)

	Jan	Feb	Mar	Apr	May	Jun	Jul
Petroleum	14,323,093	13,036,890	11,001,387	7,166,273	4,791,520	7,127,287	8,071,575
Bunker Oil	3,122,465	3,223,895	2,340,352	1,717,044	1,195,913	1,197,834	1,479,850

Source: Department of Statistics Singapore, Merchandise Trade by Commodity Section (At Current Prices), https://tablebuilder.singstat.gov.sg/table/TS/M451001 (accessed 10 January 2022).

4.6. Trade Policy Responses

To manage the trade disruptions that occurred during the pandemic, Singapore sought to diversify and to enhance the resilience of its supply chains. This took the form of a multi-pronged strategy involving import diversification, local production, and stockpiling (Low, 2021).

Import diversification was crucial during the initial stages of the pandemic, as Singapore sought to prevent supply chain disruptions by seeking out alternative suppliers, particularly for food. For instance, the MCOs that had, at various instances, been declared in Malaysia severely affected Singapore's supply of eggs from Malaysia. This prompted Singapore to tap into alternative sources of

eggs, such as Poland and the Republic of Korea, with its national carrier Singapore Airlines mobilised to transport some of these eggs via airfreight (Zheng, 2020; Koh, 2021).

Singapore also sought to strengthen its existing supply chains. This included working closely with the Government of Malaysia to ensure the stability of supply chains between the two countries (Ng, 2021a). Singapore also leveraged its existing China–Singapore (Chongqing) Connectivity Initiative/New International Land–Sea Trade Corridor agreement to strengthen its position within regional supply chains, with the agreement contributing to a 30% increase in Singapore's cargo flows in 2020 (Cheng, 2021).

Singapore worked to expand its domestic production capabilities as well. These efforts aimed to build up greater self-reliance, especially in the event of major supply chain disruptions that could be brought about by crises and disasters. This included allocating more land for urban farming as well as developing its agri-food technology sector (Singapore Food Agency, 2021). Plans were also put into place to produce medical products, including agreements with BioNTech and Sanofi to establish vaccine production plants in Singapore (Choo, 2021; Choudhury, 2021). The local production of masks and personal protective equipment was also boosted (*Channel News Asia*, 2020; Yang, 2020).

4.7. E-Commerce

Unlike with connectivity and trade, the pandemic has given rise to positive impacts on e-commerce, particularly as the circuit breaker lockdown and other restrictions on economic and social activity prompted consumers to turn to online platforms for their retail needs. Singapore's e-commerce platforms grew significantly during the first 6 months of 2020, with total web visits increasing by 23% (HeySara, 2021). Approximately 3.3 million people in Singapore shop in the e-commerce market, with the average Singaporean spending about S$113 in each single transaction, and the expected revenue from this sector expected to reach almost S$2.8 billion in 2021 (HeySara, 2021).

Table 4.8 shows a sharp spike in online retail sales from March 2020 to April 2020. During that period, online retail, as a proportion of total retail trade, jumped from 8.8% to 18.6%. This increase was particularly pronounced for the computer and telecommunications equipment segment, which saw an increase from 41.5% in March 2020 to 94.6% in May 2020, as well as the furniture and household equipment segment, which saw an increase from 18.7% in March 2020 to 93.8% in May 2020 largely due to the circuit breaker lockdown. These numbers tapered off from June 2020 onwards, as Singapore exited the circuit breaker, although they remain significantly higher than pre-pandemic levels. As of July 2021, the proportion of online sales retail in the computer and telecommunications equipment segment was 55.8%, while that of furniture and household equipment stood at 29.9%. These are significantly higher than the figures in January 2020, when the pandemic first emerged.

Table 4.8: Singapore's Online Sales Retail, 2020 (%, proportion of respective industry's total sales)

	Jan	Feb	Mar	Apr	May	Jun	Jul
Total Online Sales Retail	5.6	7.6	8.8	18.6	24.9	18.6	10.6
Supermarkets and Hypermarkets	7.6	8.4	7.8	7.5	9.3	10.6	11.2
Computer and Telecommunications Equipment	25.4	29.9	41.5	78.6	94.6	70.8	47.6
Furniture and Household Equipment	13.5	17.4	18.7	51.9	93.8	50.4	21.2

Source: Department of Statistics Singapore, Online Retail Sales Proportion (Out of the Respective Industry's Total Sales), https://tablebuilder.singstat.gov.sg/table/TS/M601861 (accessed 10 January 2022).

Increases in online sales retail in the supermarket and hypermarket segment were, however, far less pronounced, with marginal increases taking place across the circuit breaker period. Even in July 2020, online sales retail remained at 11.2% of total retail trade for the supermarket and hypermarket segment. This was largely due to the fact that supermarkets and hypermarkets have been allowed to operate throughout the pandemic, with citizens permitted to visit these places for their essential needs even during the circuit breaker.

There has, however, been a broader increase in online sales retail for the supermarket and hypermarket segment. Table 4.9 shows an increase in online retail sales for the segment from February 2021 (10.7%) to July 2021 (14.0%). Online retail sales for the segment in July 2021 was roughly double of that in January 2020.

Table 4.9: Online Retail Sales in Supermarkets and Hypermarkets, 2021 (%, proportion of respective industry's total sales)

	Feb	Mar	Apr	May	Jun	Jul
Retail Trade	10.3	11.9	11.3	13.8	15.4	13.9
Supermarkets and Hypermarkets	10.7	12.8	12.3	13.1	14.4	14.0

Source: Department of Statistics Singapore, Online Retail Sales Proportion (Out of the Respective Industry's Total Sales), https://tablebuilder.singstat.gov.sg/table/TS/M601861 (accessed 10 January 2022).

However, the circuit breaker ultimately did not result in any significant shifts in consumer behaviour in the supermarket and hypermarket segment. Yet Singapore's ongoing transition into an endemic COVID-19 reality has prompted more consumers to purchase their groceries and other essential household items from online retailers rather than physical supermarkets and hypermarkets. This was further compounded by the emergence of several large infection clusters in various wet markets across Singapore as well as Jurong Fishery Port, which directly prompted a spike in demand for online grocery services (Raguraman and Baey, 2021).

4.8. E-Commerce Policy Responses

In recognition of its growing e-commerce sector as well as the rising significance of this sector in a post-pandemic world, the government is seeking to grow its e-commerce sector. In March 2021, the then-Minister for Trade and Industry, Chan Chun Sing, announced plans to partner with Amazon in introducing new programmes that could help SMEs sell their products overseas (*The Business Insider*, 2021). This is part of a five-pronged strategy that was introduced in January 2021 to promote Singapore's status as a regional and global e-commerce hub (Yeo, 2021). The government's five-pronged strategy also includes developing nationwide 5G networks, encouraging firms to adopt digital payment and invoicing solutions, building stronger supply chain capability, enhancing cybersecurity and global digital connectivity, supporting local businesses in gaining e-commerce capabilities, and minimising the disruptions that COVID-19 poses to e-commerce (Yeo, 2021).

In regard to minimising COVID-19 disruptions to e-commerce, Enterprise Singapore introduced the E-Commerce Booster Package in September 2021 that aims to support retailers in diversifying their operations as well as defraying the business costs of going online.[7] Under the package, eligible local retailers receive one-time support to defray 80% of qualifying costs (capped at S$8,000) as well as the ability to engage one of Enterprise Singapore's appointed e-commerce platforms to sell their products online.

Another policy initiative is the Infocomm Media Development Authority's SMEs Go Digital scheme, which provides sector-specific road maps for digital adoption and training, cost-free consultancy services for SMEs planning to enter the e-commerce sector, as well as a range of grants and co-funding support for developing and adopting digital solutions that can help enhance productivity and digitalisation of firms' retail and payment processes.[8]

These policies have generally been well-received, with Singaporeans currently the most active users in the region purchasing products online from overseas (Economic Development Board, 2021). Another report showed rapid growth in Singapore's e-commerce sector, with its e-commerce sales expected to reach $10 billion by 2026 (Google, Temasek, Bain and Company, 2021). It also found that e-commerce values in Singapore went up by 87% in 2020.

While the government's e-commerce policies and the boom in Singapore's e-commerce sector have benefited – and received much support from – e-commerce start-ups and retailers, local and regional stakeholders – such as delivery companies, storage facilities, and warehousing providers – are also working to expand their capacities to accommodate this e-commerce boom.

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[7] Digital Industry Singapore, E-Commerce Booster Package – Singapore E-Commerce Programme, https://www.imda.gov.sg/disg/Programmes/2020/06/E-Commerce-Booster-Package---Singapore-E-Commerce-Programme

[8] Infocomm Media Development Authority, SMEs Go Digital, http://www.imda.gov.sg/programme-listing/smes-go-digital

4.9. Future Scenarios and Challenges

As Singapore continues its transition towards COVID-19 resilience, it is aiming to re-establish trade and connectivity with the rest of the world, further enhance trade volumes, as well as expand its e-commerce sector. A key focus will be reconnecting with ASEAN, with the Minister for National Development, Desmond Lee, stating that 'if people can travel in and out of Singapore safely, the country can re-establish its hub status and better serve the interests of ASEAN and Asia' (Tham, 2021).

Aside from physical connections, Singapore has articulated its desire to further expand its digital connectivity with the rest of ASEAN, particularly in the areas of supply chain digitalisation and common data infrastructure (Tham, 2021). This is broadly in line with its Smart Nation Initiative, which aims to transform Singapore into a leading smart city, as well as its broader ambitions to be the leading fintech hub in Asia.

At the time of writing, Singapore is seeking to re-open its economy by leveraging its high vaccination rate. More than 82% of Singapore's resident population has been fully vaccinated. Many foreign workers and delivery drivers from Malaysia who enter Singapore daily have also been fully vaccinated. As Singapore continues to vaccinate the rest of its population and roll out booster shots for the vaccinated, it aims to re-open its economy completely and live with COVID-19 as an endemic virus.

From a regional perspective, Singapore has expressed strong support for multilateral efforts to boost the region's economic recovery. This includes adopting the ASEAN Plus Three Leaders' Statement on Strengthening Cooperation for Economic and Financial Resilience in the Face of Emerging Challenges in 2020 and contributing to other relevant regional initiatives such as the ASEAN Smart Cities Network. Lastly, Singapore ratified the Regional Comprehensive Economic Partnership (RCEP) agreement in April 2021, a move that signals its commitment to strengthening trade and economic linkages across the region to foster broader economic recovery from COVID-19 (Devi, 2021).

There are, however, challenges to Singapore's road to recovery from COVID-19. For instance, a balance is needed between an endemic COVID-19 reality with health care system capacity. On 27 September 2021, the government tightened restrictions on social activity once again, as rising levels of COVID-19 infections posed potential strains on its hospitals and health care system. This spike in infection levels also prompted the government to ramp up its health care and response capacity by setting up more health care facilities and hospital beds (Government of Singapore, MOH, 2021). The emerging Omicron variant may also pose further disruptions to the region.

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Chapter 5

Thailand

Ruth Banomyong

5.1. Introduction

In Thailand, herd immunity from COVID-19 has not yet been achieved, and the roll-out of the vaccination programme has been haphazard. Access to vaccines has also been difficult due to limited quantities and distribution capabilities.

The economy of Thailand has suffered, with at least one official lockdown in 2020 and a more recent unofficial lockdown in June 2021 for the Bangkok metropolitan area. GDP growth was estimated at –6.1% for 2020, and it is expected to be only 0.7% for 2021.[9] As of 1 November 2021, the country is open to fully vaccinated visitors from low-risk countries, without quarantine, in an effort to boost its economy. However, the emergence of the Omicron variant may derail the country's recovery efforts.

5.2. Trade Assessment

Thailand's trade sector is the portion of the economy that produces tradable goods, and thus exports and/or competes with imports. It is also considered the portion of the economy that engages in international trade, exporting and/or importing or providing trade services. In this chapter, the focus is on freight, that is, goods carried from one place to another by ship, aircraft, train, or truck, or the system of transporting these goods. Although the term 'trade sector' is used, the data presented to reflect trade are the actual export and import volumes before and during the pandemic.

5.2.1. Pre-Pandemic Trade Assessment

Thailand – as an export-driven economy – is dependent upon merchandise trade. Table 5.1 describes the overall volume growth rates of the country before the pandemic.

[9] Bank of Thailand, Forecast Summary as of 30 November 2022, https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyComittee/MPR/Pages/default.aspx (accessed 9 December 2021).

Table 5.1: Thailand's Export Growth Rate, 2016–2019 (%)

	Q1	Q2	Q3	Q4
2016				
Growth rate, year-on-year	1.23	(0.81)	(0.49)	1.66
Growth rate (over previous period)	0.46	(3.12)	4.96	(0.48)
Volume Index (2005=100)	157.30	152.34	159.95	159.18
Volume Index, seasonally adjusted (2005=100)	154.09	149.94	150.80	153.94
2017				
Growth rate, year-on-year	2.63	4.71	5.66	6.53
Growth rate (over previous period)	1.41	(1.16)	8.92	(2.42)
Volume Index (2005=100)	161.43	159.56	173.79	169.58
Volume Index, seasonally adjusted (2005=100)	157.39	157.23	163.78	164.20
2018				
Growth rate, year-on-year	6.49	8.47	0.11	1.077
Growth rate (over previous period)	1.37	0.67	0.52	(1.48)
Volume Index (2005=100)	171.91	173.07	173.97	171.4
Volume Index, seasonally adjusted (2005=100)	167.31	171.18	163.87	166.44
2019				
Growth rate, year-on-year	(4.09)	(4.35)	(0.65)	(5.59)
Growth rate (over previous period)	(3.81)	0.41	4.41	(6.38)
Volume Index (2005=100)	164.87	165.55	172.84	161.81
Volume Index, seasonally adjusted (2005=100)	159.82	164.09	162.94	157.41

() = negative.
Source: UNCTAD, Volume Growth Rates of Merchandise Exports and Imports Quarterly, UNCTADStats, https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=99 (accessed 25 August 2021).

Exports of freight in volume have shown a steady increase, followed by a slow decrease starting in the third quarter of 2018. The data show that volume grew from 2016 to 2017, and that the last three quarters of 2018 decreased in growth. It started to improve in the second and third quarters of 2019, dropping again by the end of the fourth quarter of 2019.

The total volume number was the highest in the second quarter of 2018 (173.18), with a steady increase from 2016 and 2017. This started to drop in the third quarter of 2018, then had the biggest drop in the first quarter of 2019 (159.82). The second and third quarters of 2019 saw a slight increase again, then dropped in the fourth quarter.

The data show that even before the pandemic, export growth in Thailand was declining. This was particularly true for 2019 due to the relative high value of the Thai baht against the US dollar and the erosion of Thai export competitiveness due to an increased labour force.

Table 5.2: Overview of Thailand's Import Growth Rate, 2016–2019 (%)

	Q1	Q2	Q3	Q4
2016				
Growth rate, year-on-year	(7.48)	(3.05)	(2.17)	2.72
Growth rate (over previous period)	(6.52)	2.16	3.13	4.30
Volume Index (2005=100)	131.24	134.07	138.27	144.21
Volume Index, seasonally adjusted (2005=100)	131.52	130.25	135.11	138.32
2017				
Growth rate, year-on-year	5.94	7.89	8.51	7.29
Growth rate (over previous period)	(3.59)	4.03	3.73	3.13
Volume Index (2005=100)	139.04	144.65	150.04	154.73
Volume Index, seasonally adjusted (2005=100)	138.73	141.26	146.79	148.07
2018				
Growth rate, year-on-year	10.17	8.02	9.22	3.38
Growth rate (over previous period)	(1.00)	1.99	4.88	(2.38)
Volume Index (2005=100)	153.19	156.24	163.87	159.97
Volume Index, seasonally adjusted (2005=100)	153.35	153.46	160.75	152.67
2019				
Growth rate, year-on-year	(3.10)	(3.95)	(7.29)	(8.61)
Growth rate (over previous period)	(7.21)	1.10	1.22	(3.76)
Volume Index (2005=100)	148.44	150.08	151.92	146.20
Volume Index, seasonally adjusted (2005=100)	146.49	147.90	149.53	139.39

() = negative.
Source: UNCTAD, Volume Growth Rates of Merchandise Exports and Imports Quarterly, UNCTADStats, https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=99 (accessed 5 October 2021).

As shown in Table 5.2, imports of freight faced highs and lows from 2016 to 2019. The most significant drops in growth rates were in the first quarter of 2016 (–7.48%) and the last quarter of 2019 (–8.61%). Imports were generally high from 2017 to the third quarter of 2018, before decreasing in the fourth quarter of 2018.

The total volume number was the highest in the third quarter of 2018 (163.87), while the lowest was in the first quarter of 2016 (131.52). Volume numbers were relatively higher from the last quarter of 2016 to the third quarter of 2018, before dropping the next quarters. Thus, the data show that even before the pandemic, import rates were already on a steady decline.

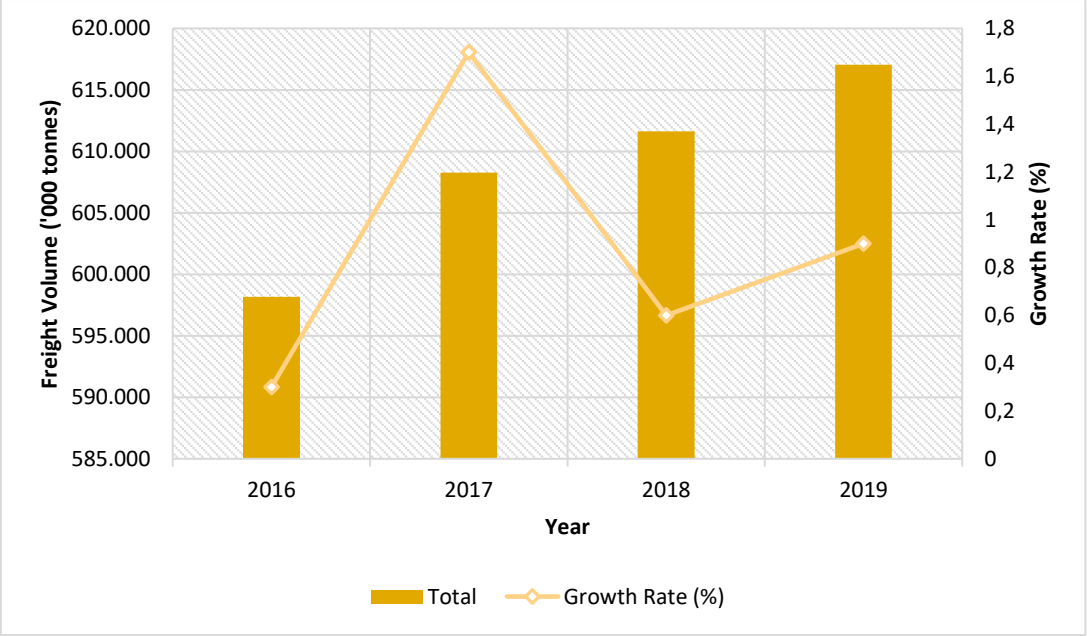
Domestic freight volumes also suffered before the pandemic (Table 5.3 and Figure 5.1). Freight volume for road transport remained relatively constant, although air freight volumes suffered.

Table 5.3: Domestic Freight Volume, Thailand, 2016–2019

Mode	2016	2017	2018	2019
Road ('000 tonnes)	484,884	482,596	483,760	483,168
Growth Rate (%)	0.5	(0.5)	0.2	(0.1)
Rail ('000 tonnes)	11,937	11,695	10,232	10,262
Growth Rate (%)	4.8	(2.0)	(12.5)	0.3
Water ('000 tonnes)	101,222	113,876	117,537	123,532
Growth Rate (%)	(1.5)	12.5	3.2	5.1
Inland Water ('000 tonnes)	50,327	53,026	55,739	57,242
Growth Rate (%)	(1.1)	5.4	5.1	2.7
Coastal ('000 tonnes)	50,895	60,850	61,798	66,290
Growth Rate (%)	(1.9)	19.6	1.6	7.3
Air ('000 tonnes)	120	112	97	74
Growth Rate (%)	4.3	(6.7)	(13.4)	(23.7)
Total ('000 tonnes)	**598,163**	**608,279**	**611,626**	**617,036**
Growth Rate (%)	**0.3**	**1.7**	**0.6**	**0.9**

() = negative.
Source: NESDC (2020).

Figure 5.1: Total Domestic Freight Volume, Thailand, 2016–2019 ('000 tonnes)



Source: NESDC (2020).

The overall domestic trade volume showed limited growth before the pandemic, a reflection of the country's overall economic slowdown. Domestic air freight had a negative growth rate of –23.7% in 2019, the lowest out of the other modes. Pre-pandemic, the best year for freight volume growth was 2017, with 1.7%. The logistics sector growth rate in 2017 was 4.2%, compared to the GDP growth rate of 6.4%. The logistics cost–GDP ratio at the time was 13.5%.10 In recent years, economic growth slowed from 4.2% in 2018 to 2.4% in 2019 due to weaker demand for exports, reflecting the impact of US–China trade tensions, slower public investments, and a drought that impacted agricultural production.[11]

Table 5.4 details domestic water transport. It is interesting to note that the unit of analysis is in tonnes, not containers. This reflects that domestic water freight – both inland and coastal – is mainly composed of bulk items. Laem Chabang and Bangkok ports dominate in terms of volumes. Chiang Saen Port, located along the Mekong River, is the third-most important port in terms of volume. This port serves as an export port, as import volumes are limited.

Overall volumes do not vary much, and in 2019, the overall volume was less than 2018 and 2017 (Figure 5.2). Water transport freight by port increased in arrivals by the end of 2019. Departures, on the other hand, steadily increased in 2017 and 2018 then dropped in 2019.

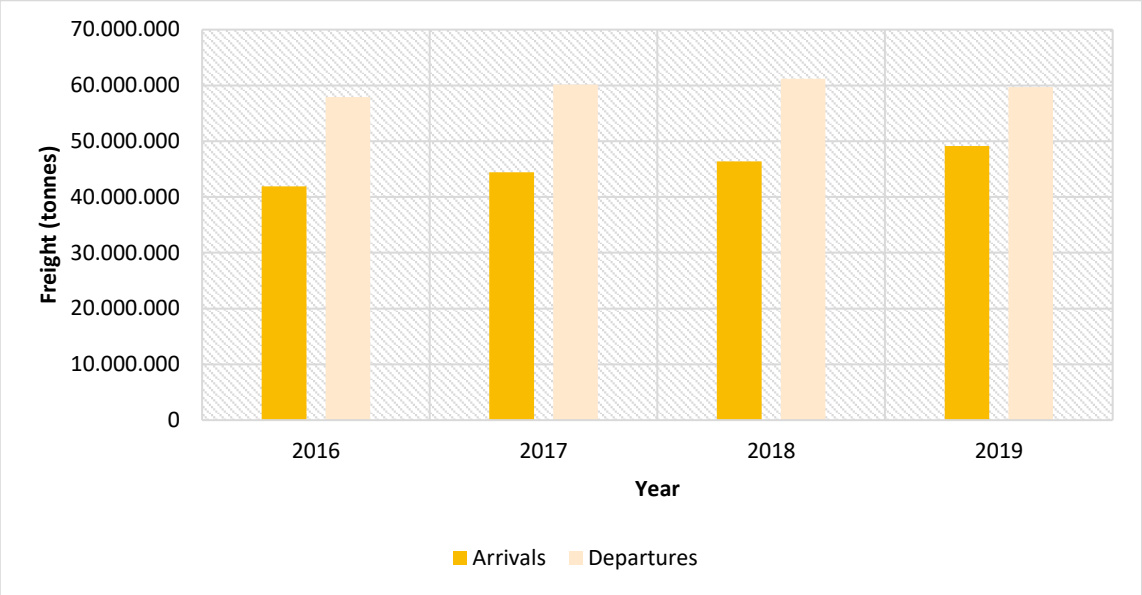
Table 5.4: Water Freight at Main Ports, 2016–2019 (tonnes)

	2016		2017	
Port	**Arrival**	**Departure**	**Arrival**	**Departure**
Bangkok Port	11,966,250	9,100,496	11,287,516	9,274,594
Chiang Saen Port	5,403.98	201,368.14	4,252.64	240,208.72
Chiang Khong Port	840	82,398.55		82,398.55
Ranong Port	41,917	87,670	15,717	63,291
Laem Chabang Port	29,888,726.55	48,468,185.78	33,115,544.44	50,511,447.20
Total	**41,903,137.53**	**57,940,118.47**	**44,423,030.08**	**60,169,326.61**
	2018		**2019**	
Bangkok Port	11,006,704	8,851,151	12,462,637	8,144,375
Chiang Saen Port	2,574.47	21,599.58	2,053.03	269,688.23
Chiang Khong Port	300	67,177.25	69	37,931.65
Ranong Port	18,583	84,599	23,865	108,486
Laem Chabang Port	35,324,621.70	52,134,259.03	36,622,719.80	51,126,409.19
Total	**46,352,783.20**	**61,158,785.86**	**49,111,343.80**	**59,686,890.07**

Source: Thailand Ministry of Transport.

[10] World Bank, The World Bank in Thailand, https://www.worldbank.org/en/country/thailand/overview#1 (accessed 2 January 2022).
[11] Ibid.

Figure 5.2: Total Freight, Water, by Thai Port, 2016–2019 (tonnes)



Source: Thailand Ministry of Transport.

The total number of containers increased steadily from 2016 to 2018 before dropping by the end of 2019 (Table 5.5). The ports of Bangkok and Laem Chabang decreased their numbers in total, while the Ranong Port increased its number. Thus, reductions had already began before the pandemic.

Table 5.5: Maritime Containers at Thai Ports, 2016–2019 (TEU)

Port	2016	2017	2018	2019
Bangkok Port	1,498,009	1,496,227	1,487,594	1,463,933
Ranong Port	2,857	2,643	2,517	3,925
Laem Chabang Port	7,227,431	7,784,498	8,074,591	7,980,533
Total	**8,728,297**	**9,283,368**	**9,564,702**	**9,448,391**

TEU = 20-foot equivalent unit.
Source: Thailand Ministry of Transport.

Cement and other miscellaneous items were increasingly transported pre-pandemic by rail (Table 5.6). Transporting equipment and other manufactured articles by rail saw a massive increase in 2017 and 2018, before dropping in 2019. Rail transport generally saw significant growth in 2017 and 2018, but this began to decrease by the end of 2019 due to higher costs of double handling as well as increased rail inefficiency (NESDC, 2020).

