

The Manufacturing Sector and the Future of Malaysia's Economic Development (Sektor Pembuatan dan Masa Depan Pembangunan Ekonomi Malaysia)

Ha-Joon Chang
(Faculty of Economics, University of Cambridge)

ABSTRACT

The paper takes on the increasingly popular view that the service sector should become Malaysia's new engine of growth, given the relative stagnation of its manufacturing sector in the last decade and the rise of post-industrial knowledge economy, in which the engines of growth consist of knowledge-intensive services such as finance, engineering, and design. The paper begins by explaining why the relative decline of manufacturing, or de-industrialisation, occurs and what kinds of negative consequences it may have on a country's productivity growth and balance of payments. After this, the paper makes a number of points criticising the 'post-industrial knowledge economy' discourse. First, the knowledge economy is nothing new, as it was never the physical act of making things but the quality of the knowledge behind production that determined a country's economic success, even in the industrial era. Second, many knowledge-intensive services look 'new' only because they have been 'spun off' or 'outsourced' from the manufacturing firms that previously produced them. Third, we cannot separate the manufacturing sector from the 'knowledge' sector, as it is the key source of new productive knowledge. Fourth, most service activities that have high rates of productivity are producer services for the manufacturing sector and can therefore be sustained without a successful manufacturing sector in the long run. Finally, the present article debunks some myths about the supposed service-based success stories of Switzerland, Singapore, and (more recently) India. In the final section, the paper discusses the policy implications for Malaysia. While warning against making a fetish out of manufacturing, Malaysia needs to further develop its national technological capabilities in manufacturing through sustained investments in machinery, education, training, and R&D, supported by better policies regarding government procurement, social welfare, and other areas, in order to become a truly developed economy.

ABSTRAK

Kertas ini mengambil kira pandangan yang semakin mendapat perhatian mengenai sektor perkhidmatan yang sewajarnya menjadi jentera pembangunan yang baharu bagi Malaysia. Memandangkan sedekad yang lalu, Malaysia berhadapan dengan kelembapan pertumbuhan sektor pembuatan, ditambah pula dengan kemunculan ekonomi pengetahuan (k-ekonomi), di mana jentera pembangunan negara beranjak kepada perkhidmatan berbentuk pengetahuan intensif seperti kewangan, kejuruteraan, dan reka bentuk. Kertas ini dimulakan dengan menjelaskan alasan mengapa berlakunya nyah-perindustrian dalam sektor pembuatan dan apakah kesan negatif yang berlaku yang boleh menjejaskan peningkatan produktiviti dan imbangan bayaran negara. Seterusnya, kertas ini mengemukakan beberapa kritikan terhadap wacana 'k-ekonomi pasca-perindustrian' iaitu: Pertama, k-ekonomi bukan sesuatu yang baharu, bahkan kejayaan ekonomi sesebuah negara semasa era perindustrian juga sebenarnya ditentukan oleh kualiti pengetahuan. Kedua, banyak perkhidmatan intensif pengetahuan kini sebenarnya kelihatan seperti baharu hanya kerana ia telah melalui proses 'pengitaran semula' atau mendapat 'penyumbangan luar.' Ketiga, sektor pembuatan dan pengetahuan tidak boleh dipisahkan kerana ia merupakan sumber utama bagi pengetahuan produktif yang baharu. Keempat, kebanyakan aktiviti perkhidmatan yang mempunyai kadar produktiviti yang tinggi adalah pembekal perkhidmatan untuk sektor pembuatan, justeru dalam jangka masa panjang ia mampu dikekalkan tanpa kehadiran sektor pembuatan. Akhir sekali, kertas ini memaparkan beberapa mitos tentang kejayaan firma berasaskan perkhidmatan di Switzerland, Singapura dan mutakhir ini, India. Bahagian terakhir, kertas ini membincangkan implikasi dasar bagi Malaysia. Ia mencadangkan untuk menjadi sebuah negara ekonomi membangun, kebergantungan kepada sektor pembuatan tidak harus dikurangkan. Kertas ini menyarankan agar Malaysia lebih menekankan kepada pembangunan keupayaan teknologi dalam sektor pembuatan melalui pelaburan berterusan dalam mesin dan peralatan, pendidikan, latihan dan R&D. Ini perlulah disokong oleh dasar-dasar kerajaan yang lebih baik berkaitan perolehan, kebajikan sosial, dan bidang-bidang lain.

Keywords: Knowledge-intensive services; Post-industrial knowledge economy; De-industrialisation; New productive knowledge; Malaysia's economy

INTRODUCTION

Since its independence in 1957, Malaysia has achieved an impressive development of its manufacturing sector and of its overall economy. Having initially been highly dependent on ‘natural’ resources like rubber and tin (‘natural’ is used because there is nothing natural about rubber, which was stolen and transposed from the Amazon by the British), it first diversified into other natural resources, like palm oil. While developing some manufacturing industries that are derived from its natural resource bases, such as the palm oil processing industry, Malaysia has also developed many manufacturing industries that are not related to it – notably electrical and electronics (E&E), as well as the automobile and steel industry.

