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How to Avoid Middle Income Traps?

Evidence from Malaysia

Aaron Flaaen
Ejaz Ghani
Saurabh Mishra

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Abstract

Malaysia's structural transformation from low to middle income is a success story, making it one of the most prominent manufacturing exporters' in the world. However, like many other middle income economies, it is squeezed by the competition from low-wage economies on the one hand, and more innovative advanced economies on the other. What can Malaysia do? Does Malaysia need a new growth strategy? This paper emphasizes the need for broad structural transformation; that is, moving to higher productivity production in both goods and services. This paper examines productivity growth for Malaysia at the sectoral level, and constructs several measures of the sophistication of goods and services trade, and puts these comparisons in a global context. The results indicate that Malaysia has further opportunities for growth in the services sector in particular. Modernizing the services sector may provide a way out of the middle income trap, and serve as a source of growth for Malaysia into the future.

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HOW TO AVOID MIDDLE INCOME TRAPS? Evidence from Malaysia

Aaron Flaaen, Ejaz Ghani, and Saurabh Mishra *

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I. INTRODUCTION

Over the past several decades, Malaysia has experienced remarkable rates of economic growth. Indeed, the real growth in GDP per capita in the period 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 Britain 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) of Singapore; Taiwan, China; and the Republic of Korea, the record of Malaysian growth appears more sobering.[1] 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 (OECD) countries has also widened; in the case of the industry sector, the productivity differential nearly doubled from $21,786 in 1980-1985 to $38,946 in 2000-2004 (Felipe et al, 2007).

After markedly reduced rates of productivity and growth after the Asian financial crisis of 1997-98, there is a growing concern that emerging markets like Malaysia might fall into a "middle income trap", unable to subsequently achieve high levels of economic growth and further economic transformation.[2] The form and pace of structural and spatial transformation is a crucial driver shaping whether countries come out of the middle income trap. The objective of this paper is to examine prior patterns of growth in Malaysia, document the cross-country evidence of how Malaysia compares with peer countries from a variety of perspectives, and highlight various policies to promote more rapid growth in the future.

To avoid the Middle Income Trap, it is critical for a country to *sustain* high rates of economic growth. This task is complicated by the fact that the transformation of Asian economies from rural to urban-based is expected to take place within 50 years, while this transformation took over 100 years in advanced economies (see Aizenman et al. 2012). The economic transitions are occurring much more rapidly than those in the past (see Felipe, 2012).[3] Recent evidence also finds that Malaysia, the Philippines and China will face a larger risk of

[1] Although Asia held technological superiority a thousand years ago, greater cultural rigidity diminished the ability to adapt to a new technological paradigm, delaying Asia's industrialization in the first half of the 20th century (see Quamrul and Galor, 2007). Cultural diffusions were a significant determinant of comparative economic performance during the Malthusian epoch and in the transition from agriculture to industry.

[2] Out of 101 middle-income economies in 1960, only 13 became high income by 2008 (see World Bank 2012). There is a growing concern that without the domestic development of genuinely novel product innovation that pushes the global technology frontier, China and other emerging markets like Malaysia might get caught in a 'middle income trap' (The Economist 2011).

[3] Most of the world's poor live in middle-income countries; the dispersion of the world's income per capita has significantly increased with many countries not closing their income gap with the US. To avoid lower middle income trap a country has to grow in per capita terms at 4.7 percent per annum; to avoid upper middle-income a country has to attain an average per capita growth rate of at least 3.5 percent per annum to avoid falling into the upper middle income trap (see Felipe, 2012 for details).

growth slowdown stemming from institutions; while Vietnam, India, and Indonesia are most at risk of a slowdown arising from a lack of transport and communications infrastructure (see Aiyer et al. 2013). Previous studies of growth slowdowns in fast-growing middle-income countries identify two modes of slowdowns: one in the $10,000-$11,000 range and another at $15,000 - $16,000 (see Eichengreen et al. 2012 and 2013). A growth slowdown is less likely to occur in countries with more diversified economic production accompanied by a skilled population set and high-technology production to avoid the middle-income trap (see Aiyer et al. 2013 and Eichengreen et al. 2013). [4]

In additional to diversifying and moving up the value chain in traditional manufacturing, we highlight a new channel for promoting rapid economic growth in emerging markets. The world is experiencing a third industrial revolution with services trade being at the forefront of this revolution. Services are characterized by growing tradability, increasing technological sophistication, and lower transport costs. Modern services can now be unbundled and splintered in a value chain just like goods and can be electronically transported internationally through satellite and telecom networks.[5] The number of services that can be transported digitally is constantly expanding – processing insurance claims; call centers; desktop publishing; compiling audits; completing tax returns; and transcribing medical records. In a not-too-distant future, patients at home will be able to speak with their doctors and students will access high-quality education via virtual classrooms. Labour matching is increasingly done online and platforms like Odesk can connect employers and employees across national boundaries (see Baldwin 2012: Blinder 2006; Ghani. et. al. 2012, 2010; Mishra etl.al. 2010; see Spence, 2012).[6]

There is a close association between structural transformation and spatial transformation. Malaysia's per capita income is $13,705 (real 2005 international $ PPP terms in 2010) whereas its urbanization rate is 72 percent (see Figure 2). As countries develop, the importance of the manufacturing sector declines and the importance of the service sector increases (see Figure 3) Malaysia has not fared well on this front. Our analysis highlights that the Middle Income Trap is often characterized by a poor integration of both structural and spatial transformation. Developing countries often develop an urbanization strategy to facilitate a goods export-led growth that has helped many emerging markets to make the transition from low incomes to become a middle income country. The pace and quality of urbanization becomes even more important as countries try to make the transition from middle income to an advanced economy. Urbanization strategy to develop services may differ in some respects (see Desmet et al, 2012). The redistribution of knowledge and technologies in a spatially balanced manner are crucial ingredients to facilitate broad economic transformation. There are many drivers that will shape how countries come out of middle income traps. The form and pace of structural and spatial transformation will vary from country to country. Some countries, like China, may need to give more focus to services growth. India may need to revive its industrial base. How these structural

[4] Population has a relatively high level of secondary and tertiary education

[5] China's domestic patent filings increased at an annual rate of 35 percent from 1999 to 2006 with changing nature of ICT at the heart of this 'patent explosion' (see Eberhardt et al. 2012).

[6] The increasing productivity, tradability and unbundling of service activities have given rise to a new engine of growth because of the 3T's technology, tradability and transportability of service tasks. Exponential growth in technology coupled with reduction in price (Moore's Law) and rise in fibre optic transmission rates (Gilder's Law) are triggering creative destruction and creative complex activities and new jobs.

transformations will evolve will depend on how countries manage urbanization, education, and infrastructure linkages.

In the sections that follow, we argue that the key to sustained growth is the continued "structural transformation" of the Malaysian economy from traditional sectors to modern tradable sectors.[7] The transformation of the Malaysian economy from traditional to modern goods trade has helped Malaysia to rise from a low-income to middle-income country. The modern service sector has stagnated in Malaysia. A similar structural transformation to modernize service trade could pave the way for Malaysia to become a developed country. While other developing countries are reaping the benefits of globalization of services, Malaysia has yet to take advantage of this phenomenon. The services sector contributes over 42 percent of the GDP, but most of these activities are in traditional services. Globally, modern service trade has witnessed higher growth, but Malaysian modern service exports have been stagnant. More positively, there remains tremendous scope to invest and take advantage of the globalization of services as an enabling mechanism to become a high-income economy.

The Great Recession present several challenges, and also (as we will argue below) opportunities for Malaysia to stimulate growth in the short to medium term. Rich country markets may not provide the equivalent magnitude of demand for exports from low and middle-income countries as in the prior decade, and thus export-led growth could become more challenging. However, , Malaysia's gap in labor productivity should serve as a source for catch-up. The global downturn will not diminish the benefits of technological spillovers as the stock of knowledge in countries such as the U.S. and Japan has not been diminished by the global crisis, and such knowledge can be transmitted through the tradable sector. We emphasize the need for broad structural transformation i.e. moving to higher productivity production in both goods and services. As emphasized by Rodrik (2009), the structural transformation from low productivity ("traditional") to high-productivity ("modern") activities sheds light on the significant gaps between the social marginal productivities of the two types of activities. Malaysia has performed exceptionally well in production of goods and high productivity goods in particular. The next challenge for Malaysia lies in taking advantage of globalization of service to escape a potential middle income trap.

The remainder of this paper is structured as follows: Section II examines what is a middle-income trap and the role played by manufacturing and services to come out of such traps. Section III discusses various definitions of modern vs. traditional areas of production and trade. Section IV documents the past models of growth that have led Malaysia to middle-income status. We provide evidence on the sector-specific growth in output and productivity, and calculate several measures of the modernization and sophistication of exports for both goods and services. Section V shifts attention to the opportunities and challenges for future growth in Malaysia brought on by likely changes in globalization and de-globalization. We examine two channels of globalization: trade and capital flows. Section VI concludes.

[7] We provide a set of criteria to differentiate "modern" vs. "traditional" sectors of production (separately for goods and services) in our subsequent discussion.

II. WHAT IS A MIDDLE INCOME TRAP?

Economic history has shown that few countries that have achieved middle-income status continue to converge to the level of high-income countries. As the policy, institutional, and structural environment evolves, prior strategies and competencies no longer remain effective at generating an equivalent rate of 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. Thus, the new constraints on the economy become more complex as domestic industries rely less on investment and more on innovation. As this process develops, experience has shown that middle-income countries can become trapped – no longer able to effectively compete with low-wage competitors in poor countries and still lacking the innovative capabilities to rival high-income economies. As argued in a recent 2007 report by the World Bank, the 'middle income trap' has become a palpable challenge for several countries in East Asia in particular. Box 1 provides a literature review on forces shaping the middle income trap.

Complicating this process in recent years is the China phenomenon, which has decreased the breathing room for both developing and middle-income countries looking to low-cost, labor-intensive manufacturing as an engine of growth. In addition, recent research shows that this "trap" may become more difficult as globalization progresses. Eeckhout and Jovanovic (2007) provide evidence that the relative challenges for middle-income countries under increased labor mobility are greater than for either low-income or high-income countries. As the authors illustrate, middle-income countries experience the smallest change in factor-price ratios after labor-market opening, and thus greater occupational choice has the least value-added in an integrated economy.

Although the challenges highlighted by the 'middle income trap' may emphasize the need to modify existing growth strategies, it is important to note that the basic policy objective will remain unchanged: strong productivity growth of the overall economy. Productivity (understood as either traditional labor productivity or the residual total factor productivity concept) provides a useful indicator of economic efficiency and is universally recognized as the fundamental determinant of improvements in real wages and rising standards of living over time. As a result, much of the following analysis will focus on this basic measure of economic performance.

BOX 1: WHAT'S THE MIDDLE-INCOME TRAP?

The "middle-income country trap" is a development stage that characterizes countries that are squeezed between being low-wage producers and highly-skilled, fast-moving innovators. Countries caught in this trap tend to grow slower and often fall behind. Cost advantages in labour-intensive sectors, such as the manufactured exports which once drove growth, start to decline in comparison with lower-wage poor country producers (Gill I and Kharas H, 2007). At the same time, they do not have the institutions, capital markets, track record, or critical mass of highly-skilled people to grow through major innovations like rich 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. Therefore, they are hard-pressed to develop new growth drivers (Nungsari and Zeufack, 2009).

Productivity slowdown has been a sound characterization of middle income traps. Over time in a country's development process, there emerges diminishing marginal returns to cheap labor and technology imitation; this could be offset if government act early to move from an imitation based economy to innovation based production cycle (see Agénor, P-R and O Canuto 2012). The East Asian experience has illustrated that such policies are central to fostering technological learning, attracting talented individuals into research and development activities, and encouraging the build-up of national and international knowledge networks. Recently, the broader debate over China's innovative prowess and potential development path has intensified. Some observers regard Chinese firms' ability to stay close to the world technology frontier and to improve upon and adapt existing innovation as key to the country's continued growth (Breznitz and Murphree 2011) where the globalization of services is increasingly an important components of China's growth (see Roach, Stephen 2013).Only one (South Korea) of the seven countries which were middle-income by 1975 managed to reach high-income status by 2005. Brazil and South Africa, which had double the per-capita income of South Korea in 1975, have remained at the same level since then. It faced periods of negative growth, which cancelled all earlier progress.

Evidence of the middle-income trap can also be found in the dynamics of occupations and wages across countries. The integration of the world's labor markets creates big gains for rich and poor countries alike. For example, blueprints of products flow from California to China, while manufacturing goods flow in the opposite direction (see Kharas et at, 2010). The middle-income countries benefit less from globalization (Eeckhout and Jovanovic, 2007). They are not technologically-savvy enough to compete with rich countries and are not cheap enough to compete with China, Vietnam and other dynamic low-income countries. Thanks to communications and transportation technologies, managers, engineers and designers — larger in number in rich countries — have access to a pool of cheap labor in poor countries. This makes them more productive as they can produce more with the same resources. The higher wages that accrue to high-skilled individuals represent the gains to rich countries of an integrated global labor market.

Poor countries also gain. They produce better and more, thanks to the technology, design and managerial skills brought in from rich countries. The wages of their unskilled rise and this represents their gains from globalization. However, middle-income countries (lower middle-income to upper middle-income) gain almost nothing from globalization as they are likely to experience "the smallest change in factor-price ratio" or no significanthange in the ratio of skilled to unskilled wages (Udomsaph and Zeufack, 2009). Escaping the middle-income country trap is an uphill battle. The move from being a middle-income country (MIC) to being a high-income country (HIC) requires a break from the past in some significant structural shift. Apart from policies that no longer work to elevate them to a high-income economy, many "trapped MICs" tend to make two common mistakes: either they cling on too long to past successful policies or they exit prematurely from the industries that could have served as the basis for their specialization process (*The Growth Report,* 2008). Timing is key. Most MICs fail to anticipate the transition and the new demands that come with it. For example, most MICs hold on to a labour-intensive strategy for too long. They artificially maintain non competitive firms through a battery of subsidies, continuing to pile up fi scal incentives with no consideration of the take-up rate or efficiency, and continue to make FDI volumes the key performance indicator for competitiveness (Nungsari and Zeufack, 2009). The second common mistake is a premature shift away from assembly manufacturing before ensuring an adequate supply of high-quality and competitive human capital to support the transition to higher value-added sectors.

*Source***:** Nungsari and Zeufack (2009) and Kharas et. al. (2010).

Sources of Growth

The notion of structural transformation necessarily involves the evolution of the output allocation of the economy among different sectors and activities. Most often emphasized in this evolution is the transition from agricultural to industrial production. Such a belief in industry, and specifically manufacturing, being the primary "engine of growth" dates back to the work of Kaldor (1966 and 1967). Through the presentation of a series of empirical regularities, Kaldor put forth an argument for the supremacy of the industrial sector for the promotion of broad economic growth. For example, Kaldor's "second law" (also known as Verdoorn's law) states that there exists a positive relationship between growth in manufacturing production and growth in manufacturing *productivity*, with an implication for increasing returns in the manufacturing sector. In this interpretation, a sector subject to scale economies has a relatively lower employment elasticity with respect to output (i.e. productivity grows more quickly for a given level of output growth).

In seeming contrast to the empirical arguments made in support of manufacturing is the fact that most countries experience a rising share of services in total output as per capita incomes increase. The causes of this shift and the subsequent implications for future growth have been somewhat controversial. One potential reason for the positive association would be that services have a higher income elasticity than goods, and therefore rising income will result in a larger share of services in total consumption.[8] A second explanation with future growth consequences is best characterized by Baumol (1967), who argues that the rising share of services in total output reflects a relatively slower rate of productivity in the sector. Baumol emphasized that the classification of production into goods and services is a result of inherent differences in the technological structure of the activities. Because labor is a more essential element of production in services than in goods, there will be less room for technological substitution for the labor input in production. Slower productivity growth in services combined with wage increases that must match those in the goods sector results in nominal costs of services rising at a faster rate. This phenomenon of a rising share of services in output and a subsequent slowing of total economy productivity, otherwise known as "Baumol's disease", has been a central concern among both middle and high-income countries.

The distinction between "modern" and "traditional" sectors of the economy has been used in classical Arthur W. Lewis dual sector models to Nurkse's Big Push. They hypothesized that the interaction of modern tradable sectors can absorb excess supply of labor and yield higher productivity and economic growth.[9] Indeed, structural transformation – diversifying from traditional to modern sectors, reducing reliance on volatile resource based exports, and adding

[8] This finding has been shown to be highly dependent on what activities are classified as goods vs services. For instance, the inclusion of food in the goods sector, which has a low income elasticity relative to other durable goods, effectively lowers the overall income elasticity of the sector. In contrast, restaurant meals are classified as part of the services sector, and typically display a strongly positive association between expenditures and income. Outside of food, Bosworth and Triplett (2004) have found that aggregate income elasticities for goods and services are broadly similar.

