Non-Equity Modes of Trade in ASEAN

Promoting new forms of trade between Japan and ASEAN

PAPER 5

JULY 2021

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Promoting new forms of trade between Japan and ASEAN

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NOTES

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The tables use the following symbols:

- Two dots (..) indicate that data are not available or are not separately reported.
- A dash (-) indicates that the item equals zero or its value is negligible.
- Use of an en-dash (–) between dates representing years, e.g., 2015–2016, signifies the full period involved, including the beginning and end years.

Reference to "dollars" ($) means United States dollars, unless otherwise indicated.

This series includes 10 papers in total. Seven (Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, the Philippines, Thailand and Viet Nam) have been published. The other papers will be produced subsequently.

Paper 1. Brunei Darussalam
Paper 2. Cambodia (published in August 2019)
Paper 3. Indonesia (published in May 2021)
Paper 4. Lao People's Democratic Republic (published in March 2020)
Paper 5. Malaysia
Paper 6. Myanmar (published in March 2020)
Paper 7. The Philippines (published in March 2018)
Paper 8. Singapore
Paper 9. Thailand (published in April 2020)
Paper 10. Viet Nam (published in December 2018)

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CONTENTS

KEY MESSAGES

- Non-equity modes (NEMs) of production value have grown rapidly in Malaysia. As an upper-middle-income country, Malaysia has evolved strong participation in NEM exports.
- Several NEMs in Malaysia have achieved advanced status and connect strongly with the global value chains of transnational corporations (TNCs).
- The electronics industry, which is dominated by TNC outsourcing (subcontracting) activities, is one of the largest generators of exports and employment in Malaysia. The volume of direct and indirect NEM electronics exports from Malaysia was estimated at 70 per cent of total exports in 2018, an increase from 66 per cent in 2015.
- Malaysia has been a major exporter of electric-electronics and textiles-apparel products since the 1970s. These sectors still offer tremendous growth potential in the country.
- Contract farming of food crops has risen following government promotion to ameliorate the food trade deficit that has been growing since the 1980s. However, this industry needs massive technological transformation to raise yields and become internationally competitive.
- Most hotels and resorts in Malaysia are operated using a franchise model, with strong marketing and management assistance. The largest hotels are listed in the Kuala Lumpur Stock Exchange, and several operate internationally. Foreign travel booking companies play a major role in promoting bookings for hotels in Malaysia.
- NEMs in Malaysia face considerable challenges because TNCs can easily terminate their contracts and long-term contracts are rare, particularly when the quality of services or goods supplied does not meet their competitive standards or when more competitive suppliers emerge from other countries.
- The government should strengthen science, technology and innovation infrastructure; expand supply of human capital and promote connectivity and coordination between firms and organizations and external markets for NEM firms to integrate competitively with global value chains and to stimulate technological upgrading.

1. INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) includes some of the most open economies in the world with largely liberal trade and investment policies. However, much of trade and investment in these countries are associated with foreign-owned and joint-venture firms and focused on aggregate trade and investment flows. Few, if any, non-equity modes (NEMs) of ownership that connect with global value chains (GVCs) have been analysed systematically. Malaysia is no exception: transnational corporations (TNCs) in the country have dominated trade, such as in electronics and automotive manufacturing, through intra- and inter-firm trade, vertically or horizontally. Also, Malaysia is increasingly focusing on expanding the domestic share of value added in its economic activities. NEM participation in trade within global value chains started gaining significance following the successful expansion of firms from Japan, the Republic of Korea and Taiwan Province of China. Given the importance of balance of payments and the overall economic development of national economies, NEM engagement in trade is increasingly recognized as important not only to check resource outflows but also to evolve local productive capabilities. Trade between Japan and ASEAN members is not an exception (box 1). While Malaysia is a highly trade-oriented country, the leakage of resource transfers has been high because of foreign ownership. Consequently, efforts to expand NEMs of trade will help reduce the country's vulnerability to external exposure.

NEM participation in trade has expanded strongly in Malaysia in the form of international subcontracting in manufacturing industries, such as electronics and apparel; contract farming in agriculture and food processing; international franchising in fast-food chains, hotels and retail stores; variations of build-own-operate transfer arrangements and other concessions in infrastructure projects and management contracts (e.g., in international hotel chains). Information and communication technology (ICT) firms have grown extensively in Malaysia, and these businesses are largely undertaken through contractual agreements with foreign entities. This study examines the case of Malaysia within the overall framework of the ASEAN-Japan Centre (AJC) project (box 1) targeted at NEMs with a focus on selected industries.

Box 1. **The AJC NEM project**

Other than arm's-length relationships, equity-holding is not the only means of exerting control over the international production chain. Companies can also enter contractual relationships with other independent firms. This trade is gaining importance as the system of global production becomes more integrated and forms value chains and is an area lacking knowledge and research in ASEAN. The growing importance of this trade also calls for an overall analytical framework to assess development impacts and propose a generic policy framework for dealing with this kind of transaction. The fundamental difference with normal trade is that non-equity forms of operations involve a contractual partnership between private parties. The role of the state in this partnership is limited to setting the framework conditions within which the private parties can freely negotiate the terms of their cooperation. By understanding this phenomenon better, including the scale and scope, and thus filling in a policy analysis gap, AJC will provide ASEAN country governments with policies to consider to fully benefit from these new forms of trade and investment.