The share of manufacturing in Malaysia’s gross domestic product (GDP) rose from 8.6% in 1960 to 32.2% in 2005, while the share of manufactured goods in total trade has risen from around 25% in the early 1980s to around 80% today. As of the late 1990s (1998, to be precise), Malaysia was identified as one of the few countries that swam against the tide of de-industrialisation that had swept the developing world since the 1980s, despite being very resource-rich (Palma 2005). Particularly impressive is its success in upgrading its exports. UNIDO (2009) reports that Malaysia’s manufactured export structure in 1976 “was substantially less sophisticated than the level predicted by its income per capita”, but that by 2003 “it had achieved one of the most sophisticated export structure among developing countries, well above the level predicted, based on its income”. UNIDO measures the degree of sophistication of manufactured exports by the weighted average of GDP per capita of all countries exporting the good. The weights used are the export intensity of the sector in each country (UNIDO 2009: 45). Malaysia is ranked third in the world league table of hi-tech exporters, as reported by the World Bank – 40% of its manufactured exports are hi-tech products (World Bank 2011: 352-3) (Table 5).

As impressive as these achievements appear, they leave a lot to be desired. Malaysia has yet to achieve international success in its automobile and steel industries, which were launched with the ambition to create world-class companies. Unlike its more successful neighbours, such as Singapore, South Korea (henceforth Korea), and Taiwan – which have all achieved a high-income status – Malaysia still remains an upper-middle-income economy, with per capita income around \$7 000.

The comparison with Korea illustrates what Malaysia could have achieved particularly poignantly. In the early 1960s, both countries were highly reliant on natural resources exports – rubber and tin in the case of Malaysia and tungsten and fish in the case of Korea – except that Malaysia was much better endowed with natural resources and had a per capita income more than two-and-a-half times (2.6 times, to be precise) higher than that of Korea – \$215 versus Korea’s \$82. Five decades

later, the position has been exactly reversed. In 2009, the per capita income of Korea was 2.7 times higher (\$19 830 vs. \$7 230), largely thanks to its mastery of core technologies and organizational skills, as well as brand-building (e.g., Samsung, Hyundai, LG, POSCO) in a number of key manufacturing industries, such as electronics (semiconductors, mobile phone, display screens), shipbuilding, automobile, and steel (the income data are from World Bank 2011: 344-345) (Table 1).

Even in the E&E sector, where it has achieved world competitiveness in certain market segments, Malaysia still relies heavily on foreign companies for core technologies, production organization, and branding and marketing, thereby not being able to capture the most lucrative parts of the value chain (Rasiah 2004; 2010). So, despite being the third most hi-tech exporter in the world, Malaysia still has a per capita income level of \$7 230, a level that is between 36% (compared to Korea, with a \$19,830 per capita income and ranked fourth on this indicator) and 13% (compared to Switzerland, with a \$56 370 per capita income and ranked tenth on this indicator) of other hi-tech economies (see Table 1 below). Malaysia’s situation in this regard is much better than the Philippines, which, despite being *the* most hi-tech economy in the world, has only 3% of the Swiss income and only 4% of the US income (\$47 240), but this is hardly a consolation for a country that is aspiring to be a high-income economy within less than a single generation.

As seen in the case of Singapore (per capita income of \$37 220, as of 2009) and Ireland (per capita income of \$44 310), reliance on foreign companies does not necessarily mean a low income if the country is able to capture the higher-end activities in the value chain. Ireland’s per capita income shrank by around 12% between 2006 and 2010, with a bleak prospect for future growth, due to its failures with its ‘financial hub’ strategy and the consequent collapse of the national economy. This is a salutary lesson for Malaysia and other countries that want to move away from manufacturing into finance. However, this requires that the country offer high-quality inputs that other countries cannot offer – such as well-trained engineers, highly-skilled workers, and high-quality infrastructure. At the moment, Malaysia is not able to offer such inputs and thus can only maintain a middle-income status.

More worryingly, Malaysia’s manufacturing sector has suffered from relative stagnation in the recent period. Having its progress arrested during the Asian financial crisis of 1997-98, the share of the manufacturing sector as a percentage of the total GDP peaked around 2000 at 32.6% and has since been on a declining trend, although there have been ups and downs.

In the meantime, China has made giant strides as a manufacturing power, attracting large amounts of foreign direct investments, some of which could have come to Malaysia, and edging middle-income countries, like Malaysia, out of many export markets. There is an

increasing feeling that Malaysia – being rapidly caught up with by China while being unable to catch up with the more advanced economies in terms of manufacturing

technologies, organizational skills, brand-building – may now be stuck in the ‘middle income trap’ (Yusuf & Nabeshima 2009a, 2009b).