[9] The bulk of the differences between Asia's recent growth, on the one hand, and Latin America's and Africa's, on the other, can be explained by the variation in the contribution of structural change to overall labor productivity. (see Rodrik and McMillan, 2012).

more value can increase both productivity and reduce unemployment by absorbing the excess capacity of labor. Classical arguments continued to favor structural transformation as the productivity difference between traditional agriculture (subsistence farming) and other activities remains. Resource re-allocation, diversification, and shift towards more productive modern tradable sectors are arguments focused on movements towards industrialization.

As a result of these ideas, over the past several decades economists and policymakers have focused their attention in large part on how to promote and sustain a large manufacturing sector. Services were a neglected area of both policy and research until two separate but related events took place in the mid-1990s. First, a global revolution in information and communication technology (ICT) had profound impacts on the production and productivity of many services activities. Bosworth and Triplett (2004), for example find that the services sector accounted for over 70 percent of the post-1995 surge in labor productivity in the United States. They argue that as a result of recent developments, the characterization of services as a drag on aggregate growth is no longer valid.

The second event was the emergence of strong economic growth in India, which was seen largely to be driven by advanced services that relied in part on the recent innovations in ICT. The increasing technology, transportability, and tradability (the so-called "3-T's") of service activities has resulted in what some call the "globalization of the services sector". The specialization and scale-economies that are evident in one of Bangalore's sprawling call centers has become symbolic of the possible opportunities that the services sector provides as a source of growth for both low and middle-income countries. In effect, information and communication technology have allowed for virtual labor mobility that has put downward pressure on wages in many service activities in high-income countries, while allowing for relatively innovative, high-tech job creation in low and middle-income economies.

Finally, other research has shown that the services sector is also a recent source of dynamism among many Southeast Asian economies. Felipe et al (2007) and others have shown that services have become an important source of labor productivity and TFP growth in many parts of developing Asia. In fact, in their estimates of the impact of sector-specific growth on overall economy growth, they find that services have a larger growth impact than manufacturing, though slightly less than the industry sector as a whole.

In our brief review of the trends and research on sectoral sources of growth, we conclude that in the current global environment, industrial vs non-industrial is no longer the appropriate distinction for designating high productivity – low productivity production. Rather, the key designation is "modern" vs "traditional" activities. Importantly, in upgrading production into higher productivity areas, countries should look to the services sector in addition to the more traditional manufacturing sector. Therefore, rather than advocate for a particular sector as the source of stronger growth in Malaysia, we emphasize the need for broad structural transformation; that is, moving to higher productivity production in both goods and services.

As emphasized by Rodrik (2009), the structural transformation is one from low productivity ("traditional") to high-productivity ("modern") activities. There are significant gaps between the social marginal productivities of the two types of activities, and the higher

technological inputs of modern activities allows for productivity spillovers into the broader economy. Rodrik also emphasizes that these modern activities are largely tradable products, although the broader benefits of tradables is less dependent on whether trade actually takes place.[10] As resources move from traditional activities towards modern, economy wide productivity increases (see Rodrik 2009b, Stiglitz et al 2001). This can take place in agriculture, manufacturing, or services.

The distinction between traditional and modern activities will play a critical role in the remainder of our analysis. Therefore, before we analyze the composition of Malaysian production, we first offer our defining characteristics for "modern" and "traditional" production/trade separately for goods and services.

III. DEFINING MODERN AND TRADITIONAL GOODS AND SERVICES

There are two criteria that we can use to classify industrial activities (specifically, manufacturing) as either modern or traditional. The OECD classifies manufacturing industries according to several categories of technological intensity using the ratio of R&D expenditures to total value-added. The division of industries into these categories was made after ranking the multi-year average R&D ratios against an aggregate OECD average.[11] This distinction was used most recently in the 2009 Industrial Development Report published by the United Nations Industrial Development Organization (UNIDO). The UNIDO publishes a listing of three-digit SITC codes that correspond to four technological classifications of trade: resource-based, low-technology, medium-technology, and high-technology industries. Using the UN COMTRADE database, we can access the commodity-level trade of individual countries and separate it by this technological classification. Calculating the share of high-technology trade with respect to the total gives us a measure of the technological intensity of trade for that country. In addition, UNIDO also provides an equivalent classification based on ISIC codes for production-level analysis; however, the available data 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 GDPs 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.[12] The authors argue that the PRODY measure captures a broader definition perspective of industrial

[10] Though Rodrik emphasizes the importance of *industrial* tradable goods, he acknowledges the increasing importance of tradable services in "modern" activities.

11 For a more detailed description of the OECD methodology, see Annex A of OECD (2007).

[12] More formally, the PRODY and EXPY measures are calculated in the following way:

$PRODY_j = \sum_i \frac{x_{ij}/X_i}{\sum_i x_{ij}/X_i} Y_i$ and $EXPY_i = \sum_j \frac{x_{ij}}{X_i} PRODY_j$ where Yi is the per-capita GDP of country i and x_{ij}/X_i is the value-added share of commodity j in the country's overall export basket.

sophistication than technology measures alone, such as the superior market knowledge, design and logistics present in high-income countries.

Adapting either technology or sophistication based classification of manufacturing activities into a modern and traditional framework is relatively straightforward. High technology trade can be viewed as modern trade, whereas resource-based and low-technology trade is evidence of traditional trade. Because the sophistication measure does not align well with such a discrete division, we rely on country positions relative to a cross-country fit of this export sophistication index and levels of per-capita GDP.

On the services side, Baumol (1985) outlined a taxonomy within the services-producing industries based upon their assumed productivity performance: 1) stagnant personal services, such as education, in which output is highly correlated with labor-time expended; 2) progressive impersonal services, where there is virtually no contact between customers and the production process, an example being telecommunications; and 3) asymptotically stagnant impersonal services, which is an amalgam of the previous two, an example of which is broadcasting. In the discussion that follows, we use a simplified adaptation of Baumol's services classification that separates out service-activities by industry into "modern" and "traditional" sectors.

Using IMF Balance of Payments data on services trade, we define "modern" services as communications, insurance, financial, computer and information, and other business services; and "traditional" services as travel, transportation, construction, personal, cultural and recreation, royalties and license fees and government services (see World Bank 2009 report on Service Revolution and Mishra et al. 2011 for details). This distinction roughly coincides with the level of international competition and education requirements of the labor force in the service industries. In addition, modern services can be characterized as those activities which can be produced, stored, and transported digitally, and therefore do not need to cross physical borders. For details on the recent transformation in service activities see Box 2.

An alternative context for the distinction in services is given in the WTO Agreement on Trade in Services. Under the GATS agreement service exports can be delivered in four different ways:

- Services being provided remotely across borders, such as IT and IT-enabled service exports (mode 1), which account for some 28 percent of global trade in services;
- Consumption abroad such as tourism and travel (mode 2) which account for some 14 percent of global trade in services;
- Commercial presence through foreign direct investments (mode 3) which account for some 57 percent of global trade in services;
- Movement of natural persons which brings in remittances (mode 4) which account for some 1 percent of global trade in services.

Hence, modern services are inclusive to mode 1 and to some extent mode 3, whereas mode 2 and 4 require movement of people to deliver the services. Similar to the case for goods, classification of services on the production side is more difficult. Detailed industry-level data on value-added and employment tends to be limited. However, for a rough approximation we classify

wholesale/retail trade and hotel/restaurants as traditional with finance, insurance, real estate, and business services as modern services.

BOX 2. CAN SERVICES BE THE NEXT GROWTH ESCALATOR?

For more than 200 years, it was argued that economic development and growth was associated with growth of the labor-intensive manufacturing sector (Baumol 1967, Kaldor 1966, UNIDO 2009). Services were considered as menial, low-skilled, and low-innovation (McCredie and Bubner 2010). Over the last three decades, services have contributed more to growth, in both developed and developing countries, than the goods sector. Furthermore, conventional wisdom has been that labor-intensive manufacturing creates the most jobs in developing countries, recent data suggest otherwise; employment growth has been most rapid in the services sector. In developed and developing countries alike, labor is being shed from both agriculture and manufacturing.

In the goods sectors, technologies have matured and developing countries already have a large market share and have achieved significant scale economies. However, modern services appear to be steadily expanding, with catch-up opportunities continuing to rise. As broadband penetration in developing countries continues to grow and improve in speed and quality, it is easy to see greater possibilities for modern service exports from low- and middle-income countries. In fact, technological change in the services sector is now larger than in the goods sector, suggesting that services may be the next escalator for growth in developing countries. Although India is the most famous case of services-based growth, it is not the only developing-country example. Armenia, Bangladesh, Kyrgyz Republic, Moldova, Mozambique, Pakistan, Philippines, Romania, Rwanda, and Sri Lanka are among a group of developing countries that have increased their revealed comparative advantage in modern services exports. As a group, lower middle–income and low-income countries have a higher RCA in modern services than in goods exports, and a higher RCA in modern services than high-income countries.

The range of modern services that can be digitized and traded globally is constantly expanding. India has been a pioneer, but many other poor countries are finding it easier to generate productivity growth in services than in industry. Services expansion provides an alternative growth escalator for developing countries. Figure B1 shows that the rise in services' contribution to growth is linked to a rise in productivity growth in the sector. Labor productivity growth in rich countries has been higher in services than in industry, and it remains positive. That implies that the global technology frontier for services is still shifting out, while that for industry has stagnated. At the same time, productivity growth in poor countries in services is accelerating and appears to have outstripped productivity growth in industry. In 58 out of 94 countries for which we have data, productivity growth in services exceeded that in industry. In 1990, modern services had a PRODY that was 10 percent higher than traditional services, but about 8 percent lower than that of goods. By 2007, the PRODY for modern services was 70 percent higher than for traditional services and 40 percent higher than for goods (see Figure B2). All sectors had increased the degree of technological sophistication over this period.

Figure B1. Comparing Labor Productivity

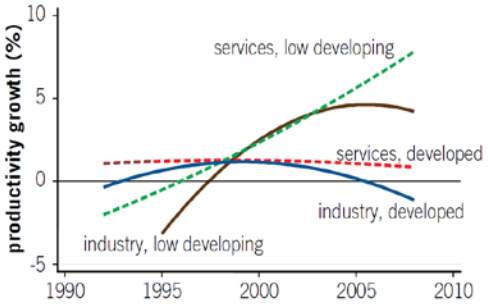
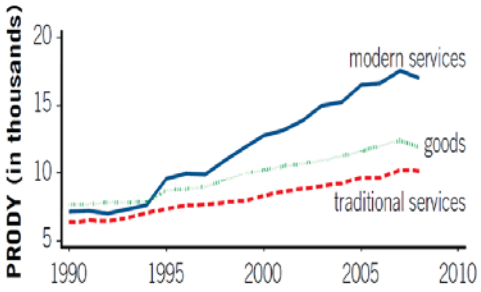


Figure B2. Growing sophistication in modern activities



Source: Ghani, Grover and Kharas, 2012.

IV. A GLOBAL COMPARISON OF MALAYSIA'S PATTERNS OF GROWTH, PRODUCTIVITY, AND TRADE

In this section we document the nature of Malaysia's progression to achieve middle-income status over the past several decades. In particular, we focus our analysis on the sectoral patterns of growth in productivity and the growth and sophistication of Malaysia's exports to the rest of the world. The first section presents a series of growth accounting calculations that separates Malaysia's recent economic growth into the contributions from increased employment, capital, labor productivity, and a residual total factor productivity measure. We also compare these estimates to several other comparable countries to place the Malaysian experience in an international context. The second section reviews the performance of Malaysian exports in recent years, and presents our calculations on the sophistication of exports separately for goods and services. Again, we place Malaysia in an international context through a series of cross-country regressions on the interaction of trade and economic growth. An accurate exposition of what propelled Malaysia into a middle-income status will be indispensable for charting the future path to high-income status.

Growth Accounting Calculations

We present a series of growth accounting calculations for Malaysia for the period 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, we can derive a simple index number formulation that relates changes in output to changes in the factor inputs plus a residual term typically referred to as total factor productivity (TFP).[13] For the case of Malaysia, we use measures of output (value added) from the national accounts as published by the Department of Statistics (DOS), and employment estimates are obtained from the labor force surveys published by DOS. The labor input is adjusted for quality using a measure of the average educational attainment of the labor force (also taken from the annual labor force surveys), assuming a seven percent return per year of schooling.

We obtain a measure of the capital input from the DOS, although at the level of individual industries we must rely on estimates prepared by the Malaysian Productivity Corporation. While there is some concern about data quality because these industry-level estimates are based on limited data, we largely restrict our analysis to the level of major sector and broad industry-groupings. Finally, there is some difficulty obtaining reliable time-series estimates of total wage compensation by sector and industry. Because the growth accounts use factor income shares as weights in measuring factor contributions to output, we use the wage measure to capture the share of income attributed to labor. Currently, we have estimates of labor income only for the benchmark year of 2000, and thus we use constant factor income shares (also known as a Cobb-Douglas production function) for our analysis.

[13] A more detailed explanation of the growth accounting framework, is provided in Bosworth and Collins (2003).

Total Economy

We present the results of the growth accounting calculations for the Malaysian total economy in Table 1. Along with the full span from 1990 to 2007, we also include two sub-periods of the 1990s and 2000-2007. The first line of the table shows the average annual output growth for the three periods. Despite the 1997-98 financial crisis in the midst of the period, the 1990s recorded a strong 7.3 percent average growth rate. The 2000-07 period shows a slowdown in growth of about 3 percentage points, which demonstrates that the Malaysian economy has never fully recovered to the pre-crisis rates of growth. However, it is worth noting that 5 percent annual growth is still very strong by international standards. The difference in GDP per worker growth rates is not much (3.8 in 1990-2000 versus 3.2 in 2000-07). In fact TFP growth appears to have increased in the latter period. It is more valid to point to generally weak growth in Malaysia over the whole period, relative to countries that have "graduated " from MIC status (Korea, Singapore or Taiwan). Malaysia may therefore be an example of a country that is stuck in a MIT *without* having undergone a substantial growth slowdown.

Roughly two-thirds of the fall in output growth that has occurred in the most recent decade can be attributed to slower employment growth, while there is a less pronounced slowdown in labor productivity growth. Decomposing the changes in output per worker into changes in capital per worker, education, land, and TFP, we see a large decline in the role of capital per worker growth combined with a modest increase in TFP growth. What is perhaps more surprising than the increases in TFP is the nonexistent contribution of TFP during the strong growth of the 1990s. This is most likely due to the disruptive forces resulting from the financial crisis in the middle of the period. The contribution to output per worker attributed to educational gains remained constant in both periods.

In general, the falloff in output and labor productivity growth in the 2000s is largely a consequence of a decreased rate of capital accumulation following the financial crisis. Investment rates that averaged roughly 40 percent of GNI in the early part of the 1990s have fallen to an average of 22 percent for 2005-2007. We now turn to a sectoral analysis of productivity to give a broader context for these changes.

Major Sectors

Table 2 displays the disaggregated growth accounts 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 to the two sub-periods of our sample, several interesting developments come out. First, the output slowdown is more pronounced in the manufacturing sector, with a five percentage point drop in the average annual growth rate after the 1990s. However, because employment has actually fallen during the 2000s, output per worker has *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 has seen a

divergence in productivity growth rates between the two sectors. Indeed, the average annual growth in labor productivity in services during 2000-07 is 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 the later sub-period. 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 4, 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. Output per worker in agriculture has remained relatively constant during the period, with a slight improvement beginning in 1999.

Improvements in labor productivity for the total economy can result from increases in sectoral labor productivity as well as labor reallocations from sectors of low productivity to higher productivity areas. Thus, the importance of this "residual" reallocation effect depends in part on the degree of inter-sectoral differences in productivity and in part on changes in the distribution of employment. Figure 5 separates out labor productivity growth for the total economy by period into sectoral contributions and the reallocation effect. (Notice here that we use the full industry sector rather than manufacturing alone for completeness of allocation.) First of all, the second column pertaining to the 1990s period demonstrates the relative importance of the services sector to total productivity growth, along with a minor contribution from reallocation. Keep in mind that the contribution of each sector to the total is a function of the growth in sectoral productivity weighted by that sector's share in output. Perhaps most importantly, the third column of Figure 5 clearly shows the stronger role of manufacturing in the 2000s, with a reallocation effect that actually turns negative. The negative reallocation effect can be explained by a reduced labor productivity growth in services during that period, combined with a services employment share that increased from 49 percent of the total in 2000 to nearly 54 percent in 2007. Thus, in this case, labor was moving out of the relatively more productive industry sector into a less productive services sector during the more recent period.

International Comparisons

We now place the experience of Malaysia in a broader international context through comparing the sector-level output and productivity growth of similar countries. In addition to examining the relative performance of the industry/manufacturing and service sectors in these countries, we can also assess the *levels* of productivity among countries and sectors. We take country-level data from a variety of sources, including Bosworth and Collins (2003), World Bank (2009), and various national accounts published by country statistical offices.

