

Key Issues:

- **The digital economy** affects the entire ecology of industries, employment, trade, and economic growth.
- **Developing Asia and Africa** must attract the changing patterns in investments and manufacturing as these will drive employment-led growth.
- **Opportunities and disruptions** arising in the employment sector call for an appropriate business, training, and trade facilitation ecology.

The Importance of Industrialisation and Trade Facilitation for Employment-Led Growth in the Digital Economy

Anita Prakash

The digital economy will affect the patterns and geographical locations of industries, employment, trade, and economic growth. Structural transformation and employment generation policies in developing Asia and Africa must understand, prepare for, and respond to these changes. Investments in industrialisation and manufacturing will continue to drive employment-led growth in Asia and Africa. Countries in different stages of development can address the opportunities and disruptions arising in the employment sector through development strategies that focus on technology-aided industrialisation, trade and investment facilitation, physical and institutional connectivity, and investment in human capital. Developing countries can support their efforts by creating an appropriate business, training, and trade facilitation ecology.

Policy Challenge

The world of work is changing because of advances in technology, innovation, automation, robotics, digital platforms, and greater connectivity. The effect of the digital economy is most advanced in corporate applications and industrial systems – hence, on investments, hiring, skill training, and trade facilitation policies.

Africa and developing Asia have a young population and a growing labour force – a highly valuable asset in an ageing world. The two regions are urbanising faster than any other region. By 2034, Africa's working-age population is expected to be 1.1 billion, larger than that of either China or India (McKinsey Global Institute, 2016). Developing Asia, on the other hand, has the largest regional labour force in the world, with nearly 2 billion workers. The Asian labour force is projected to grow by 0.5% annually from 1.9 billion in 2015 to 2.1 billion in 2030 and 2.2 billion in 2050 (Asian Development Bank, 2018). India is projected to account for 30% of the total regional labour force by 2030, while countries with relatively young current populations, such as Nepal and Pakistan, will experience larger increases in their labour force and require policies to ensure an adequate number of productive jobs.

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Opportunities and disruptions in the employment sector can be addressed through development strategies for regions at different stages of industrial development. Structural transformation and employment generation policies in developing Asia and Africa must understand, prepare for, and respond to the new digital economy, as it will affect the patterns and locations of industries, employment, trade, and economic growth. Industrialisation and participation in global value chains (GVCs) are important for growth and employment generation. The step-by-step approach to industrialisation and employment for the young population has been affected by the new digital economy, which have abruptly arrived in developing Asia and in Africa. These regions are especially vulnerable to decreased investment in manufacturing, and jobs being replaced by automation, robotics, and artificial intelligence (AI), as they are not deeply integrated in the regional production networks. They face the dilemma of matching their existing development stage with global demand for industries driven by new technologies, new skills, and an entirely new business ecology. Improved levels of automation and robotics in the workplace and factories are further reducing opportunities for employment and enterprise.

The policy challenge before these countries is to ensure that the digital economy does not promote uneven development and to provide impetus for greater investment in less developed firms, regions, and countries (United Nations Conference on Trade and Development, 2017).

In East Asia's example of trade- and investment-led growth and economic development, foreign direct investment (FDI) facilitated the industrialisation of this region and its integration into GVCs. Developing Asia and Africa have a young demography that aspires to similar growth but require development strategies to continue to attract FDI for industrialisation and integration into GVCs. While manufacturing and participation in GVCs still matter in the digital economy, the rationale and suitable policy focus and adaptations through which developing Asia and Africa can meet the challenges posed by the digital economy are explained in this policy brief.

Policy Proposal

Industrialisation and GVCs provide a singular contribution towards the prosperity of a region and help accumulate physical and human capital. They integrate the informal and formal economy and generate demand for agriculture, mining, and other raw materials, as well as for energy and information technologies, while increasing the supply of products for consumer markets, construction, and other sectors.

