Box Article

Is Malaysia Experiencing Premature Deindustrialisation?

Authors: Tengku Mohamed Asyraf, Devendran Nadaraja, Afif Shamri, Rubin Sivabalan

HIGHLIGHTS

- **Malaysia appears to have prematurely deindustrialised since the early 2000s, mainly due to the increased global competition and the slow progress in moving up the value chain.**
- **The deindustrialisation process has, however, recently slowed down, due to productivity gains in the E&E sub-sector as a result of horizontal diversification and increased high skilled employment.**
- **Ensuring further economic development requires a balanced development strategy targeting both manufacturing and modern services sectors.**

The process of industrialisation is a critical step for a country to achieve a high level of income. This was the path followed by most Western countries during the First and Second Industrial Revolution, as well as by the more recent Newly Industrialised Economies (NIEs) such as South Korea, Chinese Taipei and Singapore. Upon attaining this high income status, it is then a common pattern for countries to start deindustrialising, as they begin to adopt labour-saving technologies on a massive scale. More recently, however, developing countries have begun prematurely deindustrialising due to reasons that are vastly different, as their manufacturing sector faced intense competition from global markets. This box will explore the nature of Malaysia's deindustrialisation and compare the underlying drivers for this process vis-a-vis the advanced economies. It will also discuss the current thinking on the policy strategies in tackling the issue of premature deindustrialisation.

What are the different paths of deindustrialisation?

Deindustrialisation represents a natural stage of economic development, as economies start to shift their resources away from manufacturing to services as a result of high manufacturing productivity growth and increased consumption for services as society becomes wealthier. This is part of an economic structural transformation path (IMF, 2018), where economies typically move from agriculture, to manufacturing and on to services as they develop. This path of deindustrialisation represents a positive development as the high manufacturing productivity growth, typically due to adoption of labour-saving technologies, implies that the manufacturing workers have become highly productive that the economy requires less of them to meet overall demand. It is measured by a sustained decline in the manufacturing employment share, accompanied by a more moderate decrease in the manufacturing output share of the economy (IMF, 2018). Examples of economies that have experienced this path of deindustrialisation include the US, EU and Japan as their manufacturing employment shares have fallen much faster than their manufacturing output shares since the 1970s.

Premature deindustrialisation, however, is a less desirable path of deindustrialisation when it is attributable to declining manufacturing competitiveness as opposed to high manufacturing productivity. This form of deindustrialisation will typically result in economies experiencing a faster contraction in their manufacturing output share compared to the manufacturing employment share. Rodrik (2016) finds that economies that are currently experiencing premature deindustrialisation are mostly from Latin America and Sub-Saharan Africa, such as Brazil, Argentina, South Africa and Ghana. This deindustrialisation path is detrimental to countries' economic development as the manufacturing sector is an important source for the creation of high quality, high productivity, high income employment and technological adoption and development.

Table 1: Symptoms of positive deindustrialisation vs. premature deindustrialisation