We compare the level of output per worker in 2005 by major sector for several countries in Table 3, using international purchasing power parity dollars to adjust for differences in price levels among the countries. The total-economy productivity levels broadly align with

expectations given the level of development of each economy. However, there is a greater level of variation in the levels of output per worker within sectors. First, looking at column two, Malaysia appears to have a relatively efficient agricultural sector compared to the other countries in the table. In contrast, agriculture in India appears to operate at a low productivity level relative to the total economy. Second, the gap between productivity in industry and services in Malaysia also stands out when placed among a group of similar South and East Asian countries. In addition, we calculate the ratios of services to agriculture and services to industry in columns five and six respectively. As is evident in these columns, Malaysia has the lowest ratios of all countries presented, implying the relative performance of the services sector is low in Malaysia from an international perspective. To some degree the results in column five may reflect the high agricultural productivity in Malaysia; however this is not the case with regard to the industry sector as it appears to score low relative to the average of other countries.

The sectoral contributions to total labor productivity growth – along with the reallocation effect – presented in Figure 5 can be re-weighted in order to see the percent contributions to output per worker growth of each sector. One disadvantage of this exposition is that the actual magnitude of the overall growth is lost; yet the perspective of shares is useful for easily gauging the importance of each sector to the total. We use such a presentation in Figure 6, where we display two periods of growth for the countries of Malaysia, Korea, India, China, and the United States. For the two East-Asian countries and India, it is striking how the results broadly accord 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 service 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 U.S. and the East Asian countries. While the services sector contributes more than 40 percent of total productivity growth in both periods, it is clear that industry becomes the dominant sector beginning in the year 2000.

A final international comparison of Malaysia's output and productivity performance is shown in Table 4. Malaysia's average annual growth in output, employment, and output per worker is compared to three other East Asian countries for the period 1998-2006. As demonstrated in the second and third rows of the table, the growth of the industry/manufacturing sector in Malaysia compares favorably with the other countries, though it falls considerably short of the phenomenal performance of Korea in both output and output per worker. In the services sector, however, Malaysia records the highest rate of output and productivity growth for the post-crisis period. Yet, this should not come as a surprise when comparing with the traditionally manufacturing-driven East Asian countries. In fact, when we split up the services into modern and traditional using the classification criteria outlined above, we see that all four countries display productivity growth in modern services that is actually lower than that of traditional services. Although output is generally comparable between the two (with the exception of Thailand), it seems that modern services have generated much higher rates of employment growth than traditional services, and thereby not enjoyed comparable rates of productivity growth. Therefore, from this perspective, it appears that the dynamism of services in Malaysia appears to have been mostly in the traditional sectors in recent years, similar to the manufacturing-intensive countries of East Asia. Modern services may tend to stagnate in these countries because their infrastructure needs are so different than that for manufacturing. While

traditional services such as transportation and construction use some of the same infrastructure as goods exports (ports and roads), the needs of modern service production (such as high internet bandwidth, education) tend to be distinct (see Ghani 2010).

INTERNATIONAL TRADE

Malaysia's recent economic growth has been leveraged by trade flows. On average, from 2000-2007 total trade was twice the size of GDP for Malaysia whereas in China or India the magnitude of trade was modestly less with 60% and 30% of GDP respectively during the same period. A time series comparison of Trade (% of GDP) is shown in Figure 7a. The figure accentuates that countries such as China[14], India and Korea have had a stronger domestic demand component of growth whereas GDP growth is leveraged considerably by trade for both Malaysia and Singapore. Evidence suggests that more open countries seem to have experienced faster productivity growth as economies open to the rest of the world are able to absorb the rapid technological advances in the advanced nations. With this in mind, the following discussion documents recent patterns in the growth and technological sophistication of Malaysia's exports abroad. We contrast the relative performance of manufacturing and services trade separately. Finally, to provide a benchmark for these calculations, we report cross cross-country regressions involving international trade and broad economic growth. These regressions should serve to confirm whether the sophistication measures are an important indicator of successful growth.

Manufacturing Trade Patterns

The 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. In fact, the Global Competitiveness Report published by the World Economic Forum recently ranked Malaysian ports as 13th in the world, just behind Singapore and Hong Kong SAR, China in East Asia. In this section we evaluate the recent performance of Malaysia's trade in goods with special emphasis on the distinction between modern and traditional exports. First, we consider goods exports based upon the technological classification of the OECD as discussed above in the defining modern and traditional service sections. Thus, we use commodity-level trade data from the UN COMTRADE database to classify Malaysia's exports into 4 categories based upon technological intensity. In Figure 7b, we compare the relative growth in high-technology goods exports to low-technology and resource-based exports for several countries during 1995-2006. Although the level of growth in Malaysia's exports are slightly lower than reference countries such as Singapore and Korea, Malaysia records strong growth of over 8.5 percent annually in high-tech exports. In fact, its growth in these modern exports over the past decade has been stronger than that of Singapore, which had relatively higher growth in lower-technology commodities. An alternative perspective of the technological intensity of trade is shown in Figure 7c. Here we plot a time-series of the share of high-technology exports to total goods exports for the period 1990-2006. What is immediately striking is the high share of advanced,

[14] China, refers to Mainland China. Unless otherwise noted, data for China do not include data for Hong Kong SAR, China; Macao, China; or Taiwan, China.

modern goods exports in Malaysia, which nearly rivals that of Singapore. Although the magnitude of trade is not as high as that of China or Korea, the high level of technological intensity appears as an impressive feature of Malaysia's goods trade.

For an additional perspective on Malaysian goods trade, we develop a cross-country sample of the EXPY measure of sophistication of exports advanced by Hausmann, Hwang, and Rodrik (2007) explained above. Using publicly available data assembled by Nicita and Olarreaga (2007) we plot individual year scatter plots of the export sophistication index (in logs) with the log level of GDP per-capita for a sample of around 90 countries.[15] We display three such scatter plots in Figure 8, highlighting the relative position of Malaysia, for years 1980, 1990, and 2003 to illustrate the evolution of Malaysia's export sophistication over time. The scatter plots show striking evidence of the positive correlation between growth and sophistication, a relationship which Hausmann, Hwang, and Rodrik argue runs from export sophistication to growth rather than the other way around. The series of charts also shows 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, the position of Malaysia in 2003 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. The final figure in the series plots all countries for all years (1976-2004) in our sample. This figure nicely summarizes the movement of Malaysia over time from a low level of sophistication to one of the world's highest.

Service Trade Pattern

Both modern and traditional service exports have been growing rapidly at the global level. In fact, since the 1980s, the global trade in services has grown faster than the global trade in merchandises goods, though services trade remains at a far smaller magnitude. Figure 9 compares the trend in share of service trade in service value added for developing and developed countries for the period 1985 to 2005. What stands out is that the ratio of service trade in service output for developing countries has increased much *faster* than for developed countries. This suggests that developing countries are more focused on production of services that can be traded, rather than for domestic consumption. In addition, modern service exports are growing much *faster* than traditional service exports. However, within developing countries, some regions have benefitted more than the others in modern services trade.

According to our distinction of modern and traditional identified above, modern services exports peaked in Malaysia in 1998 with a share of 59 percent, but have fallen dramatically in more recent years to levels around 20-25 percent. This rapid decline is largely a combination of reduced exports of 'other business services' combined with an expansion of traditional 'travel' exports. Both modern and traditional services recorded healthy growth of 10-12% annually during the early 1990s; however more recently the expansion of services trade has been more skewed. As shown in Figure 10, Malaysia has witnessed negative growth in modern service exports during the period 2000-2006, whereas most developing countries have seen growth in

[15] The sample of countries varies from year to year. Please see Nicita and Olarreaga for a more complete description of the data.

excess of 10 percent a year.

Similarly, Figure 11 and 12 give a more detailed view of the evolving patterns of service exports from Malaysia. First, Figure 11 shows the export basket in 1995, 2000, 2007 and 2009 by the basic 10 categories available from the Balance of Payments. We note that travel and transport service dominate over 60 percent of Malaysia's service exports, whereas as the relative share of modern business services progressed around 2000 but did not manage to keep up over the last decade. Hence, Figure 12 gives even a more detailed look at the 74 categories of service exports in 2000 and 2009, whereas the third column reports the change in share of the particular export in total service export basket. Modern services are coded orange and blue is used for traditional services. Several creative, visual services and digital services are not reported by Malaysia however there are signs of progress. The share of computer and information services is approximately 2 percent of service export basket, whereas business services have been declining. In particular, business travel services are continuing to grow very fast.

We now present a preliminary measure of the sophistication in service exports that seeks to mirror the EXPY measure of Hausmann, Hwang, and Rodrik for goods that we employed above.[16] Mishra, Lundstrom and Anand 2011 repeat the same exercise for service exports and shows that there is increasingly a stronger association between moving to more productive modern services and economic growth. We use the IMF Balance of Payments and plot the trend of the sophistication for selected emerging economies in Figure 13. Malaysia maintained a sophistication level in services above that of China until 2003, but since then the Chinese export service sophistication has increased while Malaysia has lagged behind the remaining sample of middle income countries. In contrast, India has emerged as a big player in the delivery of complex services as measured by EXPY in post 2000. India is followed by Singapore and Korea in their level of service export sophistication.

Figure 14 plots individual year scatter plots of the export sophistication index (in logs) with the log level of GDP per-capita for a sample of around 147 countries. The two panels highlight the relative position of Malaysia in 1995-98 and 2007-09 (averages). First, the scatter plots confirm the finding that countries with higher export sophistication have higher income per capita. Second, the two panels demonstrate the stagnancy of Malaysia's relative sophistication level over time, and its overall position below the global mean in 1995 and 2005. Malaysia has made improvements but lags behind competitive and sophisticated service exporters like Singapore and Korea but ahead of Thailand in the sophistication of service exports. As expected, India stands out as a huge outlier in export of modern services.

The modern service sector has become an important driver of growth in both developed and developing countries. In particular, Figure 15 compares what has happened in some 136 countries between 2000 and 2005 in terms of real GDP growth, shown on the vertical axis and service value added growth, shown on the horizontal axis. Each point represents one country. The positive relationship between the two variables implies that countries with high growth in services also tend to have high overall economic growth or conversely that countries with high overall economic growth have high services growth. One cannot identify causality from a

[16] This measure is more suggestive than authoritative, however, as we are forced to use approximately ten different service categories as income weights, rather than the few thousand commodities employed in the goods calculation.

regression like this; however the correlation is robust with countries at different stages of development.

Cross-Country Regressions on Trade in Goods and Services

Analysis of the cross-country performance of exports further reveals how the export sophistication of trade impacts the long-term success of a country's exports in international markets. Table 5 reports cross country regressions on goods and service exports as a share of the total export basket. We control for initial conditions with log GDP per capita and nonlinearities in growth with squared log GDP per capita. In addition, we control for size with the inclusion of land area of the countries in the regression and also create categorical indicators for Malaysia, Singapore, India and China. We see that Malaysia has always been a significant negative outlier in the service share of exports, and has become more of an outlier over time in this regard. The third panel reports the share of computer and information services as a share of total export basket. Malaysia seems to have a significantly lower share of these service exports in its total export basket compared to the rest of the world. Thus, it seems apparent that much of the growth via trade channel for Malaysia has occurred through manufacturing trade. This evidence further points to the relative weakness of the services sector, and in light of the growth and productivity enhancing effects of tradable identified earlier, demonstrates an opportunity for growth in the future.

Finally, Figure 16 plots the Revealed Comparative Advantage of (RCA) for goods and services in Malaysia over time. The RCA measure represents the share of a specific sector's exports in the country's total export basket with respect to the share of world exports of that sector in the world export basket. The RCA illustrates that goods are a substantially higher comparative advantage than services in Malaysia. The production of manufactured goods drives Malaysia's export markets concurrent to its specialization.

Our analysis of the past performance of the Malaysian economy demonstrates that strong export-led manufacturing growth played a dominant role in moving Malaysia up the income ladder. Although output and productivity growth slowed in the years after the financial crisis of 1997-98, the goods-producing sectors continued to show higher rates of growth in output-per-worker and TFP than the services sectors. Similarly, Malaysia has become one of the world leaders in the sophistication of its goods exports; however, preliminary evidence demonstrates that services are considerably less sophisticated. With future growth in manufacturing constrained due to increasing wage costs relative to low-income competitors, the prior growth patterns of Malaysia do not appear to offer a path out of the middle-income trap.

V. HOW WILL POTENTIAL CHANGES IN GLOBALIZATION IMPACT MALAYSIA'S FUTURE GROWTH?

Globalization has accelerated growth in Malaysia over the last three decades and has facilitated Malaysia's transition from a low income to a middle income economy. But the post-2008 global downturn may potentially change globalization itself, as developed countries continue to adjust to global imbalances that contributed to the crisis.

The prospects of the emerging markets will depend on two different models of globalization:

- Trade Globalization--dependence on external demand
- Capital Globalization--dependence on external finance

These same two models of globalization will play a crucial role in understanding what Malaysia can do to get out of the middle-income trap and weather the global economic downturn. The emerging markets that are best poised to enjoy a speedy recovery (following a V-shaped recession) are those that do not depend excessively on external finance, external demand, and have strong fundamentals in economic management to cope with global shocks. The external demand component is an impending constraint for Malaysia and the trade channel will play an integral role for Malaysia to grow. In this section we investigate how these two major channels of globalization--trade flows and capital flows--will impact Malaysia's growth strategy.

Trade Flows Globalization

As highlighted in a previous section (see Figure 7a), Malaysia's growth is substantially leveraged by trade flows. Many countries have accelerated their recovery with the help of expanding exports. The recovery of Malaysia and other East Asian countries following the financial crisis in the 1990s was achieved by exporting to developed countries. In the global crisis following 2008, trade is expected to grow more slowly as the crisis is global – and not regional – in scope. There will be less demand for exports from Malaysia as consumers in United States and other high-income countries save more, adjust to change in asset prices and risk, and go through the process of financial deleveraging. The large imbalances between savings and investment in developing and developed countries contributed to this crisis, so some adjustment in global imbalances will slow down the role of trade in this recovery. However, this perception is based on a narrow view of how trade stimulates growth.

The impact of trade on growth is determined not just by the size of exports, but also externalities and knowledge spillover that trade brings and which are vital to growth (see Stewart and Ghani 1991). The post-2008 global crisis has not reduced the *stock* of global knowledge available in developed countries which will benefit developing countries as long as they expand their tradable sector.

Second, composition of trade matters. Those countries that can transform their tradables from traditional to modern will be more resilient and will continue to benefit from changes in globalization. Globalization of service is the tip of the iceberg (Blinder 2006). Trade in services will continue to increase despite this downturn (see World Bank 2009). Service exports are more resilient than goods exports as reflected, for example, by less volatility in India's service exports compared to China's good exports. The internet age will continue to transform more services into modern impersonal services.

The range of services that can be globalized and digitized is constantly expanding: processing insurance claims; desktop publishing; the remote management and maintenance of IT networks; compiling audits; completing tax returns; transcribing medical records; financial research and analysis. The list of possible activities is almost endless. The globalization of services will continue to be a strong force for two reasons. First, services account for more than

70 percent of global GDP, more than double in size compared to the manufacturing sector. So, there is tremendous scope for services globalization. Second, the cost differential in the production of services across the world is enormous. In the past, the only option to narrowing such cost differentials was through migration, but migration has been heavily regulated and global international migration has remained steady at about 3 percent for decades. Now that service providers can sell services without crossing national borders by making use of the internet (outsourcing), the scope for exploiting cost differentials is much higher. What is more, it is very hard for governments to regulate modern impersonal services, so prospects for rapid expansion in service exports are good.

Third, modern impersonal services have many features in common with manufacturing. Like manufacturing, they benefit from technological advances that generate productivity growth year after year. They exhibit similar tendencies for scale and agglomeration economies. Service producers can bring down unit costs by expanding operations. They benefit from being in close proximity to one another which creates a pool of well-trained workers. They are labor intensive. Malaysia still faces a huge convergence gap with the high income countries on service trade. So there is potential for Malaysia to expand its service sector as it is yet to take full advantage of globalization of services.

Capital Flows Globalization

The past few decades have highlighted the fact that the globalization of capital provides both risks and benefits for developing countries. Well-known benefits include cheaper access to capital, technology transfer, upgrading of management practices, and increased risk sharing. Greater exposure to volatility and the transmission of outside business cycles are among the risks of high levels of reliance on foreign capital inflows. The critical task facing developing countries in the 21st century is how to achieve the promised benefits of capital-account liberalization while hedging against the increased fragility that often accompanies it.

Complicating the task for developing countries are generally declining capital inflows following the post-2008 global crisis and downturn; a result of increased deleveraging of financial institutions and higher degrees of risk aversion. It will take time for private foreign capital flows to recover, and even then the capital flows will be less accessible to developing countries in a new risk-averse environment, and higher cost of capital. This could slow down the process of economic recovery in developing countries, and countries that have relied on external finance could take a deeper hit.

How dependent is Malaysia on external finance? Recent evidence indicates that Malaysia depends comparatively little on external finance. This is reflected in its external current account balance and in high savings and investment rates. In fact, the huge external current account surplus shows that Malaysia is in fact a net exporter – rather than importer – of capital (see Figure 17).