Table 5.6: Rail Freight Transport, Thailand, 2016–2019 ('000 tonnes)

Commodity Group	2016	2017	2018	2019
Cassava	2.17	2.91	0.15	0.26
Other Agricultural Products	0.04	0.04	0.03	0.03
Animal Fodder	4.48	3.01	0.24	0.49
Sugars	0.52	0.67	0.00	0.00
Other Foodstuffs	6.11	5.80	0.47	0.51
Petroleum Products	2,478.82	2,321.14	1,949.64	1,847.15
Cement	1,549.45	1,744.89	1,870.83	1,906.57
Fertilizers	0.03	0.00	0.00	0.00
Other Minerals	0.00	0.00	2.80	0.00
Equipment, Other Manufactured Articles	12.54	272.41	439.54	108.93
Miscellaneous Articles, Containers	7,882.39	7,343.82	5,968.02	6,397.89
Total	**11,937.09**	**11,694.89**	**10,231.72**	**10,261.83**

Source: Thailand Ministry of Transport.

Pre-pandemic air freight levels had a significant drop in domestic transport starting from 2017, particularly Don Muang Airport (Table 5.7 and Figure 5.3). All airports had negative growth rates for freight in 2019. This is an interesting trend that reflects the contraction for domestic air freight demand. The possible reason is the slowdown of the Thai economy, as transport is a derived demand of trade.

Indeed, before the pandemic, domestic freight volumes were relatively stagnant, with certain modes of transport suffering from the constant decrease. These were signs that the Thai economy was not really growing.[12] The GDP growth rate for 2019 was 2.27%, a 1.92% decline from 2018; 4.19% in 2018, only a 0.01% increase from 2017; and 4.18% in 2017, a 0.74% increase from 2016.[13]

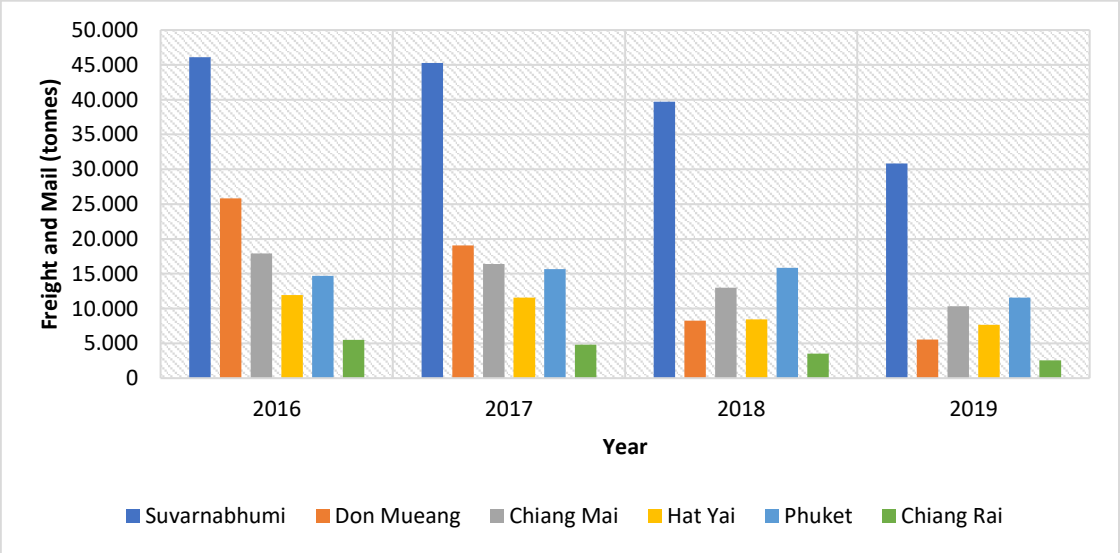
[12] Macrotrends, Thailand GDP Growth Rate, 1961–2023, https://www.macrotrends.net/countries/THA/thailand/gdp-growth-rate (accessed 30 September 2021).
[13] Ibid.

Table 5.7: Air Freight in Thailand, 2016–2019 (tonnes)

Airport	Domestic (tonnes)	Growth Rate (%)	Domestic (tonnes)	Growth Rate (%)
	2016		**2017**	
Suvarnabhumi	46,105	14.22	45,275	(1.80)
Don Muang	25,812	11.95	19,064	(26.14)
Chiang Mai	17,899	0.99	16,380	(8.75)
Hat Yai	11,938	(1.72)	11,568	(3.10)
Phuket	14,676	3.89	15,672	6.79
Chiang Rai	5,484	4.00	4,827	(11.98)
Total	**121,904**	**8.18**	**112,786**	**(7.53)**
	2018		**2019**	
Suvarnabhumi	39,719	(12.27)	30,853	(22.32)
Don Muang	8,239	(56.78)	5,525	(32.94)
Chiang Mai	12,998	(20.65)	10,318	(20.62)
Hat Yai	8,425	(27.17)	7,663	(9.04)
Phuket	15,864	1.23	11,592	(26.93)
Chiang Rai	3,545	(26.56)	2,535	(28.49)
Total	**88,790**	**(21.28)**	**68,486**	**(22.87)**

()= negative.
Source: Thailand Ministry of Transport.

Figure 5.3: Air Transport of Freight and Mail in Thailand (tonnes)



Source: Thailand Ministry of Transport.

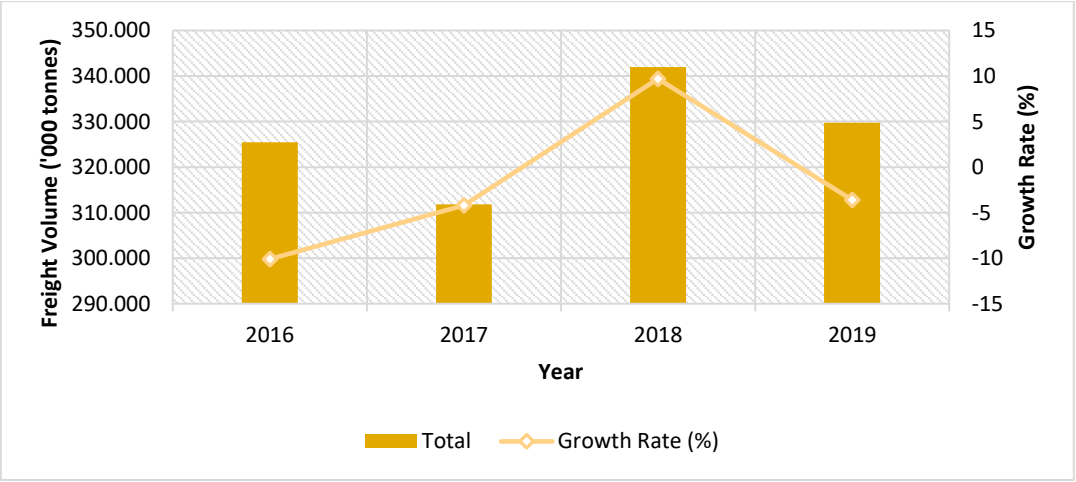
International trade is crucial for Thailand. International freight transport reflects the volumes of goods being imported and exported from the country (Table 5.8 and Figure 5.4).

Table 5.8: International Freight Volume, Thailand, 2016–2019

Mode	2016	2017	2018	2019
Road ('000 tonnes)	34,009	35,904	35,899	36,557
Growth Rate (%)	1.3	5.7	0.0	1.8
Rail ('000 tonnes)	223	324	402	413
Growth Rate (%)	77.0	45.3	24.1	2.7
Maritime ('000 tonnes)	290,480	274,868	304,898	290,609
Growth Rate (%)	(11.3)	(5.4)	10.9	(4.7)
Air ('000 tonnes)	509	543	634	787
Growth Rate (%)	(1.4)	6.7	16.7	24.1
Total('000 tonnes)	**325,221**	**311,639**	**341,431**	**328,366**
Growth Rate (%)	**(10.1)**	**(4.2)**	**9.6**	**(3.8)**

Source: NESDC (2020).

Figure 5.4: International Freight Volume, Thailand, 2016–2019



Source: NESDC (2020).

International freight volumes in Thailand suffered from a continuous decline, except in 2018. The total growth rate for all means of transport by the end of 2019 was –3.6%. Compared to 2016 (–10.1%), the growth rate at the end of 2019 was better. However, compared to 2018 (9.7%), there is a large difference between the 2 years. The biggest decreases in growth between 2018 and 2019 were in water transport and rail at –4.3% and 2.7%, respectively. Indeed, the most affected mode of transport was maritime transport – the dominant mode of transport for Thailand's international trade – while

international air freight saw continuous year-on-year increases since 2017. Thus, the growth of air freight and decline of maritime transport show a shift in Thailand's global value chain connectivity.

Regarding air freight, there were significant changes; 2017 saw a total change of 11.26% from the previous year, then dropping to 4.47% in 2018 (Table 5.9). The biggest change is from 2018 to –11.12% in 2019. Apart from the Chiang Mai, Chiang Rai, and Hat Yai airports, the majority of airports witnessed a decrease in freight transport.

Table 5.9: International Freight and Mail, Thailand, 2016–2019

Airport	International (tonnes)	Growth Rate (%)	International (tonnes)	Growth Rate (%)
	2016		**2017**	
Suvarnabhumi	1,260,330	5.89	1,394,666	10.66
Don Mueang	42,072	87.56	48,713	15.78
Chiang Mai	1,338	(14.83)	1,266	(5.38)
Hat Yai				
Phuket	28,538	20.25	37,634	31.87
Chiang Rai				
Total	1,332,278	7.62	1,482,279	11.26
	2018		**2019**	
Suvarnabhumi	1,454,881	4.32	1,293,415	(11.10)
Don Mueang	47,011	(3.49)	38,061	(19.04)
Chiang Mai	1,617	27.73	1,993	23.25
Hat Yai	14		131	835.71
Phuket	45,085	19.80	42,764	(5.15)
Chiang Rai			2	
Total	1,548,608	4.47	1,376,366	(11.12)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

5.2.2. During the Pandemic Trade Assessment

The COVID-19 pandemic began in Thailand during March 2020. This section describes the changes in freight volumes both domestically and internationally during this time.

During the pandemic, the second quarter of 2020 saw the biggest drop in growth rates for export volumes, at –17.37%. The data show a slight increase for the next quarters until minimal growth in the beginning of 2021. By the second quarter of 2021, volume growth rates increased significantly, consistent with the recovery of global trade at the end of 2020 (Table 5.10).

Table 5.10: Volume Growth Rates of Merchandise Exports in Thailand, 2020–2021 (%)

	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
Growth rate, year-on-year	1.92	(16.13)	(7.34)	(1.43)	2.80	30.90
Growth rate (over previous period)	3.84	(17.37)	15.35	(0.41)	8.30	5.21
Volume Index (2005=100)	168.03	138.84	160.16	159.50	172.74	181.74
Volume Index, seasonally adjusted (2005=100)	163.12	137.97	150.96	155.40	166.93	179.79

() = negative.
Source: UNCTAD, Total Trade and Share Annual, UNCTADStats, https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=101 (accessed 5 October 2021).

Similarly, imports during the second quarter of 2020 saw the biggest drop in growth at –19.47%. The following quarters saw decreases in growth until minimal growth in the first quarter of 2021. The second quarter of 2021 saw a large increase.

Table 5.2: Volume Growth Rates of Merchandise Imports in Thailand, 2020–2021 (%)

Measure	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
Growth rate, year-on-year	(0.97)	(19.47)	(17.31)	(3.64)	6.56	31.87
Growth rate (over previous period)	0.54	(17.796)	3.96	12.15	11.18	1.73
Volume Index (2005=100)	146.99	120.83	125.61	140.88	156.63	159.34
Volume Index, seasonally adjusted (2005=100)	143.94	119.69	123.99	134.31	153.14	158.14

() = negative.
Source: UNCTAD, Total Trade and Share Annual, UNCTADStats, https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=101 (accessed 5 October 2021).

Domestic freight data also show drops in freight volumes. In 2020, the arrival and departure volumes for water transport were less than in 2019, with the arrival volume reduced by 4.1% and departure volume reduced by 9.3% (Table 5.12). Laem Chabang and Bangkok remained the most important water nodes in Thailand.

Table 5.12: Domestic Freight Volume, Thailand, 2020

Mode	2020
Road ('000 tonnes)	450,800
Growth Rate (%)	(6.7)
Rail ('000 tonnes)	11,510
Growth Rate (%)	12.2
Water ('000 tonnes)	103,271
Growth Rate (%)	(16.4)
Inland Water ('000 tonnes)	49,248
Growth Rate (%)	(14.0)
Coastal ('000 tonnes)	54,023
Growth Rate (%)	(18.5)
Air ('000 tonnes)	32
Growth Rate (%)	(56.8)
Total ('000 tonnes)	**565,613**
Growth Rate (%)	**(8.3)**

() = negative.
Source: Government of Thailand, Ministry of Transport, MOT Data Portal, https://datagov.mot.go.th/group/ (accessed 10 December 2021).

Overall domestic trade volumes during the pandemic pummelled the economy. All forms of freight have been impacted negatively – except rail, as the government has emphasised railway development, which includes double-track railway development, the Single Rail Transfer Operator Project, and freight cost reduction (NESDC, 2021).

Although Chiang Saen Port is the third-most important port in Thailand, in 2020, its freight arrival numbers fell while departures remained high. This strong imbalance between arrivals and departures reflects not only limited freight flows from China but also the challenges related to Mekong River traffic.

Table 5.13: Freight by Port, Thailand, 2020 (tonnes)

Port	Arrival	Departure
Bangkok Port	12,946,515.00	8,288,169.00
Chiang Saen Port	4,106.93	86,361.48
Chiang Khong Port		1,132.24
Ranong Port	13,473.00	52,011.00
Laem Chabang Port	34,143,098.66	45,709,590.53
Total	**47,107,193.59**	**54,137,264.25**

Source: Government of Thailand, Ministry of Transport, Volume of Water Transport, MOT Data Catalog, https://datagov.mot.go.th/dataset/waterfleetfreight (accessed 17 July 2021).

Maritime transport also witnessed a drastic drop, with the number of container throughput similar to 2016 data (Table 5.14).

Table 5.14: Containers at Thai Ports, 2020 (TEU)

Port	
Bangkok	1,420,349
Ranong	2,374
Laem Chabang	7,552,646
Total	**8,975,369**

TEU = 20-foot equivalent unit.
Source: Thailand Ministry of Transport.

Air freight was also negatively impacted, dropping –59.48% in 2020 from the previous year (Table 5.15). The pandemic has been especially hard on air transport, as most air freight is combined with passenger transport. The cessation of passenger air transport in 2020 hindered domestic air freight, as dedicated freighters do not serve the domestic Thai market.

Table 5.15: Domestic Freight and Mail in Thailand, 2020

Airport	Tonnes	Growth Rate (%)
Suvarnabhumi	9,340	(69.75)
Don Mueang	4,430	(19.82)
Chiang Mai	4,552	(55.88)
Hat Yai	4,677	(38.97)
Phuket	3,805	(67.20)
Chiang Rai	963	(62.01)
Total	27,767	(59.48)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

International freight volumes during the pandemic also suffered, especially air freight, with a growth rate of –35.1% (Table 5.16). Rail freight took the lightest hit, with a –12.4% reduction.

Table 5.16: International Freight Volume, Thailand, 2020

Mode	Statistic
Road (tonnes)	34,594
Growth Rate (%)	(5.4)
Rail (tonnes)	312
Growth Rate (%)	(2.4)
Maritime (tonnes)	264,197
Growth Rate (%)	(9.1)
Air (tonnes)	511
Growth Rate (%)	(35.1)
Total (tonnes)	**299,614**
Growth Rate (%)	**(8.8)**

() = negative.
Source: NESDC (2021).

International air freight was also impacted compared to previous years. All airports were hit severely, with a –33.57% reduction in international air freight from previous years (Table 5.17). Chiang Rai Airport did not have a single international flight in 2020.

Table 5.17: International Freight and Mail, 2020

Airport	Tonnes	Growth Rate (%)
Suvarnabhumi	895,023	(30.80)
Don Mueang	10,799	(71.63)
Chiang Mai	363	(81.63)
Hat Yai	14	(89.31)
Phuket	8,099	(81.05)
Chiang Rai	0	(100.00)
Total	914,298	(33.57)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

5.2.3. Trade Policy Responses and Lessons Learned

At the end of 2019, the government identified three goals to help combat the COVID-19 pandemic: (i) expedite the use of infrastructure, and develop supporting factors to enhance competitiveness; (ii) promote the transformation of business operations into business-to-consumer (B2C) via digitalisation; and (iii) support the Thai Logistics Service Network, and promote regional partnerships (NESDC, 2020).

The first issue focusses on utilising rail as a national transport backbone. This includes developing road networks to connect agriculture and industrial sources strategically. Furthermore, logistics-related activities need be transferred to online platforms for transport and warehouse management. The second goal includes upgrading warehouse management, as well as improving services that meet door-to-door delivery demand more efficiently. The last goal seeks to support Thai logistics service providers with enhanced networking by promoting foreign investments as well as developing international logistics contacts. Additionally, this will support exporters and importers with necessary compliance information.

5.3. Transport Sector

This section focusses on the movement of people before and during the pandemic. Although the demand for freight fell during the pandemic, it still managed to move across borders. The situation is more complicated for passenger transport due to lockdowns and border closures.

5.3.1. Pre-Pandemic Transport Sector

Until 2018, airports in Thailand enjoyed continued growth on a yearly basis. The first decline came in 2019, with an overall decrease of 5.7% (Table 5.18 and Figure 5.5).

Table 5.18: Domestic Aircraft Movements, Thailand, 2016–2019

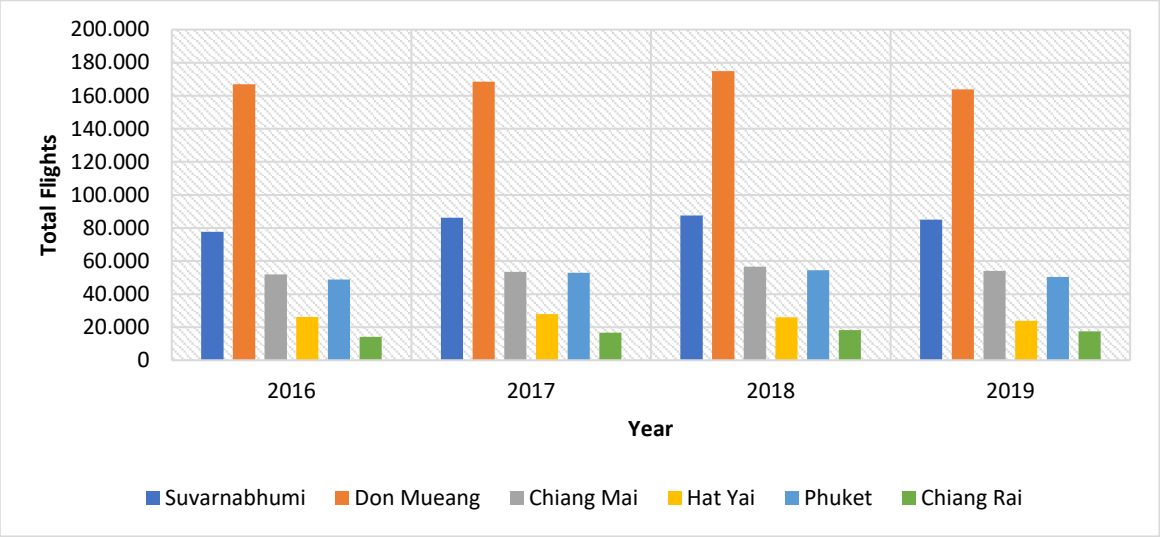
Airport	Number	Change (%)	Number	Change (%)
	2016		2017	
Suvarnabhumi	77,642	11.74	86,230	11.06
Don Mueang	166,897	5.10	168,494	0.96
Chiang Mai	51,939	8.87	53,412	2.84
Hat Yai	26,151	14.91	27,873	6.58
Phuket	48,883	19.92	52,928	8.27
Chiang Rai	14,092	9.51	16,657	18.20
Total	385,604	9.43	405,594	5.18
	2018		2019	
Suvarnabhumi	87,597	1.59	85,082	(2.87)
Don Mueang	174,806	3.75	163,819	(6.29)
Chiang Mai	56,520	5.82	54,063	(4.35)
Hat Yai	25,889	(7.12)	23,898	(7.69)
Phuket	54,514	3.00	50,409	(7.53)
Chiang Rai	18,152	8.98	17,381	(4.25)
Total	417,478	4.47	394,652	(5.47)

() = negative.

Note: Although data are for the year 2019, the actual reduction in flights occurred during the last quarter when the first signs of the COVID-19 were detected in China.

Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Figure 5.5: Domestic Aircraft Movements, Thailand, 2016–2019 (total flights)



Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Similar to aircraft movement, passenger numbers increased continuously from 2016 to 2018 but decreased in 2019 (Table 5.19 and Figure 5.6) . However, Suvarnabhumi Airport still had modest growth in 2019.

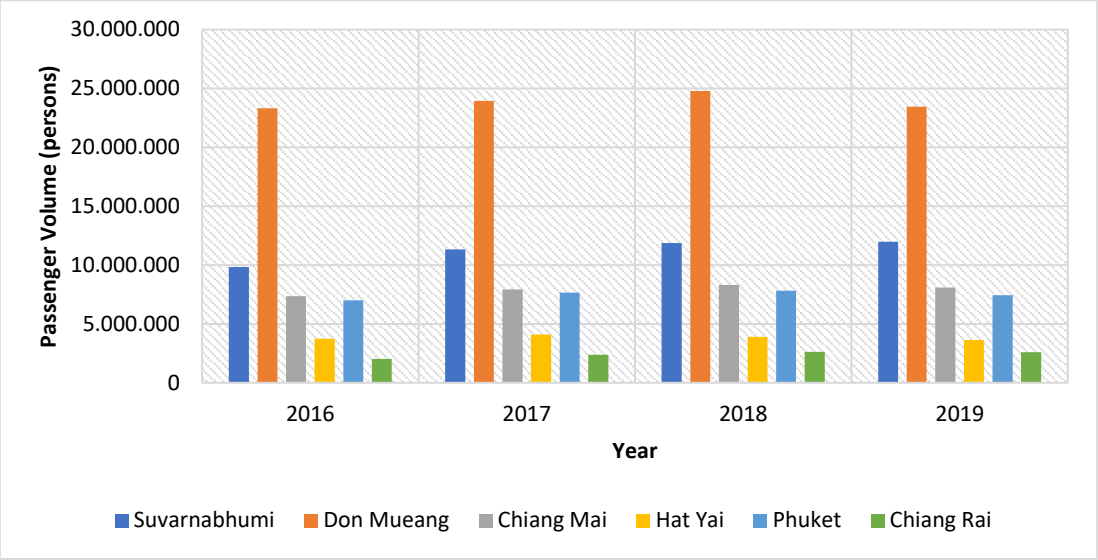
Table 5.19: Domestic Air Passenger Volume, Thailand, 2016–2017

Airport	Passengers	Change (%)	Passengers	Change (%)
	2016		**2017**	
Suvarnabhumi	9,842,502	13.35	11,337,559	15.19
Don Mueang	23,323,457	10.36	23,942,371	2.65
Chiang Mai	7,351,457	13.83	7,931,461	7.89
Hat Yai	3,753,139	10.19	4,083,465	8.80
Phuket	6,997,879	18.52	7,658,651	9.44
Chiang Rai	2,029,215	18.06	2,383,583	17.46
Total	**53,297,423**	**12.67**	**57,337,090**	**7.58**
	2018		**2019**	
Suvarnabhumi	11,871,901	4.71	11,970,155	0.83
Don Mueang	24,779,256	3.5	23,456,123	(5.34)
Chiang Mai	8,315,218	4.84	8,102,183	(2.56)
Hat Yai	3,903,344	(4.41)	3,625,593	(7.12)
Phuket	7,817,894	2.08	7,452,262	(4.68)
Chiang Rai	2,638,485	10.69	2,586,462	(1.97)
Total	**59,326,098**	**3.47**	**57,192,778**	**(3.60)**

() = negative.

Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Figure 5.6: Domestic Passenger Volumes, Thailand, 2016–2019



Source: Airport Authority of Thailand.

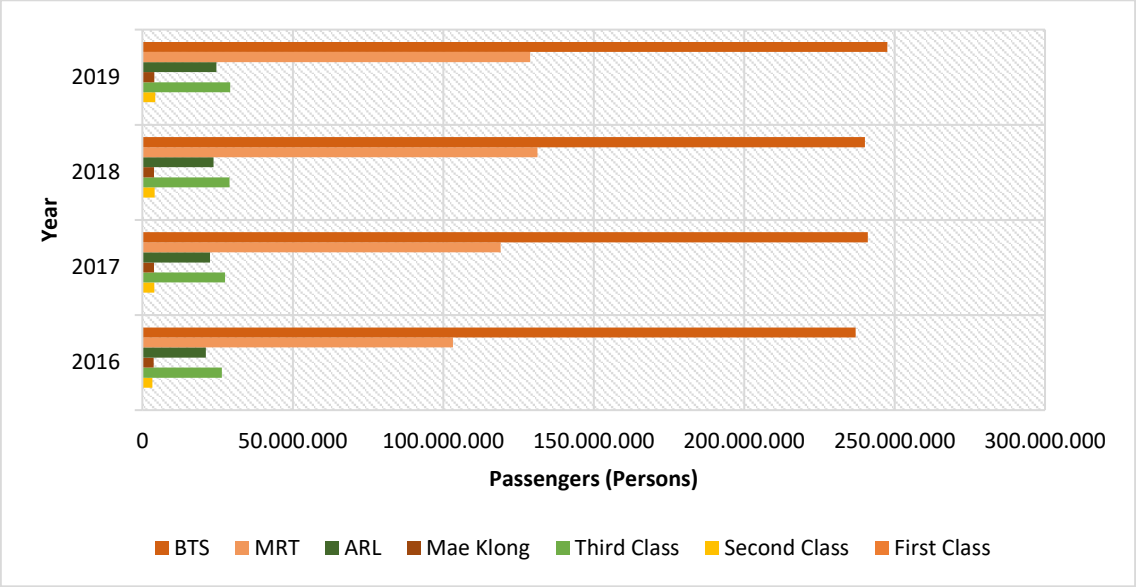
From 2016 to 2019, the number of passengers transported by rail increased continuously (Table 5.20 and Figure 5.7). This was particularly true for Bangkok's urban rail system.