Industries and Manufacturing in the Digital Economy

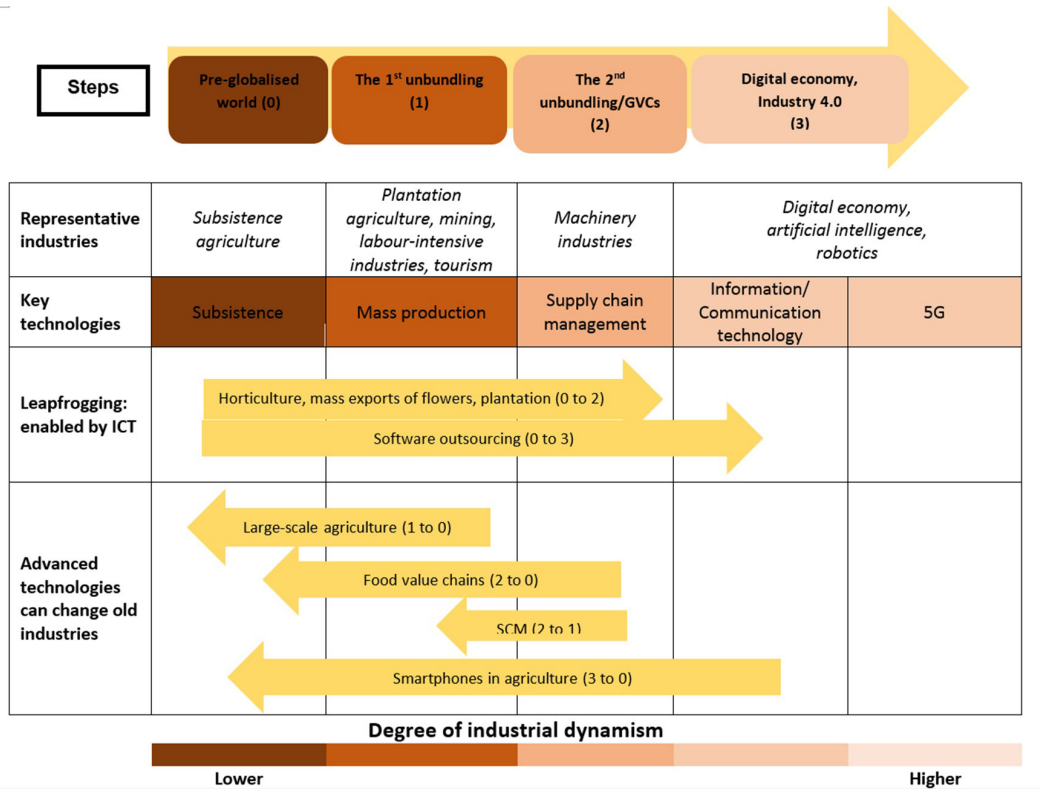
Manufacturing is at the heart of industries integrated into GVCs in Asia, although in the context of resource-rich Africa and some parts of developing Asia, industrial activities around processing and refining of raw commodities would be a significant aspect of industrialisation-led growth. FDI facilitated East Asia's industrialisation and structural change, and its integration in the GVCs. The flying geese model of FDI is synonymous with growth in East Asia, which can be extended to Africa, South and Central Asia, and other similar regions which have to create growth and employment simultaneously.

FDI in Developing Asia and Africa in the Age of the Digital Economy

The traditional step-by-step approach to industrialisation and employment for the young population has been affected by Industry 4.0 and the new digital economy, which have abruptly arrived in developing Asia and Africa. These regions are especially vulnerable to losing out to increased investment in manufacturing and jobs being replaced by automation, robotics, and AI, as they are still not active participants in regional production networks. The development strategy in these regions must, therefore, consider a multidimensional approach to industrialisation and participation in GVCs.

