How to Avoid Middle-Income Traps? Evidence from Malaysia

Aaron Flaaen, Ejaz Ghani, and Saurabh Mishra

*Malaysia’s structural transformation from low to middle income has made it one of the most prominent manufacturing exporters in the world. However, in the competitive global economy, like many other middle-income economies, it is sandwiched between low-wage economies on one side and more innovative advanced economies on the other. What can Malaysia do? Does Malaysia need a new growth strategy?*

**What Is a Middle-Income Trap?**

Malaysia has successfully transitioned from low- to middle-income status, however, there is growing concern that Malaysia might fall into a “middle-income trap” and be unable to move on to achieve high levels of economic growth and further economic transformation. So, what is a middle-income country trap? It is a development stage that characterizes countries that are squeezed between low-wage producers and highly skilled, fast-moving innovators. Countries caught in this trap tend to grow more slowly and often fall behind. Cost advantages in labor-intensive sectors, such as the manufactured exports, that once drove growth, start to decline in comparison with lower-wage countries. At the same time, “trapped” countries lack the institutions, capital markets, track record, or critical mass of highly skilled workers to grow through major innovations, like wealthier countries. Caught between these two groups, many are without a viable high-growth strategy. In addition, they are faced with new challenges, including distribution and social cohesion issues, as well as a large number of people who still live in misery and poverty. Indeed, there are as many poor people in middle-income countries as in low-income countries (see Ghani [2010]).

Economic history has shown that only a few countries that have achieved middle-income status have gone on to attain the status of a high-income country. Only one country (the Republic of Korea) out of the seven countries that could be classified as middle income in 1975 managed to reach high-income status by 2005. By contrast, Brazil and South Africa, which had double the per capita income of Korea in 1975, have remained at roughly the same level.

Many middle-income countries tend to make two common mistakes: either they cling too long to past successful policies, or they exit prematurely from the industries that could have served as the basis for their specialization process. Timing is the key (see Kharas, Zeufack, and Majeed [2010]).

As the policy, institutional, and structural environments evolve, prior strategies and competencies no longer remain effective at generating an equivalent rate of economic growth. Indeed, strategies based on factor accumulation are likely to deteriorate as the marginal productivity of capital declines, and rising wages will reduce the international competitiveness of many labor-intensive industries. A number of recent studies have documented the challenges facing middle-income countries (Agenor and Canuto 2012; Aiyar et al. 2013; Eichengreen, Park, and Shin 2013; Felipe 2012; Gill and Kharas 2007; Nungsari and Zeufack 2009; OECD 2007). A re-
cent world Bank paper, “How to Avoid Middle-Income Traps? Evidence from Malaysia,” also examines these challenges.

This paper argues that the key to sustained growth is the continued “structural transformation” of the Malaysian economy from traditional sectors to modern tradable sectors. The transformation of the Malaysian economy from traditional to modern goods trade has helped Malaysia rise from a low-income to a middle-income country. The services sector, however, has lagged behind, and the gap between advances in industry and services is striking. A similar structural transformation to modernize the services sector and expand services trade could pave the way for Malaysia to become a developed country.

While other developing countries are reaping the benefits of the globalization of services, Malaysia has yet to take advantage of services as a growth escalator. Although the services sector accounts for more than 42 percent of the country’s gross domestic product (GDP), most of these activities are in traditional services, with little potential for high productivity growth. Globally, modern services trade has witnessed much higher productivity growth compared to goods. There remains tremendous scope for Malaysia to invest in and take advantage of the globalization of services as a mechanism to escape the middle-income trap.

Growth Diagnostics

Over the past several decades, Malaysia has experienced remarkable rates of economic growth. Indeed, real growth in GDP per capita since 1980 has averaged over 3.6 percent, a rate that results in a doubling of income levels in just a 20-year period. By way of comparison, the industrial countries of the United Kingdom and the United States realized an average growth in GDP per capita of between 1.3 and 1.8 percent during their own respective periods of industrialization. Yet, relative to the more advanced newly industrializing economies (NIE—Korea; Singapore; and Taiwan, China), the record of Malaysian growth appears more sobering. These countries recorded real per capita growth rates of 4.4, 5.7 and 7.5 percent, respectively, during the same period.

As shown in figure 1, Malaysia was at a similar level of development as Korea and Taiwan, China, in 1980, and yet while these countries have made the transition from middle-income to high-income status during the subsequent decades, Malaysia has found such an evolution more difficult. In addition, Malaysia’s absolute productivity gap with high-income ( Organisation for Economic Co-operation and Development [OECD]) countries has also widened; in the case of the industry sector, the productivity differential nearly doubled from US$21,786 in 1980–85 to US$38,946 in 2000–2004 (Felipe et al. 2007).