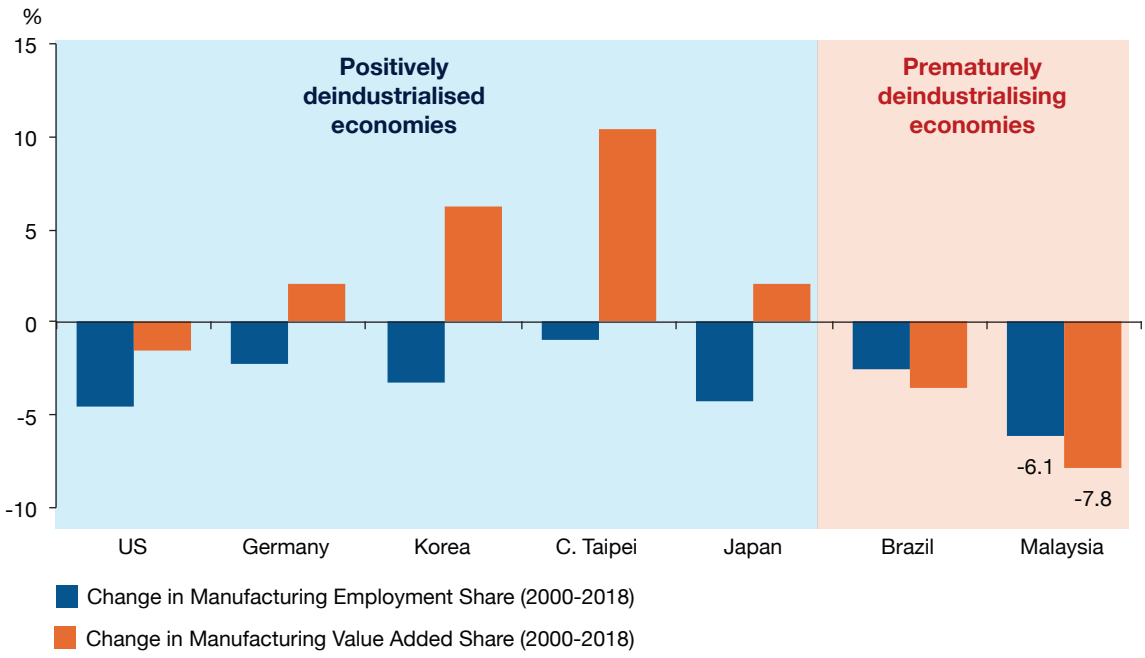
Symptoms	Deindustrialisation	
	Positive	Premature
Causes	Adoption of labour-saving technologies	Falling manufacturing competitiveness
Peak manufacturing employment share*	~30%	~15%
GDP per capita at peak manufacturing employment share*	Intl $18,000	Intl $14,000
Relative fall in employment vs output shares	Fall in employment share greater than fall in output share	Fall in employment share less than fall in output share

* Note: refers to results for a sample of advanced and middle income economies in Kirsh (2018)

Malaysia: Positive Deindustrialisation or Premature Deindustrialisation?

Based on the criteria laid out in Table 1, it appears that Malaysia has been exhibiting signs of premature deindustrialisation. The Malaysian economy began to deindustrialise from the year 2000 onwards, where it attained its peak employment share in manufacturing at 23.5%, at an income level of Intl $9,500 GDP per capita[1]. This is much lower than the peak employment share attained by the advanced economies when they began to deindustrialise (30% employment share), and far behind the level of GDP per capita income (Intl $18,000) (Kirsh, 2018). Further evidence of the economy experiencing a less desirable form of deindustrialisation are the twin decline in employment as well as the output share of manufacturing, indicating that the process of falling employment was not an outcome of rising productivity, but rather from lower competitiveness.

Chart 1: Malaysia exhibits signs of premature deindustrialisation with a relatively larger decline in manufacturing output share compared to employment

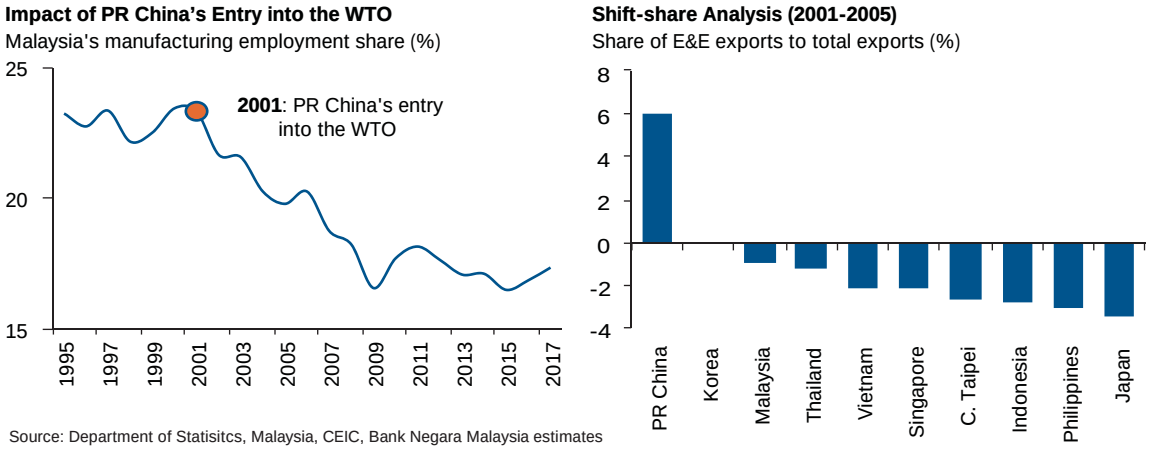


Source: Department of Statistics, Malaysia, CEIC, Haver, World Bank

[1] Refers to income level measured in constant 2005 international dollars on purchasing power parity (PPP). This is taken from the Penn World Table 7.1 (2012).