Table 5.20: Rail Passengers, Thailand, 2016–2019 (persons)

	2016	2017	2018	2019
First Class	107,313	134,735	133,333	139,841
Second Class	3,329,322	3,922,460	4,108,680	4,255,971
Third Class	26,420,646	27,498,562	28,920,868	29,145,792
Mae Klong	3,773,324	3,877,619	3,830,686	3,921,691
Train Total	**33,630,605**	**35,433,376**	**36,993,567**	**37,463,295**
Airport Rail Link	21,128,530	22,509,560	23,624,285	24,624,285
MRT	103,225,663	119,116,926	131,355,923	128,864,900
- Blue	100,151,274	107,489,936	113,711,335	114,269,061
- Purple	3,074,389	11,626,990	17,644,588	14,595,839
BTS	237,047,435	241,067,194	240,139,471	247,600,000
Electric Train Total	**361,401,628**	**382,693,680**	**395,119,679**	**401,089,185**

Source: Thailand Ministry of Transport.

Figure 5.7: Total Railway Passengers, Thailand, 2016–2019



ARL = Airport Rail Link.
Source: Thailand Ministry of Transport.

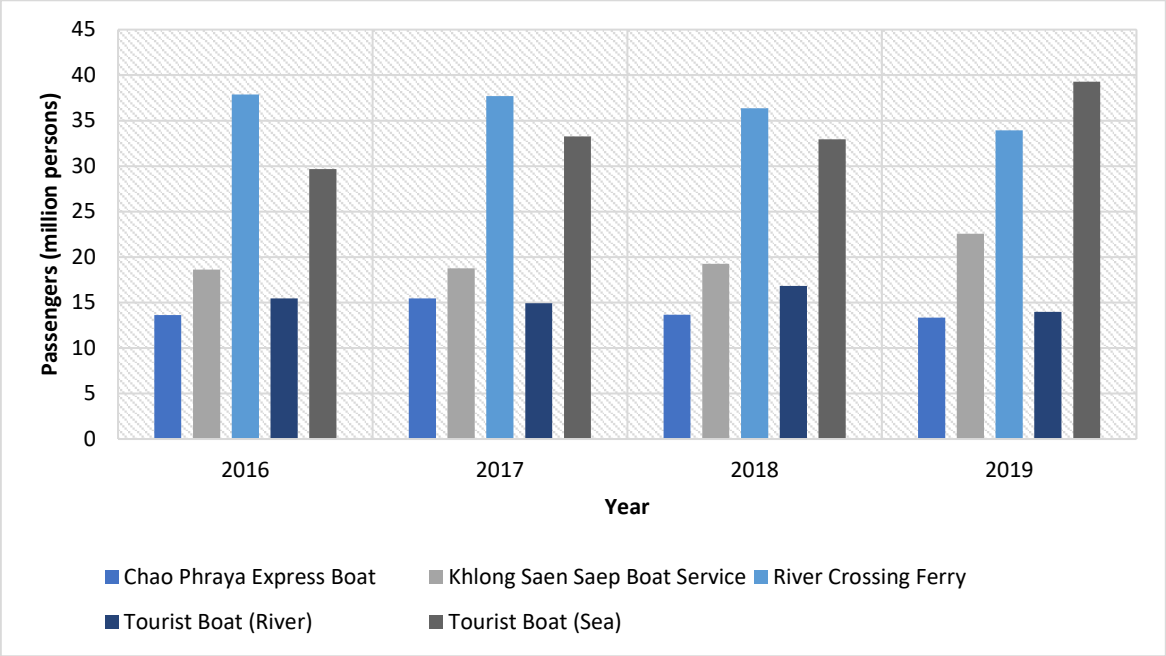
Water transport numbers remained stagnant, although there was a slight increase overall (Table 5.21 and Figure 5.8). The Khlong Saen Saep Boat Service and Tourist Boat (Sea) were the only services with increases, while the other services decreased by the end of 2019.

Table 5.21: Water Passenger Traffic, Thailand, 2016–2019 (persons)

Service Type	2016	2017	2018	2019
Chao Phraya Express Boat	13.63	15.45	13.67	13.33
Khlong Saen Saep Boat Service	18.63	18.78	19.25	22.57
River Crossing Ferry	37.88	37.68	36.35	33.93
Tourist Boat (River)	15.46	14.94	16.84	13.99
Tourist Boat (Sea)	29.68	33.25	32.95	39.29
Total	**115.28**	**120.09**	**119.06**	**123.11**

Source: Thailand Ministry of Transport.

Figure 5.8: Water Passenger Traffic, Thailand, 2016–2019



Source: Thailand Ministry of Transport.

In terms of international passenger transport, 2016 to 2019 showed continuous growth except for Hat Yai Airport in the south of the country (Table 5.22 and Figure 5.9). This is because some international airlines discontinued the connection, especially those from Malaysia. Suvarnabhumi Airport was the main international airport followed by Don Muang and Phuket international airports.

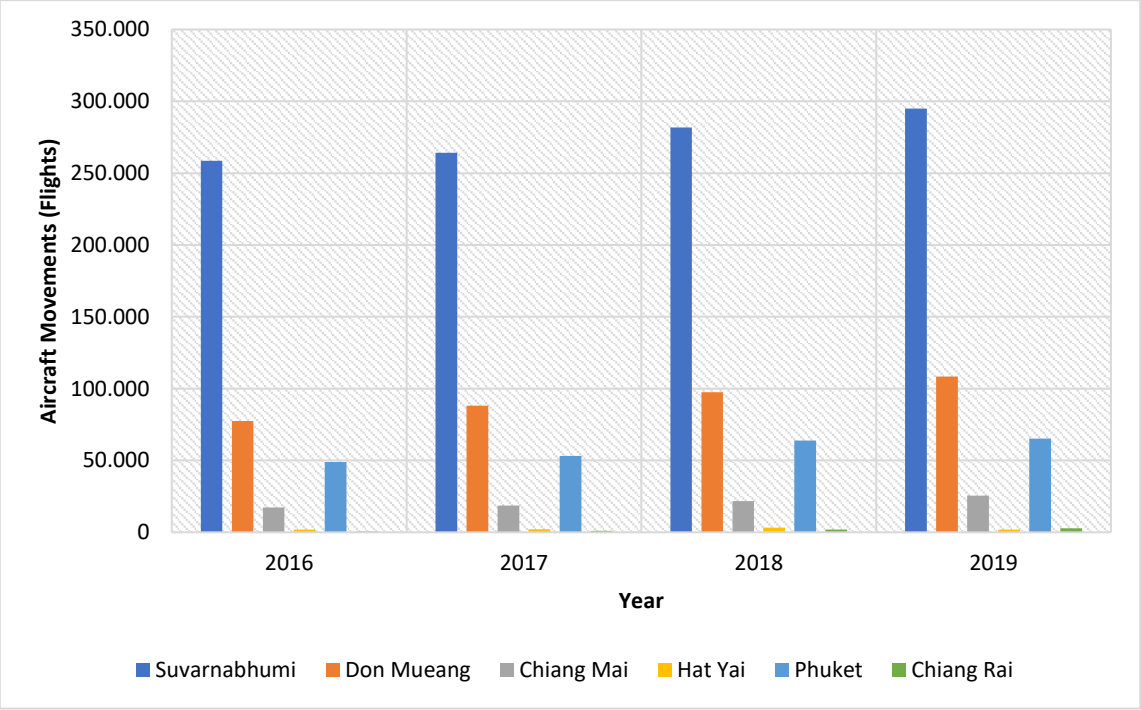
Table 5.22: International Aircraft Movements, Thailand, 2016–2019

Airport	Flights	Change (%)	Flights	Change (%)
	2016		**2017**	
Suvarnabhumi	258,714	4.50	264,279	2.15
Don Mueang	77,399	18.58	88,266	14.04
Chiang Mai	17,263	6.98	18,582	7.64
Hat Yai	1,946	5.19	2,194	12.74
Phuket	48,930	11.21	53,165	8.66
Chiang Rai	498	(6.74)	1,004	101.61
Total	**404,750**	**7.83**	**427,490**	**5.62**
	2018		**2019**	
Suvarnabhumi	281,879	6.66	294,969	4.64
Don Muang	97,555	10.52	108,544	11.26
Chiang Mai	21,690	16.73	25,441	17.29

Hat Yai	3,314	51.05	2,001	(39.62)
Phuket	63,766	19.94	65,167	2.20
Chiang Rai	1,920	91.24	2,748	43.13
Total	**470,124**	**9.97**	**498,870**	**6.11**

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Figure 5.9: International Aircraft Movements, Thailand, 2016–2019



Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

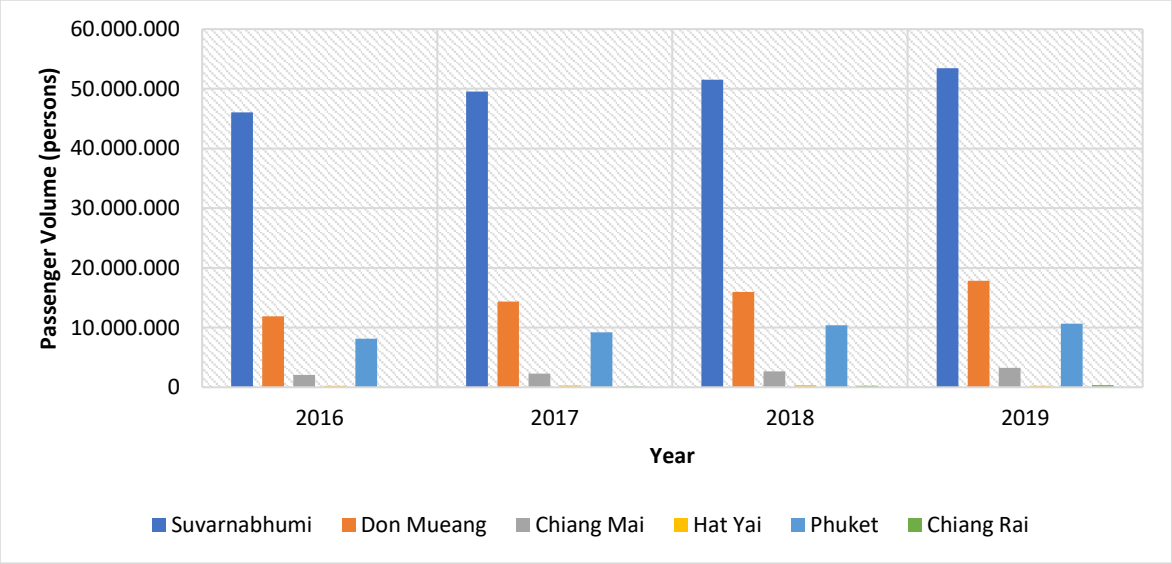
International passenger transport grew from 2016 to 2019. The drop in passenger numbers for 2019 in Hat Yai again reflected that fact that some airlines stopped service there (Table 5.23 and Figure 5.9). In 2019, apart from Hat Yai, Phuket International Airport saw a slight drop in passenger traffic.

Table 5.23: International Passenger Volume, Thailand, 2016–2019

Airport	Passengers	Change (%)	Passengers	Change (%)
	2016		**2017**	
Suvarnabhumi	46,050,161	4.14	49,522,799	7.54
Don Mueang	11,880,300	29.55	14,357,386	20.85
Chiang Mai	2,095,089	9.81	2,298,819	9.72
Hat Yai	251,526	7.48	283,899	12.87
Phuket	8,109,306	16.59	9,196,527	13.41
Chiang Rai	30,985	15.98	119,792	286.61
Total	**68,417,367**	**9.44**	**75,779,222**	**10.76**
	2018		**2019**	
Suvarnabhumi	51,507,176	4.01	53,455,724	3.23
Don Mueang	15,978,892	11.29	17,857,316	1.36
Chiang Mai	2,674,651	16.35	3,231,365	3.13
Hat Yai	352,763	24.26	272,499	(8.41)
Phuket	10,403,631	13.13	10,666,178	(0.57)
Chiang Rai	228,804	91	342,271	2.14
Total	**81,145,917**	**7.08**	**85,825,353**	**1.81**

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

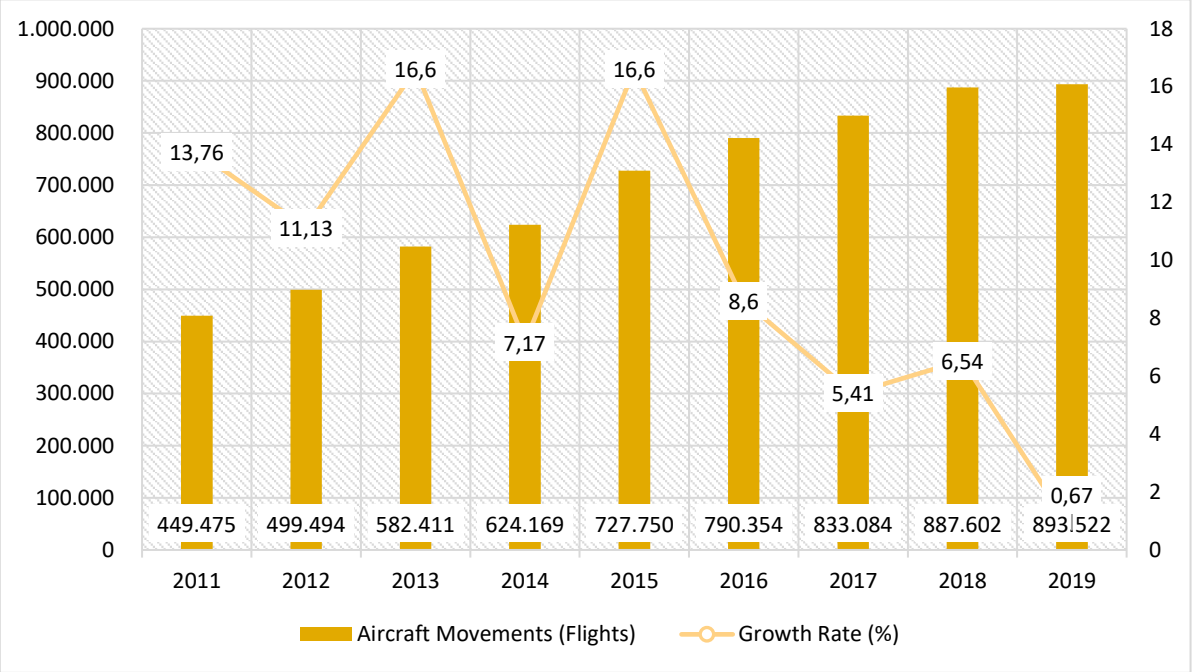
Figure 5.10: International Passenger Volume, Thailand, 2016–2019



Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

International flights witnessed an increase, while the growth rate of flights went down (Figure 5.11). The highest number of passengers was in 2019, with 85,825,353, compared to 2016 with 68,417,367 total passengers.

Figure 5.11: Commercial Aircraft Movements, Thailand, 2011–2019



Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

5.3.2. During the Pandemic Transport Assessment

With its lockdowns and restrictions on the movement of people, 2020 deeply affected aircraft and passenger movement in Thailand (Tables 5.24 and 5.25). There was a drastic drop in domestic air movements, with Phuket suffering the most. The overall decrease in passenger movement based on a year-on-year basis was –45.54%.

Table 5.24: Domestic Aircraft Movements, Thailand, 2020

Airport	Flights	Change (%)
Suvarnabhumi	59,898	(29.60)
Don Mueang	112,272	(31.47)
Chiang Mai	35,058	(35.15)
Hat Yai	18,387	(23.06)
Phuket	25,507	(49.40)
Chiang Rai	11,725	(32.54)
Total	262,847	(33.40)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Table 5.25: Domestic Air Passenger Volume, 2020

Airport	Passengers	Change (%)
Suvarnabhumi	6,835,047	(42.89)
Don Mueang	13,039,436	(44.41)
Chiang Mai	4,365,047	(46.13)
Hat Yai	2,330,416	(35.72)
Phuket	3,097,360	(58.44)
Chiang Rai	1,476,910	(42.90)
Total	31,144,216	(45.54)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Rail transport also saw a drastic decrease of about one-half for all types of rail services compared to the last 2 years (Table 5.26). The biggest decrease can be seen in the BTS data, with about 100,000,000 fewer passengers. There was an increase, however, in the MRT Purple Line in 2020 compared to previous years, as this line was not open in 2019.

Table 5.26: Railway Passengers, Thailand, 2020–2021

	2020	2021
First Class	86,245	
Second Class	2,296,221	
Third Class	17,973,264	
Mae Klong	2,527,309	
Trains Total	**22,883,039**	
Airport Rail Link	14,895,205	7,147,761
MRT	112,435,170	51,068,125
- Blue	95,598,532	44,544,144
- Purple	16,836,638	6,523,981
BTS	146,800,000	97,369,831
Red Line Train	-	758,178
Electric Trains	**274,130,375**	**156,343,895**

Note: To 7 December 2021.
Source: Government of Thailand, Ministry of Transport, Rail, MOT Data Catalog, https://datagov.mot.go.th/group/rail (accessed 12 August 2021).

Table 5.27: Water Passenger Traffic, Thailand, 2020–2021 ('000 passengers)

Service Type	2020	2021
Chao Phraya Express Boat	4.50	1.58
Khlong Saen Saep Boat Service	5.50	2.13
Chao Phraya Ferry	4.94	4.46
Chao Phraya Electric Boat	0	0.05
Regional Ships	32.82	15.78
Total	**47.76**	**24.00**

Source: Government of Thailand, Ministry of Transport, Volume of Passenger Water Transport in the Country, MOT Data Catalog, https://datagov.mot.go.th/dataset/passenger-water-transport-in-country-classified-by-service-usage (accessed 30 January 2023).

The decrease was even higher for international aircraft and passenger movements (Tables 5.28 and 5.29 and Figure 5.12). There was a decrease of over 73% for 2020, with Suvarnabhumi Airport suffering the least.

Table 5.28: International Aircraft Movements, Thailand, 2020

Airport	Flights	Change (%)
Suvarnabhumi	92,717	(68.57)
Don Mueang	20,998	(80.65)
Chiang Mai	4,397	(80.72)
Hat Yai	441	(79.46)
Phuket	13,343	(79.52)
Chiang Rai	401	(85.41)
Total	132,267	(73.49)

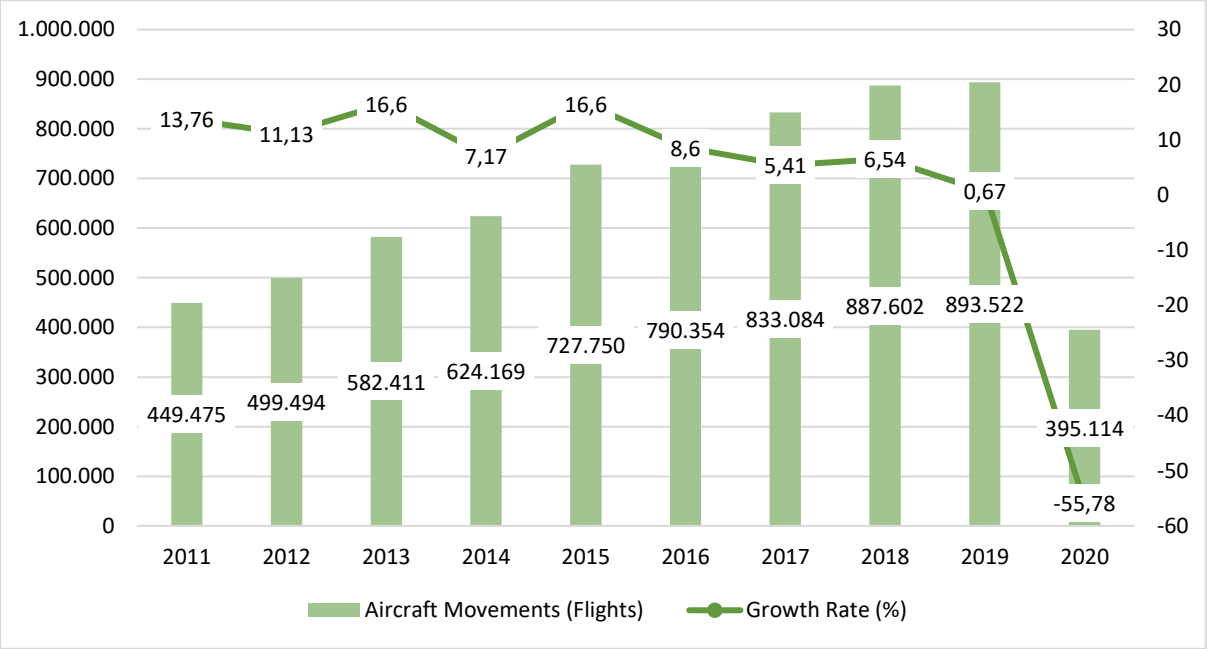
() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Table 5.29: International Passenger Volume, Thailand, 2020

Airport	Passengers	Change (%)
Suvarnabhumi	9,871,186	(81.53)
Don Mueang	2,726,407	(84.73)
Chiang Mai	486,428	(84.95)
Hat Yai	40,777	(85.04)
Phuket	2,332,349	(78.13)
Chiang Rai	36,384	(89.37)
Total	15,493,531	(81.95)

() = negative.
Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

Figure 5.12: Commercial Aircraft Movements, Thailand, 2011–2020



Source: Airports of Thailand, About BOT, https://www.airportthai.co.th/en/airports-of-thailand-plc/about-aot/air-transport-statistic/ (accessed 8 July 2021).

5.3.3. Transport Policy Responses and Lessons Learned

As of 1 September 2021, some COVID-19 restrictions in Thailand were relaxed, in particular interprovincial travel (Tourism Authority of Thailand, 2021). Below are the details from domestic providers regarding how each are resuming their operations:

(i) Thai Airways, the national carrier under liquidation, has announced that its domestic executive lounges at Suvarnabhumi Airport, Phuket International Airport, and Chiang Mai International Airport are back in service as of 1 September 2021. This means that the airline is slowly returning to offering domestic services.

(ii) Bangkok Airways is offering sealed route flights daily for international transit/transfer passengers under the Samui Plus programme connecting from Suvarnabhumi to Samui International Airport.

(iii) Nok Air is back in service at Don Mueang International Airport from 1 September 2021 to Buri Ram, Chiang Mai, Chiang Rai, Chumphon, Hat Yai, Lampang, Loei, Mae Sot, Nakhon Si Thammarat, Nan, Phitsanulok, Phuket, Ranong, Sakon Nakhon, Surat Thani, Ubon Ratchathani, and Udon Thani.

(iv) AirAsia is back in service at Don Mueang International Airport from 3 September 2021 to Chiang Mai, Chiang Rai, Hat Yai, Khon Kaen, Nakhon Phanom, Nakhon Si Thammarat, Narathiwat, Phuket, Roi Et, Ubon Ratchathani, and Udon Thani.

(v) Thai Lion Air is back in service at Don Mueang International Airport from 1 September 2021.

(vi) Thai Smile Airways has announced resumption of some domestic flights from 1 to 30

September 2021 to Chiang Mai, Chiang Rai, Hat Yai, Khon Kaen, Krabi, Nakhon Si Thammarat, Narathiwat, Phuket, Surat Thani, Ubon Ratchathani, and Udon Thani.

(vii) Thai VietJet Air resumed its entire domestic flight network at Suvarnabhumi Airport from 1 September 2021, flying to Chiang Mai, Chiang Rai, Hat Yai, Khon Kaen, Krabi, Nakhon Si Thammarat, Phuket, Surat Thani, Ubon Ratchathani, and Udon Thani. The airline has also resumed its services at Don Mueang International Airport from 1 September 2021.

All passengers are asked to travel safely; wear masks during their flights; wash their hands with alcohol spray or gel; and maintain social distancing. They also must show proof of vaccination to be allowed to board.

Airlines have been asking for support from government, but there has been no formal policy response. This shows the resiliency of the Thai private sector, as it cannot rely on government measures. These operators do hope, however, that the government does not issue new restrictions if COVID-19 cases increase again.

5.4. E-Commerce

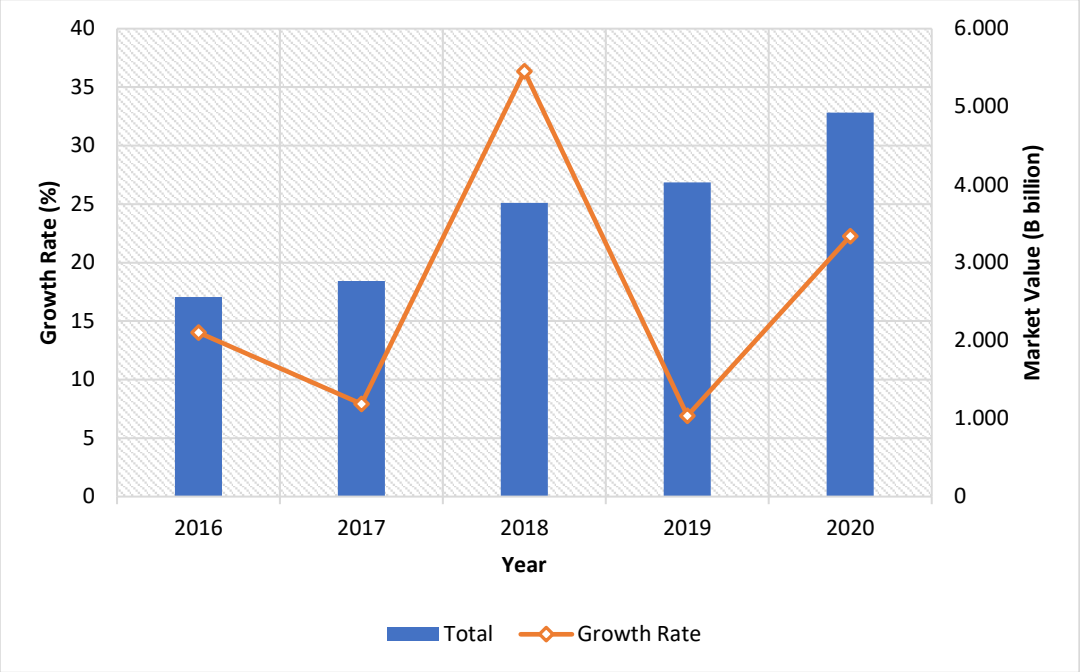
Before the pandemic, Thai retailers were adjusting to the digital age. Many retailers created online channels for their customers while using data analytics to better understand customer needs (Government of the US, ITA, 2022).

E-commerce platforms in Thailand are divided into three categories: business-to-business (B2B) transactions, B2C transactions, and business-to-government (B2G) transactions. Amongst the three groups, B2B transactions are the largest and account for 55%, followed by B2C transactions (29%), and B2G transactions (16%). Indeed, B2B e-commerce in Thailand is growing rapidly due to internet development and mobile transformation. Sectors using e-commerce platforms to increase their productivity include the food and service sector with 31%, followed by manufacturing at 16%, and retail and wholesale at 15% (Government of the US, ITA, 2022). Demand for e-commerce services is coming not only from Bangkok but also from other provinces such as Nonthaburi and Chonburi.