TABLE 1. Share of manufactured exports and share of hi-tech exports in them (World Bank data, ordered according to the latter, excluding countries with less than 50% share in the former)

Ranking and the country name	Share of hi-tech exports in total manufactured exports (%)	Share of manufactured exports in total merchandise exports (%)	Per capita income (Gross National Income in current US dollars)
1 the Philippines	66%	86%	1,790
2 Singapore	51%	70%	37,220
3 Malaysia	40%	70%	7,230
4 Korea	33%	87%	19,830
5 China	29%	94%	3,590
6 US	27%	67%	47,240
7 Ireland	26%	86%	44,310
8 Thailand	25%	75%	3,760
9 Hungary	24%	80%	12,980
10 Switzerland	23%	90%	56,370
11 the Netherlands	22%	55%	49,350
12 Finland	21%	81%	45,680
13 France	20%	79%	42,680
14 Mexico	19%	76%	8,920
14 UK	19%	72%	41,520
16 Japan	18%	89%	37,870
17 Sweden	16%	76%	48,930
17 Denmark	16%	67%	58,930
17 Israel	16%	94%	25,740
20 Canada	15%	50%	41,170

Source: World Bank (2011), Selected Indicators, Table 1 (pp. 344-345) for income figures, Table 5 (pp. 352-3) for export figures.

This has prompted many people to focus on the service sector as a new alternative engine of growth for Malaysia. Being unable to make further progress in manufacturing, in this view, the better alternative for Malaysia is to develop its service sector. The fact that the service sector is now the largest and fastest growing sector in the Malaysian economy – growing at an average rate of 6.8% for the past 5 years, compared to the average rate of GDP growth of 4.3% for the same time period (UNDP data) – adds to the weight of this argument.

This view is further strengthened by the increasingly popular discourse of post-industrial knowledge economy. According to this discourse, the world has now entered a ‘post-industrial’ stage, in which the engine of growth is not manufacturing any more but knowledge-intensive services, such as finance, engineering, design, marketing, logistics, and consultancy. Countries like Switzerland and Singapore are presented as the examples of service-based prosperity. Some even believe that developing countries now can, and should, skip industrialization and enter the ‘post-industrial’ stage directly. The apparent success of services exports by India is frequently cited as evidence that this is not only possible but also desirable.

The view that knowledge-intensive services are the new engine of growth has become very popular in Malaysia too. The Malaysian government has started actively promoting the services sector. One key move has been the liberalization of 27 services sub-sectors in April 2009.

THE LIMITS OF THE DISCOURSE OF POST-INDUSTRIAL ECONOMY

The discourse of post-industrialism starts from the observation that in the last few decades all rich countries have experienced ‘de-industrialisation’ in the sense that the shares of manufacturing sector in national output and in employment have fallen. So, according to this argument, the decline of manufacturing is not only something natural that we need not worry about, but something that we should really celebrate as a sign of development.

There is a truth in the argument that above a certain level of development, countries become ‘post-industrial’, or ‘de-industrialised’. However, this is unequivocally the

case only in terms of employment.

It is true that much lower proportions of people in the rich countries work in factories than used to be the case. For example, in the late 19th and the early 20th century, in some countries (notably the UK and Belgium), around 40% of those employed worked in the manufacturing industry. Today, the ratio is at most 25% and in some countries (especially the US, Canada, and Britain) between 10% and 15%.

However, even the richest economies have *not* really become post-industrial in terms of their production and consumption. In order to see this point, we first need to understand why de-industrialisation has happened in the rich countries.

A small, but non-negligible, part of de-industrialisation is due to ‘optical illusions’, in the sense that it reflects changes in statistical classification rather than changes in real activities. One such illusion is due to the outsourcing of some services that used to be provided in-house by manufacturing firms and thus were counted as manufacturing output (ranging from low-grade services, like catering and cleaning, to high-end services, like research and design). When these activities are outsourced, recorded service outputs increase without a real increase in service activities. Even though there is no reliable estimate of its magnitude, experts agree that outsourcing has been a significant source of de-industrialisation, at least in the US and the UK, especially during the 1980s.

In addition to the outsourcing effect, the extent of manufacturing contraction is exaggerated by what an important report by the UK government’s Department for Business, Enterprise, and Regulatory Reform (BERR 2008) calls the ‘reclassification effect’. According to BERR (2008), up to 10% of the fall in manufacturing employment between 1998 and 2006 in the UK may be accounted for by some manufacturing firms, seeing their service activities becoming predominant, applying to the government statistical agency to be re-classified as service firms, even when they are still engaged in some manufacturing activities.