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Box 1. **The AJC NEM project** (Concluded)

To understand the scale and scope of non-equity involvement in major industrial sectors, this paper uses a case study methodology. The reasons for this approach are two-fold: (1) balance of payment and supplementary statistics do not provide the detail necessary to accurately measure cross-border non-equity participation and (2) the relevant microdata are fragmented and disconnected. As much as possible, each case study builds on existing research and statistics.

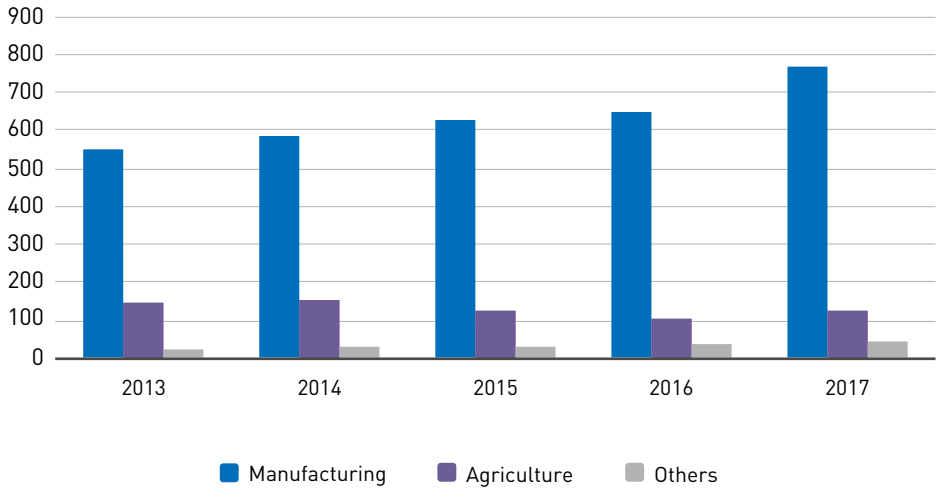
New opportunities are emerging for ASEAN countries owing to developments in the international innovation networks of TNCs. While attracting foreign direct investment (FDI) and encouraging foreign TNCs to establish affiliates remain an important option for ASEAN countries, governments need to review their current regulatory regimes to appropriate synergies from international innovation networks. A key objective of this study is to make recommendations on which policies (investment and GVCs and industrial policies) the government should consider to fully benefit from these emerging opportunities.

Source: AJC.

Manufacturing has been the most important export sector in Malaysia since the 1980s (Rasiah, 1995), which grew from Malaysian ringgit (MYR) 548 billion ($174.1 billion) in 2013 to MYR768 billion ($178.8 billion) in 2017 (see figure 1). Agricultural exports in terms of percentage contribution to gross domestic product (GDP) have tended to fall since 1970. In fact, absolute exports fell from MYR147 billion ($46.7 billion) in 2013 to MYR127 billion ($29.6 billion) in 2017. Other exports rose slightly from MYR25 billion ($7.9 billion) to MYR41 billion ($9.5 billion) during the same period.

Electric and electronics products have remained the prime export from Malaysia with its percentage share rising in trend terms from 34 per cent in 2013 to 39 per cent in 2019 (see figure 2). Oil, gas and

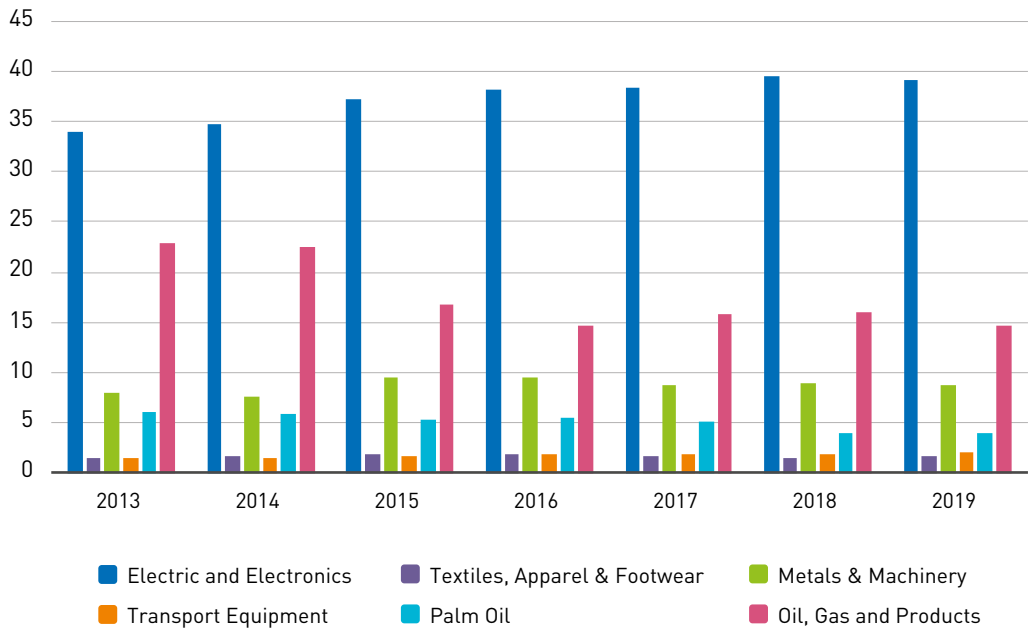
Figure 1. **Exports by sector, Malaysia, 2013–2017** (MYR billion)