Thailand's online retail commerce is driven by several factors, including increased smartphone penetration and intense competition amongst e-commerce operators. The PromptPay service, a national e-payment scheme, has been a key driver in stimulating e-commerce activities.

5.4.1. Pre-Pandemic E-Commerce Assessment

Figure 5.13: E-Commerce Market Value (B billion)



Source: Statista, E-commerce Market Value in Thailand from 2017 to 2020 with a Forecast for 2021, E-Commerce, https://www.statista.com/statistics/770050/e-commerce-market-value-thailand/ (accessed 8 July 2021).

Pre-pandemic data show that online digital marketing grew 70% since 2017 (Leesa-Nguansuk, 2019). The following year, the value of Thai e-commerce grew by 14% and was expected to hit a growth rate of 20% in 2019; the value of Thai e-commerce grew to B3.2 trillion in 2019 (Leesa-Nguansuk, 2019). The market is expected to develop further, as Thailand had over 45.0 million internet users in 2018, and 124.8 million mobile subscribers, 44.0 million people using LINE, and 52 million Facebook users in 2019 (Languepin, 2019). Facebook topped social commerce with a market share of 42%, trailed by LINE at 34%, Instagram at 19%, and Twitter at 5% (Leesa-Nguansuk, 2020).

5.4.2. During the Pandemic E-Commerce Assessment

The COVID-19 pandemic increased Thailand's desire to move towards a cashless society; more retailers turned to online payment services. Online payments had often been used in shopping malls and restaurants but could be seen everywhere; even street carts offered an online payment services or a QR code for payment. Additionally, the Thailand 4.0 programme, which supports the digitalisation of business and payment systems, will have a huge impact. The use of online banking is encouraged through the government's payment of aid to people through another e-payment system, Pao Tang.

The population often uses social media and mobile apps to research new products before making purchases. Many purchase directly through social media, and 83% of mobile users use shopping apps. Travel, electronics and physical media, food, and personal care remain the strongest online shopping

categories. The online shopping sector had a total value of approximately $18.97 billion in 2021 (Government of the US, ITA, 2022).

From the beginning of 2020, social distancing, lockdowns, and other measures led consumers to change their behaviours to online shopping, social media use, internet for teleconferencing, and streaming of videos and films. These trends resulted in spikes in online shopping businesses, especially in B2C sales and B2B e-commerce. Online sales were expected to hit $49 billion in 2020, up from $33 billion in 2017 (Minh, 2023). The driving factors behind this growth were increased internet and mobile phone use, as well as improved logistics and e-payment systems, which heightened convenience and consumer confidence to shop online.

Thailand's growing e-commerce market is focussed on mobile applications, with an estimated mobile commerce market of $15.8 billion in 2020. The mobile commerce market is expecting a compound annual growth rate of 12% to $25 billion by 2023, driven by rising smartphone penetration (around 40%) and an established preference for mobile over desktop shopping.[14]

Thailand's e-commerce data during the pandemic jumped to B220 billion in 2020, accounting for 2%–5% of total retail (Leesa-Nguansuk, 2020). Compared to pre-pandemic data, e-commerce use shot up 40% after the 2020 lockdown (Srivorakul, 2021). For Thai households, shopping online increased 58% during the pandemic, which also accelerated the shift to e-commerce (*The Nation Thailand*, 2021). The food category grew by 74% from January to December 2020, compared to 60% in non-food categories (*The Nation Thailand*, 2021).

5.4.3. E-Commerce Policy Responses and Lessons Learned

The government's focus on Thailand 4.0 includes allocating a budget to develop a broadband network for all villages across the country (Royal Thai Embassy to the United States, 2018). This nationwide network will help bridge the digital divide and promote modern economic development through e-commerce. The government also has a vision of creating the next generation of digital apps to accommodate and to promote online activities, including e-marketplaces, e-payments, and e-government. The goal is for villagers to start conducing e-commerce businesses for local products and services.

The growth of e-commerce has also boosted the use of e-payments because these make purchases of goods faster and more convenient. Indeed, Thailand's online and mobile banking market could reach maturity within 6 years, largely driven by the national e-payment system and the significant growth in mobile broadband penetration. By 2021, over 85% of the population will be online via mobile phone, an increase of 31% from 2018 (Kemp, 2021).

In recent years, the Electronic Transactions Development Agency has been creating a strategic plan, focussing on developing digital infrastructure, upgrading e-transaction rules, improving e-transaction system standards, and promoting digital knowledge amongst the public. A key target of this proposed

[14] JP Morgan, 2020 E-commerce Payments Trends Report: Thailand, E-Commerce Payments Trends, https://www.jpmorgan.com/europe/merchant-services/insights/reports/thailand-2020

plan is increasing people's confidence in internet usage by 4% per year, reaching 85% by 2022 (Tortermvasana, 2021).

Over the past few years, many courier service companies started launching their e-commerce platforms in Thailand, bringing domestic end-to-end delivery to the market. Consequently, delivery costs for e-commerce products have sharply declined due to the fierce competition amongst these providers.

The Thai mobile commerce market is already the dominant e-commerce sales channel in the country, used for 52% of all online shopping transactions, estimated at around $13.6 billion. This makes Thailand one of the regional forerunners for mobile commerce. Indeed, smartphone users are keen e-shoppers, with 71% shopping online at least twice per month. Some 90% of smartphone users plan to shop online in the future. Apps are the most-used method to shop online, comprising 65% of all transactions – offering in-app purchasing will therefore be crucial for merchants to reach most Thailand's online consumers.[15]

5.5 Policy Recommendations

Thailand was already suffering from reduced export volumes due to the country's lower competitiveness even before the pandemic. Economic growth in Thailand contracted by –6.1% in 2020 due to a decline in external demand, affecting trade and tourism, disrupting supply chains, and weakening domestic consumption. In 2020, after suffering its worst contraction since the Asian financial crisis, the economy expanded by 2% in the first half of 2021 amidst the third wave of the COVID-19 pandemic and is not expected to recover to pre-COVID-19 levels until 2023.[16]

5.5.1. Trade Policy Recommendations

Reductions in trade costs matter, because they improve access to markets (Berg et al., 2017). When infrastructure is in place, operations may require funding or be hindered by inefficient management, non-competitive market structures of service providers, and/or excessive regulations, which further drive up user costs. As these non-physical costs represent a significant share of total transport costs, they should be eradicated.

During the pandemic, Thailand suffered from a lack of access to containers, which made exports more challenging. Exporters not only were faced with container shortages but were also subject to higher freight costs. To remedy this situation, Thailand should develop its own shipping fleet. It should not belong to the government but to the private sector, with the government providing incentives.

The overall objective is to reduce transport costs for Thai exporters and importers. A reduction in transport costs can stimulate the volume of trade, reconnect existing markets, open new markets,

[15] Ibid.

[16] World Bank, The World Bank in Thailand, https://www.worldbank.org/en/country/thailand/overview#1 (accessed 2 January 2022).

induce new industries to form, and thereby influence the pattern of trade. Incentives can include financial support, such as additional credits of 20%–30% if exporters and importers use Thai vessels; a Thai shipowners' fund with a credit term of at least 10 years; and/or tax incentives such as exemption of import duties and long-term tax holidays.

It is also important for the government to pursue an active anti-trust policy in the maritime sector. In 1999, Thailand enacted the Prices of Goods and Services Act B.E. 2542 and the Trade Competition Act B.E. 2542 with a view to ensuring free and fair competition in trade in goods and services. In addition, Section 27 of the Business Competition Act defines the types of anti-competitive conduct that are prohibited. The activities of maritime conferences, consortia, and stabilisation agreements – especially with respect to joint pricing and monopolisation – appear to come under the aegis of the act. However, under Section 35(2), enterprises must be declared as 'controlled businesses' before any action can be taken. The maritime sector has not yet been declared a controlled business, so this action should be done as soon as possible.

Within ASEAN, the proposal of a regional resilience concept means that AMS governments are expected to 'promote domestic stability on a comprehensive basis so that the resultant secure states can withstand internal and external stresses and thus contribute to the attainment of regional resilience in Southeast Asia' (Bradford and Herrmann, 2021). To achieve regional resilience and re-connect intra-ASEAN trade, it is important for AMS to agree on a coordinating platform whereby ASEAN shippers and consignees, ASEAN shipowners, ASEAN freight forwarder associations, and the ASEAN trucking federation work together to enable the development of dedicated ASEAN trade lanes. These dedicated trade lanes, with the support of ASEAN's trade and transport facilitation committees, can become best-practice trade corridors where all non-tariffs barriers are eliminated and shipments are expedited.

5.5.2. Transport Policy Recommendations

Passenger mobility fell significantly because of the pandemic. AMS that rely on tourism are struggling in their economic recoveries and need to consider how to balance economic reality with health protocols. Currently, Thailand's domestic passenger policy is based on the enforcement of social-distancing measures and the full vaccination of passengers travelling within the country. However, the return to pre-pandemic levels of travel may be challenging even if a large portion of the population has been vaccinated. Depending on the pandemic, airlines may require extra COVID-19 testing before travel can take place. These measures could fluctuate depending on the pandemic situation. The current main policy is to create a national bubble, but this is unrealistic; vaccinating the whole population is the only way to establish herd immunity.

The development of dedicated travel lanes needs to be enhanced in ASEAN. AMS need to negotiate bilateral travel lanes for vaccinated citizens to enable travel. People-to-people connectivity is a key pillar for ASEAN, so these lanes should be established as quickly as possible amongst all ASEAN capitals. The opening of these travel lanes will depend on the pandemic situation in each AMS, but at least 90 vaccinated travel lanes could be created that would reconnect ASEAN.

5.5.3. E-Commerce Policy Recommendations

The government would like to increase revenues from e-commerce to roughly $165 billion next year, helping support the economic recovery from the pandemic (*Bangkok Post*, 2021). In the first phase of the plan, the government aims to increase the e-commerce revenues of SMEs by at least 5% per year and outbound cross-border e-commerce revenue by at least 5% per year during that timeframe (Royal Thai Embassy to the United States, 2021). To be successful, the government must:

(i) **Reallocate the country's transport budgets.** The government must shift its spending away from roads towards infrastructure that primarily favours public transport, walking, and cycling. Supporting more compact and connected cities does not necessarily require larger transport budgets but more strategic use of existing resources (Heeckt and Colenbrander, 2019).

(ii) **Integrate urban and transport plans.** National land-use, housing, and transport policies have historically been developed by separate ministries. This has led to cities where residential areas are poorly connected to jobs, schools, hospitals, and parks, so people end up driving long distances every day. Thai cities thus should create integrated urban mobility plans.

(iii) **Introduce road pricing.** Charging drivers to use a road can help reduce congestion, distribute the social costs of driving more fairly, and improve air quality. The price can be set to reflect the real cost; for example, a higher congestion charge can be imposed on heavier and more polluting vehicles. The revenues generated from road pricing can be then earmarked for reinvestment in public transport, so that road pricing not only deters cars but also helps make alternative modes of travel more affordable, efficient, and pleasant.

(iv) **Establish metropolitan transport authorities.** Many people who live in cities commute from a much wider region. It therefore makes sense for Thailand to establish a transport authority with responsibility for multiple transport modes across the greater Bangkok metropolitan region. The transport authority should have sufficient responsibility for spatial planning, budgets, and operations to help shape transport. A strong mandate from the government is essential, as poor coordination across different jurisdictions and service providers can otherwise undermine the effectiveness of the new authority.

In this context, it is important for policymakers in ASEAN to find ways to become more engaged in cross-border e-commerce, especially for the promotion of exports. It is thus essential to collaborate with large cross-border e-commerce platforms and to build partnerships between governments and the private sector (Grant, Banomyong, Gibson, 2021). Due to network effects, large cross-border e-commerce platforms can help link regional and international markets. It is also suggested that ASEAN pays attention to the supervision of payments, transactions, and goods in the early stages of development and to begin conducting comprehensive supervision over all aspects of the cross-border e-commerce supply chain through the development of a regional regulatory system.

International cooperation in cross-border e-commerce should also be strengthened. AMS should actively promote cross-border e-commerce rules and treaties. The establishment of a cross-border e-

commerce regional cooperation mechanism is required to create the necessary conditions for domestic enterprises in AMS to successfully carry out cross-border e-commerce activities.

ASEAN should pay special attention to SMEs and small shippers to be engaged in cross-border e-commerce. At a minimum, AMS should adopt and implement international best practices, as recommended by the World Trade Organization Trade Facilitation Agreement, especially the provisions on expedited shipments, and the Immediate Release Guidelines of the World Customs Organization.

5.6. Conclusions

After the pandemic, there is a need to improve transport networks in ASEAN, as this will lead to reduced transport costs, which in turn increases access to markets and boosts trade flows. Passenger transport requires dedicated vaccinated travel lanes; if connectivity is re-established, this will support the return of people-to-people connectivity in ASEAN.

E-commerce has grown exponentially in all AMS, but the success of e-commerce also depends on national and regional transport and logistics networks. Reconnection therefore requires ASEAN transport and logistics network integration, coupled with enhanced trade and transport facilitation.

Dialogue partners should share their expertise. Lessons learned from China are that developing regulations on e-commerce, especially cross-border e-commerce, is a long process (Su *et al*., 2019). The experience of China also shows the complexity of cross-border e-commerce policymaking. AMS may consider implementing pilot projects to manage the possible risk of introducing cross-border e-commerce regulations, learning from the Chinese experience.

Japan needs to consider the implications of developing shorter supply chains embedded within ASEAN to serve its global market. This needs to be a joint effort between the Japanese public and private sector in reconfiguring regional supply chains at the ASEAN level.

It is difficult to propose policies when the situation related to the pandemic is ever changing, however. Policies tend to be reactive, with responses that are often not aligned with the up-to-the-minute situation. Nonetheless, the pandemic has been a wake-up call related to the need for ASEAN to continue its efforts in integrating transport and logistics networks. Developing simulation models predicting the impact of new policies would be useful to AMS when considering regional responses to natural or human-made events.

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Chapter 6:

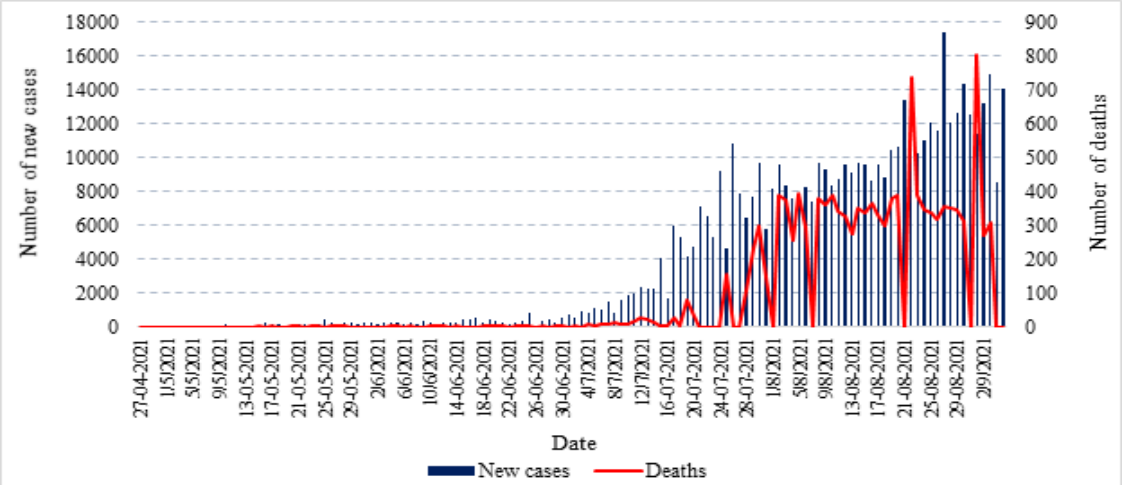
Viet Nam

Trinh Thi Thu Huong

6.1. Introduction

In Viet Nam, the number of deaths from COVID-19, as of September 2021, was 13,074 (Figure 6.1). The death rate was 2.5%, higher than the world average of 2.1%.

Figure 6.1: COVID-19 Cases and Deaths in Viet Nam, to September 2021



Source: Vietnam General Department of Preventive Medicine, Covid-19 Data in Vietnam, https://ncov.vncdc.gov.vn/ (accessed 30 August 2021).

Since the beginning of the pandemic, the government's goal has been prevention simultaneously with socio-economic development. Consequently, Viet Nam's economy still achieved positive results; GDP growth reached 2.9%, equivalent to more than $271 billion (World Bank, 2021). This was a success for Viet Nam, as it was in the group with the highest economic growth rates in the world. However, to August 2021 with the rapid spread of the Delta variant, Viet Nam again applied strict social-distancing measures. The government aims to vaccinate about 75 million people (70% of the population), with 150 million doses of vaccine, in the second half of 2021 and early 2022. As of September 2021, 22,012,123 doses were administered (WHO, 2021b).

The purchase and production of vaccines are still being accelerated, and vaccinations for vulnerable groups has been prioritised. Viet Nam's GDP growth forecast in 2021 was for 4.8% due to the positive

economic results achieved in the first 6 months of the year (World Bank, 2021). The GDP in the first 6 months of 2021 increased by 5.64%, higher than the growth rate of 1.82% in the first 6 months of 2020 (GSO, 2020). Many industries, however, remain negatively affected by the pandemic; there are also industries with strong growth like e-commerce.

6.2. Pre-Pandemic Economy

6.2.1. Passenger Transport

The passenger transport sector in Viet Nam consists of nearly all transport modes: road, rail, and air (i.e. domestic and international flights). With the appearance of many ride-hailing applications (e.g. Grab and Be), motorbikes have also become popular in big cities like Ha Noi, Ho Chi Minh City, and Da Nang. Amongst the modes of transport, road passenger transport occupied the highest proportion. Through interviews, experts all said that passenger transport activities pre-pandemic were growing (Table 6.1).

Table 6.1: Passenger Transport Services in Viet Nam, 2016–2019

	2016	2017	2018	2019
Volume (million passengers)	3,620.5	4,081.6	4,641.5	5,143.1
Growth (%)	9.6	11.1	10.7	11.2
Rotation (billion passengers/kilometre)	171.3	182.8	207.1	248.5
Growth (%)	11.0	9.1	10.9	10.9

Source: GSO.

The growth of both volume and rotation achieved double-digit rates during this period; thus, the economic development of the country encouraged the demand of individual movement. This is the main source of revenue for passenger transport in Viet Nam. Moreover, infrastructure is being improved in both the urban and interprovincial transport systems to provide more flexible times and reasonable prices, suitable to those with low and middle incomes.

In terms of air transport, the number of international passengers to Viet Nam, as well as domestic passengers, witnessed an annual upward trend. Meanwhile, the infrastructure of air transport continued to develop, with 22 airports including 8 international airports. The plan to develop airport–rail links, as in other countries, has not been mentioned in development strategies.

Rail transport has many limitations in Viet Nam, including poor conditions and low speeds, and also competes with low-cost airlines. Therefore, the number of passengers transported by rail was low, peaking during holidays when people returned to their hometowns.

In terms of transport companies, almost all coach and taxi service companies are private (accounting for 90%), while only the Vietnam Railways Corporation is a state-owned enterprise providing passenger transport service. Viet Nam has four commercial airlines providing mainly domestic flights. Vietnam Airlines, Bamboo Airways, and VietJet Air all have international routes.

6.2.2. Trade Sector

A key part of logistics activity, freight transport connects different stages of a supply chain. The trade sector includes many modes of transport: rail, road, maritime, inland waterways, and air. Road freight transport is considered to be the backbone of the national freight transport system. Before the pandemic, the majority of freight was carried via roads, accounting for 67.36%, followed by inland waterways (19.8%), and maritime (12.74%) (Table 6.2).

Table 6.2: Volume of Carried Freight in Viet Nam, 2015–2019 (million metric tonnes)

Mode	2015	2016	2017	2018	2019
Rail	4,327	5,147	5,421	5,664	5,567
Road	2,684,956	2,823,242	2,596,533	3,001,043	3,814,075
Maritime	803,028	832,821	776,868	843,040	721,227
Inland waterway	697,859	717,655	732,401	838,379	1,120,833
Air	275	292	336	382	354

Source: GSO.

To meet the increasing demand for freight transport, the quality of transport services improved significantly, with the appearance of many modern vehicles that enhanced competitiveness. The number of enterprises joining road transport accounted for the majority and increased continuously. This trend was similar to inland waterway and rail transport (Table 6.3).

Table 6.3: Transport Enterprises in Viet Nam, 2015–2019 (number)

	2015	2016	2017	2018	2019
Rail freight	13	13	14	16	31
Road freight	12,780	14,072	16,002	17,003	18,018
Coastal and maritime freight	471	567	563	543	527
Inland waterway freight	822	878	971	980	1,045
Air freight	1			3	

Source: GSO.

With high economic growth and fast freight development, the traffic flow on roads – especially on expressways – kept increasing. Viet Nam was thus focussing on developing multimodal transport systems, including coastal waterways and inland waterway networks, along with infrastructure at ports and inland ports, to share the cargo load. Viet Nam's transport infrastructure system ranked 66 in 2019 with 52.2 points, which was higher than the Philippines (41.2 points), for example (Schwab, 2019).

6.2.3. E-Commerce Sector

The improvement of the legal framework and ICT infrastructure encouraged Viet Nam's e-commerce breakthrough. A series of regulations were issued to manage e-commerce activities, such as the Law on Tax Administration 2019, Law on Cyber Security 2018, Decree No. 165/2018/ND-CP on electronic transactions in financial activities, and Decision No. 1563/QD-TTg to develop e-commerce in Viet Nam during 2016–2020.

Viet Nam had some 68 million internet users, accounting for 70% of population, above the global average of 59% (Kemp, 2020). Smartphones continue to be the most popular devices, with a 93% penetration rate. Rising internet and smartphone penetration – coupled with a large younger generation – are helping propel the e-commerce market. Indeed, Viet Nam's e-commerce grew in 2018 and 2019 when e-commerce sales reached approximately $9 billion and $12 billion, respectively (Google, Temasek, Bain and Company, 2019). The compound annual growth rate was about 30% from 2016 to 2019 (VECOM, 2019).

There are two popular types of e-commerce models in Viet Nam: B2B and B2C. B2C is the leading sector in the e-commerce market (Kemp and Moey, 2019). In 2019, B2C e-commerce sales exceeded the target of $10.8 billion, accounting for 4.9% of the total retail sales of consumer goods and services nationwide (iDEA, 2020). B2B e-commerce, which still remains relatively new in Viet Nam, falls under the umbrella of import–export activities, especially for SMEs with limited financial resources. In 2016, 32% of businesses partnered with foreign companies through online channels. In 2018, 500–600 exporters were selling on Alibaba (EU-Vietnam Business Network, 2018). This period also witnessed the popularity of e-marketplaces with consumer-to-consumer (C2C) platforms such as Lazada, Sendo, Shopee, and Tiki, but the most prominent C2C platforms are social media, most notably Facebook.

6.3. Pandemic Impacts and Policy Responses

6.3.1. COVID-19 in Viet Nam

COVID-19 was first confirmed in Viet Nam on 23 January 2020, when two cases were discovered in Ho Chi Minh City. In March and April 2020, the number of cases increased rapidly due to passengers from European countries and the appearance of clusters as in Bach Mai Hospital in Ha Noi and Buddha Bar in Ho Chi Minh City. From 1 April 2020, a lockdown was implemented for 15 days; the country did not

confirm any cases of local transmission from mid-April to the end of July 2020. In this first wave, a total of 383 confirmed cases were reported without any deaths. Of the 383 reported cases, 277 cases (72%) were from abroad (WHO, 2020a).

The second wave of infection began on 25 July 2020 in Da Nang. The first death was recorded on 31 July 2020, while hundreds of cases were detected. After 2 months, almost all economic activities were resumed. On 24 January 2021, there were 1,548 confirmed cases of COVID-19, including 37 health care workers, from 46 provinces, and 35 deaths (WHO, 2020b).

On 28 January 2021, Viet Nam entered its third wave of infection when Hai Duong and Quang Ninh provinces recorded an additional 84 community transmission cases within 1 day. Initially, the government only quarantined the areas directly related to the infected people to limit economic impact. After 2 weeks, the number of cases continued to increase, so Hai Duong Province was locked down for 15 days while Ha Noi and Ho Chi Minh City stopped all entertainment activities. Meanwhile, Viet Nam launched a mass COVID-19 vaccination campaign on 8 March 2021. As of April 2021, there were 2,843 cases from 51 provinces, and 89.6% have recovered. This wave witnessed no deaths (WHO, 2021b).

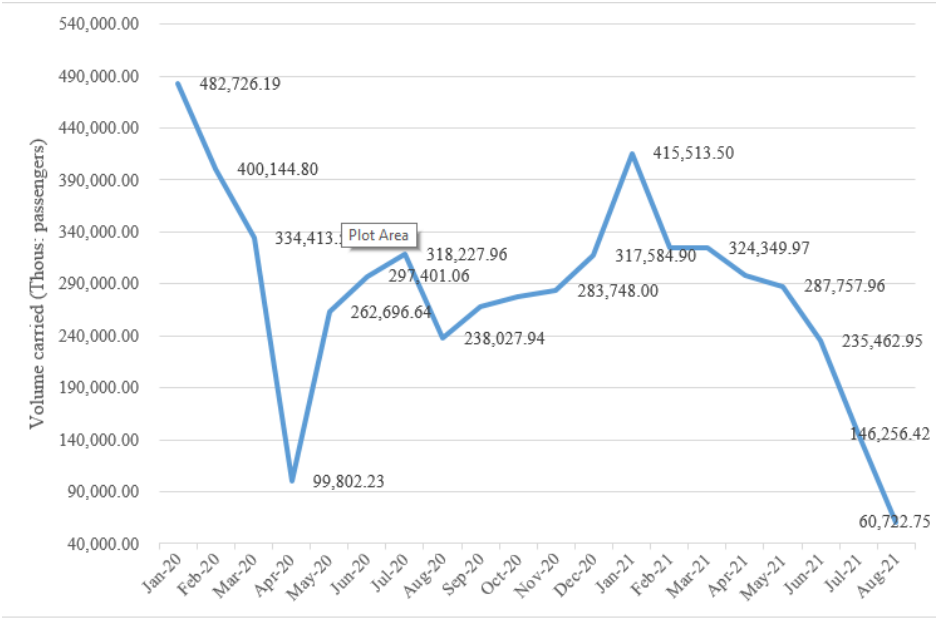
The fourth wave began on 27 April 2021 and is still ongoing. Many outbreaks, most of which are unrelated, were discovered in 58 localities and in various health care institutions. Viet Nam also experienced a fast-spreading outbreak due to the Delta variant. Lockdowns began, and 30 more field hospitals have been built. As of September 2021, 520,013 confirmed cases have been reported, including 13,039 deaths, from 62 provinces, especially in Ho Chi Minh City and Binh Duong Province; a total of 22,012,123 vaccine doses have also been administered (WHO, 2021c).