One cause of genuine (as opposed to the above-mentioned ‘illusory’) de-industrialisation has recently attracted a lot of attention. It is the rise of manufacturing imports from low-cost developing countries, especially China. Nevertheless, however dramatic it may appear, it is not the main explanation for de-industrialisation in the rich countries. Rowthorn and Ramaswamy (1999) estimate de-industrialisation (of the rich countries) due to such trade to be around 18% for the 1970-94 period, while Rowthorn and Coutts (2004) estimates the figure to be around 30% for the 1992-2002 period. Bolhoul (2004) estimates the figure for 1970-2002, for the OECD, to be about 15%.

The prevailing view is that the bulk of de-industrialisation in the rich countries can be largely explained by the natural tendency of the (relative) demand for manufactured goods to fall with rising

prosperity. However, a closer look reveals that this demand effect is actually very small. It looks as if we are spending ever higher shares of our income on services *not* because we are consuming ever more services in absolute terms *but* mainly because services are becoming ever more expensive in relative terms due to the falling prices of manufactured goods.

With the (inflation-adjusted) amount of money you paid to get a personal computer ten years ago, today you can probably buy three, if not four, computers of equal or even greater computing power (and certainly smaller sizes). As a result, you probably have two computers, rather than just one. But even with two computers, the portion of your income that you spend on computers has gone down quite a lot (for the sake of argument, I am assuming that your income, after adjusting for inflation, is the same). In contrast, you are probably getting the same number of haircuts as you did ten years ago. The price of haircuts has probably gone up somewhat, so the proportion of your income that goes to your haircut is greater than it was 10 years ago. The result is that it looks as if you are spending a greater (smaller) portion of your income on haircuts (computers) than before, but the reality is that you are actually consuming much more computers than before, while your consumption of haircuts is the same.

Indeed, if you control for the changes in relative prices and measure things in *constant* prices, the decline of manufacturing in the rich countries has been far less steep than it appears to be. For example, in the case of the UK, the share of manufacturing in total output in *current* prices fell by over 40% between 1955 and 1990 (from 37% to 21%). However, when taking the relative price effects into account, the fall was only by just over 10% (from 27% to 24%) (Alford 1997: 6) (Table 1). In other words, the *real* demand effect – that is the demand effect after taking relative price changes into account – is small.

The above discussion shows that much of de-industrialisation actually happens not because of the fall in real demand for manufactured products, but because of the fall in the relative prices of manufactured goods, thanks to the higher productivity growth rates in manufacturing industries than in services (this theory was first systematically developed by Rowthorn and Wells (1987). As the output of the manufacturing sector increases faster than the output of the service sector, the prices of the manufactured goods relative to those of services fall.

In manufacturing, where mechanisation and the use of chemical processes are much easier, it is easier to raise productivity than in services. In contrast, by their very nature, many service activities are inherently impervious to productivity increase *without diluting the quality of the product*.

In some cases, the very increase in productivity will destroy the product itself – we wouldn’t say that its productivity increased by three times because a string quartet has trotted through a 27-minute piece in nine

minutes. For some other services, the apparent higher productivity is due to the debasement of the product. For example, a teacher can raise her apparent productivity by four times by having four times many pupils in her classroom, but the quality of her 'product' has been diluted by the fact that she cannot pay as much individual attention as before. For another example, a lot of the increases in retail service productivity in countries like the US and Britain have been brought about by lowering the quality of the retail service itself. Productivity increases in retail services in these countries have been achieved by passing on the costs to the consumers. The means used include: the use of fewer shop assistants, thereby reducing the wage bill but making customers wait longer before they are served and increasing their time costs; making the customer use self-service check-outs, where the customer does the work of the cashier; locating stores outside of population centres, thereby reducing store rents but forcing the customers to take longer shopping journeys, which imposes more time and transportation costs on the customers (e.g., more fuel, higher bus fares); making stores bigger, thereby reducing the logistic costs but forcing the customers to spend more time shopping, as they have to walk longer aisles; reducing the frequency and the precision of deliveries, thereby reducing the transportation costs (as the delivery vehicles need to make fewer trips and spend less time travelling between delivery points) but forcing the customer to spend more time waiting and even skipping work, which then imposes costs on the customer and/or their employers. To sum up, much of de-industrialisation – the fall in the share of manufacturing in total output in current prices – can be explained by the faster rate of productivity growth in manufacturing, compared to services, which leads to the rise in the relative prices of services.

If de-industrialisation is due to the very dynamism of a country's manufacturing sector, isn't it a good thing? Not necessarily. The fact that de-industrialisation is mainly caused by the *comparative* dynamism of the manufacturing sector *vis-a-vis* the service sector does not tell us anything about how well it is doing compared to its counterparts in other countries. If a country's manufacturing sector has slower productivity growth than its counterparts in other countries, it will become internationally uncompetitive, leading to balance of payments problems in the short run and falling standards of living in the long run. In other words, de-industrialisation may be accompanied by either economic success or failure. Countries should not be lulled into a false sense of security by the fact that de-industrialisation is due to *comparative* dynamism of the manufacturing sector, as even a manufacturing sector that is very undynamic by international standards can be (and usually is) more dynamic than the service sector of the same country.