Growth accounting exercises conducted at the sectoral level document the sources and patterns of economic growth in Malaysia during 1990–2007. The growth accounting framework originates from the concept of an aggregate production function that relates output to the contributions of factor inputs (namely, capital and labor) and a shift component normally associated with an adjustment of the inputs for quality. Assuming competitive markets where the factors are paid their marginal products, a simple index number formulation can be derived that relates changes in output to changes in the factor inputs plus a residual term typically referred to as total factor productivity (TFP).

Table 1 displays the disaggregated growth accounting results for Malaysia at the sectoral level of agriculture, manufacturing (the defining subset of industry), and services. First, considering the full sample 1990–2007, the large discrepancy in growth rates between agriculture and manufacturing/services is clearly evident. In fact, the average growth rates between manufacturing and services during the sample are nearly identical, with employment growth playing a larger role in the services sector.

Looking within two subperiods of the sample, 1990–2000 and 2000–2007, there are several interesting patterns worth discussion. First, the output slowdown is more pronounced in the manufacturing sector, with a 5 percentage point drop in the average annual growth rate after the 1990s. However, because employment actually fell during the 2000s, output per worker increased to an average of over 6 percent per year. Second, although 1990s growth in output per worker between manufacturing and services was relatively comparable, the more recent period saw a divergence in productivity growth rates between the two sectors. Indeed, the average annual growth in labor productivity in services during 2000–2007 was less than half that of manufacturing. Finally, despite the low rates of capital accumulation in the total economy, the contributions of capital to labor productivity growth in manufacturing increased in

![Figure 1. GDP per Capita 1980–2009, Constant 2005 PPP US$](source: Penn World Tables, PWT 7.1, 2013.
Note: PPP converted GDP per capita (Chain Series), at 2005 constant prices.)
And because TFP growth fell in the 2000s in both services and manufacturing, this relatively strong capital formation in manufacturing amounts to much of the divergent productivity growth between the two sectors. Thus, the decreased rate of capital accumulation in the total economy identified above may be largely concentrated in the services sector.

An alternative perspective on this point is provided in figure 2, which plots the level of output per worker by these three sectors during 1987–2007, in terms of Ringgit per worker. What is strikingly apparent in the figure is that the period of catch-up between services and manufacturing evident throughout the late 1980s and early 1990s has subsequently reversed, as services output per worker slowed while that of manufacturing continued to increase.

To see the percentage of contributions to total labor productivity growth—and with the reallocation effect—figure 3 displays two periods of growth for Malaysia, Korea, India, China, and the United States. For the two East Asian countries and India, it is remarkable how the results broadly agree with popular perceptions of the regions: there is a dominant contribution of the industrial sector in both Korea and China, while India relies mostly on services for overall productivity growth. As a high-income country with a large services sector, the United States also records high contributions from services along with minimal benefits from reallocating labor among the sectors. Malaysia appears to fit somewhere between India, the United States, and the East Asian countries. While the services sector contributes more than 40 percent of total productivity growth in both periods, Malaysia is the only country other than the United States to recently see the contribution of services decline.

A large gap in productivity exists between manufacturing and services in Malaysia, and this gap has only accelerated in recent years. However, this gap is no inevitable consequence of a country’s economic evolution. In other words, there is no intrinsic characteristic of manufacturing that translates into inevitable productivity growth. Rather, in the current global environment, “industrial versus nonindustrial” is no longer the appropriate distinction for designating high-productivity/low-productivity production. The key designation is “modern versus traditional” activities. Therefore, rather than advocate for a particular sector as the source of stronger growth in Malaysia, there is a stronger need for broad structural transformation; that is, moving to higher productivity production in both goods and services.

The next section discusses the patterns of Malaysian trade in both goods and services, and documents how trade statistics can be used to infer information on the modern versus traditional composition of economic activity.

**Modern versus Traditional Goods and Services Trade**

Its strategic location and historical role as a regional hub for commercial interactions with the West has given Malaysia a long history of international trade in manufacturing. However, the record for Malaysian services exports has been less successful.

There are two criteria that can be used to classify industrial activities (specifically, manufacturing) as either modern

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**Table 1. Malaysia—Sources of Economic Growth by Major Sector, 1990–2007**