Malaysia's investments are largely driven by domestic savings which has safeguarded the economy from the volatility in international financial markets. A high level of domestic saving enables a country to cope much better with reduced capital inflows. So is Malaysia an outlier in savings and investments compared to the rest of the world? Table 6 Panel B reports the results

of a cross-country regression for more than 100 countries, after controlling for the stage of development, non-linearity's in development and country specific features. Malaysia remains a large and significant positive outlier in savings and is above the global norm. It is a more pronounced positive outlier than India but less of an outlier compared to China. This bodes well for Malaysia.

Panel A of Table 6 reports the results of a similar regression for investment. In 1995 Malaysia was a significant positive outlier in investment compared to the rest of the world after controlling for income per capita, size and non-linearity in growth. It was a bigger outlier than either China or India. However, the investment boom in Malaysia appears to be over. The investment patterns now appear to be no different from the rest of world, once we control for the stage of development. More importantly, the cross-country regressions highlight that dependence on external finance has declined over time for Malaysia.

Which sectors will be impacted by the decline in investment rates? Table 7 Panel A and B report cross-country regression results for manufacturing and service output as dependent variables for the time period 1995-2007 for over 150 countries. The results indicate that investment is more important for growth in the more capital intensive manufacturing sector than services growth.

The combination of high domestic savings and declining demand for external financing has safeguarded Malaysia from the volatility of international financial markets. On the other hand, Malaysia is therefore not taking advantage of the collateral benefits of financial globalization. Malaysia has not taken full advantage of network externalities that countries such as Singapore have utilized from financial globalization. The flow of foreign financing in Malaysia is directed towards the goods export basket whereas neighboring countries like Singapore have taken advantage of globalization of services.

Foreign Direct Investment (FDI) is generally regarded as highly effective mechanism for the transfer of technology, skills, and management practices. In addition, it is less prone to volatile swings in line with global business cycles, as the foreign-held assets are in general long-term. To examine the openness of Malaysia to FDI, we use the FDI Regulatory Restrictions Index published periodically by the OECD. This index, published at the sector level for a variety of countries, should provide a natural gauge for the openness of Malaysia to FDI across sectors and over time.

The OECD separately examines four distinct measures of restrictions: i) foreign equity restrictions; ii) screening and prior approval requirements; iii) rules for key personnel; and iv) other restrictions on foreign enterprises.[17] We report the total index score, summing over these four measures, which is scaled between 0 (no restrictions) and 1 (foreign ownership forbidden). Figure 18 summarizes our findings over the period 1997-2012. Panel A compares the index score between the manufacturing sector and the Tertiary sector for Malaysia.[18] As is clear from the

[17] Rules on state ownership are not scored, provided they are not discriminatory toward foreign enterprises in particular. For more information on the methodology, see Kalinova et al (2010).

[18] The Tertiary sector consists of Distribution, Transport, Hotels and Restaurants, Media, Communications, Financial Services, Business Services, and Real Estate Investment.

graph, although the tertiary sector has become less restrictive in recent years, the gap relative to manufacturing remains substantial. Panel B of Figure 18 compares the index scores for the Tertiary sector in India, China, and Korea. Although Malaysia compares favorably with China and India, it has lagged behind the more advanced economy of Korea. Finally, Panel C highlights that there is large heterogeneity in this index even within the Tertiary sector in Malaysia. Subsectors like business services communication have seen recent improvements, whereas the media and distribution subsectors remain largely restricted to foreign-owned firms.

The evidence above makes clear that Malaysia has further progress to make in order to take advantage of the collateral benefits of FDI inflows. Moreover, we find that Malaysia has lagged behind in the services sector in particular, which may perhaps have been a handicap on the productivity advances of this sector in recent years. Recent efforts to liberalize the services sectors in Malaysia should help to bring in internationally competitive firms which should lead to spillover benefits to domestic firms in the market.

VI. WHAT SHOULD POLICYMAKERS DO?

Malaysia, a small open economy is squeezed by the competition from low-wage economies on the one hand, and more innovative and advanced economies on the other. Malaysia's structural transformation from low income to middle income status is a success story. It leveraged globalization (trade, capital, and economic management) to expand the tradable sector, and has become one of the most sophisticated exporters of manufacturing goods. But Malaysia has yet to modernize its large service sector.

Policymakers 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 require. 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. The response "Not enough good people" is a common complaint among business owners in Malaysia.

Attracting highly productive foreign firms to locate production in Malaysia is another area that policymakers should devote their 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. The current degree of restrictions on foreign-owned firms – particularly in the services sector – might be hindering the potential for FDI to stimulate further growth.

Developing the services sector holds the greatest promise for high impact reform. In particular, providing access to learning and training opportunities to build social entrepreneurs and product innovations will be crucial. The promise of service globalization means that Malaysia should utilize the market space provided by the Internet to foster business and

technological innovations for the global economy. In this respect, the interaction of spatial transformations 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 non-distortionary 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. The globalization of service has just begun. The modernization of services is a promising way out of the middle income trap.

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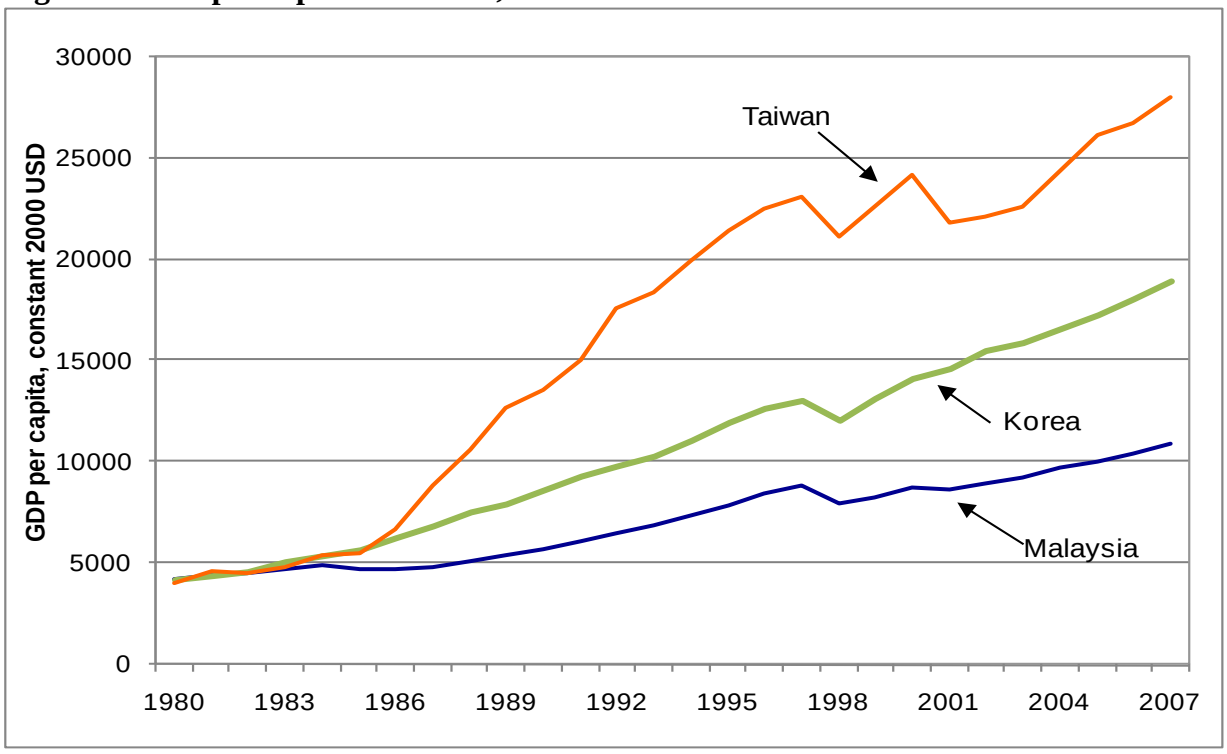

Source: Malaysia and Korea, World Development Indicators 2009; Taiwan, China, Directorate General of Budget, Accounting, and Statistics 2009

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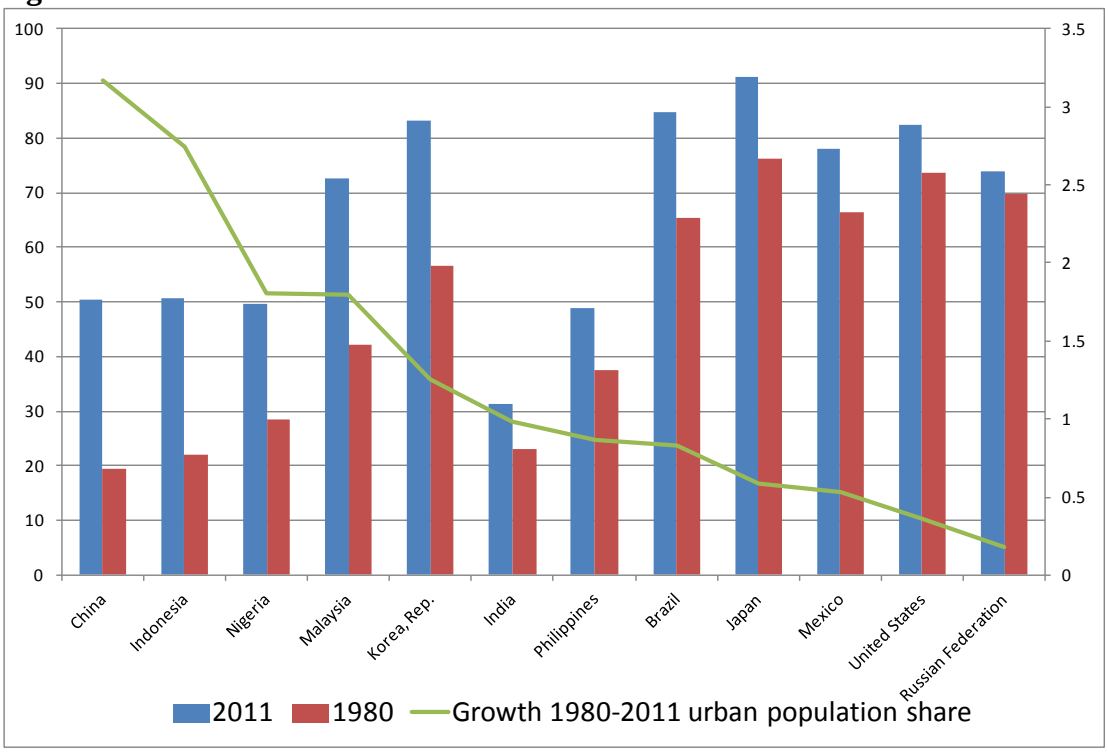

Source: World development Indicators, 2013.
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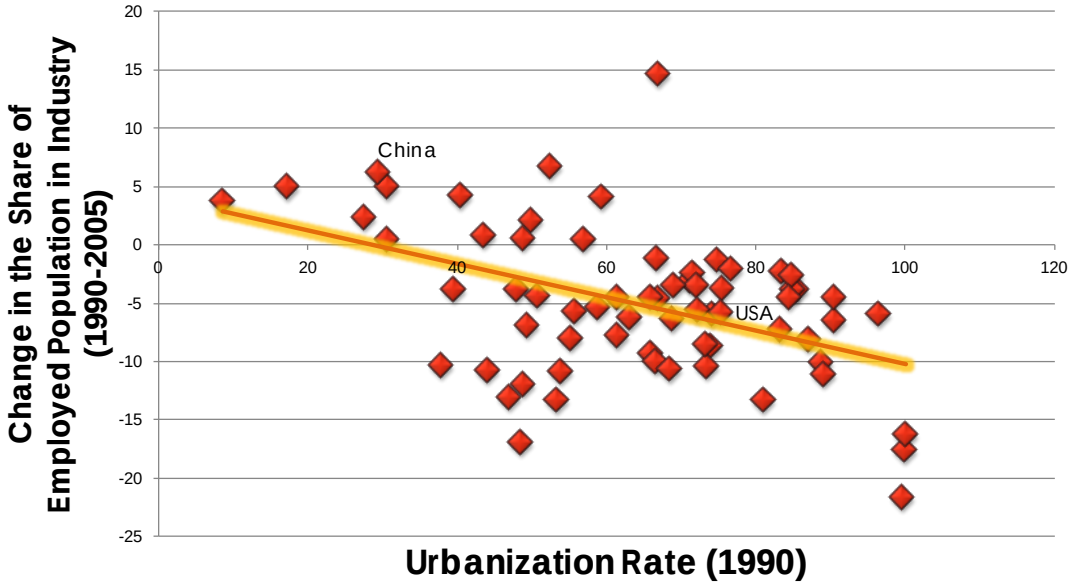

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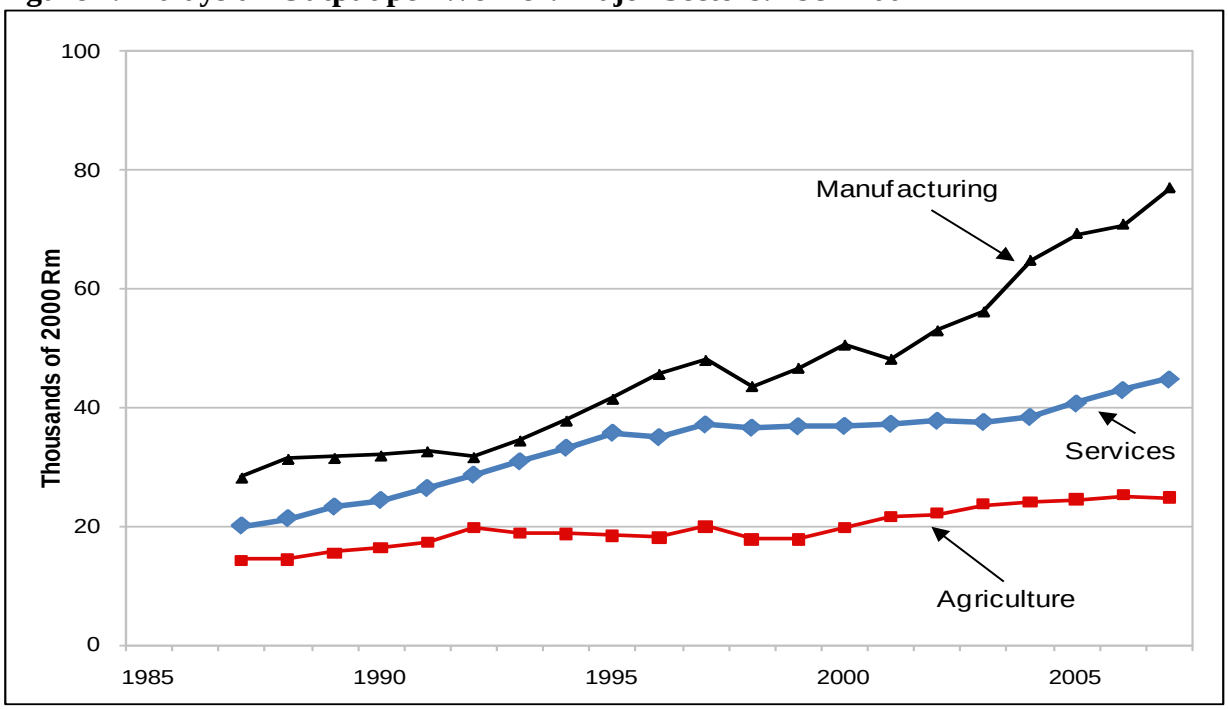