Whether or not a country's manufacturing sector is dynamic by international standards, the shrinkage of the

relative weight of the manufacturing sector has a negative impact on productivity growth. As the economy becomes dominated by the service sector, where productivity growth is slower, productivity growth for the whole economy will slow down. Unless we believe (as some do) that the countries experiencing de-industrialisation are now rich enough not to need more productivity growth, productivity slowdown is something that countries should get worried about – or at least reconcile themselves to.

Moreover, de-industrialisation also has a negative effect on a country's balance of payments because services are inherently more difficult to export than manufactured goods. This is because, unlike manufactured goods that can be shipped anywhere in the world, most services require that providers and consumers in close proximity to each other. With severe restrictions on immigration, the provision of such services simply cannot happen.

Given this, a rising share of services in an economy means that a country, other things being equal, will have lower export earnings. Unless the exports of manufactured goods rise disproportionately, the country won't be able to pay for the same amount of imports as before. If its de-industrialisation is of a negative kind, accompanied by weakening international competitiveness, the balance of payments problem could be even more serious as the manufacturing sector will not be able to increase its exports. We will return to this issue later.

HOW ABOUT THE KNOWLEDGE ECONOMY?

But how about the rise of the knowledge economy, where ideas are the main source of wealth? Gone are the days when services were characterized by low productivity growth and low tradability, it is argued, and now knowledge-intensive services – such as finance, engineering, design, accounting and consultancy – are the engines of growth. In such a world, developing countries need not industrialise in order to become rich. It may even be argued that sticking to outdated manufacturing industries is positively harmful for economic development in this 'brave new world'.

Against this, it must be pointed out that the knowledge economy is nothing new. We have always lived in one in the sense that it has always been a country's command over knowledge (or lack of it) that made it rich (or poor). China was the richest country in the world during the first millennium because it possessed technical knowledge that others did not – paper, movable type, gun powder, and the compass being the most famous, but by no means the only ones. Britain became the world's economic hegemon in the 19th century because it came to lead the world in technological innovation. When Germany became as poor as Peru and Mexico after the Second World War, no one suggested that it should be reclassified as a developing country, because people knew that it still had command over technological, organisational, and

institutional knowledge that had made it one of the most formidable industrial powers before the War.

Moreover, it should be noted that many knowledge-intensive services (e.g., research, engineering, design) have always been there – inside manufacturing firms. They look new only because they have been ‘spun off’ or ‘outsourced’ from those firms. It is not as if manufacturing firms used to engage only in mindless physical operations and began using those knowledge-intensive producer services only recently.

More importantly, it is wrong to separate the manufacturing sector from the ‘knowledge’ sector. The manufacturing sector itself has been the key source of new productive knowledge (see, among many others, Rosenberg (1982), Lundvall (1992), and Nelson (1993)).

First of all, there is a lot of learning-by-doing (Arrow 1962) and learning-by-using (Rosenberg 1982) in the manufacturing sector. This means that a lot of new knowledge is acquired in the actual process of making things. Second, insofar as deliberate efforts are made to generate new knowledge through R&D, a lot of such efforts are generated in the process of solving concrete problems arising from production activities in the manufacturing sector. This means that little knowledge is generated by ‘pure’ knowledge (service) industries. Third, the manufacturing sector has a lot more ‘linkages’ with other sectors than the service industries (the concept of linkages is due to Hirschman (1958)). Therefore, other things being equal, the manufacturing sector stimulates more technological progress in other activities than does the service sector.

All of this means that those who believe that developing countries don’t need to industrialise and develop by jumping directly into the ‘knowledge economy’ seriously misunderstand the nature of modern economic activities. Given the way in which new knowledge is generated – whether deliberately (through conscious research and development) or not (through learning-by-doing or learning-by-using) – the production process in the manufacturing sector is the key source for new productive knowledge. Given all this, any attempt to de-value the importance of manufacturing on the ground that it is knowledge-poor low-grade activity is highly misleading.

CAN COUNTRIES ACHIEVE PROSPERITY BY SPECIALIZING IN SERVICES?

Of course, there are some service activities – such as financial services, research, engineering, design, and logistics – which have faster rate of productivity increase than other services. However, this does not mean that countries can ditch manufacturing and rely on such services.

First of all, as revealed by the 2008 financial crisis, much of the productivity growth in financial services was due not to a real rise in their productivity (e.g., reduction

in trading costs due to better computers) but to financial innovations that obscured (rather than genuinely reduced) the riskiness of financial assets, thereby allowing the financial sector to grow at an unsustainably rapid rate.

Moreover, the above-mentioned high productivity-growth services are mostly ‘producer’ services, for which the main customers are manufacturing firms, so their growth is in large part dependent on the vitality of the manufacturing sector. They are complements of, rather than substitutes for, manufacturing activities.