The onset of the digital economy has also coincided with China and other important East Asian economies' graduation from low-skilled manufacturing jobs and moving up the ladder in the value chain of production. With improved productivity and rising wages, labour-intensive manufacturing jobs are likely to move to the developing regions of South Asia, Africa, and even Central Asia. Although piecemeal technologies and new business models are already being used everywhere, facilitative regulatory frameworks and the matching of old businesses with new technologies can help developing countries to adapt to the new industrial framework and address the future of work, especially youth employment, in the digital economy. Since the third unbundling is an unprecedented phenomenon, the quantitative importance of newly emerging businesses cannot yet be measured directly. However, new elements of the digital economy should certainly be incorporated into the development strategies (Kimura, 2018). An illustrative approach to industrial development between different stages of economic development and industrialisation can be seen in the Table 1.

Table 1: Industrial Dynamism Within and Between Unbundling Regimes

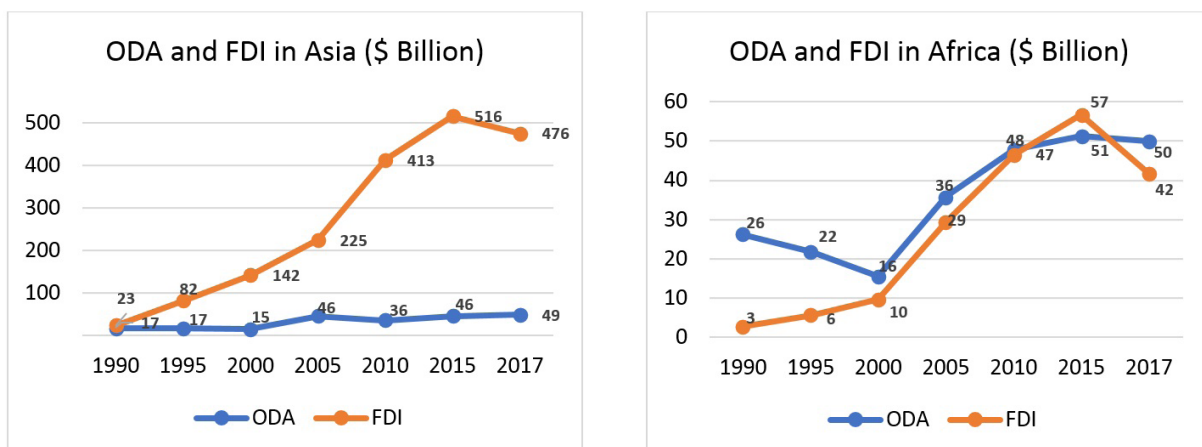


ASEAN = Association of Southeast Asian Nations.
 Source: World Bank, 2017.

Policy Focus Areas for Attracting Investments in Africa and Asia

Increased investment in Africa and developing Asia is required for industrialisation, moving up the value chain of production and consumption, and integration in GVCs. Africa particularly requires a weaning away from official development assistance (ODA) and to create the conditions to attract FDI, leaving ODA-led growth behind.

Figure 1: Foreign Direct Investment and Official Development Assistance in Asia and Africa



FDI = foreign direct investment, ODA = official development assistance.
 Sources: Organisation for Economic Co-operation and Development (2018), International Development Statistics (IDS) online databases. <http://www.oecd.org/dac/financing-sustainable-development/development-finance-data/idsonline.htm>; United Nations Conference on Trade and Development (2018), UNCTADstat. <http://unctadstat.unctad.org>.

FDI for industrialisation in Africa is increasing, and manufacturing is the second highest destination after the oil and gas sector. Rising wages in East Asia are creating the perfect opportunity for investments to move towards Africa and other parts of Asia. After Europe, Asian companies are the largest investors in manufacturing opportunities in Africa, increasingly shifting manufacturing activities to low-wage regions in Africa. Intra-African investment is also becoming increasingly significant, just as intra-Asian investment sustains growth in Asia.