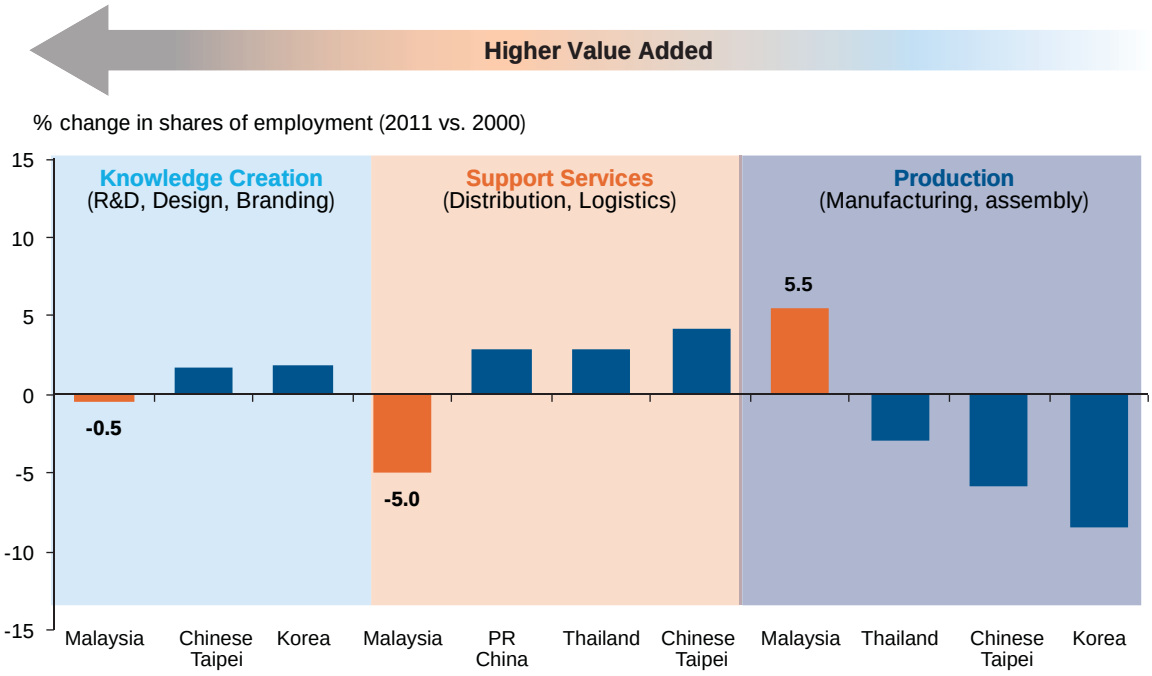
The loss of competitiveness is partly attributable to PR China's ascension into the World Trade Organisation (WTO), which coincided with the timing of the reduced significance of Malaysia's manufacturing employment share (Chart 2). The loss of competitiveness to PR China is, however, not unique to Malaysia as other Asian economies have also shed employment in the low skill sectors. What differs, however, is that other countries such as South Korea and Chinese Taipei[2] appear to have prevented premature deindustrialisation by creating employment in other high value added segments of the manufacturing value chain, a situation that is less apparent in Malaysia (Chart 3).

Chart 2: PR China's entry into the WTO in 2001 coincided with the decrease in Malaysia's manufacturing employment share and reduced competitiveness of regional economies' E&E exports



Source: Department of Statisitcs, Malaysia, CEIC, Bank Negara Malaysia estimates

Chart 3: Unlike other regional economies, Malaysia's manufacturing sector has generated less employment in high value added segments



Source: de Vries, Chen, Hasan and Li (2016), Bank Negara Malaysia estimates

[2] Chinese Taipei's successful positive deindustrialisation arose from adoption of the strategy of "keeping the roots planted in Chinese Taipei while letting the branches and leaves expand abroad" (Chen, 2005). This entailed retaining production of higher value added products in the country, while offshoring labour-intensive activities. Critically, both Chinese Taipei and South Korea also kept innovation-based functions such as developing new products domestically, while moving production-based manufacturing jobs abroad.