Of course, the interdependence of dynamic services and manufacturing does not preclude the possibility that individual countries can specialize in those services and export them. However, apart from the balance of payments problem that such specialization is likely to generate (more on this later), a country’s international competitiveness in those dynamic services cannot be maintained in the long run without a strong manufacturing sector within its borders. In services like engineering and design, insights gained from the production process are crucial. Given this, a weakening manufacturing base will eventually lead to a decline in the quality and exportability of these services over time. Countries that lose production processes will eventually lose design, engineering and other producer services.

Apart from all these theoretical considerations, the truth of the matter is that, except for very small tax havens (e.g., Monaco), there is no country that has attained a high standard of living on the basis of services. Against this point, many people cite the cases like Switzerland, Singapore, and Luxembourg as examples of service-based prosperity, but this cannot be further from the truth.

As we see from Table 2, Switzerland and Singapore are the second and the third most industrialised countries in the world respectively, measured by per capita manufacturing value added. Luxembourg, while not as industrialised as Switzerland and Singapore, is more industrialised than the UK (the former ‘workshop of the world’) or Taiwan and Korea (today’s manufacturing powerhouses).

One more problem with service-based economic development is that the increase in the weight of the service sector has a negative impact on the country’s balance of payments because services are inherently more difficult to export as we discussed earlier.

Balance of payments problems are bad enough for rich countries, but they are critical obstacles to the progress of developing countries. By definition, these countries need to import advanced technologies from the technologically more advanced countries – sometimes through technological licensing, but mostly through the purchase of machines and intermediate goods that embody more advanced technologies – and therefore restrictions on their ability to import also restrict their ability to develop their economies.

Of course, not all services are equally non-tradable. The knowledge-based services that I mentioned earlier – finance, consulting, engineering, and so on – are highly

tradable. For example, in the UK since the 1990s, exports of knowledge-based services have played a crucial role in plugging the balance of payments gap left behind by de-industrialisation (and the fall in North Sea oil exports,

which had enabled the country – just – to survive the negative balance of payments consequences of de-industrialisation during the 1980s).

TABLE 2. Manufacturing value added per capita in selected countries, 2005

Country	MVA per capita (in constant 2000 US dollars)	Index (US = 100)	Ranking*
Japan	8,474	153	1
Switzerland	6,874	124	2
Singapore	6,708	121	3
Ireland	6,590	119	4
Sweden	6,462	117	5
Finland	5,939	107	6
USA	5,528	100	7
Germany	5,179	94	8
Austria	4,786	87	9
Luxembourg	4,496	81	10
Taiwan	4,144	75	11
Canada	4,110	74	12
Iceland	3,960	72	13
Norway	3,953	72	14
Belgium	3,897	70	15
Denmark	3,828	69	16
Korea	3,827	69	17
UK	3,707	67	18
Italy	3,379	61	19
Qatar	3,364	61	20
Malaysia	1,430	26	
China	496	8	
Philippines	249	4.5	
India	83	1.5	

Source: UNIDO (2009), pp. 129-31, Table 1.

Note: *The ranking is provided only for the countries that rank in the top 20 in the UNIDO table.

However, even in the UK, which is the most successful country in the export of knowledge-based services, the balance of payments surplus generated by those services is well below 4% of GDP, just enough to cover the country's manufacturing trade deficits (Rowthorn & Coutts 2004). Moreover, with the likely strengthening of global financial regulation as a consequence of the current global financial crisis, its exports in finance will decrease, making it very difficult for the country can maintain the current level of trade surplus in knowledge-based services in the future.

In the case of the US, supposedly another model post-industrial economy, the trade surplus in knowledge-based services is actually less than 1% of GDP – nowhere near enough to make up for its manufacturing trade deficits, which are around 4% of GDP (Rowthorn & Coutts 2004). The US has been able to maintain such a large manufacturing trade deficit only because it could borrow from abroad heavily – an ability that can only shrink in the coming years, given the changes in the world economy – and not because its service sector

stepped in to fill the gap, as in the British case.

Moreover, as we mentioned above, it is questionable whether the strengths of the US and Britain, even in the knowledge-based services in which they have come to specialise, can be maintained over time. Most of these services with higher tradability are producer services, in which geographical proximity, shared traditions, and continued interactions between different stakeholders are critical in learning and innovation. This means that a continuous shrinkage of a country's industrial base will lead to a decline in the quality of its producer services, which will then eventually lead to a fall in international competitiveness and thus the loss in export earnings.

Given the reality of service production and trade in countries such as the UK and the US, the view that developing countries can largely skip industrialisation and move directly to the service economy – a view particularly popular among some observers of India, the self-proclaimed 'office of the world' – needs a serious re-examination.

As pointed out earlier, the manufacturing sector

has an inherently faster productivity growth than the service sector does and, thus, specializing in services will mean a slower economic growth. There are some services that have high productivity growth, but they are mainly producer services that supply manufacturing firms, so it is very difficult to develop them without first developing a strong manufacturing base, whose absence is typically the most important reason why a country is not economically developed.