Industry 4.0 does not indicate that manufacturing will diminish in the digital economy. The nature of manufacturing, the value chains of production, and consumption will, however, be affected. Developing Asia and Africa can resolve the important issue of engaging human capital, employment, growth, and industrial development in the digital age through five important policy actions.

Investments in industrialisation and maintaining industrial dynamism in the age of automation, robotics, and AI require (i) focus on industrialisation and trade policies; (ii) promoting innovation; (iii) leapfrogging and feedback of technology where necessary; (iv) ensuring physical and institutional connectivity; and (v) resource allocation, expansion, and training of human capital for the digital economy.

Policy focus on industrialisation. Industrialisation is uneven across areas of Asia and Africa, as it differs by country, region, and industry. The sequential approach remains applicable in developing Asia and Africa as opportunities for agricultural and resource-based economies are not yet exhausted. The development of plantation agriculture, mining, and labour-intensive industries such as garments and footwear are still open for these countries, especially when labour costs are rising in East Asian manufacturing hubs. By reducing trade costs with medium-grade but reliable connectivity, traditional industries such as agriculture may develop outward-oriented business models (Kimura, 2018).

African countries with lower levels of industrialisation can follow the example of Cambodia, the Lao People's Democratic Republic, and Myanmar, which have just begun to participate in machinery production networks. Bangladesh is an example of attracting investments in labour-intensive manufacturing.

Promoting innovation. Information technology – represented by AI, robotics, and data analysis – reduces the number of tasks and promotes the concentration of innovative activities in selected centres of growth. Communication technology helps overcome distance and generates dispersion forces. Therefore, the creation of innovation hubs and keeping the investment window open to the most advanced innovation in the world will be important. Large platform firms may take a while to arrive, but various kinds of application jobs and start-ups can be created early.

Attracting educated workers, both nationals and foreigners, to obtain a critical mass of innovation activities is important. Urban amenities can be improved relatively easily if good infrastructure for industrial agglomeration has already been established (Kimura, 2018).

Leapfrogging and feedback of technology. Despite the benefits of the step-by-step approach, it takes time to go through the different stages of industrialisation. Some countries/regions could skip certain stages and leapfrog to a higher level of unbundling. The table suggests possible leapfrogging from the pre-globalised world to active participation in trade through technology and connectivity. For Africa, the export of cut flowers and horticulture is made possible through air transportation and commercial connections. Likewise, leapfrogging is possible in developing Asia through software outsourcing. With the right amount of human capital and digital connectivity, software-related jobs can be created even in remote areas. These opportunities may be limited in size, but countries/regions should capture any new business opportunities. This will require providing an enabling policy environment as well as a minimum level of infrastructure and human resources.

The stages of industrial dynamism in the table also suggest that industrialisation and investment pathways in the digital economy are possible through the feedback of new technologies to old industries. This is especially important for the structural transformation of labour, where even if the existing industrial structure is not fully transformed, new piecemeal technologies can be used for upgrading old industries. The development of food value chains, the use of smartphones, and remote sensing in agriculture have spread, while drones and AI are increasingly used for seeding and pest control.

Physical and institutional connectivity. Policies for attracting investment, creating job growth through industrialisation, and adopting technologies in old industries should enhance both hard and soft connectivity. Infrastructure for connectivity makes regions competitive in GVCs. Connectivity can unlock the economic potential of many countries and connect their people to the rest of the world. This is especially important for the landlocked countries of Africa and Asia. Hard infrastructure translates into reliable connectivity. Airports, full-scale ports with container yards, and multi-modal cargo/passenger transport systems are both facilitators as well as avenues for investment. Institutional connectivity must include relatively simple trade and investment liberalisation for participation in GVCs. Participation in a regional or comprehensive free trade agreement can take care of these multiple policy aspects simultaneously. Policies for industrial promotion and some amount of government support are helpful for countries and regions to attract investments.