Two explanations in the literature have been put forth to account for the slow progress of Malaysia's manufacturing sector in moving up the value chain. First is the less-than-desirable policy landscape and the lack of industry-government coordination which has led to a lack of technology upgrading in the manufacturing sector (see Rasiah (2011) and Menon and Ng (2015)). The second view posits that industrial upgrading in Malaysia is slow due to the large concentration of micro-, small- and medium-sized firms in the manufacturing sector. These smaller firms suffer from low production volume or do not have consistency in the demand for their products. As a result, they are unable to embrace automation solutions, which are costly, capital intensive and have a longer payback period. For export-oriented firms, the difficulty in upgrading is also due to the limited ability to embark on product innovation as they are mainly involved in production-related activities on behalf of international clients, with limited ownership of the final product itself (Khazanah Research Institute, 2017). This, however, has not stopped local firms from undertaking process innovation, as the percentage of Malaysian firms that embarked on this is comparable to our regional peers (World Bank Enterprise Survey, 2016).

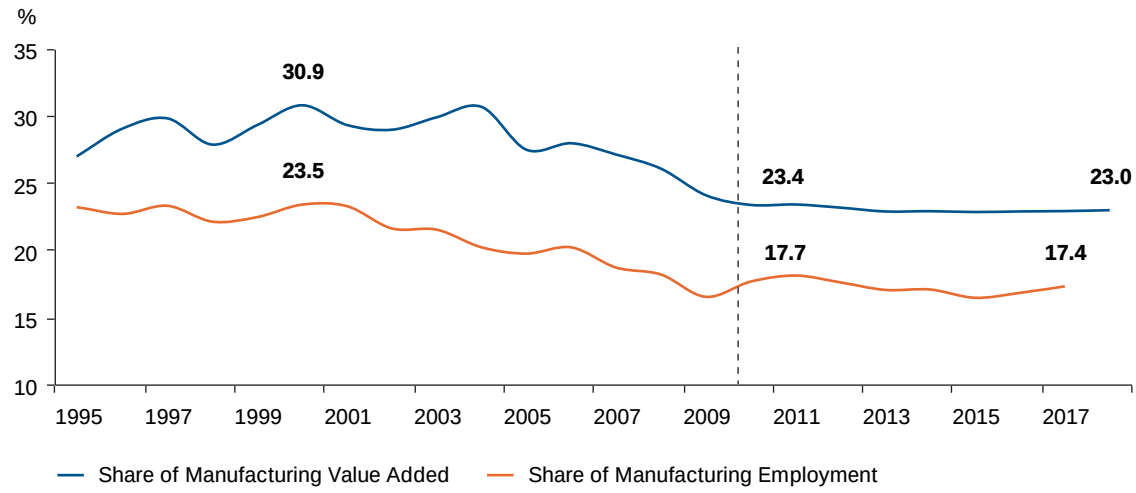
Notwithstanding these developments, there are several important nuances about Malaysia's deindustrialisation that are worth highlighting:

1. While the output and employment shares of manufacturing declined up to 2010, they have been relatively steady thereafter (Chart 4). Though it may be too early to conclude that Malaysia has stopped deindustrialising, the process appears to have slowed considerably over the past decade.

2. Sector-specific trends also appear to play an important role in explaining Malaysia's deindustrialisation. Most of the decrease in the overall manufacturing share as well as the subsequent stabilisation tracks closely the trend of the E&E sub-sector (Chart 5a). Meanwhile, other manufacturing sectors experience more muted changes in their output and employment shares.

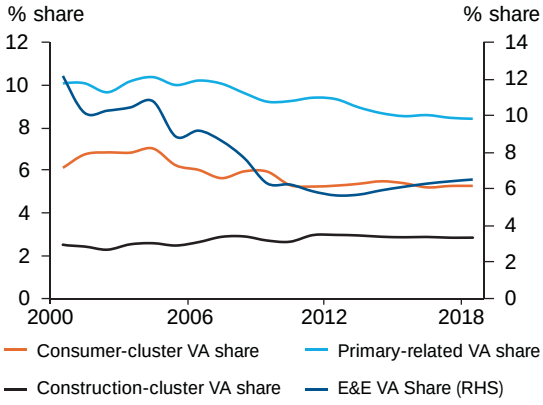
3. Comparing the period before and after 2010, the E&E sub-sector showed an improvement in productivity in the latter half compared to the previous decade (Chart 5b). An increasing rate of productivity is an important attribute towards a more positive long-term industrial process.