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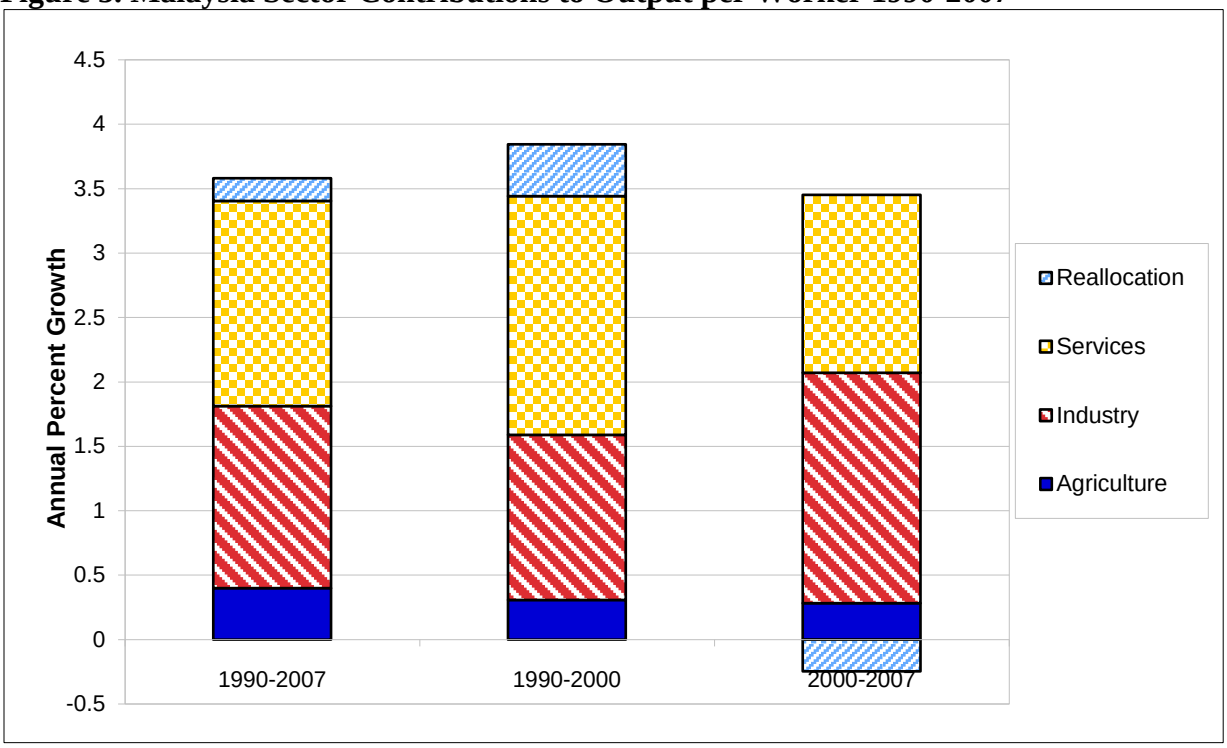

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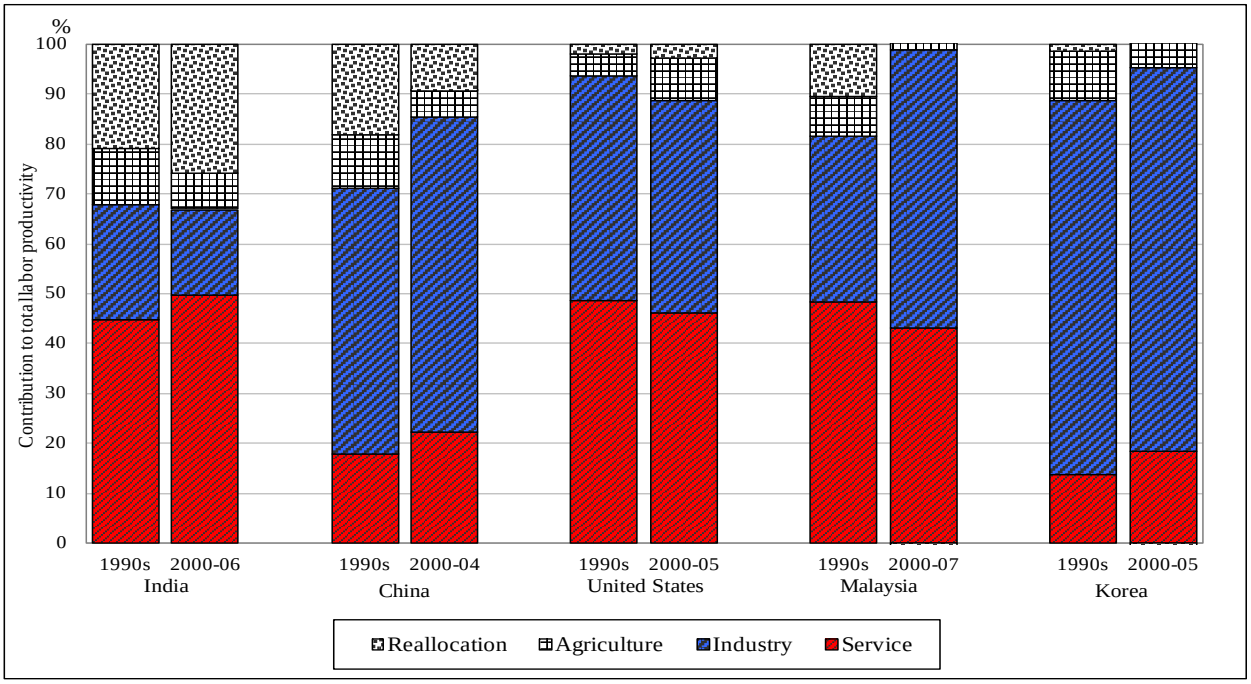

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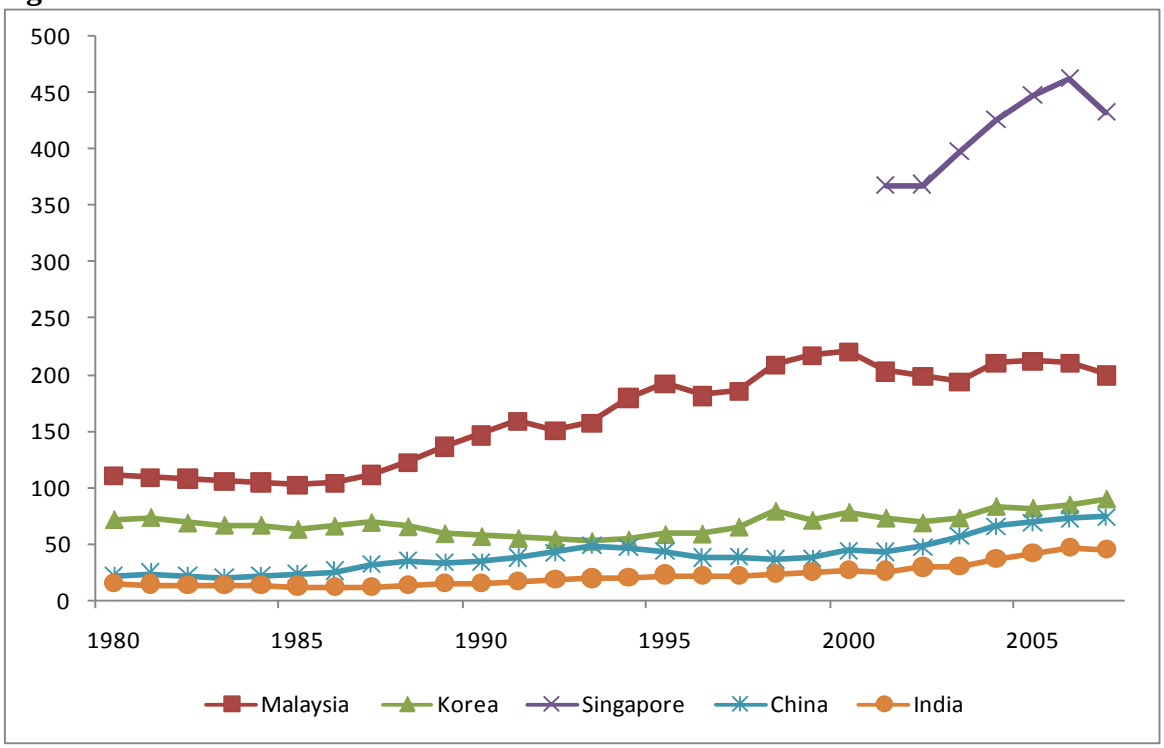

Source: World Development Indicators, World Bank. 2009.

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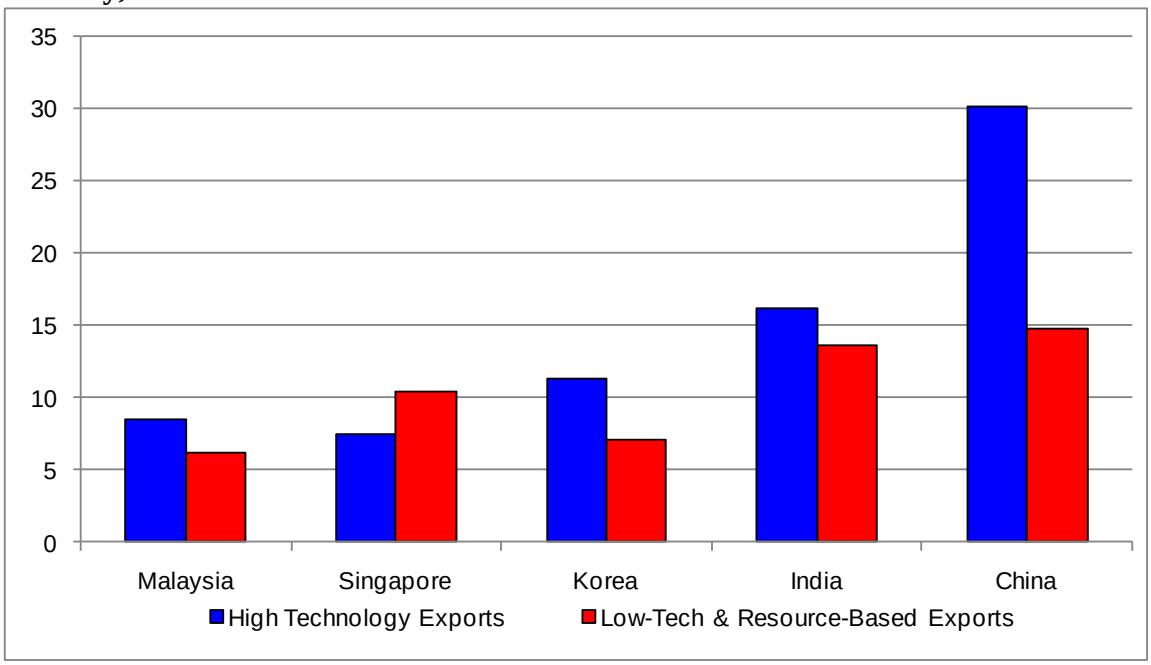

Source: UN COMTRADE data from technological intensity calculations as explained in text.

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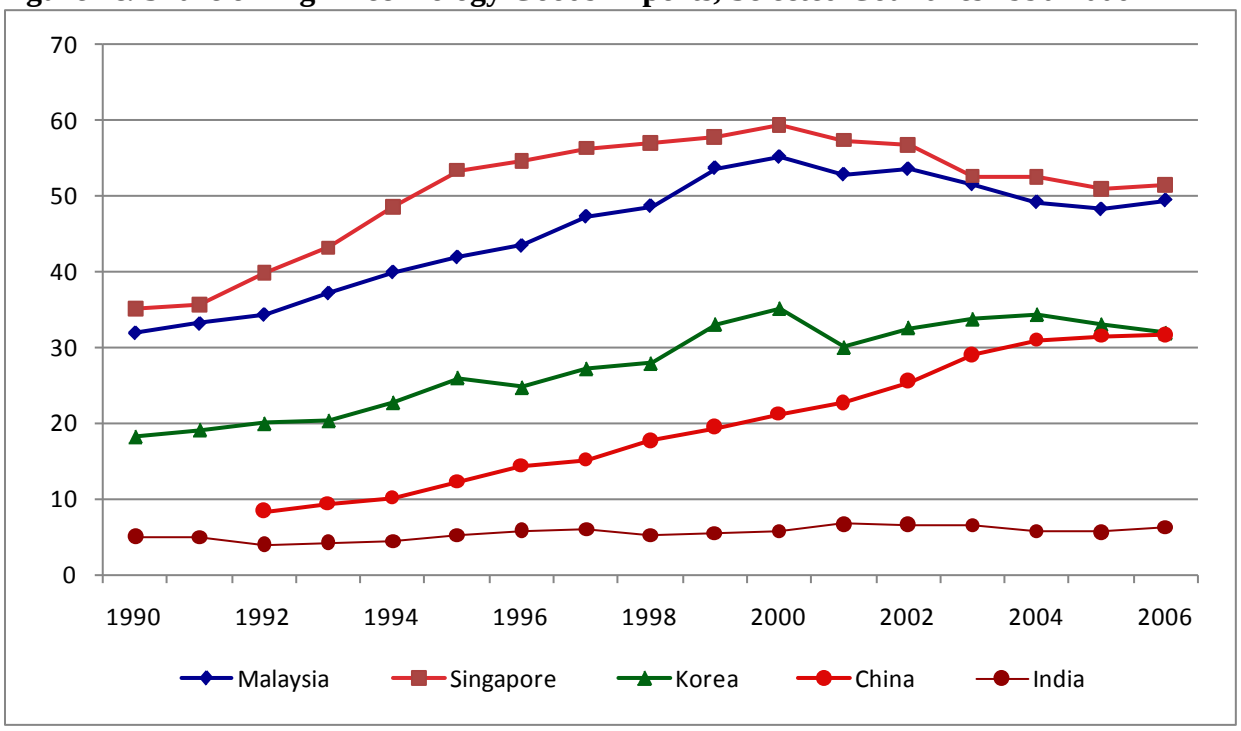