Even if a developing country somehow develops some producer services without industrialisation, their international competitiveness is likely to be unsustainable, given that its maintenance requires continuous interaction with the producer, for which geographical proximity and shared traditions are critical.

Moreover, given that services are much less tradable, countries specialising in services are likely to face much more serious balance of payments problems than countries that specialise in manufacturing. Even with the supposed rise of these tradable services, the share of services in international trade has been firmly stuck at around 19% since the early 1990s (Chang in *The Economist Debate* 2011) suggesting that these services may not have exceptionally high tradability, although we have to look at the data at a more disaggregated level, something which no one has really done, in order to draw a definite conclusion in this regard.

Low tradability of services is bad enough for a developed country, for which balance of payments problems will lower standards of living in the long run. However, it is seriously detrimental for a developing country. To repeat what we said earlier, a country is not developed mainly because it has low-productivity technologies and has to import superior technologies from abroad if it is to develop economically. Therefore, when a developing country has a problem concerning its balance of payments, the ability to develop its economy is hampered.

The supposed export success of India's service sector reveals the fantastical nature of the 'service-driven development' discourse. India had a trade *deficit* in services until 2003, so its service export success is very recent. But even after that – between 2004 and 2009 (the latest data available) – India recorded service trade surplus equivalent only to 0.9% of GDP, which covered only 19% of its manufacturing trade deficit (4.8% of GDP) (derived from the UN statistics). This means that unless it increases its service trade surplus by 5 times (an implausible scenario, given that its service trade surplus has *not* even been on a firm rising trend), India cannot maintain its current pace of economic development without a serious balance of payments problem.

IMPLICATIONS FOR MALAYSIA

The above discussion suggests that in order to achieve a high-income status, Malaysia should develop its

manufacturing industries further and upgrade them to the world class. Of course, Malaysia – or for that matter any other country – should not make a fetish out of manufacturing. As we have pointed out earlier, the Philippines has less than \$2,000 income despite being the most hi-tech manufacturing economy in the world on one indicator. At the other extreme, the Netherlands, despite having one of the highest population densities in the world and poor climate, is the 3rd largest agricultural exporter in the world. These examples show that ultimately what matters is not what you produce but how you produce it – the Philippines is poor despite its manufacturing export success because it does not control the technologies it uses, while the Netherlands is one of the most successful agricultural producers in the world because it has essentially 'industrialised' agriculture (greenhouses, hydroponic agriculture, computer-controlled feeding, high quality chemicals).

Nevertheless, it is totally implausible that Malaysia can become a high-income economy by abandoning the manufacturing sector and radically re-focusing its economy towards the service sector, although all of this does not preclude Malaysia from developing some high-end services.

As Singapore's experience shows, developing the manufacturing sector to a very high level does not necessarily mean developing national brand names, as Japan or Korea have done. However, it definitely means developing national technological capabilities. This, in turn, requires sustained investments in machinery, education, training, and R&D, supported by better policies regarding government procurement, social welfare, and other areas.

These investments and supporting policies won't come easy and will take time to bear fruit. However, Malaysia's current strategy, based upon the New Economic Model that clearly recognises the need to upgrade *national* productive capabilities, makes one cautiously hopeful for the country's future. However, some of the NEM's detailed policies are questionable. First of all, deregulation is proposed as a way to promote private sector interest, but this is not right. While it is important to promote the private sector, this does not mean that less regulation is necessarily better for the private sector, not to mention the national economy. There are many regulations that actually promote private sector development through the prevention of the 'race to the bottom' (e.g., child labour), the prevention of business from seeking short-term gains (e.g., financial transactions tax, making M&A more difficult, (again child labour), and the prevention of 'wasteful competition' (e.g., investment coordination) (Chang 1997; 2011). Second, the linkages between production and innovation need to be emphasised more than at present. As emphasised in the text, without productive enterprises, little useful innovation will happen, so it is important to establish close collaboration between productive enterprises and research bodies. Third, the current global financial crisis

has exposed the limits of the 'global standard' corporate governance institutions and financial regulations that the NEM wishes to emulate. These need to be re-evaluated.⁴