Chart 4: Although Malaysia's manufacturing output and employment shares have declined since its peak in 2000, the pace of the decline have been more gradual from 2010 onwards



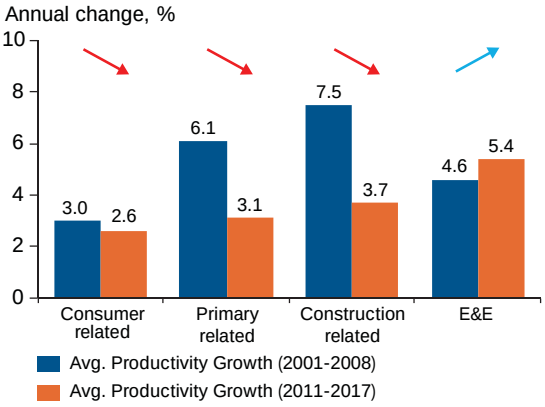
Source: Department of Statistics, Malaysia, Bank Negara Malaysia estimates

Chart 5a: The trend in the E&E sub-sector predominates the overall manufacturing VA share



Source: Department of Statistics, Malaysia, Bank Negara Malaysia estimates

Chart 5b: The E&E sub-sector is the only cluster with improved productivity from 2010 onwards

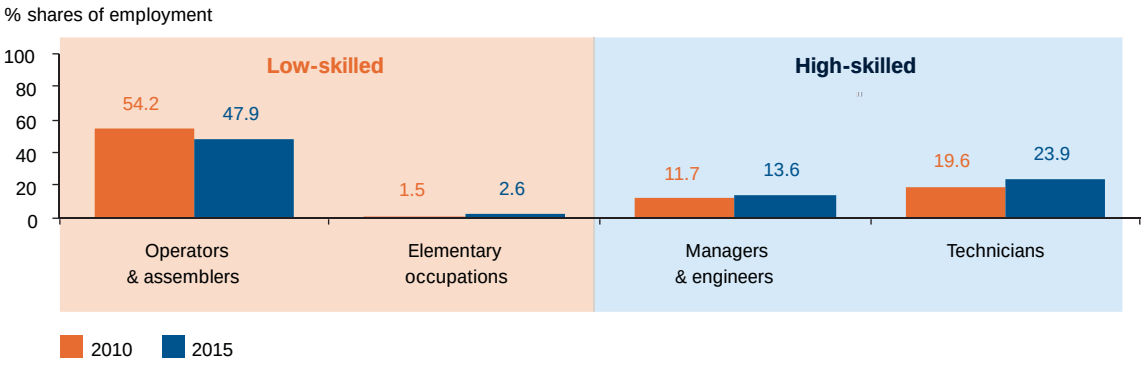


Source: Department of Statistics, Malaysia, Bank Negara Malaysia estimates

These developments appear to be rooted in several recent shifts taking place in the manufacturing sector. First, although the broader manufacturing sector has been slow in moving up the value chain, the E&E sub-sector has considerable success in reversing its fall in output share as it engaged in horizontal diversification towards a new set of end-product segments. This was enabled by a large presence of multinational corporations (MNCs) in Malaysia with vendor linkages with domestic E&E firms as well as the emergence of public-listed homegrown E&E companies. As the MNCs responded to the major shifts in the global E&E markets, Malaysian firms moved in tandem to diversify away from personal computers (PC), which had been on a structurally declining trend towards and after 2010, into fast-growing end-product segments such as smartphones, automotive electronics and cloud computing. Consequently, Malaysia's E&E sub-sector was able to record improved output share and productivity from 2010[3] onwards. These are in spite of the lack of functional upgrading in terms of activities within the E&E sub-sector, as its primary activity remains predominantly assembly and testing.

Second, employment within the E&E sub-sector has also become increasingly skilled-biased. Data from the Labour Force Survey between 2010 and 2015 indicate a shift in the E&E sub-sector's worker composition away from the use of direct labour, typically associated with the labour-intensive methods of production (Chart 6). This has been replaced with a higher share of engineers and technicians who can operate machines and automated equipments. Despite this positive trend, the E&E sub-sector still faces an acute shortage of high-skilled labour amid the increasing need to automate and innovate.

Chart 6: E&E's shift towards high skilled employment



Source: Department of Statistics, Malaysia

[3] The declining E&E output share in the late 2000s reflects the adverse impact of the emergence of smartphones and tablets technology to the global PC market as Malaysia's E&E sub-sector was highly plugged into the PC production chain.