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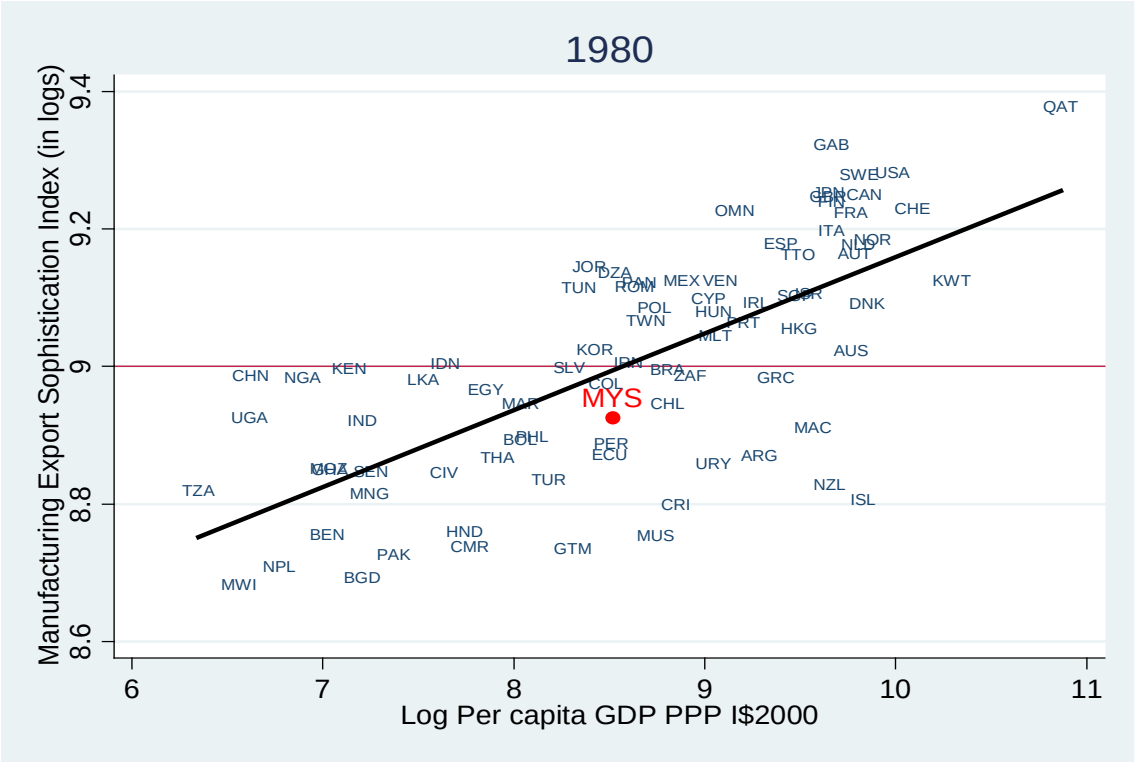
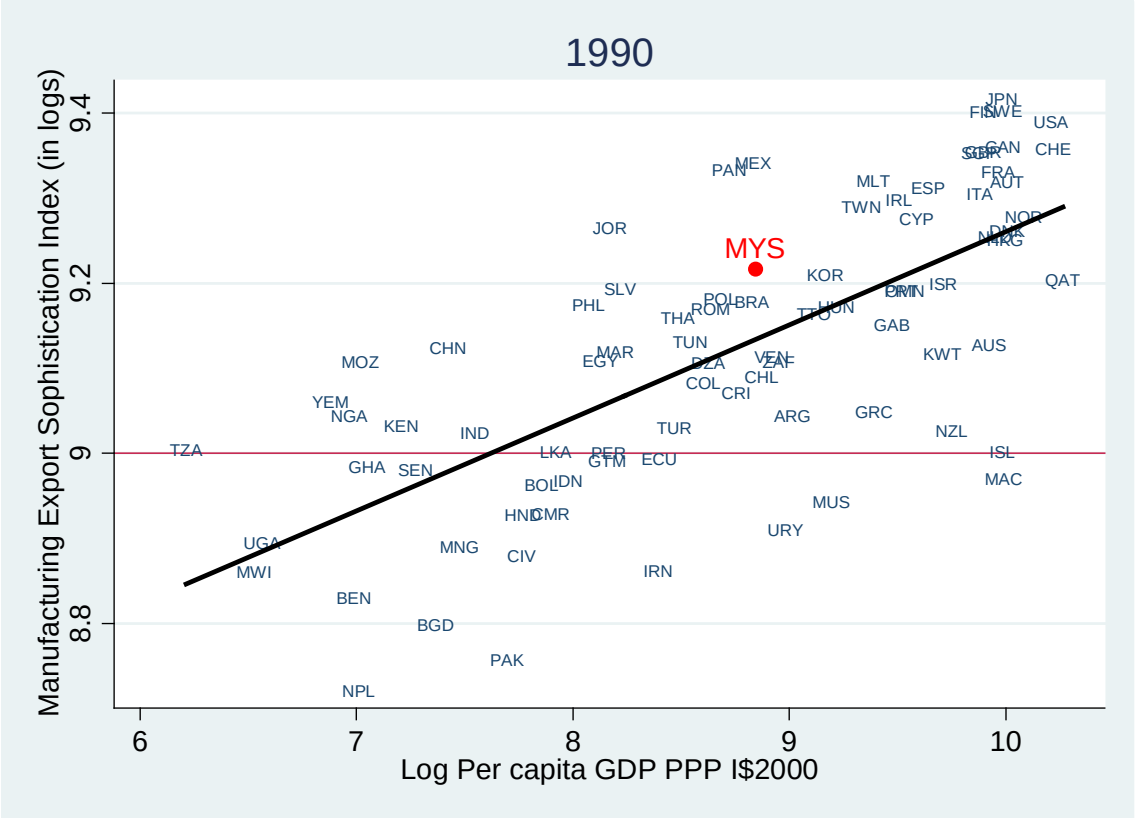
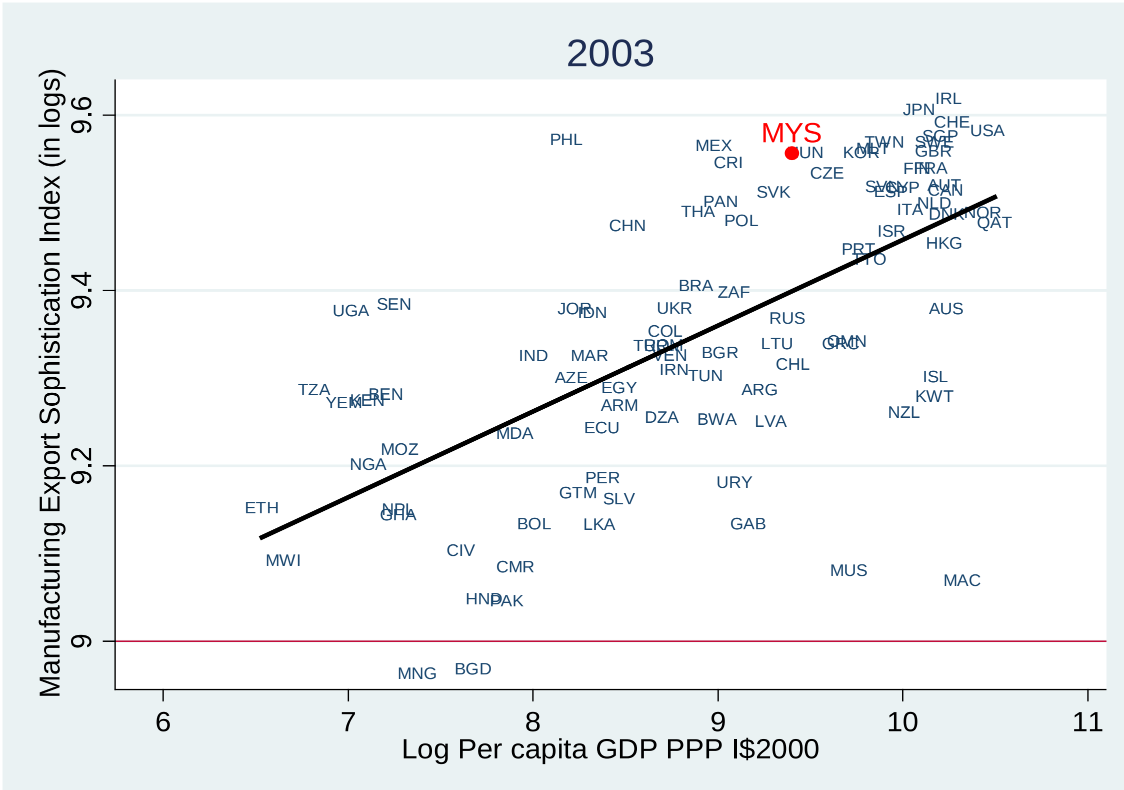
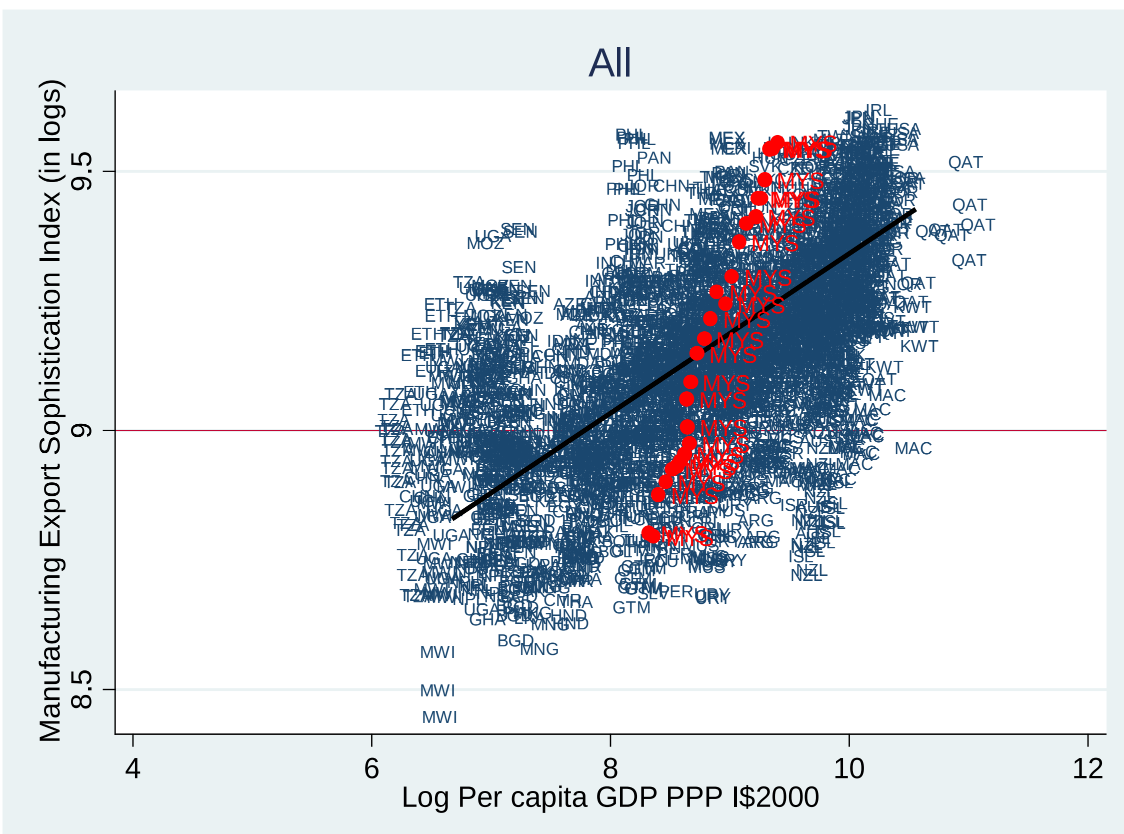





2003
Manufacturing Export Sophistication Index (in logs)
Log Per capita GDP PPP I$2000
9
9.2
9.4
9.6
6
7
8
9
10
11
MYS


All
Manufacturing Export Sophistication Index (in logs)
Log Per capita GDP PPP I$2000
8.5
9
9.5
4
6
8
10
12

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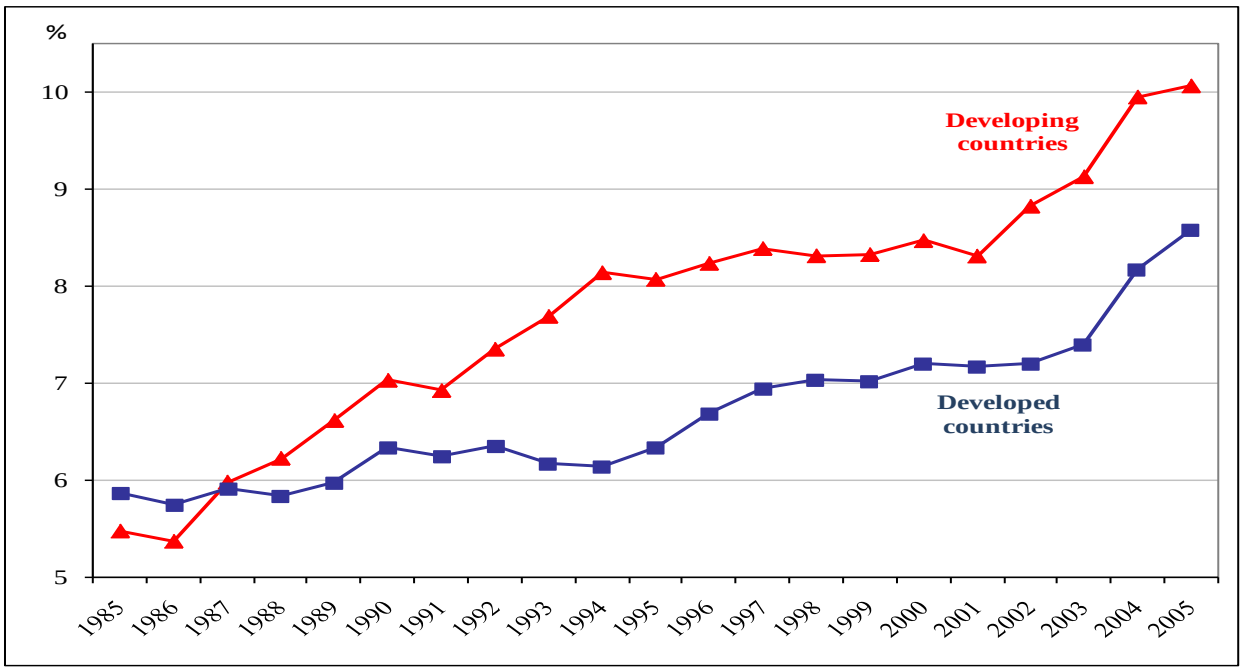

Note: Developing countries are defined as middle and low income countries. Developed countries are high income OECD countries. Source: World Bank 2008a.

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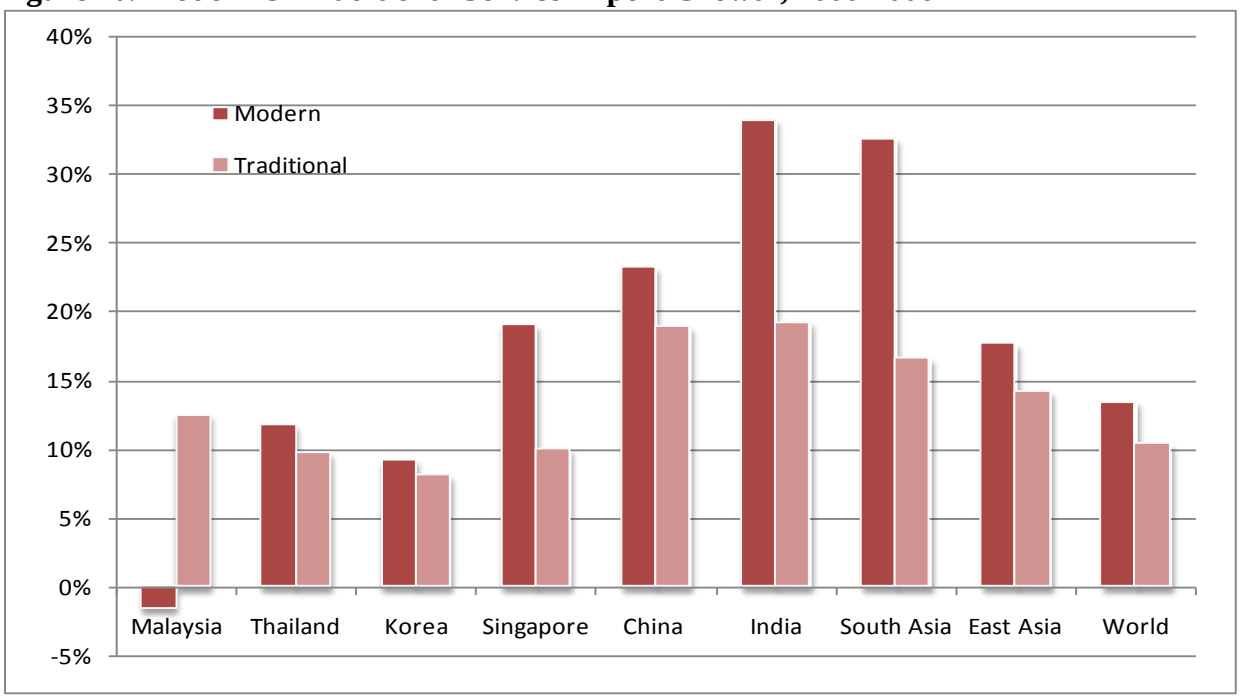

Source: Balance of Payments, IMF. 2008.
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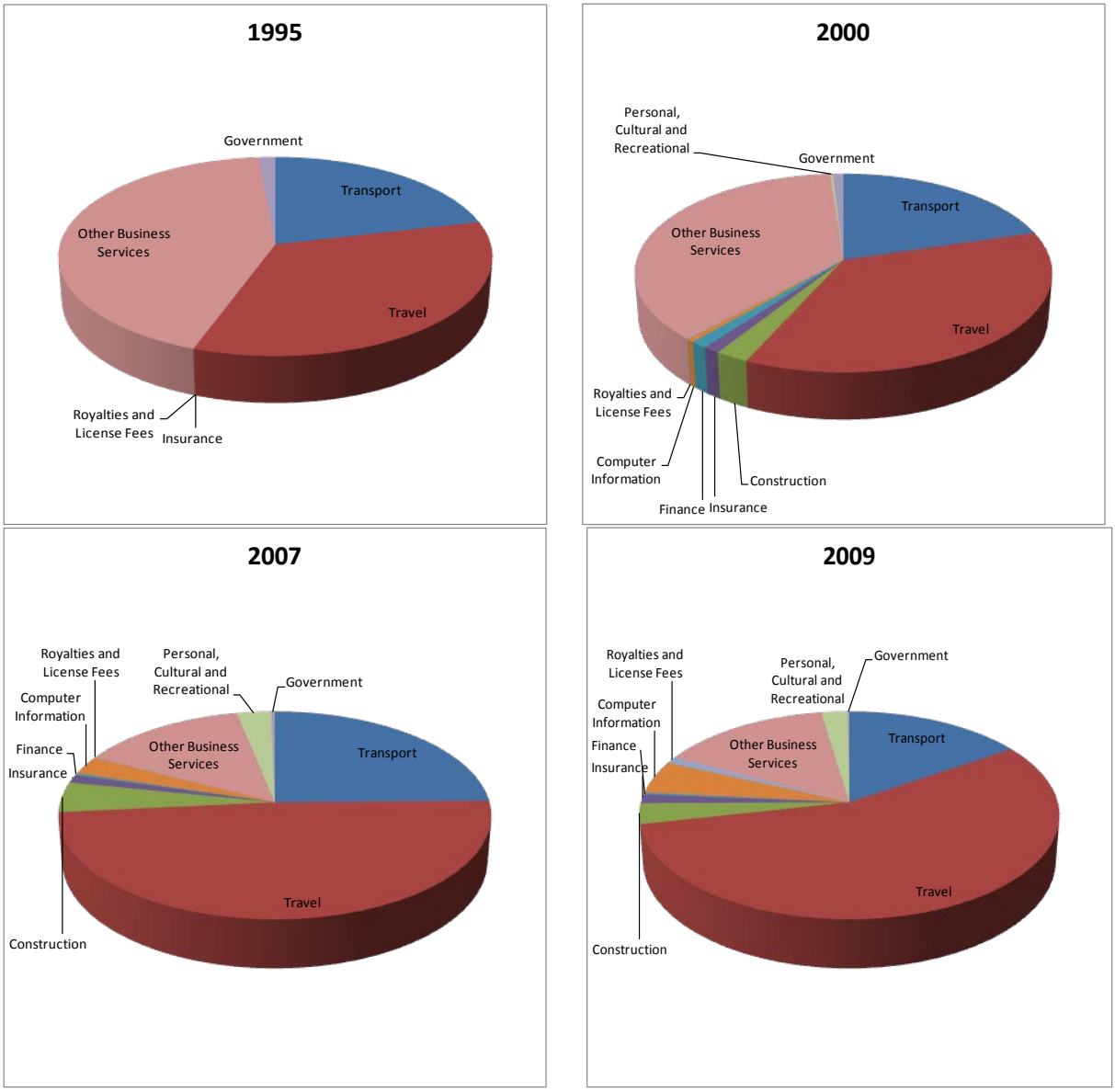

Source: Balance of Payments, IMF. 2012.