From the first wave, the government has issued many directives towards epidemic prevention and control. Depending on the severity of the epidemic at different times, the documents have different provisions on measures to prevent and to control the pandemic such as on mass gatherings, minimum safe distances, production activities, and transport. In general, these measures are focussed on social distancing and prevention. On the basis of these directives, provincial people's committees decide the specific implementation of social-distancing measures in their localities.

6.3.2. Impacts on the Transport Sector

Interviews showed that restrictive measures towards transport have not been strict and have been inconsistent between the central government and localities as well as amongst localities. During social-distancing measures, all means of passenger transport were paused. Thus, the number of passengers and vehicles decreased (Figure 6.2). Many enterprises have no revenue to pay principal and interest on bank loans and other expenses to maintain operations. As a result, many workers have lost their jobs and livelihoods. Many, especially in the passenger transport field, are facing the risk of bankruptcy.

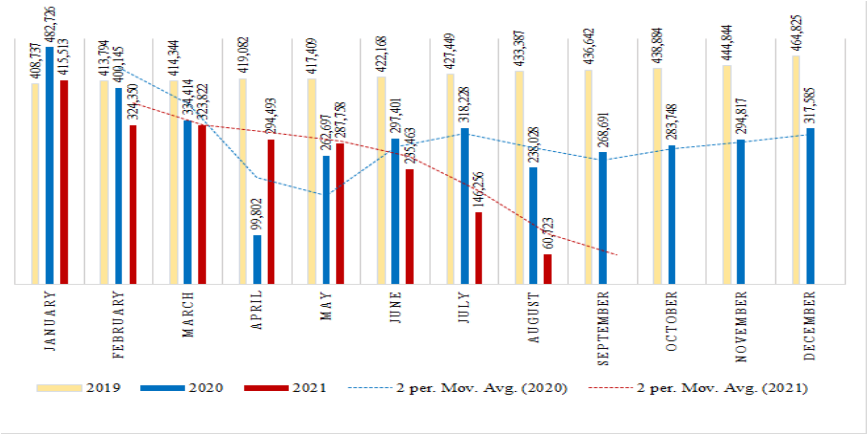
Figure 6.2: Volume of Passengers in Viet Nam, January 2020–August 2021 ('000)



Source: GSO.

Comparing pre-pandemic and pandemic numbers, it can be seen that the number of passengers decreased sharply in 2020 and 2021 (Figure 6.3).

Figure 6.3: Volume of Passengers Carried, Viet Nam, 2019–2021 ('000)



Source: GSO.

Passenger cars on fixed routes only reached 30% of pre-pandemic volume. Over 50% of these cars were at inactive parking lots. Taxis only ran about 20%–30% of previous levels, and they drove just 100–150 kilometres per day compared to the average of over 300 kilometres per day pre-pandemic. Bus revenue is estimated at 45%–50% of pre-pandemic levels.

Tourist cars reached about 10%–15% of their pre-pandemic volume, as international visitors were not allowed to enter the country. Cars transporting passengers only ran at 20%–30%.

As of August 2021, Viet Nam has not yet opened its doors to any international commercial passenger flights. Almost all flights are rescue flights and charter repatriation flights for Vietnamese citizens. Before the fourth wave of the pandemic, domestic flights remained at lower levels. It is difficult to get a flight between two most visited areas in Viet Nam, Ha Noi and Ho Chi Minh City.

In 2020, the passenger volume through airports was estimated at 66 million passengers, down 43.4% compared to 2019, while passenger rotation reached 34 million passengers per kilometre, down 56.0% from 2019 (MOT, 2020). These numbers will continue to decrease significantly in 2021. The airlines are operating at a loss.

Moreover, rail passengers continuously return tickets due to COVID-19 lockdowns or infections, sharply decreasing the revenue of the rail passenger transport industry. Many passenger trains have had to stop operations due to no passengers or capital. The revenue in the first 5 months of 2021 was only 51.4% compared to the same period in 2020.

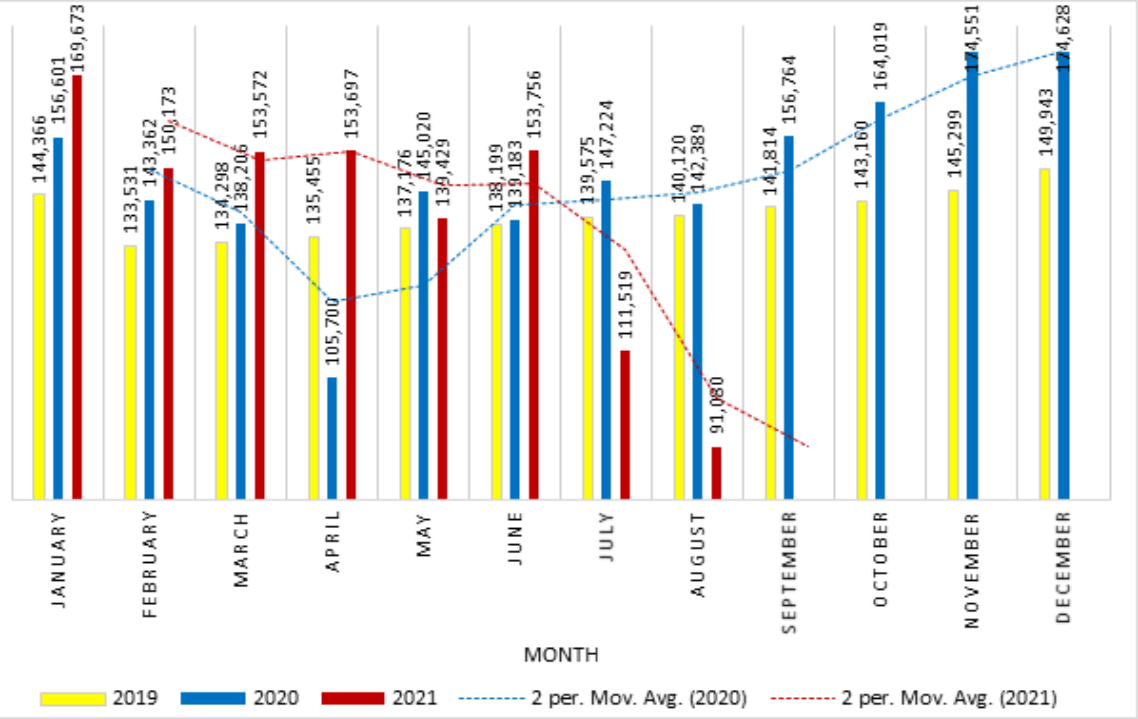
6.3.3. Impacts on Trade

COVID-19 prevention and control measures were effective in the early period of the pandemic, helping Viet Nam quickly control infections, creating peace of mind for investors, manufacturers, and consumers. From May 2020, freight transport activities for production and consumption fully resumed. In 2020, Viet Nam achieved a GDP growth rate of 2.91%, which was the lowest growth rate in a decade but one of the highest growth rates in the world (GSO, 2020).

However, with the fourth wave, Ho Chi Minh City became a new cluster. Therefore, the strictest pandemic measures have been taken. Freight transport activities are being interrupted, and there are extended delivery times due to COVID-19 testing and inconsistent policies between localities. The supply chain is broken, and last-mile delivery is affected because of the inactivity of shippers.

The first wave of pandemic had obvious impacts on the freight transport industry. Transport volume decreased from 156.6 million tonnes in January to only 105.7 million tonnes in April 2020. During the second wave, Viet Nam's successful control of the disease enabled economic growth in 2020. However, the third and fourth waves have had dramatic effects on the economy. On the supply side, manufacturing enterprises face a shortage of labour and material delay of input, which cause delays for production and business process. On the demand side, consumers seem to have tightened their spending. Both enterprises and consumers have also faced rising transport costs. The volume of freight transport declined by 46.32%, from 169.173 million tonnes in January 2021 to 91.08 million tonnes in July 2021 (Figure 6.4).

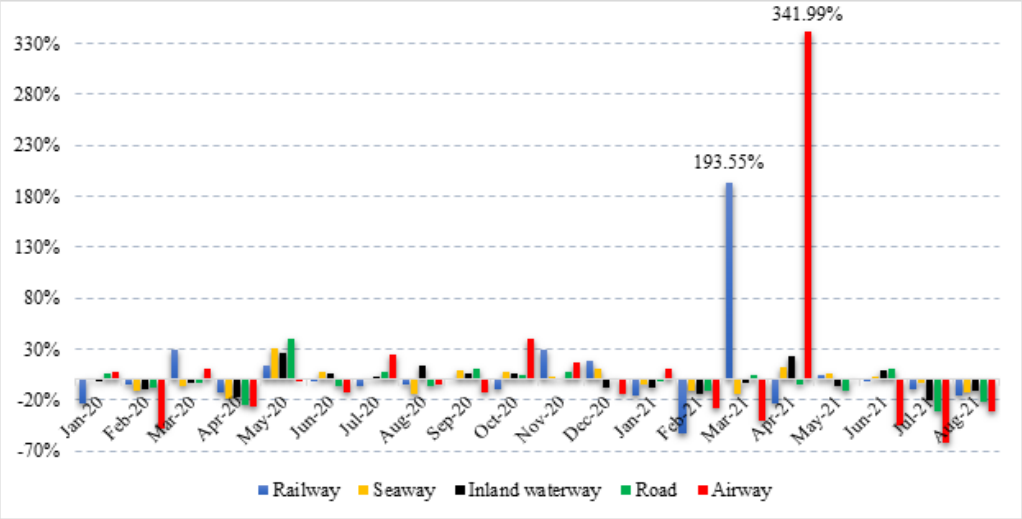
Figure 6.4: Monthly Volume of Goods Carried, Viet Nam, 2019–2021 ('000 tonnes)



Source: GSO.

Of the five freight transport modes, air transport suffered the most during the pandemic. Although there was some growth, especially in April 2021 of up to 342%, most of it was transport of relief goods under the government (Figure 6.5). The air freight transport volume in the first 8 months of 2020 decreased by 36.13% compared to the same period in 2019; in the first 8 months of 2021, this volume decreased by 11.28% compared to the same period in 2020 (Table 6.4).

Figure 6.5. Changes in Volume Carried by Transport Type, Viet Nam, 2020–2021 (%)



Source: GSO.

Table 6.4: Volume of Goods Carried and Change by Transport Type

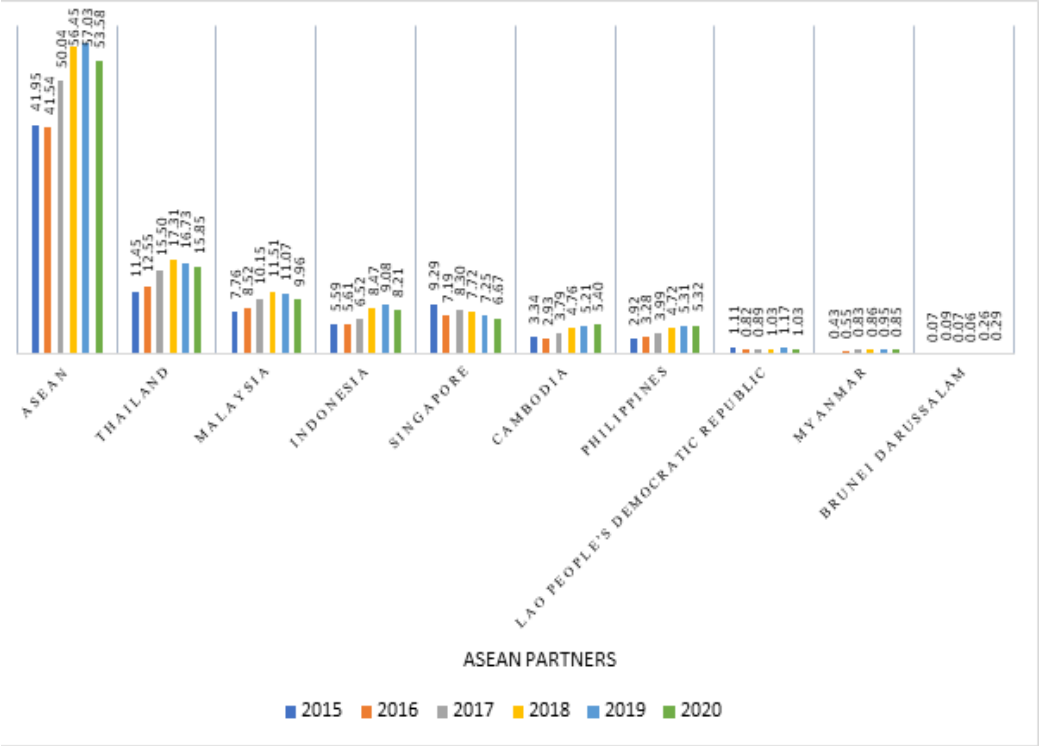
	First 8 Months of 2019 ('000 tonnes)	First 8 Months of 2020 ('000 tonnes)	Compared to 2019 (%)	First 8 Months of 2021 ('000 tonnes)	Compared to 2020 (%)
Rail	3,335.00	3,295.30	(1.19)	3,706.41	12.48
Sea	53,552.37	51,441.88	(3.94)	54,513.69	5.97
Inland Waterway	198,435	204,714.25	3.16	207,939.79	1.58
Road	847,089.92	840,471.40	(0.78)	803,001.50	(4.46)
Air	285.67	182.45	(36.13)	161.87	(11.28)

() = negative.
Source: GSO.

Figure 6.6 shows that the total trade in goods between Viet Nam and AMS was developing strongly before the pandemic. In 2020, despite the negative pandemic impacts, Viet Nam's total import–export turnover with AMS decreased but still reached $53.58 billion, accounting for 9.87% of the total import–export turnover of the country. Viet Nam's exports to AMS reached $23.13 billion, accounting for 8.22% of total export turnover. Its import turnover from AMS reached $30.45 billion, accounting for 11.65% of total import turnover.

Transport and container rental costs have subsequently increased. In the first 7 months of 2021, the trade turnover between Viet Nam and AMS was estimated at $40.8 billion, up 38.5% over the same period in 2020. Exports reached $16.1 billion, up 25.9%, and imports reached $24.7 billion, up 48.2% (GSO, 2020). Goods with great export value to ASEAN include iron and steel; electronics, computers and components; machinery, equipment, tools, and spare parts; phones and components; rice; and textiles. Main imported items are electronics, computers, and components; machinery, equipment, tools, and spare parts; oil and petroleum; complete cars; plastics; household electrical appliances; and components.

Figure 6.6: Viet Nam's Import and Export Turnover with ASEAN Member States ($ billion)



ASEAN = Association of Southeast Asian Nations.
Source: UN, UN Comtrade Database, https://comtrade.un.org/data

6.3.4. Impact on E-Commerce

Prime Minister's Directive No. 16 aimed to minimise travel outside of homes, encouraging online sales. At the same time, other legal documents were issued to ensure the sustainable growth of e-commerce, such as Decree No. 126/2020/ND-CP on 16 October 2020, guiding the implementation of the Law on Tax Administration 2019. It includes some key provisions on the taxation of foreign suppliers who conduct e-commerce activities in Viet Nam. Many regulations related to tax administration for e-commerce were also added, such as building a database and deploying electronic tax services. On 26 August 2020, Decree No. 98/2020/ND-CP was released concerning penalties for administrative violations in commercial activities and the production and trading of counterfeit and banned goods. As the most common problem of shopping online is quality, this decree protects consumer rights. Regarding the legal framework for non-cash payments, on 26 May 2020, Prime Minister's Directive No. 22/CT-TTg launched a mobile money service pilot programme to encourage financial inclusion and to promote a cashless society.

Despite many negative impacts on the economy, the pandemic has boosted the development of Viet Nam's e-commerce industry. The habits of consumers have changed to buying online, increasing the demand of e-commerce and encouraging the boom of online shopping platforms. However, the pandemic has made freight transport difficult, including online product delivery in the last mile. Many strict measures have limited logistics activities for e-commerce as well as incurred costs for masks, hand sanitizer, and disinfectant spray.

Along with Industry 4.0 and digital transformation, many online platforms have come into operation during pandemic, especially the B2C sales channels. In the top 10 most-visited e-commerce websites in South-East Asia, five Vietnamese companies are listed, including Bách hoá Xanh, FPT Shop, Sendo, Thegioididong, and Tiki.[17] The Industrial Revolution 4.0 and pandemic not only changed the way firms use digital solutions to shift their business models online but also created a strong incentive to push enterprises to use online channels to operate, organise, and manage. As a result, Viet Nam is the only country in South-East Asia to achieve a double-digit growth rate in e-commerce. Its e-commerce sector in 2020 grew by 18.0% to $11.8 billion, accounting for 5.5% of total retail sales (iDEA, 2021).

The pandemic also made cashless transactions more popular amongst customers, opening an opportunity for e-wallet platforms. Some 33% of internet users use a mobile payment service, 36.23 million Vietnamese digitally enabled payment transactions, and the annual percentage of the value increased by 19.3% compared to the previous year (Kemp, 2021). These are good conditions to boost e-commerce development.

Purchasing power is still affected by the pandemic, however, so consumers may still tighten their spending. The shutdown of more than 90% of enterprises means that incomes have been reduced, leading to a decrease in aggregate demand. Indeed, although the number of transactions increased significantly in 2020, revenue growth is on a downtrend as consumers are also buying lower-value items.

Moreover, many distribution activities and logistics for e-commerce are limited due to lockdowns and social distancing. Shippers are controlled by travel permits, which can become inactive in some localities at certain times. Social-distancing policies have caused overloaded express delivery of goods and prolonged delivery times due to a shortage of employees. Other policies and regulations on pandemic prevention (e.g. only transporting essential goods) is leading to more limitations for the e-commerce sector. Therefore, the speed of e-commerce growth is limited, relative to the demand.

6.4. Analysis of Future Conditions

The recovery of the transport and trade sectors depends on the COVID-19 situation and the ability to control the disease. According to experts' assessments, in mid-2022, when Viet Nam reaches its vaccination goal to ensure herd immunity, the economy will recover. However, this is not a sure scenario, because new virus variants are appearing.

Through analysis and discussion with experts, the current scenario is that passenger transport will continue to suffer until the end of 2021. By mid-2022, the travel demand of people for work or tourism will return, and passenger transport will become active again. In the next 4 years, when returning to the new normal, passenger travel will continue to increase, but the paperwork and control procedures (especially at borders) will be strict and take more time.

[17] iPrice, The Map of E-Commerce in Vietnam, https://iprice.vn/insights/mapofecommerce/en/ (accessed 15 August 2021).

Over the next 4 years, economic activities will be completely reopened. The global supply chain will be restructured in the direction of developing cooperation and effectively exploiting the resources of each country. It will also be better prepared to deal with future pandemics. Further, the intra-regional economic and trade cooperation between Viet Nam and ASEAN will be consolidated and enhanced.

6.4.1. Scenario Analysis of Transport Sector

The development opportunity for passenger transport from to June 2022 was very low but will recover gradually. Passenger transport will have many opportunities to grow exponentially in the next 4 years. The increasing demand for travel, shopping, and tourism – along with the reopening of countries after a long period of closure – will be a huge opportunity for passenger transport, especially air transport. New modes and means of transport will appear with better service quality, such as limousines and sleeper cars.

The recovery of international passenger transport will be more intense than domestic transport. Domestic tourism may become active again also because foreign tourism may keep certain restrictions, depending on the policies of various countries towards foreign tourists.

The biggest challenge is the bankruptcy of passenger transport enterprises. Governments must support businesses to limit bankruptcy. Moreover, transport restrictions will impact the use of public transport or private vehicles. Traveling by personal vehicles will increase, putting pressure on the environment. Other hidden challenges will crop up, such as (i) the poor quality of vehicles and services with increasing customer requirements, (ii) varying technology in passenger transport competing with foreign technology, (iii) infrastructure not meeting the increased number of personal vehicles, and (iv) competition between transport enterprises and between modes of transport. Railways are still not considered an efficient mode of transport in Viet Nam, so the industry should work to improve the quality of such transport services.

General recommendations are:

(i) Effective measures should be taken against the pandemic to prevent recurrence.

(ii) Sanctions should be severe enough to deter violators of social distancing or lockdown orders.

(iii) Testing should be widely deployed to detect infections and to promote vaccination to achieve herd immunity as soon as possible.

For passenger transport, recommendations include the following.

(i) During the pandemic, the government should encourage the development of intra-regional or inter-regional modes of transport where the pandemic has been controlled.

(ii) A new set of standards should be developed on pandemic prevention for each mode of passenger transport. Permission to operate should only be given in compliance with the conditions.

(iii) The central government and ministries should coordinate on policies amongst localities to have appropriate, non-contradictory responses .

(iv) Conditions should be created for digital infrastructure that can connect passengers to capture demand, and a transport plan should be developed. Digital technology should be accelerated to inspect and to supervise the implementation of pandemic prevention activities in an objective, transparent, and effective manner.

(v) For domestic passenger transport, air, rail, and road transport should be immediately restored when the economy recovers in the direction of innovation.

(vi) For international passenger transport, priority should be given to international flights carrying experts and investors to Viet Nam – restricting tourists – controlled via vaccine passports.

(vii) The government should consider financial policies to support businesses, such as through investment incentives (including lower tax rates, fees, new loans, old debt freezes, debt rescheduling, debt restructuring, and interest rate reduction), and modernising means of transport in line with ASEAN and international standards. The government should also develop packages to support businesses in general, as the access of enterprises to Viet Nam is still very difficult.

If the pandemic can be well controlled in the region, air passenger transport connections amongst AMS will gradually return to the pre-pandemic state, but new requirements and standards on ensuring safety and security should be mandatory. As it will take time for passengers to get used to this new normal, note that fear may slow down the typical recovery period.

ASEAN has put into operation 14 of 15 initiatives in 5 strategic areas of the *Master Plan on ASEAN Connectivity 2025*, including sustainable infrastructure, digital innovation, seamless logistics, regulatory excellence, and mobility of people (ASEAN, 2018). AMS have discussed measures to promote this plan in the context of the pandemic, continuing to affirm that its strategic areas are well suited to the ASEAN post-pandemic recovery plan.

At the 42nd General Assembly of the ASEAN Inter-Parliamentary Assembly, the Vietnamese delegation also proposed supporting the *ASEAN Tourism Strategic Plan, 2016–2025* towards responsible and sustainable tourism, promoting green recovery and cultural diversity in tourism. In particular, it encouraged the construction of a 'tourism bubble', establishment of a 'green corridor', and creation of special routes to tourist destinations in AMS (National Assembly of Vietnam, 2021). Some other recommendations towards ASEAN connectivity are:

(i) promote cooperation in the ASEAN Economic Community even more strongly on the basis of existing commitments;

(ii) tighten movements to completely control the pandemic in the bloc;

(iii) promote resource sharing, information, knowledge, and methods to strengthen pandemic response capacity at borders, seaports, and airports; strengthen training courses of disease protection for workers in transport; and prevent cross-border virus transmission and reduce the risk of infection from abroad;

(iv) develop maritime transport and tourism, improving the reception capacity of tourist passenger ships, while enhancing the ability to connect to tourist destinations on the mainland; and develop a large tourist fleet connecting ASEAN with famous tourist destinations around the world;

(v) create favourable conditions for customs procedures, entry, and exit; and

(vi) increase investment in transport infrastructure system for connection, implement cross-border transport connections, improve the quality of transport services, increase mobilisation of resources to connect, promote human resources development, strengthen road traffic order and safety as well as maritime and aviation security and safety, and improve institutions and enhance international integration capacity.

6.4.2. Scenario Analysis of Trade Sector

Due to the urgency of freight transport, Viet Nam needs new and better policies to facilitate the industry to operate at a level that ensures that the supply chain does not break. However, opportunities are few in the current period as production and circulation are stalled.

For interprovincial transport, road transport is limited, but rail, inland waterway, and maritime transport will have many opportunities for development. The pandemic has accelerated the process of digital transformation, applying technology such as big data, blockchain, Internet of Things (IoT), cloud technology, and automation for manufacturers, shippers, and transport enterprises.

In the short term (i.e. until the end of 2021 or around June 2022 when the vaccination rate reaches 70% of the population), the chance of supply chain disruption is huge. Due to social distancing and travel restrictions, import and export shipments have been delayed through customs and slow to be transported to or from the border to or from the warehouse. The shortage of supply and the delay in obtaining raw materials and labour will lead to problems in completing export products.

There are also increased costs, because enterprises must now have a COVID-19-negative test for drivers or field workers (at airports, seaports, and border gates) valid for 72 hours. Costs also increase due to the prolonged execution time of an operation, unforeseen congestion, and long waiting times at customs.

The next 4 years will be a time of recovery for the transport industry, as well as the dawn of modern logistics and supply chain management models. The application of new technologies and digital transformation as well as sustainable development goals will challenges for Vietnamese transport enterprises, especially since most Vietnamese enterprises are SMEs. Another challenge for SMEs – and even large enterprises – is mergers and acquisitions, as many foreign logistics enterprises once again enter the market.

SMEs, especially micro enterprises, have not yet been able to access ICT. Indeed, Viet Nam has not invested in logistics infrastructure. Although infrastructure has slightly improved, it still has many shortcomings and poor connectivity. Human resources are also lacking.

In the next year, the government must

(i) continue to implement pandemic prevention and control measures with the application of risk management methods; and develop a uniform process of transporting and circulating goods across the country, applying to each level of pandemic severity;

(ii) prioritise vaccinations for logistics company employees; and

(iii) issue policies to support transport businesses, such as tax exemptions or reductions, to help businesses limit the impact of the pandemic.

In the next 4 years, it should

(i) implement Prime Minister's Decision No. 221 on the development of logistics services until 2025, which focusses on the development of logistics infrastructure and inland waterways and rail transport to reduce the load on roads as well as creation of a strategy for logistics development by 2030;

(ii) speed up application of ICT to build a common database, share information in freight transport activities, and further promote digital transformation; train and develop high-quality human resources to improve the quality of logistics services; build strong logistics service enterprises; and support SMEs in the logistics industry;

(iii) develop tax exemption and reduction policies for newly established transport enterprises to promote the private sector's participation in the industry;

(iv) ensure sustainable development goals by building a green freight transport model; and

(v) continue to amend and to supplement legal documents in the direction of simplification and electronification of administrative procedures, without creating loopholes that lead to harassment of authorities.