Where should Malaysia go from here?

These recent trends suggest Malaysia is already making some progress towards a more positive path of development. Replicating the E&E sub-sector's experience in other parts of the manufacturing industry can accelerate productivity improvements across the entire sector, which is critical to overcoming premature deindustrialisation. Improvement should not be confined to the manufacturing sector alone. In particular, the services sector, being the largest sector, will need to play a more significant and complementary role to manufacturing in creating good quality, high productivity and high paying jobs that are the hallmark of more developed economies.

The lesson from the E&E's diversification process presents a pragmatic way forward for other sectors in the economy to improve productivity and arrest their respective "premature output deindustrialisation". Producing more complex and sophisticated products can be a viable strategy to increase each sector's competitiveness. A strong case can be made for the resource-based industries to potentially produce more complex downstream products, such as specialty chemicals and oleo-chemicals. Similarly, transport manufacturers may also find means to produce more complex types of passenger vehicles such as hybrid and electric vehicles.

It is noteworthy, however, that even if these industries were able to move horizontally and produce more complex products, it may not necessarily prevent the decline in manufacturing employment share as the nature of advanced manufacturing inherently requires more automated equipments and machines while reliance on labour as a factor of production diminishes. This explains the reason that advanced economies are still experiencing a declining share of manufacturing employment to this day. Despite this lower reliance on labour, there will be a potential for an increase in high skilled and thus higher paying jobs in order to cater for the more technologically advanced manufacturing sector.

Given these trends, recent developments in the literature also suggest that the services sector is able to take on a more significant role in providing high quality employment to complete the process of transitioning towards a high income economy. It is essential that employment creation be targeted towards the modern services sub-sector as opposed to the traditional services sub-sector. This is because the modern services sub-sector closely resembles the manufacturing sector in terms of productivity, tradability and technological diffusion (Nayyar et al., 2018). This modern services sub-sector is typically defined as the ICT services, finance as well as transport, storage and communications sectors. In addition, Gollin (2018) argues that modern services will also yield technological and knowledge spillovers, which will provide an opportunity for technological transfer and capital investments, akin to the manufacturing sector.

However, a balanced development strategy targeting both manufacturing and modern services is needed as there are several limitations in solely relying on the modern services sub-sector in economic development. Firstly, despite the increasing tradability of the modern services sub-sector, its share in global trade is still relatively low compared to manufacturing trade, which implies there might be limited gains to the economy's export performance if it were to focus solely on modern services. Secondly, despite the similarities in the characteristics of the manufacturing and modern services sectors, the modern services sub-sector will not be able to absorb the displaced low and mid-skilled manufacturing workers in the short run due to its demand for high-skilled labour, which is a key feature of modern services. This reinforces the urgency for effective and comprehensive labour upskilling programmes to accelerate the development of the modern services sub-sector to ensure a smoother employment transition.

To facilitate a more balanced development strategy, several policy imperatives ought to be prioritised. Firstly, there is a need for a principle-based investment approach that focuses on high skilled job creation, high value added activities and high product complexity. This will ensure the economy attracts investments that will move all the sectors up the value chain and into modern and advanced activities that are fast growing with high productivity. Secondly, the capability of domestic firms, talent and infrastructure must be further strengthened in order to capitalise on opportunities as a result of

the changing global economic landscape. Industrial automation, advanced robotics and digitalisation are transforming processes in both the manufacturing and services sectors. While Malaysian firms are already actively pursuing process innovation, there is still a need to nurture domestic firms and talent to be agile in dealing with new forms of process innovation. National strategies and roadmaps will play a critical role in steering this transformation[4]. Infrastructure-wise, digital connectivity using high-speed broadband has become equally important as the deployment of physical infrastructure.

Conclusion

While Malaysia has been experiencing premature deindustrialisation since the early 2000s, recent trends suggest that certain industries are progressing towards a more positive path of industrial development. To further sustain the progress of the Malaysian economy, a balanced development strategy that targets and upgrades both manufacturing and modern services is needed. Recent experience also underscores the principle that the most effective outcomes are achieved when government and private sector efforts work hand-in-hand, and new forms of industrial policies will have a key role to play in facilitating structural transformation and economic development.

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[4] Examples of these strategies and roadmaps include Industry4WRD, National Internet of Things Strategic Roadmap and the eCommerce Strategic Roadmap.