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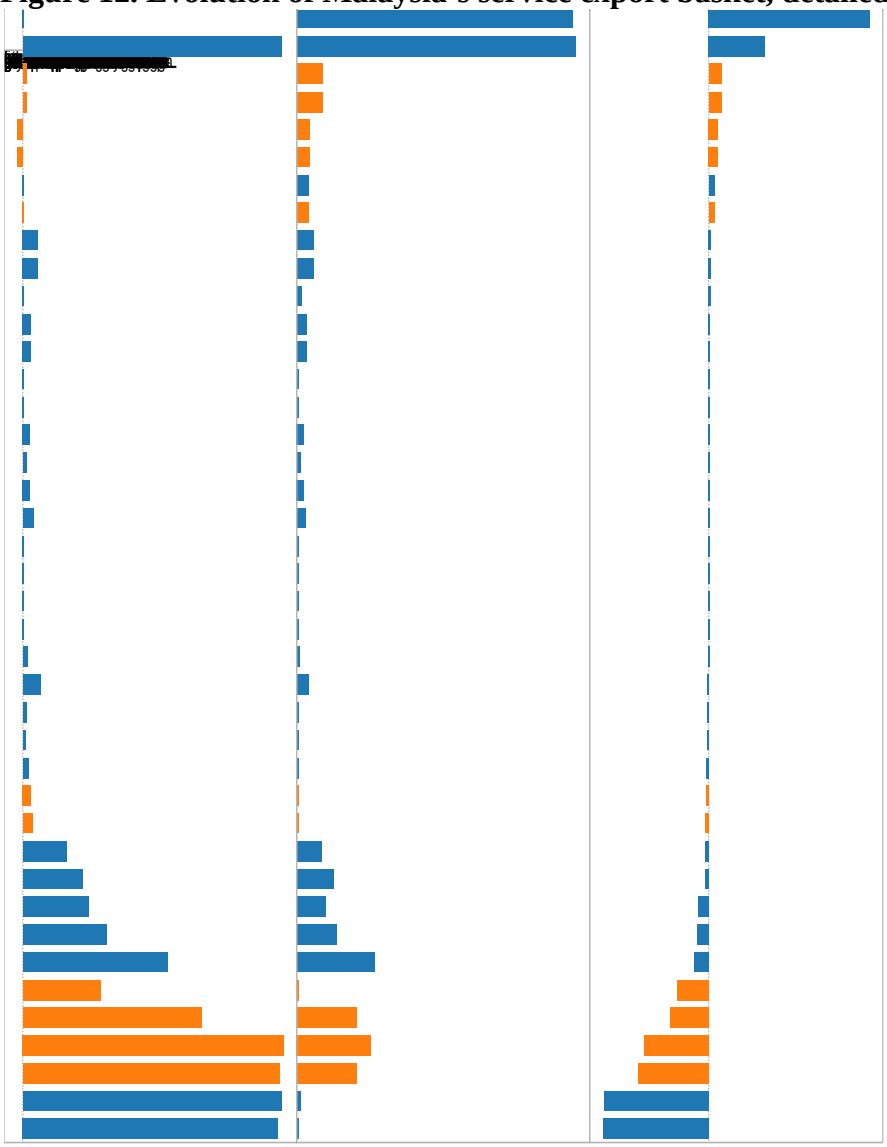

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Source: Balance of Payments, IMF. 2012.

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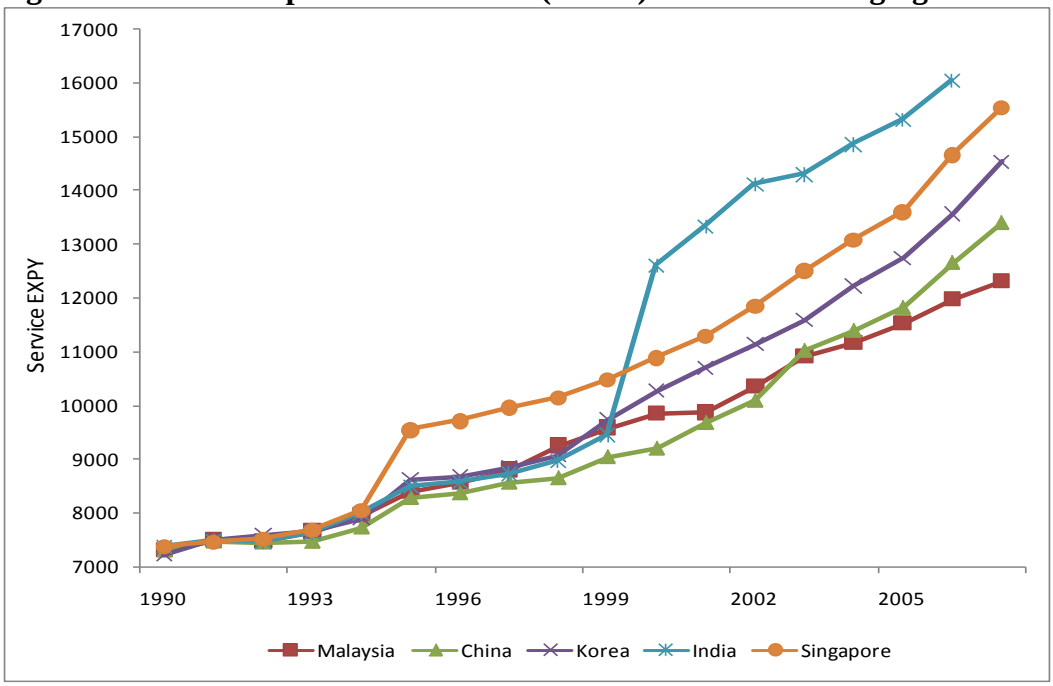

Source: IMF Balance of Payments as described in text.
Note: Sophistication index EXPY

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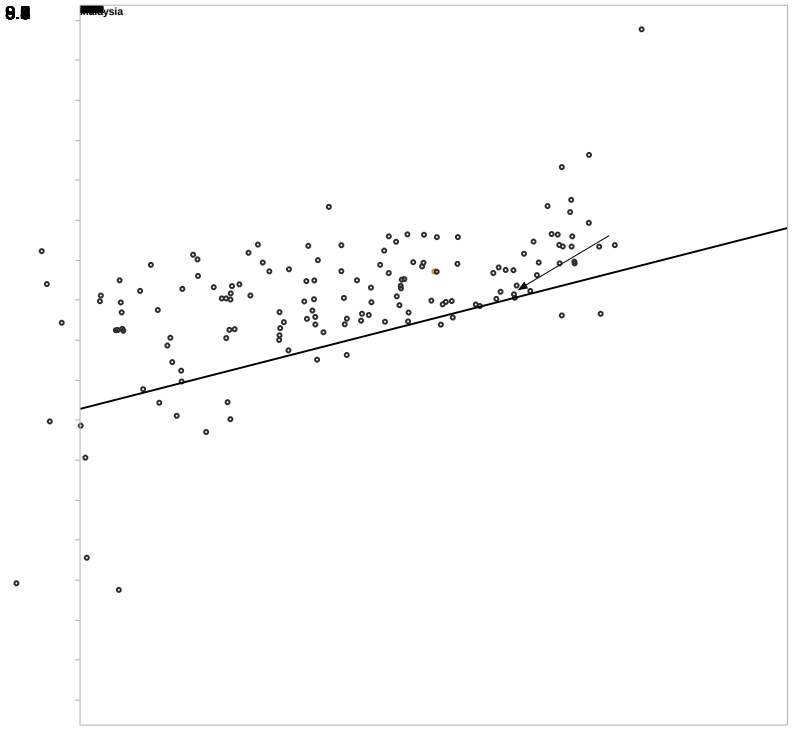
1995-98



2007-09

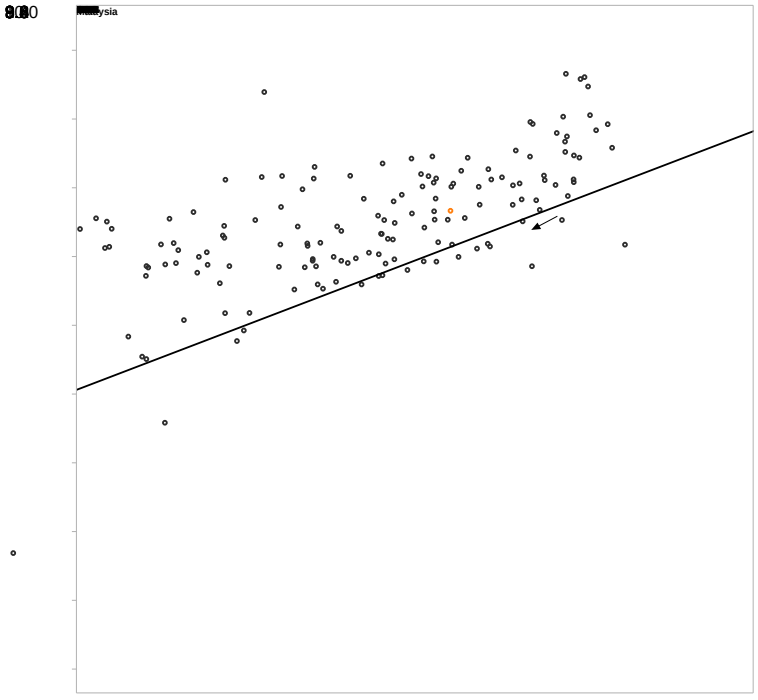
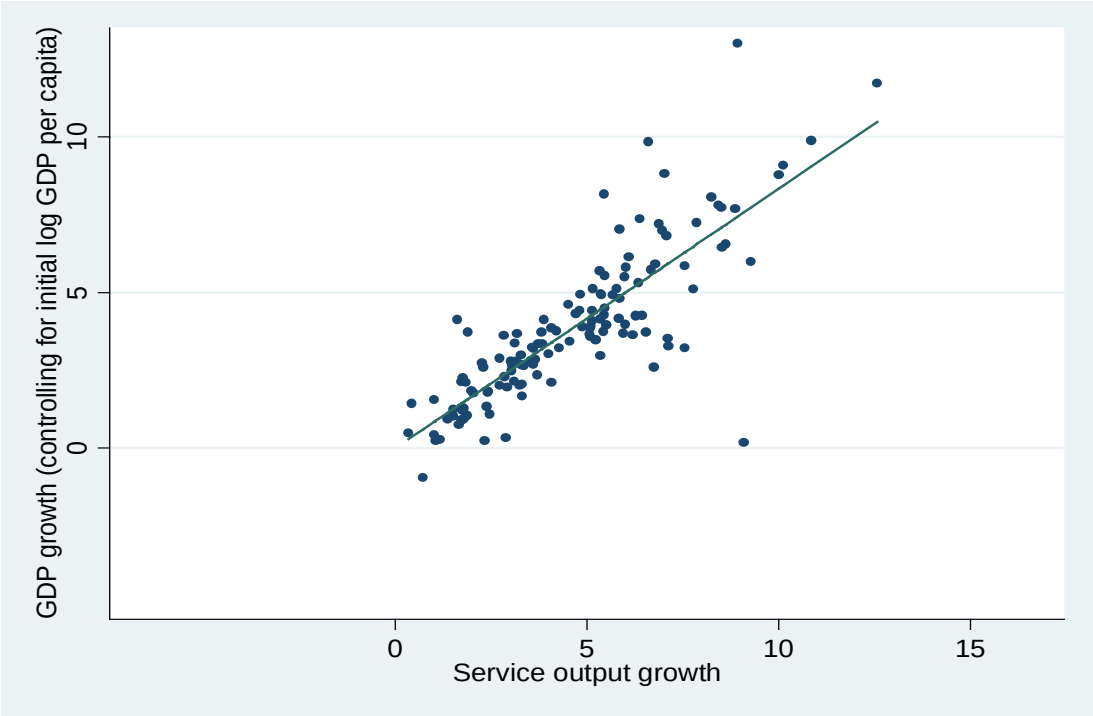
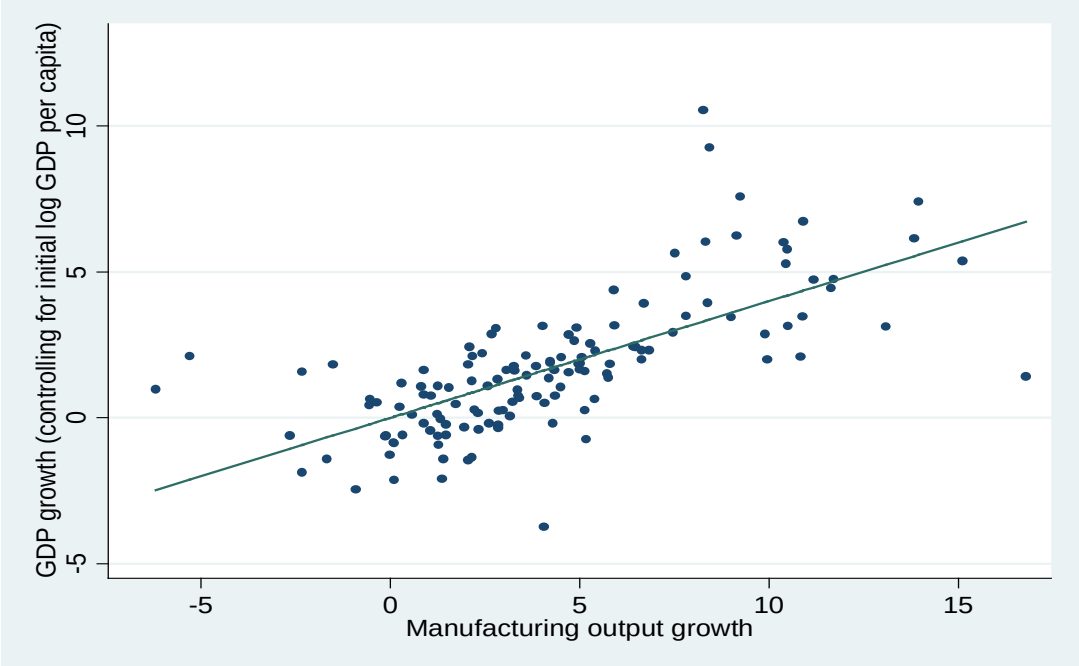


Figure 15. Growth Relationships of Service and Manufacturing Value-Added

Panel A: GDP Growth and Service Value-Added Growth (2000-2005)



Panel B: GDP Growth and Manufacturing Value-Added Growth (2000-2005)



Source: Authors calculations using data from World Bank, World Development Indicators. Note: Each point in the chart corresponds to 5 year growth during 2000-2005 for a specific country. GDP growth rates control for level of initial income per capita. All values are in constant 2000 US$. Growth rates are compounded annual averages. The sample consists of 134 countries.