Trade and investment facilitation. Leapfrogging different stages of industrialisation in the digital economy calls for trade and investment liberalisation and facilitation, especially in services and e-commerce. Trade facilitation must be made more consumer-friendly, and the movement of skilled people should be facilitated. Policies for consumer protection and privacy, competition policy, the taxation system, and cybersecurity require greater attention and global calibration. Industrialisation and job growth take place when markets for goods and services are available. Income levels in Africa and Asia have already started to rise substantially. The rate of urbanisation is also fast. Most countries will experience rapid growth in demand for manufactured products soon – from processed food and beverages to electronics, appliances, and labour-intensive goods such as clothing and footwear. This implies a greater movement of intermediate goods amongst countries. Thin trade borders and low tariffs will facilitate the movement of goods, people, and capital. Trade policies that remove or reduce tariff barriers can have a benign effect on many African and Asian countries' participation in regional and global value chains, especially for manufacturing industries such as motor vehicles, basic metals, textiles, leather, and footwear, which have long value chains.

Free trade agreements and regional trade agreements are important to keep tariffs low and promote greater GVC participation. A good example comes from the developing countries of Southeast Asia, which have comprehensive free trade agreements with regional partners and enjoy high levels of GVC integration. The proposed African Continental Free Trade Area is crucial to maximising intra-regional trade and investment in Africa. The success story of the Association of Southeast Asian Nations (ASEAN) Free Trade Area – with near zero tariffs and freer movement of goods, people, and capital – is a good indicator of the growth likely to follow the implementation of free trade agreements.

Improving human capital. Human capital is central to the investment ecosystem, especially in the digital age. The quality of a country's work-force is directly related to the country's flexibility, productivity, and ability to innovate. Investors value the skills and productive capacity of companies. The supply of skills is an important consideration for multinationals when making investment decisions, since a trained (or trainable) labour force helps increase productivity and streamline operations. National investment in schools, universities, and vocational training institutions will, therefore, be very important. Besides investment facilitation, the quality of human resources could become a decisive factor for attracting investment in the digital economy. Strategic and selective training for sectors with export or investment potential is an important policy action, as well as further investment in courses to equip people with the skills needed to be more productive.

Investment in human capital should ensure both access to and quality of education in schools and colleges. The promotion of science, technology, engineering, entrepreneurship, and mathematics in formal education is a must. This includes building capacities for entrepreneurship and self-employment through business training, skills upgrading, and vocational and on-the-job training.

Policy Recommendations for Creating Growth Opportunities in Developing Economies

Continued industrialisation, investments in new production centres, and greater integration of these centres in production networks will create employment and overall growth in developing Asia and Africa. High-value agriculture, ranging from horticulture and floriculture to new bio-economy products, is highly feasible for countries where agriculture is the largest employment sector. Suitable investments in skills, technology dispersion, and adoption and connectivity will ensure the development of regional and global value chains in Africa and many parts of developing Asia – providing opportunities to leverage the agricultural and manufacturing potential of the region. Trade and investment facilitation, and improvement in physical and institutional connectivity, will attract investments and strengthen the integration into GVCs. Countries should strengthen the implementation of trade and investment facilitation measures which will help firms and producers to invest in industries and infrastructure.

Manufacturing will continue to be a driver of growth even in the digital economy, at least for several foreseeable years. Global demand for agriculture-based products will also continue to grow strongly. ICT-based services, tourism, and transport may outpace the growth of manufacturing in many countries/regions of Africa and Asia. Both agriculture and manufacturing will be shaped by the new technologies, and the five policy focus areas will allow the new developing regions in Africa and Asia to continue to industrialise and generate employment-led growth in the age of the digital economy. Developing countries in Asia and Africa could support their efforts by creating an appropriate business, training, and trade facilitation ecology.

(A modified version of this policy brief was adopted by the T20 Task Force on The Future of Work and Education for the Digital Age. <https://t20japan.org/policy-brief-industrialization-and-growth-in-digital-age/>)

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