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<tbody>
<tr>
<td><strong>Agriculture</strong></td>
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<td>1.8</td>
<td>0.8</td>
<td>3.3</td>
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<tr>
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<td>0.1</td>
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<tr>
<td>Output per worker</td>
<td>2.5</td>
<td>1.9</td>
<td>3.3</td>
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<tr>
<td>Contribution of:</td>
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<tr>
<td>Capital</td>
<td>1.3</td>
<td>1.6</td>
<td>0.8</td>
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<tr>
<td>Education</td>
<td>0.3</td>
<td>0.2</td>
<td>0.4</td>
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<tr>
<td>Land</td>
<td>0.2</td>
<td>0.5</td>
<td>-0.1</td>
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<tr>
<td>Factor productivity</td>
<td>0.6</td>
<td>-0.4</td>
<td>2.1</td>
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<tr>
<td><strong>Manufacturing</strong></td>
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<tr>
<td>Output</td>
<td>7.8</td>
<td>9.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Employment</td>
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<td>5.0</td>
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<tr>
<td>Output per worker</td>
<td>5.3</td>
<td>4.7</td>
<td>6.2</td>
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<tr>
<td>Capital</td>
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<td>-0.9</td>
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<td>Land</td>
<td>0.0</td>
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<tr>
<td>Factor productivity</td>
<td>4.4</td>
<td>5.5</td>
<td>2.9</td>
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<tr>
<td><strong>Services</strong></td>
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<tr>
<td>Output</td>
<td>7.7</td>
<td>8.6</td>
<td>6.4</td>
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<tr>
<td>Employment</td>
<td>3.9</td>
<td>4.2</td>
<td>3.5</td>
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<tr>
<td>Output per worker</td>
<td>3.6</td>
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<tr>
<td>Contribution of:</td>
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<tr>
<td>Capital</td>
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<td>Factor productivity</td>
<td>2.6</td>
<td>3.3</td>
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Source: Department of Statistics and calculations, as explained in text.
Note: Percentage changes of the components may not add to the total due to rounding (interaction terms). Labor shares used in these calculations are as follows: total economy (.38), agriculture (.45), manufacturing (.28), and services (.41).
or traditional. The OECD classifies manufacturing industries according to several categories of technological intensity using the ratio of research and development (R&D) expenditures to total value added. Industries were divided into these categories after ranking the multiyear average R&D ratios against an aggregate OECD average. This distinction was used most recently in the 2009 United Nations Industrial Development Organization (UNIDO) Industrial Development Report. UNIDO publishes a listing of three-digit Standard International Trade Classification (SITC) codes that correspond to four technological classifications of trade: resource-based, low-technology, medium-technology, and high-technology industries. The UN Comtrade database provides access to commodity-level trade for individual countries, which can then be organized by these technological classifications. Calculating the share of high-technology trade with respect to the total provides a measure of the technological intensity of trade for that country. In addition, UNIDO also provides an equivalent classification based on International Standard Industry Classification (ISIC) codes for production-level analysis; however, data availability on the production side is more limited.

An alternative measure of the sophistication of goods exports is provided by Hausmann, Hwang, and Rodrik (2007). They construct a weighted average of the per capita GDP of all countries exporting a particular product (which they call PRODY), and correspondingly weight each PRODY value of a country’s export basket by its share in total goods exports to arrive at a measure of the productivity level of a country’s exports, which they refer to as EXPY. The authors argue that the PRODY measure captures a broader perspective of industrial sophistication than technology measures alone, such as the superior market knowledge, design, and logistics present in high-income countries.

To gain a perspective on the sophistication of Malaysian goods trade, a cross-country sample was developed of the EXPY measure of sophistication of exports advanced by Hausmann, Hwang, and Rodrik (2007). Using publicly available data assembled by Nicita and Olarreaga (2007) for a sample of around 90 countries, individual year scatter plots of the export sophistication index (in logs) were created with the log level of GDP per capita. Figure 4 contains two such scatter plots, highlighting the relative position of Malaysia for 1980 and 2003, to illustrate the evolution of its export sophistication over time. The two charts show Malaysia’s rapid climb up the sophistication ladder: while significantly below the predicted level in 1980, Malaysia has advanced its manufacturing exports to attain one of the highest index values in the world. Of course, Malaysia’s position in 2003, which was well above the trend line, would imply a higher level of development (it is notable that Singapore lies at a similar level of sophistication) than Malaysia currently enjoys.

Classifying services trade is a more challenging endeavor because of less aggregated statistics and the neglect of this sector in most trade analyses. One approach is to categorize services industries based on the rough level of international competition and education requirements of the labor force for that industry. Using IMF Balance of Payments data on services trade, this paper defines “modern” services as communications, insurance, financial, computer and information, royalties and license fees and other business services; and “traditional” services as travel, transportation, construction, personal, cultural and recreation, and government services (see Ghani [2009] and Mishra, Lundstrom, and Anand [2011] for details).
mirror the EXPY measure of Hausmann, Hwang, and Rodrik for goods used above. Using data from the International Monetary Fund (IMF) Balance of Payments, a similar GDP-weighted index of services trade was constructed for a variety of countries to examine the sophistication of Malaysia’s services trade in parallel with that of its goods trade. Figure 6 plots the trend of the sophistication for selected emerging economies, and clearly shows that Malaysia maintained a sophistication level in services above that of China until 2003, but since then, Chinese export services sophistication has increased while Malaysia’s has lagged behind. By 2007, Malaysia records the lowest level of services export sophistication among the group of emerging economies. As might be expected, as measured by EXPY, India appears to have become the leader in the delivery of complex services.