The ability to connect freight transport in ASEAN after the pandemic is very high, but careful steps are needed to control risks. However, growth depends on economic cooperation amongst the countries and the level of participation in the global supply chain. In the past, ASEAN has been amongst Viet Nam's top export markets. For the logistics industry, reforms will create conditions for logistics businesses to develop, increasing the ability of Vietnamese enterprises to connect with other businesses in ASEAN.

Viet Nam cannot miss the opportunity to link with countries in the region to have a voice in ASEAN and in the international arena. The market will be open for free enterprise and cooperation, which offers many development opportunities to reconnect supply chains broken during the pandemic. To strengthen ASEAN connectivity, in the next 1 year, AMS should:

(i) develop a set of standards for the prevention of pandemics;

(ii) strengthen customs cooperation and share information through the ASEAN Single Window portal, creating conditions for parties to participate in the chain of activities in transport, customs clearance, and trade;

(iii) create conditions for cargo transport to operate in a new normal; and

(iv) actively participate in the intra-regional capital movement as well as actively cooperate with other AMS that export goods with advantages to the global market.

In the next 4 years, AMS should:

(i) solve customs clearance policy issues at borders;

(ii) complete a digital transformation policy, support businesses in digital transformation, and develop transport infrastructure and digital infrastructure;

(iii) create a common legal basis related to intra-regional freight transport as well as a premise to promote freight transport activities between ASEAN and neighbouring regions, especially the inter-regional transport links related to the East–West Economic Corridor, promoting the Viet Nam–Cambodia–Thailand coastal shipping route;

(iv) develop road transport modes, and remove difficulties in cross-border road transport; and

(v) implement measures to promote the *Master Plan on ASEAN Connectivity 2025* in the context of the pandemic and the *ASEAN Comprehensive Recovery Framework.*

6.4.3. Scenario Analysis of E-Commerce

The development of e-commerce will continue but more slowly until mid-2022. When the pandemic is under control, the digital economy and e-commerce will still boom thanks to the young population and the rapid development of ICT. The pandemic has changed consumer buying habits, especially in rural areas. In addition, cashless payment has become a trend in Viet Nam, especially during the pandemic.

Large global e-commerce enterprises tend to invest in Viet Nam. Meanwhile, the government has policies to encourage the development of e-commerce, especially cross-border e-commerce. Therefore, e-commerce will expand its scale and influence in Viet Nam with a higher growth rate than offline commerce.

The biggest challenge facing the e-commerce industry is the availability of logistics services and costs. During the pandemic, it has been necessary to quickly solve connection problems in the logistics service industry. In addition, the cost of goods circulation also increased due to the need to cover safety measures to prevent infections. Moreover, although a change in shopping habits caused an increase in demand, the purchasing power is still weak due to unemployment and social distancing. Consumers may tighten their spending.

In the next 4 years, the growth of e-commerce also depends on the platform economy and digital transformation. The application of ICT helps connect supply and demand as well as identify customer needs. However, the technology infrastructure in Viet Nam is still unstable and uneven across localities. The reputation of Vietnamese retailers is also still weak. The penetration of many foreign e-commerce platform businesses into the Vietnamese market will make it difficult for Vietnamese enterprises with small-scale capital and limited financial capacity. Meanwhile, foreign sellers will participate in the Vietnamese market, and competition will become increasingly fierce.

Finally, the legal framework for e-commerce activities, especially cross-border e-commerce, has many shortcomings and has not been completed. Management of e-commerce still faces many difficulties, especially in the management of goods quality. Recommendations for the e-commerce industry in the pandemic and in the long term (until 2025) are as follows.

(i) The government should have a unified and flexible policy to create favourable conditions for shippers to maintain operations by prioritising their vaccinations and allowing for controlled operations.

(ii) The government should encourage and support online channels of large distribution chains to reduce the burden of controlling the flows of goods and the movements of sellers and buyers. It should provide adequate guidance and clarify the list of essential items allowed to be traded during the pandemic to support e-commerce enterprises to maintain operations.

(iii) As the value of e-commerce varies greatly between cities and provinces, the government should create policies to encourage the development of e-commerce in rural areas, and logistics should pay attention to the connection between provinces.

Recommendations for the government in reconnecting with ASEAN are as follows.

(i) In the context of a pandemic, flexible and unified regulations on human control in transport activities amongst countries should be developed.

(ii) The government should continue to review, amend, supplement, and issue new legal frameworks, mechanisms, and policies for cross-border e-commerce development in ASEAN. In addition, countries should work together to perfect the institution of ASEAN e-commerce.

(iii) To promote digital integration in ASEAN, governments should create a digital transformation policy; strengthen the connection of digital platforms; and share information and multinational management on trading, payment, customs procedures ,and tax collections.

(iv) On the enterprise side, governments should strengthen training and support for SMEs to open e-commerce stores in AMS as well as support localities to introduce potential e-commerce products and services to AMS.

(v) Finally, it is important to bring cooperation into reality and build ASEAN into a region with developed digital transformation to keep pace with developed countries to create a solid foundation for regional and global supply chains.

6.5. Conclusions

It is necessary to study more specific safety standards for each mode of transport. The transport of passengers amongst safe areas, known as green areas, should be permitted, but controlling and ensuring passenger distance must be a priority in the early stages. A reopening must not be massive

but controlled. It is difficult for authorities to control road transport, so the cooperation of passenger transport enterprises is required.

In the long term, reconnection to AMS also needs to follow the principles of prudence and safety. It is essential to take advantage of the advancement of ICT (e.g. blockchain, big data, and IoT) and apply this digital transformation to control passengers but not cause distractions. As a result, the flow of tourists can resume. For freight transport, better response scenarios to a pandemic are needed to avoid the paralysis of the logistics system as in the past. Moreover, proposed regulations and policies need the participation of departments, associations, and experts before putting them into practice. Lastly, soft connections between the government and enterprises are required to immediately solve issues.

Interprovincial freight transport must be designed and operated at the best level to ensure the least impact on the supply chain while ensuring safety. It is necessary to review the regulations on essential goods that are allowed to circulate; they should be consistent. The systems of transport in cities (especially Ha Noi and Ho Chi Minh City) – including both express delivery and technology vehicle systems – should be reviewed to guarantee smooth distribution.

To promote passenger transport, tourism, freight transport, and e-commerce in ASEAN, parties need to promote information sharing, negotiate at all levels to settle customs clearance as well as to connect transport routes and to move persons. With blockchain and big data, it is also essential to study applications to track people when moving within and between AMS and to promote immigration procedures while still limiting the pandemic.

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Chapter 7

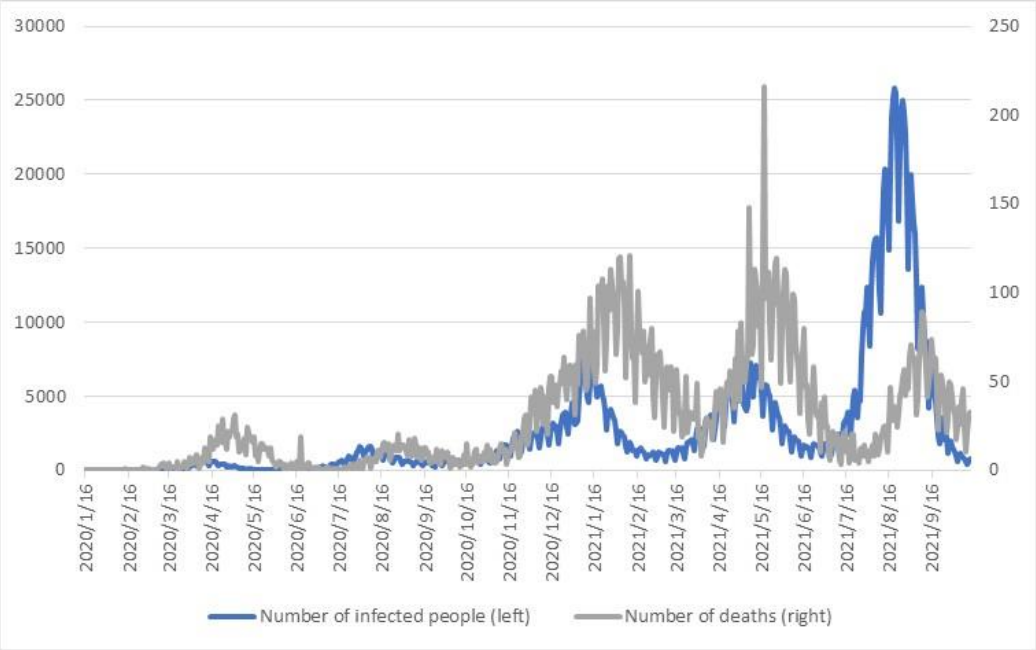
Japan

Hidekazu Itoh

7.1. COVID-19 in Japan

Since 15 January 2020, when the first case of COVID-19 was confirmed in Japan, the numbers of infected people and deaths have been increasing, especially in the first quarter of 2021, along with the occurrence of mutated strains (Figure 7.1). The total numbers of infected people and deaths exceeded 1.7 million and 17,000, respectively, as of the end of September 2021. The vaccination programme that began in March 2021 has progressed, with more than 80 million people receiving the second dose of vaccine as of the end of September 2021, which means that about 65% of the domestic population has been vaccinated.[18]

Figure 7.1: COVID-19 in Japan, 2020



Source: NHK, New Coronavirus, https://www3.nhk.or.jp/news/special/coronavirus/

[18] Prime Minister of Japan and His Cabinet, COVID-19 Vaccines, Ongoing Topics, https://japan.kantei.go.jp/ongoingtopics/vaccine.html

The fifth wave, which caused more than 25,000 new infections per day in mid-August 2021, is now coming under control, and all emergency declarations, which were mainly issued for urban areas, were lifted at the end of September 2021. In particular, the number of new infections increased sharply in August 2021, probably due to the effect of vaccination, but the percentage of deaths declined rapidly compared to the fourth wave during the second quarter of 2021.[19] It is expected that the situation will gradually return to normal, although some restaurants and other businesses will continue to be asked to shorten their opening hours.[20]

The spread of the disease in Japan began in mid-March 2020, and the first emergency declaration was issued on 7 April 2020, just after the start of the new fiscal year. The GDP growth rate for fiscal year 2020 (FY2020) was –4.4% in real terms, with private final consumption, exports, and imports at –5.8%, –10.4%, and –6.8%, respectively.[21] In terms of quarterly data, the GDP declined sharply by –7.9% in the second quarter of 2020 when the first emergency declaration was issued but has been recovering slowly since then (except for the first quarter of 2021) (Figure 7.2). Although there are some differences, the economic situation in Japan has been improving since the second quarter of 2020, when the first voluntary curfew was implemented. Current economic levels have recovered to about 98% of pre-pandemic levels.

Figure 7.2: Economic Condition Changes in Japan, 2016–2021

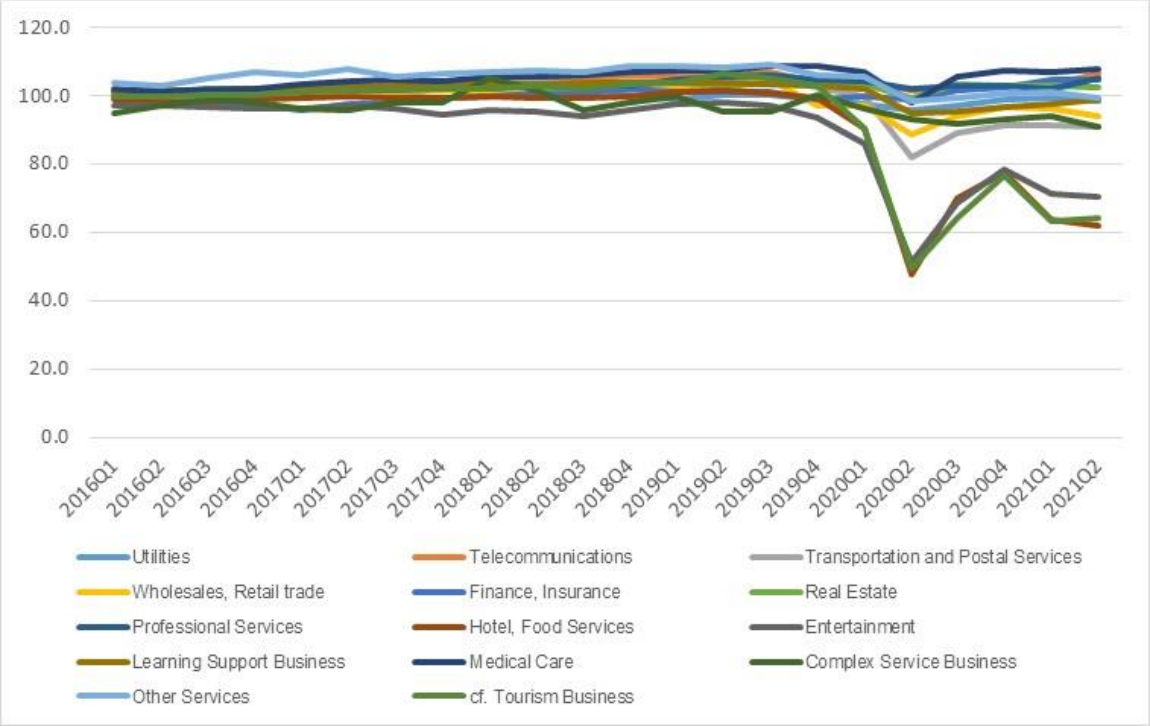
GDP = gross domestic product.
Source: Economic and Social Research Institute, National Accounts (GDP Statistics), https://www.esri.cao.go.jp/jp/sna/menu.html

[19] Government of Japan, Ministry of Health, Labour and Welfare, Coronavirus (COVID-19), https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000164708_00079.html
[20] As of 1 November, all restrictions on business hours and serving of alcoholic beverages have been lifted. Government of Japan, Cabinet Secretariat, COVID-19 Information and Resources, https://corona.go.jp/en/
[21] Economic and Social Research Institute, SNA (National Accounts of Japan), https://www.esri.cao.go.jp/en/sna/menu.html

In Japan, although infections have been controlled by masks and refraining from going out to a certain extent compared to other developed countries – the mortality rate in 2020 is the only one in the G7 that is negative compared to the average (The Economist, 2021) – the lack of progress in expanding the medical system, the prolonged refrain from going out, and the delays in vaccination have led to a significant stagnation of economic activity, especially in the services sector.

Observing the available tertiary industry activity index,[22] the decline in entertainment and hotel and food services was severe in the second quarter of 2020 at about half of the 2015 level and is still down more than 30% (Figure 7.3). As a reference, the tourism-related industry is also listed, which also shows no recovery. The transport and mail sector, which is the aggregate figure, declined about 20% in the second quarter of 2020 but recovers gradually thereafter. The recovery to 80% in the second quarter of 2020 was understood to be temporary due to the effect of a consumption stimulus package for hotels and restaurants implemented by the national and local governments.

Figure 7.3: Service Industry Activity in Japan, 2016–2021



Source: Government of Japan, Ministry of Economy, Trade and Industry, Tertiary Industry (Service Industry) Activity Index, https://www.meti.go.jp/statistics/tyo/sanzi/index.html

Using the same database, a breakdown of the transport and mail and hotel and food services sectors shows that hotel and air transport services fell sharply (about 20% of those of 2015) and are still

[22] This index is calculated as a weighted average of index series representing the production activity of services in individual industries, weighted by the value added according to the input–output table for the base year. The index provides a unified measure of activity in the tertiary industry and enables the examination of trends in the services sector.

recovering (Figure 7.4). On the other hand, warehouse and road freight were above the 2015 baseline. In particular, road freight increased by more than 5 percentage points since the end of 2020.

Figure 7.4: Transport and Hotel and Food Industries in Japan, 2016–2021

Source: Government of Japan, Ministry of Economy, Trade and Industry, Tertiary Industry (Service Industry) Activity Index, https://www.meti.go.jp/statistics/tyo/sanzi/index.html

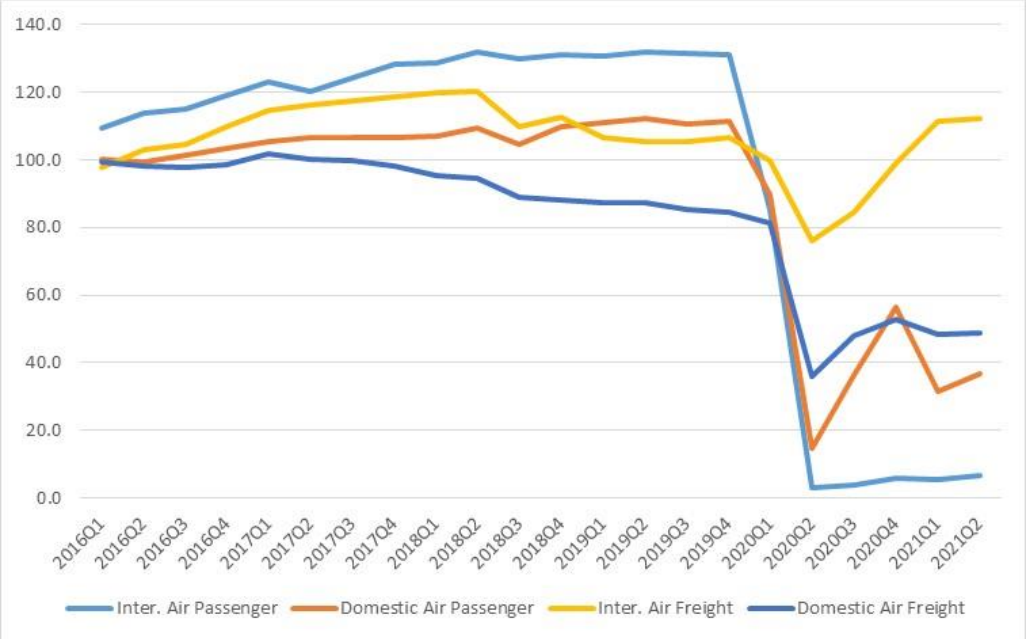
E-commerce has been booming due to nested demand by the pandemic. For example, Yamato Transport, Japan's largest parcel delivery company, recorded a 16.5% increase in delivery volume compared to FY2020, a record high. The volumes of the top three delivery companies (i.e. Japan Post Holdings, Sagawa Express, and Yamato) totalled 4.530 billion boxes in FY2020 (Cargo News, 2021). Before the pandemic, in Japan, redelivery (i.e. delivery made again because the recipient is not at home) became a problem due to the expansion of online shopping. The 20.0% redelivery rate has now decreased because of telecommuting. However, in the second half of 2020, telecommuting fell, and the redelivery rate rose again to 11.4%.

Air transport services have recovered only about 40%, but a closer look at passenger and cargo services – as well as international and domestic services – reveals a different situation (Figure 7.5). Before the pandemic, the number of international passengers increased by more than 30% compared to 2015 due to the expansion of inbound tourism. In Japan, travel restrictions are still imposed on most countries, and even vaccinated people need to be quarantined for 2 weeks as of the end of September 2021. In the second quarter of 2021, the recovery was therefore only less than 10%.[23] The number of foreign visitors from Asia, including China and the Republic of Korea, also fell by 99.3% in 2019, while the number of foreign visitors from Indonesia, Malaysia, Philippines, Singapore, Thailand,

[23] However, the extent of the decline in the first quarter of 2020 was minor, as the infection did not spread in Japan until March 2020. Japan National Tourism Organization, Monthly/Yearly Statistical Data (Foreigners Visiting Japan/Japanese Leaving Japan), Statistics/Data, https://www.jnto.go.jp/jpn/statistics/visitor_trends/index.html

and Viet Nam fell by 97.8%.[24] Japanese airlines ANA and JAL are expected to post losses for the second consecutive FY due to slow recovery, especially in international flights that have been suspended for a long time.

Figure 7.5: Air Transport Indexes, Japan, 2016–2021



Source: Government of Japan, Ministry of Economy, Trade and Industry, Tertiary Industry (Service Industry) Activity Index, https://www.meti.go.jp/statistics/tyo/sanzi/index.html

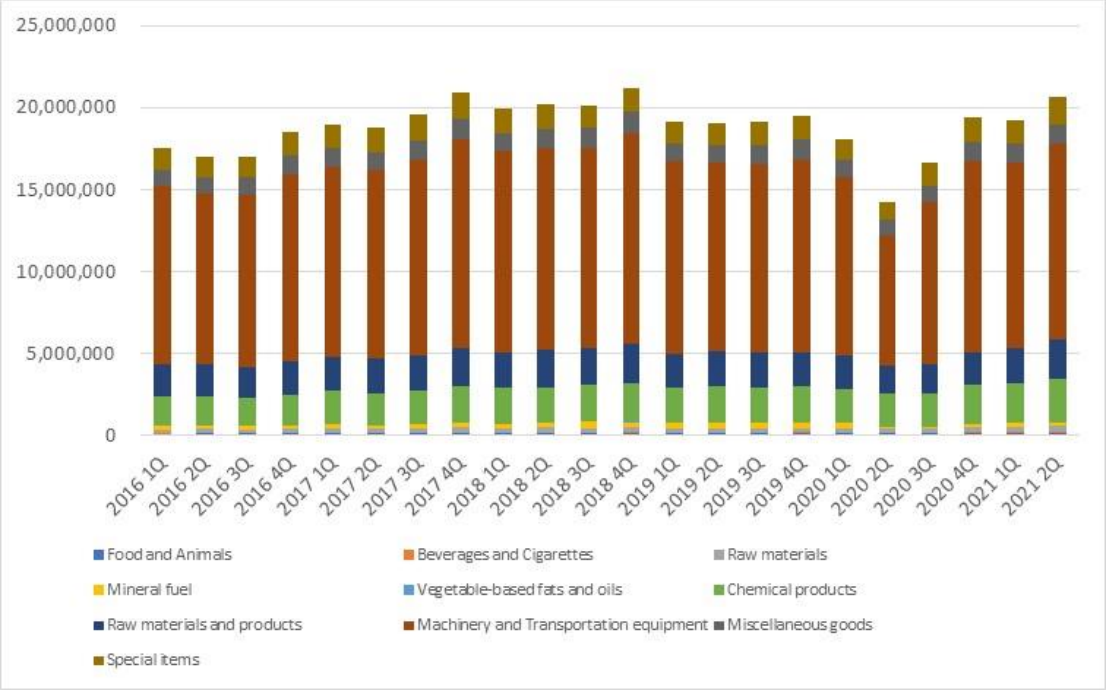
However, international air cargo transport is returning to pre-pandemic levels due to a shift to air freight transport as a result of delays in maritime container transport and higher freight rates as well as demand for vaccine transport. For example, ANA Cargo, which is a member of ANA Holdings, increased its international cargo freight, including passenger aircraft cargo freight, by the demand increases of electric parts and semi-conductors and the level of higher freight rates. Domestic air cargo transport has only recovered by about 50% due to limited belly transport, which was also affected by the cancellation of domestic passenger transport. Domestic air cargo transport had been on a downward trend even before the pandemic since 2017, due to the expansion of low-cost carriers, which limited belly transport and tightened flight schedules. As mentioned earlier, domestic passenger transport also only recovered by less than 40%, due in part to self-restraint in travel and business trips, except in the fourth quarter of 2020 when there was a positive effect from the consumption stimulus package.

As indicated earlier, in terms of Japan's exports and imports, the pandemic impact on exports was significant, and the major decline in exports was in the second quarter of 2020, while import decline was also seen in the third quarter. In absolute values, the exports of machinery and transport

[24] The reason for the small decrease in ASEAN was that about 20,000 technical interns from Viet Nam were allowed to enter the country in January 2021. M. Fujisaki (2021), '40,000 Foreign Trainees Enter Japan amid Virus as Others Fired', The Asahi Shimbun, 21 January, https://www.asahi.com/ajw/articles/14125024

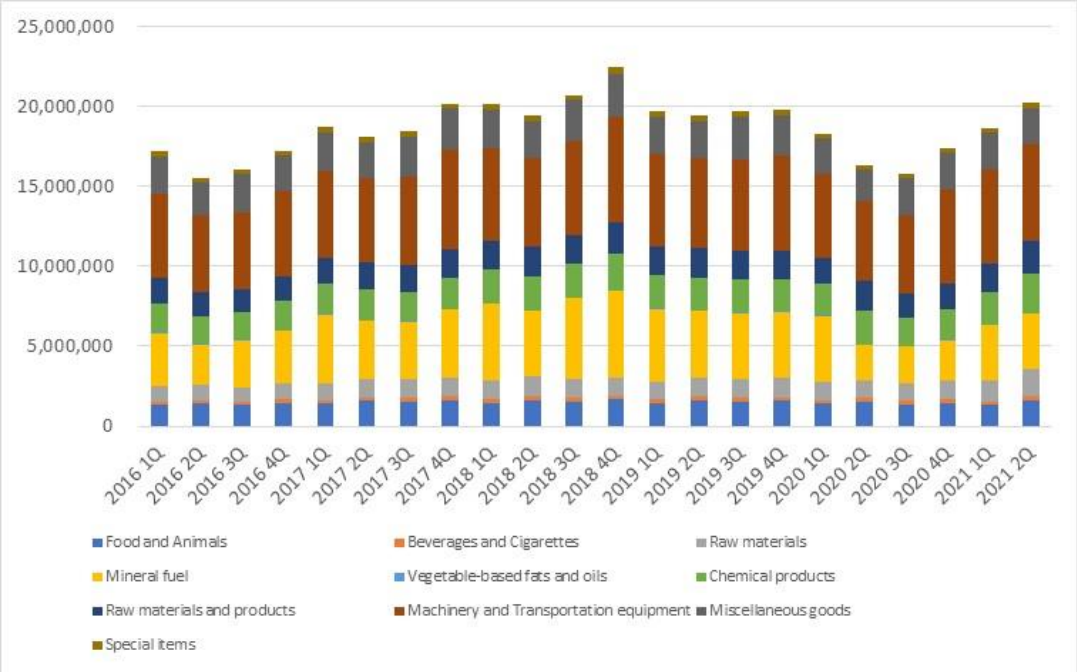
equipment fell significantly but recovered steadily from the third quarter of 2020 and to pre-pandemic levels in the second quarter of 2021 (Figure 7.6). In terms of the share of exports, mineral fuel fell sharply, while the shares of beverages and cigarettes and food and animals increased relatively. On the other hand, in absolute values, the imports of mineral fuel significantly declined and recovered slightly after the fourth quarter of 2020 (Figure 7.7). However, this was about 65% of the pre-pandemic level, even in the first half of 2021. Similarly, the import ratio of mineral fuel has fallen sharply, but the ratio is also recovering. The import ratio of raw materials and products had been increasing continuously before the pandemic.