NOTE

- 1 UNIDO measures the degree of sophistication of manufactured exports by the weighted average of GDP per capita of all countries exporting the good. The weights used are the export intensity of the sector in each country (UNIDO 2009: 45).
- 2 However, Ireland's per capita income shrank by around 12% between 2006 and 2010, with a bleak prospect for future growth, due to its failures with its 'financial hub' strategy and the consequent collapse of the national economy. This is a salutary lesson for Malaysia and other countries that want to move away from manufacturing into finance.
- 3 This section draws partly on Chang (2010), chap. 9. However, some of the NEM's detailed policies are questionable. First of all, deregulation is proposed as a way to promote private sector interest, but this is not right. While it is important to promote the private sector, this does not mean that less regulation is necessarily better for the private sector, not to mention the national economy. There are many regulations that actually promote private sector development through the prevention of the 'race to the bottom' (e.g., child labour), the prevention of business from seeking short-term gains (e.g., financial transactions tax, making M&A more difficult, (again child labour), and the prevention of 'wasteful competition' (e.g., investment coordination) (Chang 1997, 2011: chap. 12). Second, the linkages between production and innovation need to be emphasised more than at present. As emphasised in the text, without productive enterprises, little useful innovation will happen, so it is important to establish close collaboration between productive enterprises and research bodies. Third, the current global financial crisis has exposed the limits of the 'global standard' corporate governance institutions and financial regulations that the NEM wishes to emulate. These need to be re-evaluated.

ACKNOWLEDGEMENT

I am grateful to United Nation Development Programme (UNDP) for Malaysia, Singapore, and Brunei Darussalam and the Economic Planning Unit (EPU) of Malaysia for their supports of this work. I thank Kamal Malhotra and Chris Choong Weng Wai for their helpful inputs throughout the process of conceptualizing and preparing for the paper. I thank Antonio Andreoni, Carlos Lopez-Gomez, and Veerayooth Kanchoochat for their valuable research assistance. I thank the participants in the UNDP-ISIS Public Lecture on 7 December, 2011, on which this paper is based, for their helpful comments.

REFERENCES

- Alford, B. 1997. De-industrialisation. *ReFRESH*, Autumn.
- Arrow, K. 1962. The economic implications of learning by doing. *Review of Economic Studies* 29(3): 155-173.
- BERR. 2008. *Globalisation and the changing UK Economy*. London: Department for Business Enterprise and Regulatory Reform, Her Majesty's London.
- Boulhol, H. 2004. Quel impact du commerce international sur la désindustrialisation dans les pays de l'OCDE?, flash CDC-Ixis capital markets, in Debande, O. 2006. De-industrialisation, *EIB Papers* 11(1).
- Chang, H-J. 1997. The economics and politics of regulation. *Cambridge Journal of Economics* 21(6): 703-728.
- Chang, H-J. 2010. *23 Things They Don't Tell You About Capitalism*. London: Allen Lane (Penguin).
- The Economist*. 2011. Debate on manufacturing between Ha-Joon Chang and Jagdish Bhagwati, Available at <http://www.economist.com/debate/overview/207/Manufacturing>
- Hirschman, A. 1958. *The Strategy of Economic Development*. New Haven and London: Yale University Press.
- Lundvall, B-Å, eds. 1992. *National Systems of Innovation*. London: Pinter Publishers.
- Nelson, R., eds. 1993. *National Innovation Systems*. Oxford: Oxford University Press.
- National Economic Advisory Council. 2010. *New Economic Model for Malaysia 2010*. Putrajaya: Government of Malaysia.
- Palma, J. G. 2005. Four sources of de-industrialisation and a new concept of the 'Dutch Disease'. In *Beyond Reforms, Structural Dynamics and Macroeconomic Vulnerability*, edited by. Ocampo, J. A. Stanford: Stanford University Press.
- Rasiah, R. 2004. Exports and technological capabilities: a study of foreign and local firms in the electronics industry in Malaysia, the Philippines, and Thailand'. *European Journal of Development Research* 16(3): 141-177.
- Rasiah, R. 2010. Are electronics firms in Malaysia catching up in the technology ladder? *Journal of Asia Pacific Economy* 15(3): 301-319.
- Rosenberg, N. 1982. *Inside the Black Box*, Cambridge: Cambridge University Press.
- Rowthorn, R. & Coutts, K. 2004. De-industrialisation and the balance of payments in advanced economies. *Cambridge Journal of Economics* 28(5): 767-790.
- Rowthorn, B. & Ramaswamy, R. 1999. Growth, trade and deindustrialisation. *IMF Staff Papers* 46(1): 18-41.
- Rowthorn, R. & Wells, J. 1987. *Deindustrialisation and Foreign Trade*. Cambridge: Cambridge University Press.

- World Bank. 2011. *World Development Report 2011*. Washington D.C.: World Bank.
- Yusuf, S. & Nabeshima, K. 2009a. *Tiger Economies under Threat – A Comparative Analysis of Malaysia's Industrial Prospects and Policy Options*. Washington DC: World Bank.
- Yusuf, S. & Nabeshima, K. 2009b. Can Malaysia escape the middle-income trap? – a strategy for Penang, Policy Research Working Paper no. 4971, Washington DC: World Bank.

UNIDO. 2009. *Industrial Development Report*. Vienna: UNIDO (United Nations Industrial Development Organization).

Ha-Joon Chang
Faculty of Economics
University of Cambridge
Sidgwick Avenue, Cambridge CB3 9DD,
United Kingdom
E-mail: hajoonchang@googlemail.com