### What Should Policy Makers Do?

Over the past several decades, Malaysia has leveraged the three channels of globalization—trade, capital, and economic management—to expand its tradable sector, and has consequently become one of the most sophisticated exporters of manufacturing goods in the world. As demonstrated above, the services sector in Malaysia has yet to modernize and contribute substantively to economic growth. What steps can be taken to advance this sector to enable Malaysia to proceed on the path to high-income status?

Malaysia’s economic strategy to become a high-income economy by the year 2020 is strongly supported by the Economic Transformation Program (ETP), Strategic Reform Initiatives (SRIs), and Government Transformation Program (GTP). Public investments through ETP are expected to accelerate in the future, as the implementation of large infrastructure and investment projects gather momentum and are funded by government-linked companies. Furthermore, these investments have also bolstered private manufacturing, services, and mining sectors in targeted growth corridors. The ETP has made great strides in liberalizing crucial manufacturing and services activities to pull in a skilled labor pool and relax restrictions on capital mobility. But more can be done.

Policy makers should promote entrepreneurship and innovation to begin reaping the benefits of information networks and skilled labor before the gains from cheap labor and knowledge spillovers are exhausted. Rapidly expanding the secondary and then tertiary education system will be critical in producing graduates with the skills that employers
Highly skilled workers and professionals are an indispensable ingredient of high, valued-added, modern services and manufacturing. The “skills crisis” is a well-known shortcoming of the Malaysian economy.

Attracting highly productive foreign firms to locate production in Malaysia is another area on which policy makers should focus. Apart from the direct benefits of high wages, imported capital equipment, and substantial tax revenues, the spillovers between these firms and the broader economy are well documented. More can be done, including allowing foreign-owned firms—particularly in the services sector—to gain from network externalities and collateral benefits of FDI to stimulate further growth, and promoting venture capital investments for small domestic start-up firms seeking to scale to global markets.

Developing the services sector holds the greatest promise. In particular, providing access to learning and training opportunities to build social entrepreneurs and support product innovation will be crucial. The promise of services globalization means that Malaysia should utilize the market space provided by the Internet and communication technologies to foster business innovations for the global economy. In this respect, the interaction of spatial transformations linked to such structural changes will be paramount.

The range of modern services that can be digitized and traded globally is constantly expanding. India has been a pioneer, but many other emerging markets are finding it easier to generate productivity growth in services than in industry. This does not happen automatically. Although the same set of general nondistortionary policies is as important for modern services as for goods, specific strategies for services matter, like market integration and the technological changes in information networks. Services expansion provides an alternative growth escalator for emerging markets like Malaysia to escape the middle-income trap.

Malaysia and other countries facing the middle-income conundrum will need to expand the modern sectors. This would work in practice, when traditional sectors with low productivity shed labor, and high productivity modern sectors (be they in goods or services) grow and hire more labor. Both processes are needed if a country is to climb out of the middle-income trap. But this process of structural reform can be tricky: structural reforms can be slow and complex, or fast and easy, depending on the ownership of the program, implementation capabilities, and a macroeconomic stance that provides fiscal and political space to implement the program.

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Notes

1. A set of criteria to differentiate “modern” versus “traditional” sectors of production can be found in this paper’s section on “Modern versus Traditional Goods and Services Trade in Malaysia.”
2. For a more detailed discussion of the growth accounting methodology, see Bosworth and Collins (2003).
3. For a more detailed description of the OECD methodology, see annex A of OECD (2007).
4. More formally, the PRODY and EXPY measures are calculated in the following ways:
\[
PRODY_j = \sum_i \frac{x_{ij}}{X_i} Y_i \\
\sum_i \frac{x_{ij}}{X_i}
\]

and \( \text{EXPY}_i = \sum_j \frac{x_{ij}}{X_i} \text{PRODY}_j \)

where \( Y_i \) is the per capita GDP of country \( i \) and \( \frac{x_{ij}}{X_i} \) is the value-added share of commodity \( j \) in the country's overall export basket. See Hausmann, Hwang, and Rodrik (2007) for goods sophistication and Mishra, Lundstrom, and Anand (2011) for details on service export sophistication.

5. One exception is Baumol (1985), which outlines taxonomy within service-producing industries.

6. This measure is more suggestive than authoritative, however, because the calculations were only able to use approximately 10 different service categories as income weights, rather than the few thousand commodities employed in the goods calculation.

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