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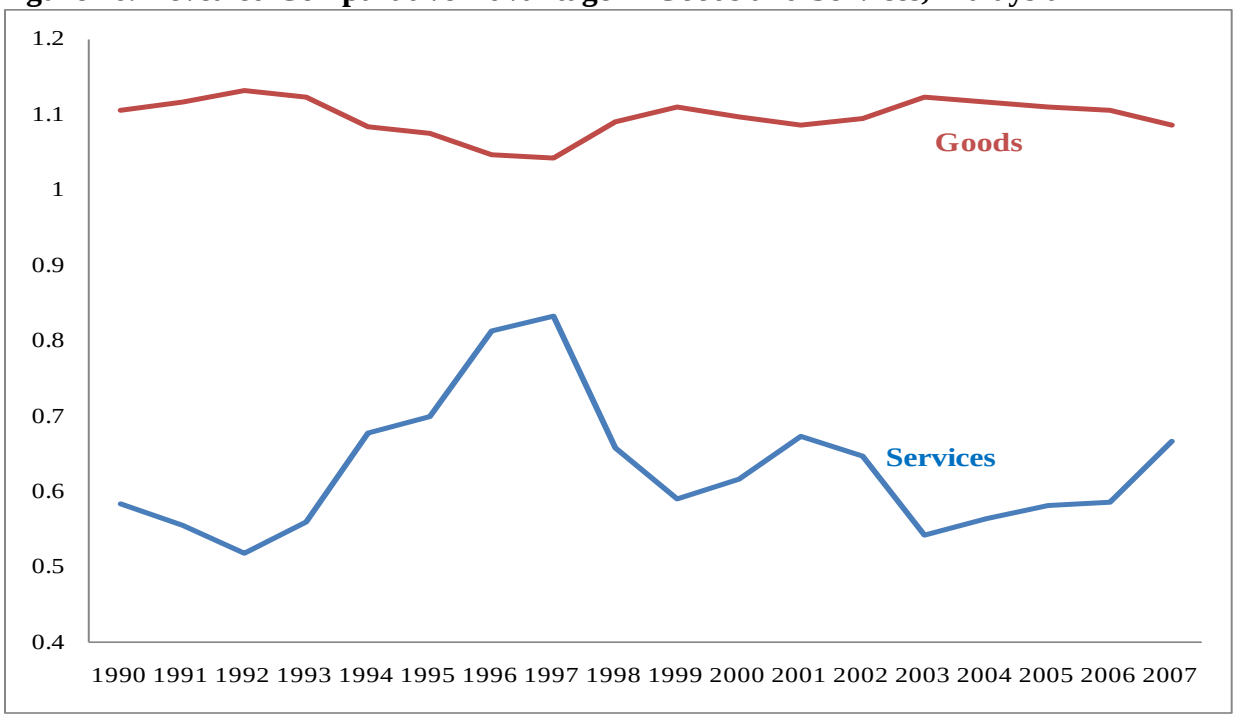
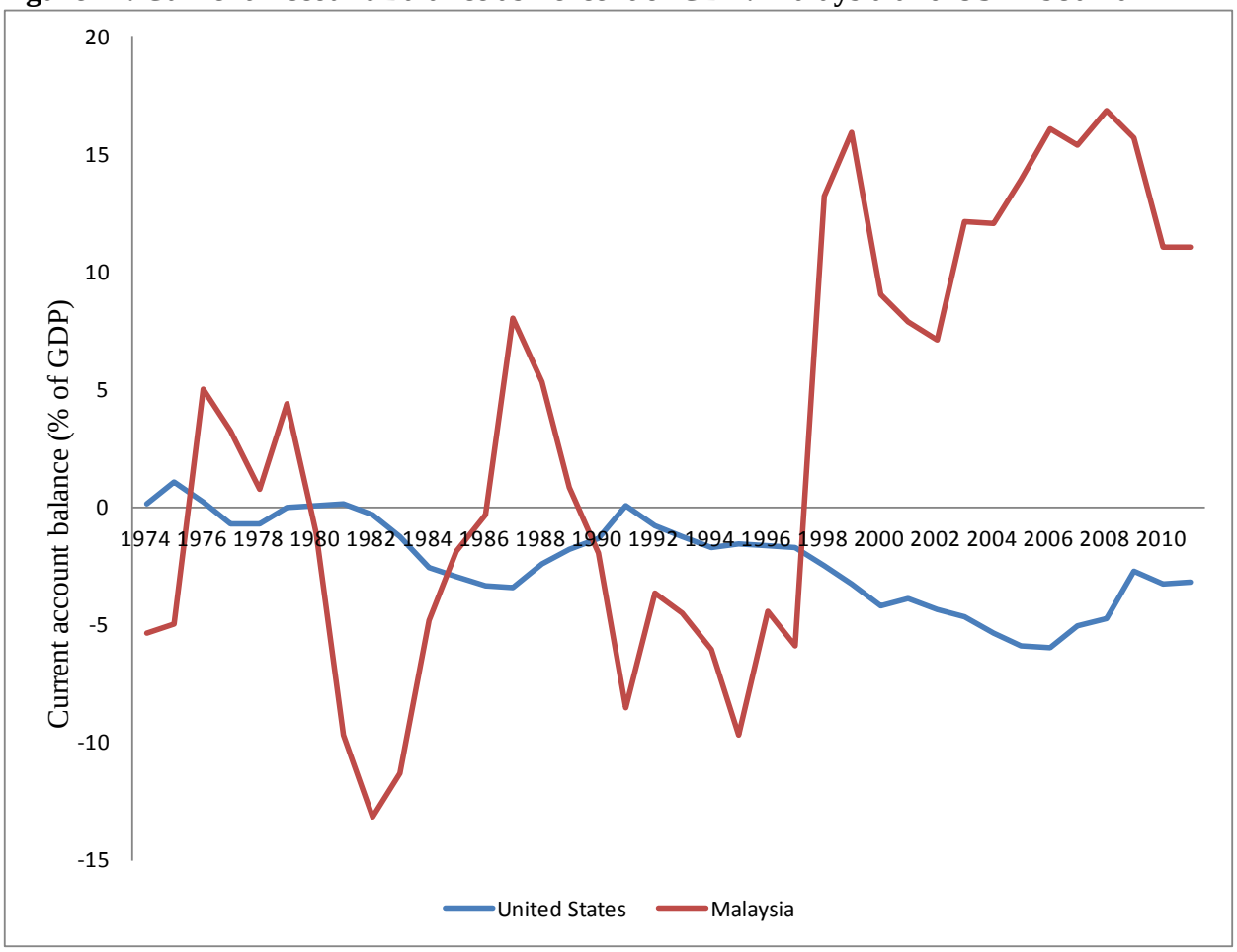


Source: Balance of Payments, IMF and World Development Indicator, WDI. 2008.

Note: The RCA index is calculated using the following concept: where E=exports, c=country index, j=specific sector index w=world, t =total exports of goods and services; Data is in current US$ terms.

$$RCA = \left(E_{CJ} / E_{CT}\right) / \left(E_{WJ} / W_{WT}\right)$$

Figure 17. Current Account Balance as Percent of GDP: Malaysia and USA 1980-2011



Source: World Development Indicators, World Bank. 2013.

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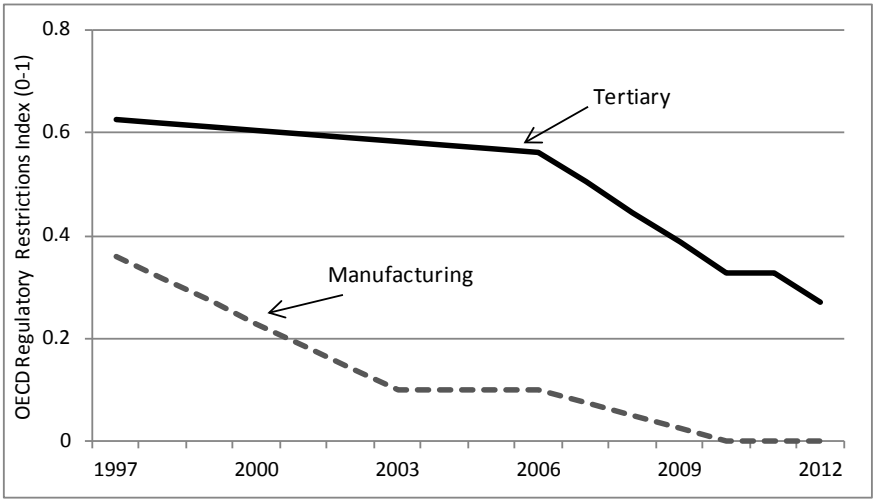
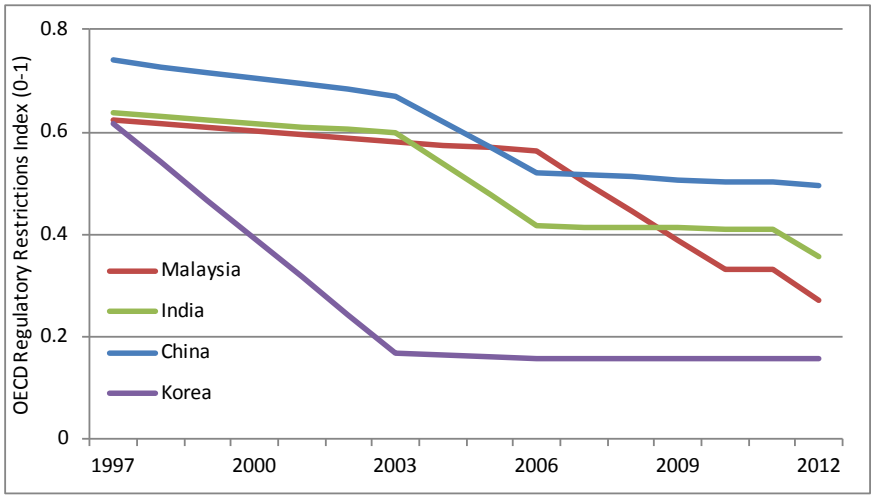


Panel B: FDI Regulatory Restrictions: Tertiary Sector, by Country



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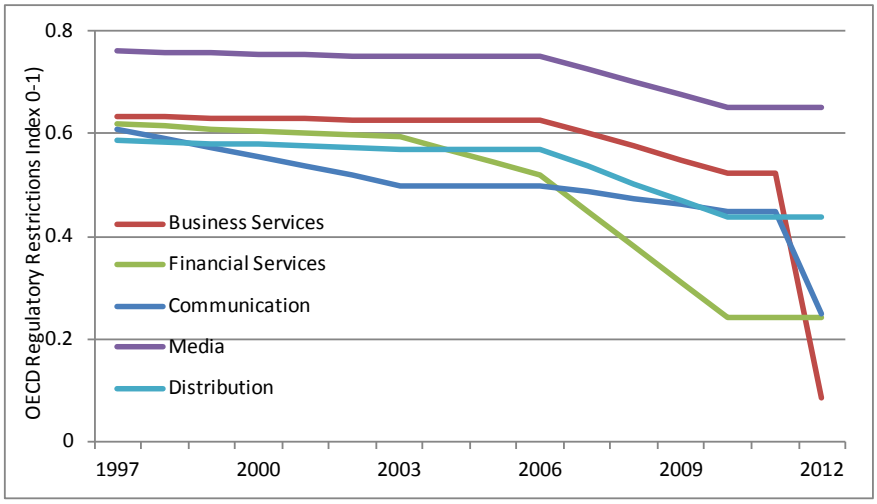

Table 1. Malaysia--Sources of Growth, Total Economy: 1990-2007

Annual percentage rate of change

	1990-2007	1990-2000	2000-2007
Output	6.4	7.3	5.1
Employment	2.7	3.3	1.8
Output per worker	3.6	3.8	3.2
Contribution of:			
Capital	2.7	3.5	1.5
Education	0.3	0.3	0.3
Land	-0.1	-0.1	0.0
Factor Productivity	0.6	0.0	1.4

Source: National Accounts and calculations as explained in text. Percentage changes of the components may not add to the total due to rounding (interaction terms).

Table 2. Malaysia--Sources of Economic Growth by Major Sector, 1987-2007

Annual percentage rate of change

	1990-2007	1990-2000	2000-2007
		Agriculture	
Output	1.8	0.8	3.3
Employment	-0.6	-1.1	0.1
Output per worker	2.5	1.9	3.3
Contribution of:			
Capital	1.3	1.6	0.8
Education	0.3	0.2	0.4
Land	0.2	0.5	-0.1
Factor Productivity	0.6	-0.4	2.1
		Manufacturing	
Output	7.8	9.9	4.8
Employment	2.3	5.0	-1.3
Output per worker	5.3	4.7	6.2
Contribution of:			
Capital	0.7	-0.9	3.0
Education	0.2	0.2	0.2
Land	0.0	0.0	0.0
Factor Productivity	4.4	5.5	2.9
		Services	
Output	7.7	8.6	6.4
Employment	3.9	4.2	3.5
Output per worker	3.6	4.2	2.8
Contribution of:			
Capital	0.7	0.7	0.8
Education	0.3	0.3	0.3
Land	0.0	0.0	0.0
Factor Productivity	2.6	3.3	1.7

Source: Department of Statistics and calculations as explained in the text. Percentage changes of the components may not add to the total due to rounding (interaction terms).

Note: Labor shares used in these calculations are as follows: Total Economy (.38), Agriculture (.45), Manufacturing (.28), and Services (.41)

Table 3. Labor Productivity Levels, by Sector, 2005

PPP International Dollars per worker

	Total	Agriculture	Industry	Services	Ratio (4)/(2)	Ratio (4)/(3)
	(1)	(2)	(3)	(4)	(5)	(6)
Malaysia*	30,593	17,544	49,270	25,439	1.5	0.5
Korea	40,013	17,199	60,012	34,556	2.0	0.6
Thailand	12,647	3,335	24,948	14,818	4.4	0.6
China**	7,230	2,021	14,853	9,608	4.8	0.6
Bangladesh	3,319	1,390	6,208	4,679	3.4	0.8
Nepal	2,596	1,513	1,716	5,552	3.7	3.2
India	4,540	1,597	7,479	8,901	5.6	1.2
Pakistan	7,952	3,556	10,439	11,829	3.3	1.1
Sri Lanka	8,990	4,968	8,906	11,856	2.4	1.3

Sources:

* The utilities industry in Malaysia is included in services rather than industry.

** Data for China is from 2004 and taken from Bosworth and Collins (2003).

Table 4. Sources of Growth by Sector for Malaysia, Thailand, Korea, and Taiwan, China: 1998-2006

Annual percentage rate of change

	Malaysia			Thailand*		
	Output	Employment	Output per worker	Output	Employment	Output per worker
Total Economy	5.6	2.3	3.3	4.9	2.3	2.6
Industry	5.7	1.6	4.1	6.6	3.7	2.8
Manufacturing	7.4	1.1	6.3	7.2	3.9	3.1
Services	6.0	3.7	2.2	3.8	3.8	0.0
Modern Services	7.0	6.5	0.5	0.9	3.6	-2.6
Traditional Services	4.8	3.5	1.3	3.1	4.4	-1.2

	Korea			Taiwan, China*		
	Output	Employment	Output per worker	Output	Employment	Output per worker
Total Economy	5.6	1.9	3.6	3.8	1.1	2.7
Industry	9.6	0.8	8.7	4.4	0.9	3.5
Manufacturing	9.9	0.8	9.1	5.3	0.9	4.4
Services	4.7	3.1	1.5	3.8	2.1	1.7
Modern Services	5.0	5.9	-0.9	3.6	3.5	0.1
Traditional Services	4.4	0.4	4.0	4.2	1.6	2.6

Sources:

Note: Modern services is defined as finance, insurance, and business services. Traditional services is defined as wholesale/retail trade and hotels and restaurants.

* Years for Thailand are 1998-2005, and total services excludes utilities.
** Years for Taiwan, China are 1999-2006

Table 5 : Share of Service and Goods Exports in Total Exports

	Share of service exports in total exports		*Share of goods exports in total exports*		*Share of computer & information services*
	1982	**2006**	**1982**	**2006**	**2006**
Log GDP per capita	-4.77	-1.99	-5.53	1.99	-14.01
	(29.11)	(27.22)	(29.91)	(27.22)	(14.21)
Log GDP per capita^2	0.45	0.78	0.96	-0.78	2.92
	(4.20)	(3.96)	(4.31)	(3.96)	(2.12)
Malaysia indicator	-13.90***	-17.76***	14.09	17.76***	-0.29
	(2.68)	(2.78)	(2.66)	(2.78)	(1.51)
Singapore indicator	2.81	-16.50***	-2.66	16.50***	
	(2.16)	(4.16)	(2.15)	(4.16)	
India indicator	1.38	19.09***	-3.16	-19.09***	56.44***
	(4.39)	(3.29)	(4.45)	(3.29)	(1.78)
China indicator	-0.89	8.79	-0.88	-8.79	-1.86
	(7.46)	(8.34)	(7.48)	(8.34)	(4.24)
Control for size	Yes	Yes	Yes	Yes	Yes
Observations	109	125	111	125	104

Source: WDI
Note: *** represents significance at 1%, ** represents significance at 5%, * represents significance at 10%. Country size is measured by land.

Table 6. Cross-Country Determinants of Investment and Saving, Percent of GDP

Panel A			Panel B		
Investment (% of GDP)	1995	2006	*Domestic Savings (% of GDP)*	1995	2006
Log real GDP per capita	12.07***	8.00	Log real GDP per capita	15.21***	14.81*
	(3.36)	(2.83)		(5.81)	(8.15)
Log real GDP per capita^2	-0.74	-0.49***	Log real GDP per capita^2	-0.66***	-0.59
	(0.21)	(0.18)		(0.37)	(0.52)
Malaysia	20.97**	-2.02	Malaysia	17.51***	11.84***
	(0.91)	(0.70)		(1.43)	(1.92)
India	9.59***	13.62***	India	13.25***	14.09***
	(2.02)	(2.04)		(2.61)	(5.05)
China	18.18***	22.86***	China	27.81***	27.03***
	(2.18)	(2.07)		(2.80)	(5.19)
Control for size	Yes	Yes	Control for size	Yes	Yes
Observations	164	137	Observations	164	138

Source: WDI
Note: *** represents significance at 1%, ** represents significance at 5%, * represents significance at 10%. Country size is measured by land.

Table 7. Panel A. Service is less vulnerable to the investment downturn

Average Service growth	1995-2007
Investment (as ratio of GDP)	0.16***
Initial GDP per capita	0.000
Openness (trade as % of GDP)	0.003
Credit (% of GDP)	-0.01
Population growth	0.04
Control for size	Yes
Observations	161

Panel B. Malaysia's "manufacturing" output is more vulnerable to the investment downturn

Average Manufacturing growth	1995-2007
Investment (as ratio of GDP)	0.74***
Initial GDP per capita	0.000
Openness (trade as % of GDP)	0.01
Credit (% of GDP)	-0.08***
Population growth	0.94**
Control for size	Yes
Observations	157

Source: WDI

Note: *** represents significance at 1%, ** represents significance at 5%, * represents significance at 10%. Country size is measured by land.