Figure 7.6: Product Categories of Exports, Japan, 2016–2021



Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Figure 7.7: Product Categories of Imports, Japan, 2016–2021



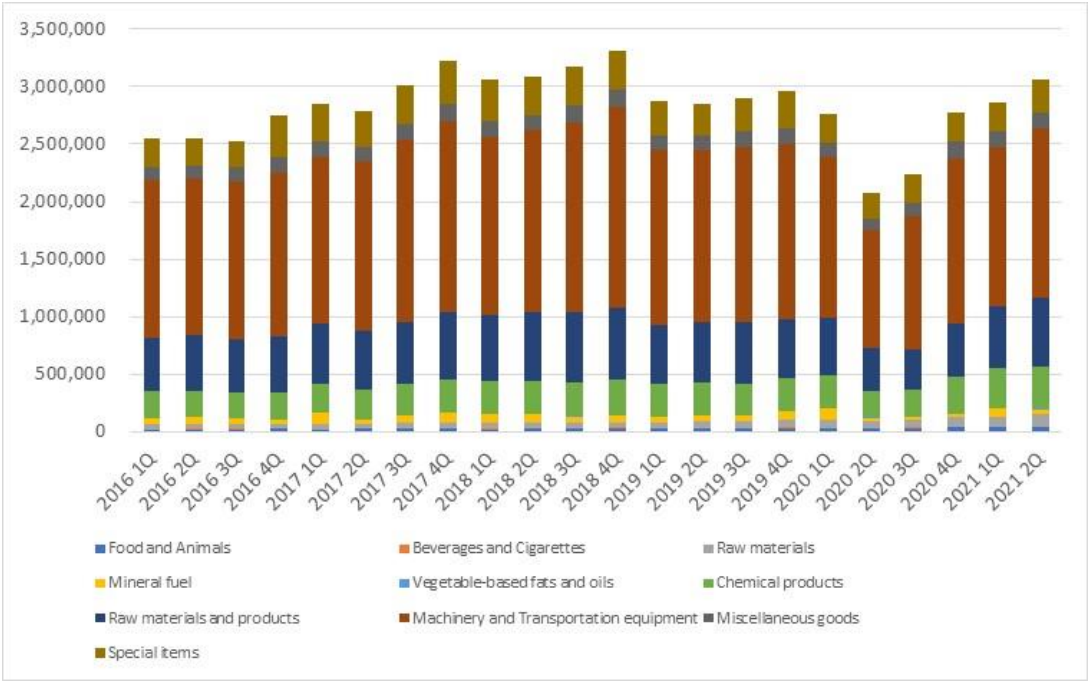
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

In the second quarter of 2020, the first state of emergency was declared in Japan, which led to the shutdown of schools, stores, offices, and factories, which in turn led to stagnation of exports of various parts. This is believed to have led to lower demand for energy and imported parts in the domestic manufacturing sector, which in turn led to lower demand for fuel. Another reason could be that in 2020, stagnant global demand for fuel caused prices to fall.[25] However, since the fourth quarter of 2020, imports (in value) have also recovered steadily due to the stabilisation of the Japanese domestic economy and are now at pre-pandemic 2019 levels.

In terms of the absolute value of exports, the decline in machinery and transport equipment was still severe, but it returned to its pre-pandemic level in the first quarter of 2021 (Figure 7.8). Raw materials and products also experienced a significant decline, although to a lesser extent and have already surpassed their pre-pandemic levels. In terms of the share of exports, the share of vegetable-based fats and oils and raw materials and products increased relative to the decline in mineral fuel. In terms of imports, machinery and transport equipment also fell sharply, but this, too, surpassed the pre-pandemic level (Figure 7.9). On the other hand, the decline in mineral fuel has not recovered to date. In terms of import ratio, the decline in mineral fuel is still evident, while the rise in beverages and cigarettes is not considered to be a direct pandemic impact, as it has shown an upward trend since 2019.

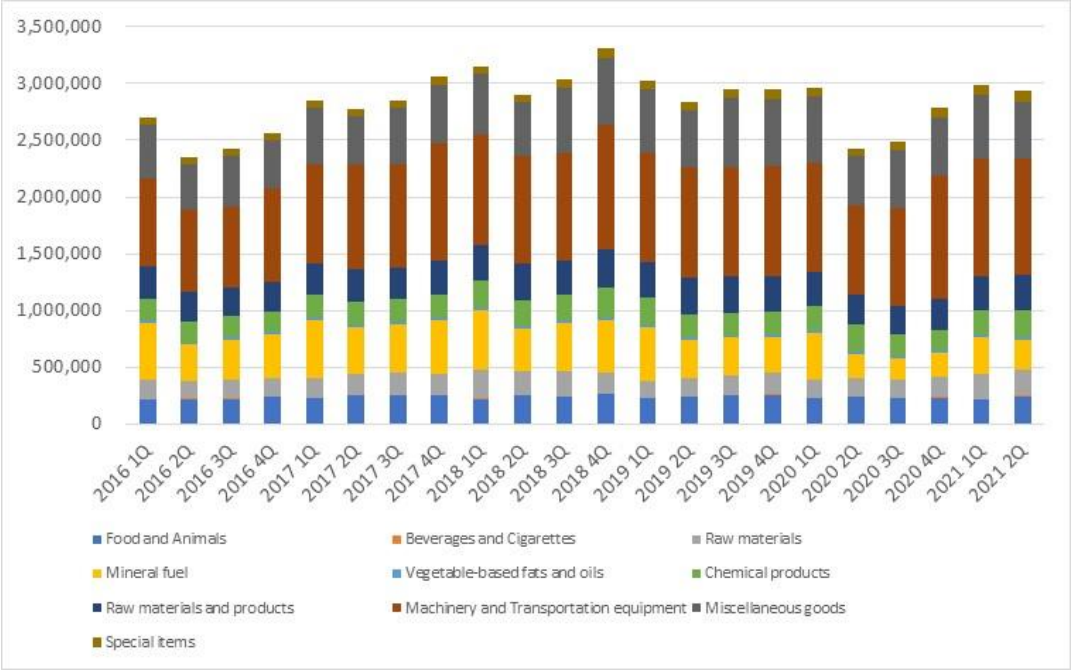
[25] International Energy Agency, Oil Market Report, https://www.iea.org/topics/oil-market-report

Figure 7.8: Product Categories of Japanese Exports to ASEAN, 2016–2021



ASEAN = Association of Southeast Asian Nations.
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Figure 7.9: Product Categories of Japanese Imports from ASEAN, 2016–2021



ASEAN = Association of Southeast Asian Nations.
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

To understand the impact trend of the pandemic on Japan's global supply chain with AMS, the relative positioning of trading partners and their share changes are key. Considering the differences in impact, including the difference in the share changes between the world as a whole and AMS, the overall trend of exports to AMS – being higher in raw materials and products and lower in machinery and transport equipment – was unchanged since 2016. However, in the second quarter of 2020, the ratio of machinery and transport equipment decreased further. This is to say that the export cargo of machinery and transport equipment to AMS became relatively small. However, this returned to its original level in the first quarter of 2021.

On the contrary, machinery and transport equipment accounted for a relatively high share of imports from AMS, but the extent of such imports declined in the second quarter of 2020. In other words, the extent of the decline in imports from ASEAN is even greater, but it also recovered. Influenced by above situation, the percentage of mineral fuel (compared to the whole world) increased. However, it is still low compared to the world as a whole. As a result, both imports and exports of machinery and transport equipment had a significant impact on the ASEAN region as compared to the world as a whole.

7.2. Global Production Networks and Global Value Chains between ASEAN and Japan

7.2.1. Supply Network between ASEAN and Japan

As discussed in the previous section, the impact of the pandemic on Japan's trade with AMS – both in absolute and relative terms to the world as a whole – has been significant on machinery and transport equipment (52.2% of total exports and 38.7% of total imports in 2019). On the other hand, it is clear that the trade situation will steadily recover after the second quarter of 2020, returning to the pre-pandemic levels in the first quarter of 2021 (nominal value base).

Based on this background, this section examines the major and detailed trade items between Japan and AMS to obtain suggestions for the global production network and supply chain robustness between Japan and AMS. To check the pre-pandemic situation, 2019 is the baseline. Since the trade statistics are based on declarations – and there are various issues to be resolved[26] – Harmonized System (HS) codes are used to obtain an overall trend.[27]

The major products between Japan and AMS are finished automobiles (8703), auto parts (8708), and integrated circuits (partially auto parts) (8542). By country, differences in the location of finished vehicle assembly plants indicate that Brunei Darussalam, the Lao PDR, and Myanmar import a large

[26] For example, in the trade between Japan and AMS, the classification is as large as 8.5% for exports (of the total) and 2.5% for imports. It has also been pointed out that due to tariff rates, the correct classification is not made, amongst other things.

[27] Government of Japan, Ministry of Finance, Code Lists – Trade Statistics of Japan, https://www.customs.go.jp/toukei/sankou/code/code_e.htm

number of finished vehicles, while Thailand and Malaysia import a large number of auto parts for assembly of finished vehicles at local plants.

Table 7.1: Main Exports from Japan to ASEAN Member States, 2019 (HS 4-digit code, share of total values)

	Viet Nam		Thailand		Singapore		Malaysia		Brunei Darussalam		Philippines		Indonesia		Cambodia		Lao PDR		Myanmar		ASEAN	
1	8542	0.093	8708	0.090	8901	0.113	8542	0.103	8703	0.241	8542	0.067	8708	0.116	0202	0.142	8703	0.271	8703	0.115	8542	0.055
2	7204	0.038	8542	0.039	7108	0.057	8703	0.055	8414	0.222	8702	0.052	8703	0.027	8429	0.072	8702	0.061	8704	0.075	8708	0.054
3	8536	0.036	7208	0.035	8542	0.045	8708	0.052	7304	0.133	8704	0.042	8409	0.025	8711	0.058	8464	0.057	5407	0.061	8703	0.024
4	7208	0.035	8409	0.028	2710	0.036	8541	0.042	2707	0.077	8708	0.024	7208	0.024	8714	0.051	8704	0.040	7302	0.056	8901	0.024
5	8443	0.024	8541	0.027	8486	0.033	2710	0.036	8413	0.052	8703	0.024	7225	0.023	2710	0.047	0202	0.039	8701	0.037	7208	0.023
6	8543	0.020	7225	0.025	8703	0.028	7108	0.023	2523	0.040	8523	0.023	8704	0.021	8703	0.047	2807	0.036	8708	0.031	8541	0.021
7	8708	0.020	9032	0.020	8541	0.024	8532	0.020	8702	0.037	8536	0.021	8406	0.021	8415	0.040	8429	0.036	7208	0.027	8536	0.017
8	8479	0.019	8414	0.018	8443	0.021	8479	0.016	7307	0.025	8479	0.020	8407	0.016	8708	0.028	6004	0.029	8429	0.022	2710	0.016
9	5407	0.017	8479	0.016	3304	0.019	7404	0.016	8704	0.021	2710	0.020	8483	0.016	8408	0.022	8538	0.025	8711	0.015	7108	0.016
10	8473	0.015	8536	0.015	8507	0.014	7208	0.014	8512	0.011	8473	0.019	8536	0.016	8518	0.020	5516	0.024	5903	0.014	8479	0.015
Sum	**0.317**		**0.313**		**0.390**		**0.377**		**0.859**		**0.312**		**0.305**		**0.527**		**0.618**		**0.453**		**0.265**	

ASEAN = Association of Southeast Asian Nations, HS = Harmonized System, Lao PDR = Lao People's Democratic Republic.

Notes: 8407 = spark-ignition internal-combustion engine; 8408 = compression-ignition engine (diesel, etc.); 8409 = parts for internal combustion spark ignition engines; 8413 = pumps for liquids; 8414 = air, vacuum pumps, compressors, ventilating fans, etc.; 8415 = air-conditioning equipment, machinery; 8479 = other machines and mechanical appliances; 8483 = shafts, cranks, gears, clutches, flywheel, pulleys, etc.; 8507 = electric accumulators; 8512 = electric lighting, signal equipment, car electrics; 8517 = electric apparatus for line telephony, telegraphy; 8518 = automobile loudspeaker; 8536 = electrical switches, connectors, etc.; 8541 = electric apparatus; 8542 = integrated-circuit; 8544 = wire harnesses, electrical cables; 8701–8704 = vehicles; and 8708 = parts and accessories for motor vehicles.

Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Table 7.2: Main Imports from ASEAN Member States to Japan, 2019 (HS 4-digit code, share of total values)

	Viet Nam		Thailand		Singapore		Malaysia		Brunei Darussalam		Philippines		Indonesia		Cambodia		Lao PDR		Myanmar		ASEAN	
1	8544	0.097	8517	0.065	3004	0.134	2711	0.255	2711	0.937	8544	0.119	2701	0.152	6204	0.145	4402	0.108	6203	0.130	2711	0.084
2	8517	0.066	1602	0.064	8486	0.078	8542	0.041	2709	0.058	4418	0.089	2711	0.123	6203	0.101	6403	0.093	6201	0.094	8544	0.046
3	4401	0.034	8708	0.037	8471	0.077	8541	0.032	2905	0.004	0803	0.073	8544	0.054	6110	0.087	2603	0.089	6202	0.078	8517	0.035
4	6110	0.033	8443	0.023	8542	0.076	4412	0.029	0303	0.000	7501	0.062	7112	0.043	4202	0.083	6204	0.088	6204	0.075	2701	0.026
5	4202	0.028	8542	0.022	4911	0.050	8517	0.029	2902	0.000	8526	0.036	7501	0.043	6403	0.061	6203	0.085	6205	0.060	8542	0.022
6	6404	0.028	8415	0.021	9031	0.035	8508	0.027	2102	0.000	8542	0.034	4001	0.041	6109	0.059	8544	0.073	6211	0.055	8708	0.018
7	6109	0.024	8471	0.018	2710	0.031	8528	0.019	0306	0.000	8541	0.032	4412	0.031	6104	0.044	8517	0.071	6110	0.049	1602	0.015
8	9403	0.022	1604	0.016	3811	0.024	1511	0.019	6109	0.000	8471	0.030	4802	0.017	8544	0.040	3307	0.043	6210	0.034	8471	0.014
9	8708	0.022	8544	0.016	9021	0.021	2710	0.018	9031	0.000	2603	0.024	8708	0.016	6404	0.029	6704	0.037	4202	0.033	7501	0.013
10	6203	0.019	8529	0.014	9027	0.020	8543	0.018	2853	0.000	8505	0.021	0306	0.015	6402	0.027	6104	0.036	0306	0.033	8443	0.013
Sum	**0.373**		**0.296**		**0.546**		**0.487**		**0.999**		**0.520**		**0.535**		**0.676**		**0.723**		**0.641**		**0.286**	

ASEAN = Association of Southeast Asian Nations, HS = Harmonized System, Lao PDR = Lao People's Democratic Republic.

Notes: 8407 = spark-ignition internal-combustion engine; 8408 = compression-ignition engine (diesel, etc.); 8409 = parts for internal combustion spark ignition engines; 8413 = pumps for liquids; 8414 = air, vacuum pumps, compressors, ventilating fans, etc.; 8415 = air-conditioning equipment, machinery; 8479 = other machines and mechanical appliances; 8483 = shafts, cranks, gears, clutches, flywheel, pulleys, etc.; 8507 = electric accumulators; 8512 = electric lighting, signal equipment, car electrics; 8517 = electric

apparatus for line telephony, telegraphy; 8518 = automobile loudspeaker; 8536 = electrical switches, connectors, etc.; 8541 = electric apparatus; 8542 = integrated-circuit; 8544 = wire harnesses, electrical cables; 8701–8704 = vehicles; and 8708 = parts and accessories for motor vehicles.
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

As for imports from ASEAN to Japan, excluding mineral resources (2701, 2711) such as coal and petroleum gas from Brunei Darussalam and Indonesia, there was still a large trade of auto parts, such as wiring harnesses and electrical cables (8544) and integrated circuits. Due to the high share of mineral resources, auto parts (8708) accounted for a low 1.8% of the total, the sixth-largest category. In particular, because wiring harnesses are labour-intensive components, many vehicles assembled in Japan use imported products (Itoh and Guerrero, 2020). The characteristics of each country include integrated circuits in Thailand, Singapore, and Malaysia; wire harnesses in Viet Nam, the Philippines, and Indonesia; and auto parts in Thailand. Other than that, apparel-related products in Cambodia, the Lao PDR, and Myanmar; mineral fuel in Brunei Darussalam and Indonesia; and electrical equipment and machinery are the main export items.

Thus, ASEAN had a relatively high share of trade in automotive components, especially electrical components such as wiring harnesses and integrated circuits in addition to auto parts, as well as finished automobiles. The Japanese automobile industry has been fully engaged in automobile production in ASEAN – especially in Thailand – since the 1960s. It began with complete export and assembly of parts, known as complete knock-down, but due to the industrial policies of each country (e.g. import substitution policies), it gradually promoted local part procurement, and Japanese parts suppliers also made progress in ASEAN with various policies. Then, exports of auto parts from Japan, especially metal key components with high freight-carrying capacity, have become the main source of trade due to the progress of local production, while localisation of low value-added goods has progressed.

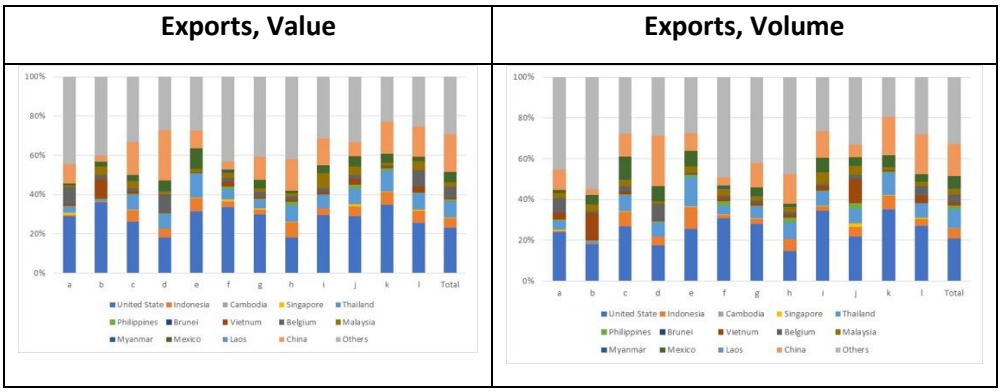
In addition, especially since 2000s, auto parts have been procured within the ASEAN region for the production of world common vehicles (and parts), and their global production networks has become more sophisticated. On the other hand, the horizontal division of labour is progressing on a global scale, with some parts being exported from ASEAN to Japan. For example, Sumitomo Wiring System is the world's top manufacturer of wiring harnesses, but because wiring harnesses are one of the most labour-intensive components, advanced logistics is required, such as manufacturing overseas (mainly in Viet Nam), transporting them in containers, and matching with orders in Japan (Itoh, 2019). These labour-intensive products were initially produced in Thailand, but due to increased labour costs, they have been relocated to countries near Thailand. In addition, Japan's domestic automobile industry also imports labour-intensive auto parts such as wiring harnesses from AMS (mainly Viet Nam) to ensure cost-competitiveness for domestic assembly.

However, this complex supply network has become a discontinuous chain. For example, the supply of auto parts to Japan was disrupted due to the shutdown of parts factories in Viet Nam and Malaysia, and the suspension of production at major assemble factories in Japan has been recently announced (Muramatsu, 2021). Moreover, the impact on the production network is noteworthy, because the production of auto parts and their export to Japan have been stalled, and the decline in production at Japan's domestic assembly plants is expected to continue throughout 2021 (*Nikkei Asia*, 2021). The automotive industry, in particular, has a broad base with many related parts, including materials, in addition to auto parts, and the economic impact of this on the industry, local employment, and regional income is noteworthy (Guerrero and Itoh, 2017).

To provide an overview of the impact of the spread of the pandemic on the supply chain of the automotive-related industry, auto parts (8708)[28] are now the focus to identify global changes and regional shifts in the trade structure in 2019 and 2021.

There was no difference in the value base of auto part exports from Japan in 2021, which is annualised, compared to 2019. In terms of volume base, the decrease was about 5.0% (Figure 7.10). Observing the share by country, 8.3% of Japan's auto part exports (after 23.2% for the US and 19.2% for China overall in 2019) were destined for Thailand, followed by 4.9% for Indonesia and 2.1% for Malaysia (in value terms, 17.5% for ASEAN). In terms of both value and volume, the shares of Indonesia and Thailand are expected to decline slightly in 2021, and it is unlikely that there have been any major changes in Japanese destinations related to automobile production. ASEAN as a whole saw its market share decline by 2.3 percentage points in value terms and by 1.8 percentage points in volume terms in 2021.

Figure 7.10: Share of Trade Partners by Auto Parts, Japan, 2019

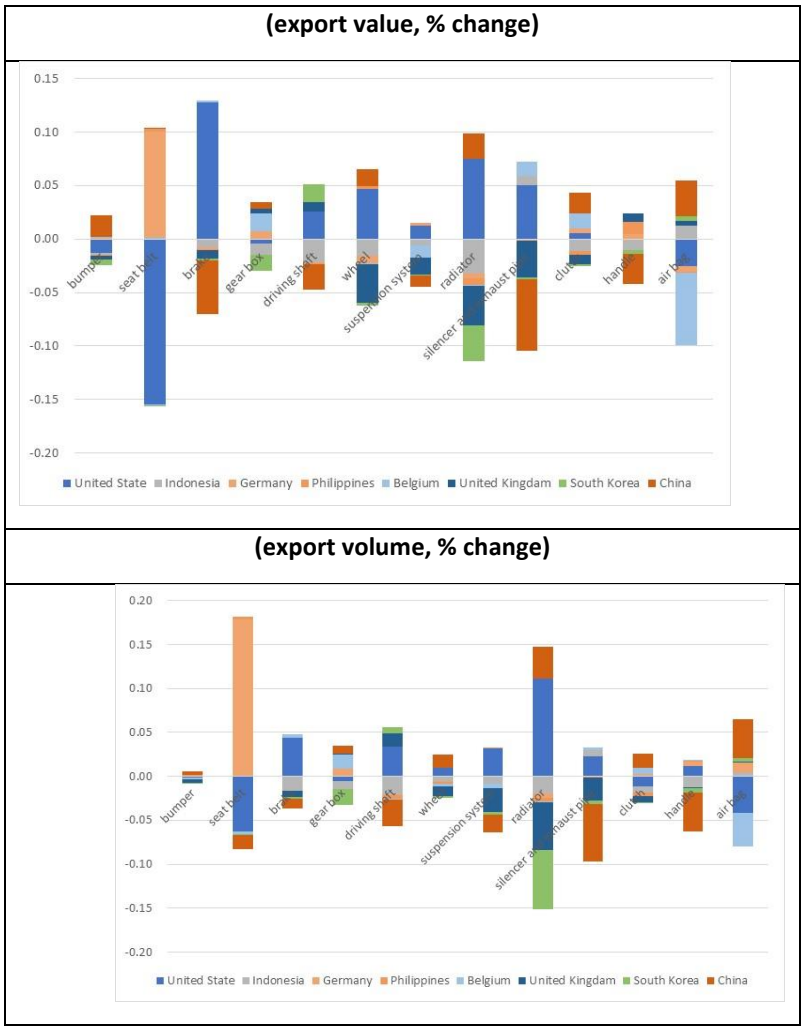


Note: a = bumper, b = seat belt, c = brake, d = gear box, e = driving shaft, f = wheel, g = suspension system, h = radiator, I = silencer and exhaust pipe, j = clutch, k = handle, l = air bag.
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Observing the changes in the composition of each component by country, there was no relatively large increase or decrease, but for other components (870899), Indonesia decreased by 5.2 percentage points (volume) and the Philippines increased by 5.2 percentage points (volume), so this may have been a substitution between the two countries (i.e. intermediate processing, since the change in value terms is very small) (Figure 7.11). For example, in ASEAN, Japanese manufacturers (e.g. Toyota) have adopted part relay centres, which is expected to be part of their procurement strategy in the region (Nemoto and Hashimoto, 2010).

[28] Since circuits (8542) and wiring harnesses and electrical cables (8544) are used for purposes other than automotive parts, it is necessary to examine them by detailed code classification. In this section, the focus is on automotive parts (8708), whose usage is clear, to examine the supply chain of automotive parts.

Figure 7.11: Trade Partner Changes in Auto Parts, Japan, 2019–2021



Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

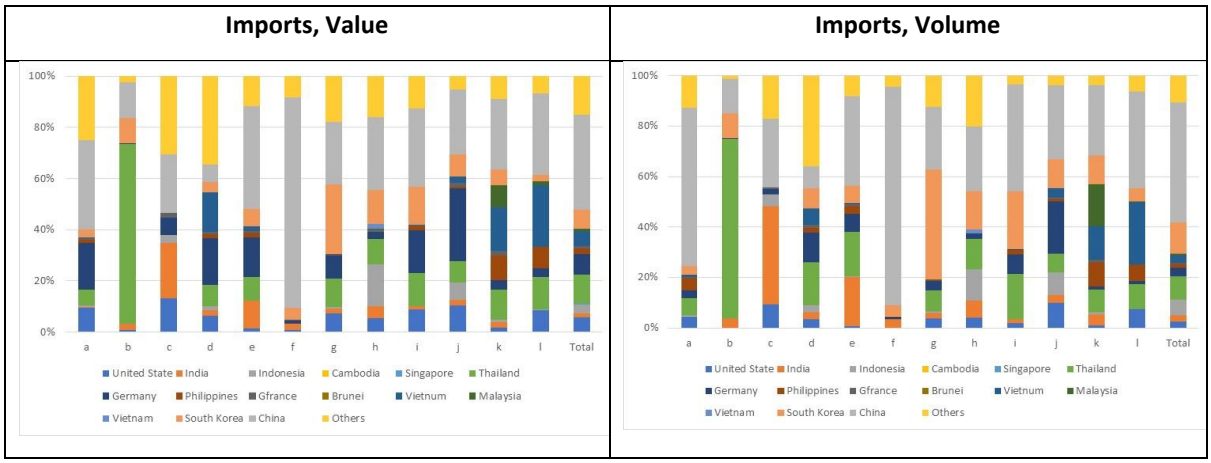
On the other hand, there have been notable changes outside of ASEAN; for example, the destination of seatbelt exports has changed from the US to Germany, radiators from the UK and the Republic of Korea to the US, and silencer and exhaust pipe exports from China to the US (Figure 7.11). It is expected that the destination of auto parts produced by Japanese domestic auto-related manufacturers will be changing in response to the recovery of production systems at assembly factories in various countries and changes in production models.

Imports of auto parts to Japan, which are supposed to be used for the assembly of finished vehicles, fell 10% in value terms and 12% in volume terms, although there were differences depending on the parts,[29] indicating the impact of the shutdown of production plants at foreign factories by the pandemic. However, observing the share by country, there were no significant changes in major trading partners, with Thailand accounting for just over 10% of the total and Viet Nam at around 7% (Figure 7.12). In terms of volume, China accounted for about half of the total, followed by the Republic

[29] Imports of drive shafts (76.2%), clutches (78.4%), and airbags (79.6%) have declined significantly, with Viet Nam accounting for 28.2% of the global total, especially for airbags.

of Korea at just under 10%. With Thailand at just under 9% and Indonesia at just over 7%, ASEAN was a higher value-added parts supplier than China and the Republic of Korea. ASEAN as a whole saw its market share rise by 0.5 percentage point in value terms and by 0.8 percentage point in volume terms in 2021.

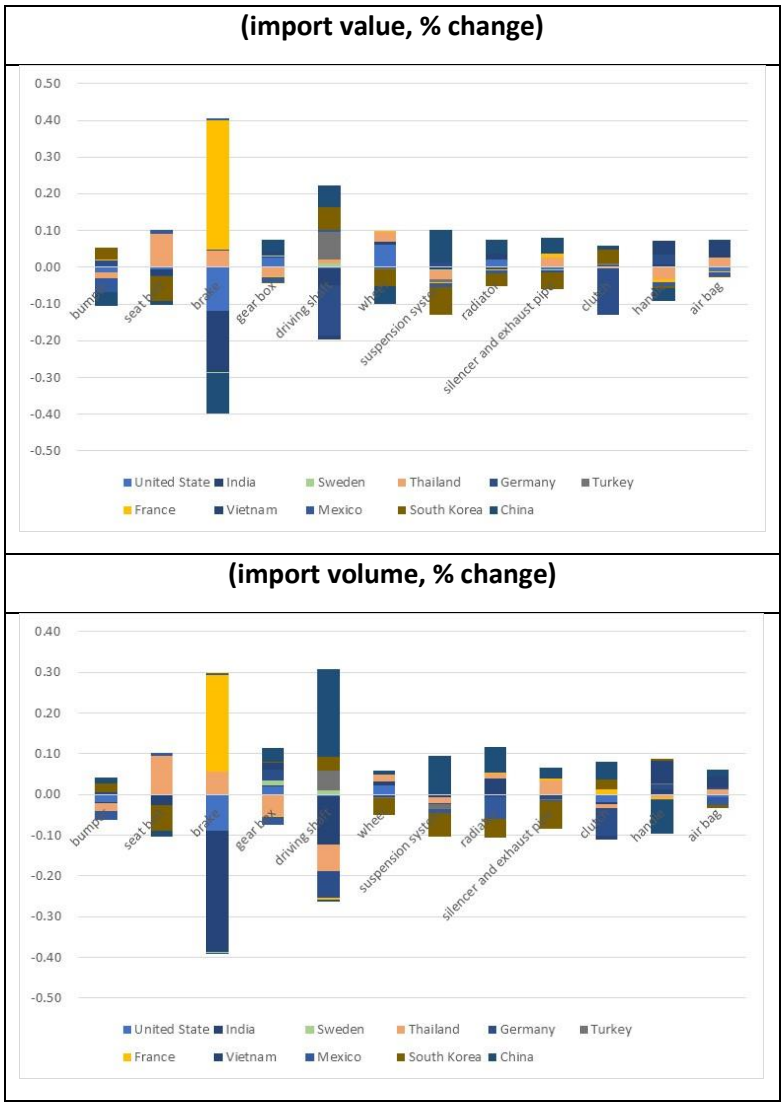
Figure 7.12: Share of Japan's Trade Partners by Auto Parts, 2019



Note: a = bumper, b = seat belt, c = brake, d = gear box, e = driving shaft, f = wheel, g = suspension system, h = radiator, I = silencer and exhaust pipe, j = clutch, k = handle, l = air bag.
Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Observing the composition of each component by country, regional concentration by component can be seen in terms of value, with about 80% of seatbelts imported from Thailand, and just under 30% of airbags and just under 20% of steering wheels imported from Viet Nam. Although the overall trade value/volume declined due to the pandemic, there was no significant decrease in share by country (Figure 7.13). For example, seatbelts in Thailand were up 9.1 percentage points in value terms (shifted from the Republic of Korea), airbags in Viet Nam were up 4.4 percentage points, and handles were up 3.7 percentage points. In terms of volume, there was also a decrease of around 6 percentage points in gear boxes and driving shafts in Thailand, but there was an increasing trend in seatbelts and brakes (also in Thailand) and in wheels in Viet Nam. There was no significant change in the procurement composition of AMS but rather a noticeable increase in the share of parts imported from ASEAN.

Figure 7.13: Japan Trade Partner Changes in Auto Parts, 2019–2021



Source: Government of Japan, Ministry of Finance, Trade Statistics of Japan, https://www.customs.go.jp/toukei/info/index_e.htm

Outside of ASEAN, as with exports, there were significant changes. For example, before the pandemic, brakes were mainly sourced from India, the US, and China, but this has shifted to France (up 35 percentage points) and Thailand. It is also clear that some parts were subject to changes in procurement sources, as Germany's share of the market for driving shafts and clutches shifted to Turkey, Republic of Korea, and China.

Therefore, particularly in the category of auto parts (8708) – although there have been some changes in Japan's part procurement – there was no major shrinkage in market share for ASEAN; in fact, there was an expansion trend of imports in Japan. Even in the third quarter of 2021 and beyond, Toyota planned to reduce global production by 330,000 units in October and up to 150,000 units in November due to operational restrictions in Malaysia and Viet Nam, demonstrating the difficulty of alternative procurement, not only due to technical factors but also due to production costs and procurement logistics issues (*Nikkan Jidosha Shimbun*, 2021).

As a reference, the top three countries (77.4% in total) in terms of Japan's imports of wire harnesses and electric cables (854430) were Viet Nam (37.1%), the Philippines (23.6%), and Indonesia (16.7%) in 2019. Similarly, in Japan's exports, the main overseas bases of Japanese finished vehicle assembly plants were listed as the US (19.7%), Russia (17.0%), and China (11.2%) in 2019. In 2021, the top three countries for imports were also in ASEAN, with 36.7% from Viet Nam, 24.6% from the Philippines, and 15.3% from Indonesia. On the other hand, exports were 29.2% to the US, 13.4% to China, and 11.0% to Russia, and it can be predicted that the concentration of exports from Japan is increasing, especially due to the recovery of production in the US (or the decline in production in Russia).[30] However, the number of imports until August 2021 was about 90.8% as compared to the 2019 level. In addition, there was little change in the supply of wiring harnesses and electric cables, only an 0.8 percentage point decrease.

7.2.2. Impacts of the Japanese Economy on ASEAN

As seen previously, the impact – or changes of supply location – on the supply network of auto parts in the trade between Japan and ASEAN was insignificant; in fact, some parts expanded ASEAN's share, which helps explain its importance to the Japanese automobile industry.

As discussed earlier, the Japanese automobile industry has built advanced global production networks to gain cost-competitiveness and to produce world standard vehicles. Due to the pandemic, economic activity is stagnant on a global scale. In the case of a natural disaster, the impact is limited to a certain period of time and area, but in the case of COVID-19, the impact is different.

To understand the transition of the production network and the structure of economic linkages, international input–output tables are now used, including AMS, to clarify the spill-over mechanism of the impact to/from the key industry on the ASEAN economy, the global value chain.[31] Of the 36 industrial categories, 16 are manufacturing industries. For example, transport machinery is divided into automobiles, trailers, and others, which may be appropriate for analysing global value chains in the automobile industry. In this numerical analysis, 64 countries are classified into Japan, ASEAN countries (8 countries in total), other Asian countries, and others (i.e. the rest of the world).

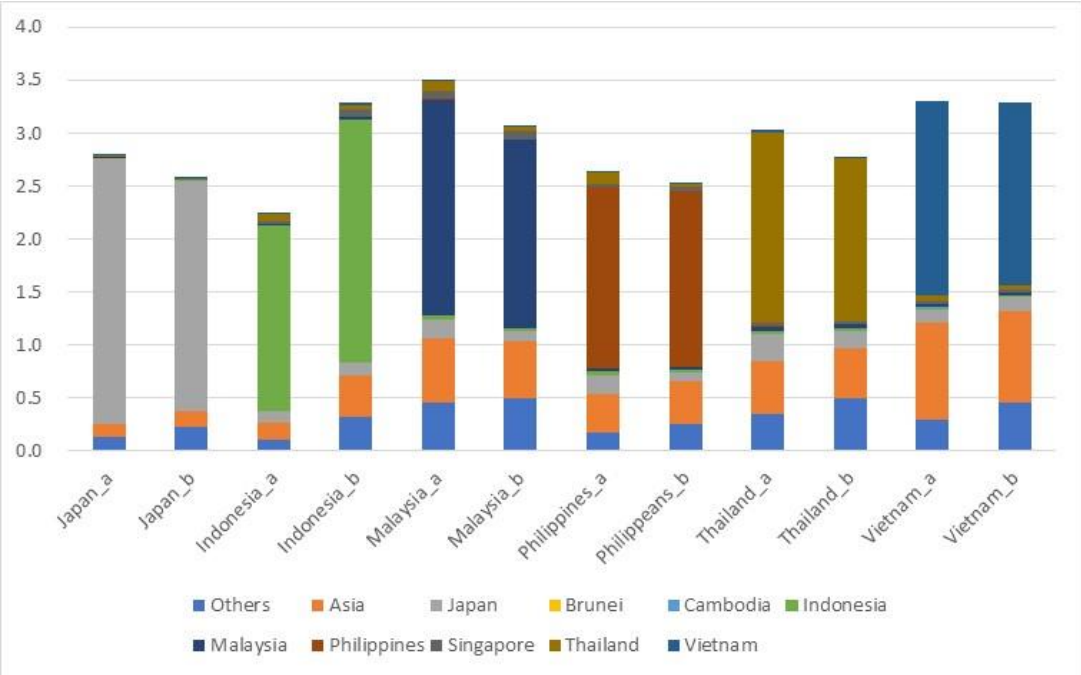
According to the economic spill-over mechanism and each industry, the impact of Japan's domestic automobile industry on the economies of AMS has been small. Rather, for ASEAN as a whole, the results show that Japan's crude oil and petroleum products (0.126 in total), wood and wood products (0.068), and clothing (0.065) had a high impact. This is probably because the ratio of related industries in AMS to Japan's domestic automobile industry was relatively small, or because production spill-overs within the ASEAN region were small due to relatively low value-added auto parts and goods. The

[30] The share of integrated circuits (854231) imported by country is 52.7% from Taiwan, 18.1% from the US, and 9.8% from China; likewise, the share of exports is 20.4% in China, 13.0% in the US. and 10.2% in Germany. These are used for purposes other than automobiles, so ASEAN's global position is different. In general, semiconductors and electronic components (8540, 8541) in trade statistics are not categorised as auto parts (Han, 2016).

[31] OECD, OECD Inter-Country Input-Output (ICIO) Tables, https://www.oecd.org/sti/ind/inter-country-input-output-tables.htm

automobile industry had the highest spill-over effect amongst Japanese industries, confirming the importance of global auto parts procurement for Japan (Figure 7.14).

Figure 7.14: Spill-Over Effects to Countries and Regions on Automotive Industries



Note: a = motor vehicles, trailers, and semi-trailers; b = other transport equipment.
Source: OECD, OECD Inter-Country Input-Output (ICIO) Tables, https://www.oecd.org/sti/ind/inter-country-input-output-tables.htm; and author.

The picture is different when examining the impact of the automobile industry in AMS, specifically Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam, where the spill-over effects of automobile-related industries are attracting attention (Figure 7.14). The spill-over effects of motor vehicles in Malaysia (3.508), Viet Nam (3.300), and Thailand (3.030) and other transport equipment in Viet Nam (3.286), Indonesia (3.283), and Malaysia (3.071) were higher than those of Japan, while the leakage loss of AMS to 'Asia' (i.e. mainly China, Republic of Korea, and India) were large. In particular, the leakage loss to 'Asia' in Malaysia following Viet Nam is significant. It is clear that not only the spill-over effect within the home country – but also the spill-over effect within the ASEAN region – was limited for automobile-related domestic and international demand.

The ASEAN Economic Community was established on 31 December 2015, and tariffs in Cambodia, Lao PDR, Myanmar, and Viet Nam were eliminated in 2018, but such effects are not included in this estimate. In the Greater Mekong Subregion, which includes five countries and two provinces in southern China, the Cross-Border Transportation Agreement was signed by all member countries in 2003 as a trade facilitation measure. In addition, memorandum of understanding on bilateral and trilateral vehicle travel have been signed in sequence. Japanese auto part manufacturers have been producing auto parts in industrial parks in Cambodia and delivering/procuring them to finished vehicle assembly plants in Thailand due to soaring labour costs in Thailand; the part distribution function inside the ASEAN region is also progressing. Further analysis of these impacts on the production network using the latest data and trade statistics of AMS is needed.

At the end of this section, the value-added trade, or global value chain, is estimated to see to what extent the Japanese economy generated value-added trade for the ASEAN economies (UN, 2018). As a result, Japan's aggregate demand generated $68.62 billion of value added in ASEAN (i.e. eight countries excluding Myanmar and the Lao PDR), equivalent to 1.6% of the total value added of $4,326.76 billion (Table 7.3). In comparison with the total of $175.53 billion for 'Asia' excluding Japan and ASEAN, it can be understood that the per capita income growth in ASEAN was less than double that of Asia[32] and is a relatively high value-added industry linkage.

Table 7.3: Global Value-Added Trade by Japan ($ billion)

Country and Region	Value
Others	365.497
Asia	175.530
Japan	3,717.109
ASEAN total	**68.620**
Brunei Darussalam	1.692
Cambodia	252
Indonesia	15.317
Malaysia	11.040
Philippines	6.894
Singapore	12.053
Thailand	13.893
Viet Nam	7.480
TOTAL	**4,326.756**

ASEAN = Association of Southeast Asian Nations.
Source: Author.

Indonesia had the largest share at 15.317, followed by Thailand at 13.893 and Singapore at 12.053. Observing the final industry of value added, in Indonesia, minerals accounted for 27.2% of the total, followed by commerce at 13.6%; in Thailand, commerce accounted for 26.8%, followed by agriculture, forestry, and fisheries at 9.8%; and in Singapore, commerce accounted for 27.4% and other business at 13.6%. Similar to the economic spill-over effects mentioned earlier, based on the industrial structure of AMS, it is understandable that the spill-over effects to the manufacturing sector – not only to the automobile industry but also to the value-added sector of each manufacturing sector – were limited because the share of commerce at value added was too big .

[32] If the population of the eight AMS was 5.93 million in 2018, and the population of China, Hong Kong, India, Republic of Korea, and Taiwan was 2.90 billion, the per capita value of ASEAN will be $115.70 and that of the others will be $61.30.

7.3. Transport Policy

This section summarises the international transport and logistics strategy promoted by the Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT). MLIT oversees three major international issues: transport security, logistics initiatives in East and South-East Asia, and transport and the environment.[33]

Some projects being implemented with ASEAN include those on transport security and on transport and environment around the world (Table 7.4 and 7.5). For each of these initiatives, it is collaborating not only with Asia, but the US and Europe.

Table 7.4: Transport Security between Japan and ASEAN

Name	Objective
ASEAN–Japan Maritime Transport Security Programme	To improve maritime security in the ASEAN–Japan region and to support the implementation of the SOLAS Convention by organising policy seminars and cooperating on training of security personnel.
ASEAN-Japan Aviation Security Project	To further improve aviation security by exchanging information and conducting joint surveys on the current status and problems of aviation security measures in each country.

Source: Author.

Table 7.5: Transport and Environment Cooperation between Japan and ASEAN

Name	Objective
Automobile Technical Cooperation Project on Safety and Environment	To contribute to the improvement of automobile safety and the environment, participating countries will cooperate in human resources development and policy coordination regarding automobile inspection, technical standards including accident analysis, certification systems, and publicity of these technical measures.
Urban Public Transport Policy Framework	To promote the use of public transport in urban areas, to improve the urban environment, and to make urban mobility more efficient.
ASEAN–Japan Alternative Fuel Project for Transport Sector	To reduce global warming gases and build an environment-friendly transport network, information on the use of alternative fuels for transport in the ASEAN region will be collected, and a feasibility study will be conducted based on the applicability to Clean Development Mechanism.

Source: Author.

[33] Government of Japan, MLIT, New Issues Being Addressed Internationally, https://www.mlit.go.jp/sogoseisaku/kotsu/kadai/index.html

In 2003, MLIT established a basic framework to strengthen cooperation with ASEAN in the transport sector. A new issue for MLIT is the ASEAN–Japan Transport Partnership, a logistics initiative in East and South-East Asia.[34] It aims to increase the competitiveness of the ASEAN–Japan region as a production base, take a joint survey on the problems in the logistics network, and discuss improvement measures.

There are 21 programmes between ASEAN and Japan, including regional economic integration, regional and international environmental issues, urgent matters related to road safety, and the introduction of safety facilities using the latest technology. These are critical issues for Japan as well, since bottlenecks within the ASEAN region will affect the growth of Japanese companies, as human flows and logistics within and amongst the region increase.

The Pakse Action Plan, 2014-2023,[35] negotiated in December 2013, sets out four main policies: transport facilitation, transport infrastructure, high-quality and sustainable transport, and human resources development. Along with economic development, the demand for cold-chain logistics for foods is on the rise in the ASEAN region. Governments of AMS and Japan launched the ASEAN–Japan Cold Chain Project to support the development of cold-chain logistics in AMS for safe food transport and the reduction of food waste. It aims to implement bilateral policy dialogues and workshops, establish guidelines, encourage human resources development and pilot projects, and promote high-quality logistics equipment.

Indeed, Japan is promoting policies in the medical and food sectors as priorities by using radio-frequency identification to share cargo information in the cold chain in compliance with international certifications, supporting the establishment of consolidation services, and developing refrigerated warehouses and container freight stations in line with international certifications. On 28 May 2020, an international standard was issued to achieve appropriate temperature control in small-lot cold-storage delivery services, which was a joint effort of the public and private sectors. Yamato has already obtained the certification both domestically and internationally. It is necessary for industries and ministries to work together to promote international standardisation in cold-chain logistics so that the healthy development of overseas logistics markets will lead to the strengthening of Japan's industrial competitiveness at large.

The Government of Japan’s initiatives are mainly related to the environment and safety, and the policies currently being implemented are also directed towards the cold chain of food and medicine, and the visualisation and integration of logistics information, including port electronic data interchange. While emphasis has been placed on establishing a safe and secure distribution system for intermediate goods and final products, there are few logistics policies that contribute to the development and upgrading of the production systems of Japan and ASEAN. For example, machinery products are a major trade item between Japan and ASEAN, especially the share of electronics and auto parts. The maintenance of a robust production network is key – even in the face of production stoppages and reduced capacity utilisation due to the pandemic. However, it is clear from the empirical analysis that the spill-over effects of the automobile industry and the income effects through trade have been relatively small, probably because the automobile-related industry in AMS mainly

[34] AJTP, ATJP Information Center, https://www.ajtpweb.org/ajtp/info/about.html
[35] AJTP, AJTP Projects, https://www.ajtpweb.org/ajtp/ajtpprojects/index.html

handles low value-added parts, and the leakage to other Asian countries such as China from ASEAN is large.

Although some AMS have positioned the automotive industry as a key industrial area to promote innovation and high value-added activities, there are few strong local suppliers, with limited procurement and only general-purpose low value-added parts (Chiengkul, 2019). Many first-tier suppliers have been sourcing parts from Japanese suppliers for quality of parts and transport, total costs including transport costs, and lead time to their factories. As a result, ASEAN local suppliers have had limited opportunities to engage in research and development with transnational corporations, which is why technology transfer for the production of high value-added components to local suppliers has been slow (Intarakumnerd, 2010).

Due to the labour cost increase in Thailand, auto part manufacturers are producing their products in countries around Thailand, specifically in special economic zones such as in Cambodia and the Lao PDR, and delivering them to assembly plants in Thailand and other AMS. The transport infrastructure, or hardware side, has been developed, but in addition to higher forwarder fees, transhipment at the borders, and the resulting single-load problems of cargo, the need for improvements in the software side has been pointed out (JICA, 2016). Although trade facilitation has been promoted, non-tariff barriers in customs clearance and the number of registered vehicles is still limited due to delays in the development of laws in each country, and efforts related to such cross-border logistics are necessary.

To support the global production network of the Japanese manufacturing industry – not only inside Japan but also in other countries – policies leading to the logistics upgrading within the ASEAN region is necessary. Coe (2014) pointed out that the sophistication of logistics contributes to increasing the value of companies in the global economy, and that the integration of logistics and global protection networks will reshape the global economy. In addition, Coe (2020) cited a variety of factors that affect the sophistication of modern logistics, including the development of transport infrastructure, training and securing of workers, creation of social (software) infrastructure, and political issues (laws).

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Appendix: Major Trade Goods in ASEAN Countries

HS	Item
02 - Meat and edible meat offal	
0202	Beef meat (frozen)
03 - Fish and crustaceans, molluscs and other aquatic invertebrates	
0303	Fish (frozen)
0306	Crustaceans
08 - Fruit and nuts, edible; peel of citrus fruit or melons	
0803	Bananas (fresh or dried)
15 - Animal or vegetable fats and oils and their cleavage products; prepared animal fats; animal or vegetable waxes	
1511	Palm oil and its fractions
16 - Meat, fish or crustaceans, molluscs or other aquatic invertebrates; preparations thereof	
1602	Meat preparations
1604	Fish preparations
21 - Miscellaneous edible preparations	
2102	Yeasts and other single-cell micro-organisms
25 - Salt; sulphur; earths, stone; plastering materials, lime and cement	
2523	Cements
26 - Ores, slag and ash	
2603	Copper ores
27 - Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	
2701	Coal and briquettes, soybean coal
2707	Distillates of hot coal tar
2709	Petroleum and regenerative oils (crude oil)
2710	Petroleum and regenerative oils (other than crude oil)
2711	Petroleum gases and other gaseous hydrocarbons
28 - Inorganic chemicals; organic and inorganic compounds of precious metals; of rare earth metals, of radio-active elements and of isotopes	
2807	Sulfuric acid
2853	Phosphide
29 - Organic chemicals	
2902	Cyclic hydrocarbons
2905	Acyclic alcohols and their halogenated
30 - Pharmaceutical products	
3004	Medical supplies

33 - Essential oils and resinoids; perfumery, cosmetic or toilet preparations	
3307	Pre-shave, shaving or after-shave preparations
38 - Chemical products n.e.s.	
3811	Anti-knock agents, antioxidants, anti-gumming agents
42 - Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	
4202	Bags
44 - Wood and articles of wood; wood charcoal	
4401	Fuelwood
4402	Charcoal
4412	Plywood
4418	Woodworking Products for Building and Construction
48 - Paper and paperboard; articles of paper pulp, of paper or paperboard	
4802	Paper and paperboard
49 - Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans	
4911	Printed matter
54 - Man-made filaments	
5407	Synthetic filament yarn fabric
55 - Man-made staple fibres	
5516	Woven fabrics of staple fibers of recycled or semi-synthetic fibers
59 - Textile fabrics; impregnated, coated, covered or laminated; textile articles of a kind suitable for industrial use	
5903	Textile fabrics for spinning
60 - Fabrics; knitted or crocheted	
6004	Knitted fabrics and crocheted fabrics
61 - Apparel and clothing accessories; knitted or crocheted	
6104	Suits for women
6109	T-shirts, singlets and other vests
6110	Jerseys, pullovers, cardigans
62 - Apparel and clothing accessories; not knitted or crocheted	
6201	Coats for men
6202	Coats for women
6203	Suits for men
6204	Suits for women
6205	Shirts for men
6210	Clothes
6211	Swimwear

64 - Footwear; gaiters and the like; parts of such articles	
6402	Footwear (outer soles and uppers of rubber or plastics)
6403	Footwear (outer soles of rubber, plastics, leather or composition leather, uppers of leather)
6404	Footwear (outer soles of rubber or plastics and uppers of textile materials)
67 - Feathers and down, prepared; and articles made of feather or of down; artificial flowers; articles of human hair	
6704	Wigs
71 - Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	
7108	Gold
7112	Scrap of precious metals or metals covered with precious metals
72 - Iron and steel	
7204	Steel scrap and ingots for remitting steel
7208	Flat rolled products of ferrous or non-alloy steel
7225	Other Alloy Steel Flat Roll Products
73 - Iron or steel articles	
7302	Rails, guardrails, rack rails and tongue rails
7304	Steel tubes and hollow profiles
7307	Steel pipe fittings
75 - Nickel and articles thereof	
7501	Nickel matte, sintered nickel oxide and other intermediate products of nickel smelting
84 - Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	
8406	Steam turbines
8407	
8408	
8409	
8413	
8414	
8415	
8429	Bulldozers and angledozers
8443	Printing machinery
8464	Processing machinery
8471	Data processing machines
8473	Equipment, parts and accessories between no 8470 and no 8472
8479	
8483	
8486	equipment, parts and accessories for semiconductor balls, semiconductor wafers, semiconductor devices, integrated circuits or flat panel displays

85 - Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts and accessories of such articles	
8505	Magnets
8507	

8508	Vacuum cleaners
8512	
8517	
8518	
8523	Media, unrecorded; magnetic tapes
8526	Radar apparatus
8528	Monitors and projectors
8529	Reception and transmission apparatus for between no 8525 to no 8528
8532	Electrical capacitors
8536	
8538	Electrical apparatus for between no 8535 and no 8537
8541	
8542	
8543	Electrical machines and apparatus
8544	
87 - Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	
8701	Tractors; pedestrian controlled
8702	Vehicles; public transport type
8703	Vehicles; specially designed for travelling on snow, golf cars and similar vehicles
8704	Vehicles; dumpers, designed for off-highway use, for transport of goods
8708	Auto-parts (8708)
8711	Motorcycles
8714	Motorcycles parts
89 - Ships, boats and floating structures	
8901	Ships (8901)
90 - Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	
9021	Plastic surgery machine
9027	Instruments for physical or chemical analysis
9031	Instruments for measurement or inspection
9032	Automatic adjustment equipment

94 - Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, n.e.s.; illuminated signs, illuminated nameplates and the like; prefabricated buildings	
9403	Other furniture and parts thereof

HS = Harmonized system.
Source: Government of Japan, Ministry of Finance, Code Lists – Trade Statistics of Japan, https://www.customs.go.jp/toukei/sankou/code/code_e.htm