Source: Plotted from Bank Negara Malaysia (2018).

products were the next biggest export category, but its share in total exports fell from 23 per cent in 2013 to 15 per cent in 2019 as a consequence largely of falling prices. Metal and machinery exports rose from 8 per cent in 2013 to 9 per cent in 2019. Palm oil exports fell slightly from 6 per cent in 2013 to 4 per cent in 2019. Transport equipment exports rose from 1 per cent in 2013 to 2 per cent in 2017. Textiles, apparel and footwear exports remained at 2 per cent over the whole period 2013–2019 with slight fluctuations.

Figure 2. **Major exports in total exports by category, Malaysia, 2013–2019** (%)



Source: Plotted from Bank Negara Malaysia (2018).

Malaysia has a long history of attracting foreign investment, originally through portfolio equity and FDI under British colonialism starting in the 19th century, although the British had got control of Penang from the Kedah Sultan in the late 18th century (Rasiah, 1995). Malaysia was one of the earliest recipients of major FDI inflows in East Asia benefiting from various circumstances, including the closed economy in China until 1978; the preference of Japan, the Republic of Korea, Taiwan Province of China and Indonesia for national investment; the communist insurgency in the Philippines; the small size of Singapore and efforts in Indo-China to install communist governments in the 1970s. Unlike Thailand, which still focused on import-substitution policies in the 1970s, Malaysia moved aggressively to promote FDI inflows starting with the launch of the Second Malaysia Plan in 1971 (Rasiah, 2010). Malaya became independent in 1957 and took the name of Malaysia following the entry of Sabah, Sarawak and Singapore in 1963 (Singapore left in 1965). The first attempt to promote FDI in manufacturing started with the Pioneer Industry Ordinance of 1958, which gave incentives to import-substituting (IS) firms. IS failed to galvanise the economy because of the small domestic market and lack of focus on technical change (Rasiah, 1995). The promotion of FDI inflows also took a new direction from the Investment Incentives Act of 1967, but especially starting with the opening

of free trade zones in 1972, with the focus moving from import substitution to export orientation (Rasiah and Gopi, 2020).

Government efforts to stimulate national investment in general, and Bumiputera[1] investment in particular, became significant starting in 1981 when heavy industries were promoted using Japan and the Republic of Korea as examples. After working with technology tie-ups with foreign firms, including Mitsubishi Corporation, Proton acquired Lotus in the late 1990s to upgrade. This venture was unsuccessful as the company failed to transform its business to become competitive internationally. Recognizing the direct and indirect losses it faced, the Government of Malaysia sold 49.5 per cent of Proton's shares to Geely of China. The Pakatan Harapan government that came to power in 2018 promoted NEMs with greater value added recorded by local capital in the automotive industry but was replaced by the Perikatan Nasional government in 2020.

Foreign firms, particularly those from Japan, behave differently than local firms in how they contribute to the development process. In Asia as well as Malaysia, the technological catch-up that enabled local firms to transition from low to high value-added activities was initially very much based on creative learning from knowledge acquired and imported from Western and Japanese firms with FDI playing a critical role (Amsden, 1989; Kim, 1997). The successful leapfrogging experience of many firms in ASEAN took place through this catch-up situation. However, despite evolving to become an upper-middle-income country, Malaysia has yet to undergo economic transformation from low to high value-added activities. Hence, the promotion of NEMs can act as a catalyst to stimulate Malaysia's transition from an upper-middle-income country to a high-income country (box 2).

Local firm participation in GVCs already emerged in several industries in Malaysia starting in the 1960s, initially as suppliers to IS industries, tin mining and rubber cultivation (Rasiah, 1995). More extensive local supplier networks supporting foreign TNCs evolved from the 1980s, particularly in the electronics industry and in textiles and apparel (Rasiah, 1995). However, unlike the experiences of Foxconn, Flextronics and Celestica, changes in such intra- and inter-firm production linkages have not significantly transformed the nature of control exerted by buyer TNCs and by target markets, although nationally owned Globetronics, Carsem and Unisem are on the brink of achieving the nature of control (Rasiah et al., 2015). This report seeks to examine the nature of control in the value chains involving local firms in electronics, automotive and textile and apparel firms with a special focus on Japanese firms in Malaysia and exporting links with Japanese markets.

[1] This term is used in Malaysia to describe Malays and various indigenous peoples of East Malaysia.

Box 2. **Factors that make countries attractive NEM locations: The case of Malaysia**

When examining the factors that stimulate the emergence and growth of NEMs, addressing overlapping factors that stimulate FDI inflows is important, especially the impact of FDI inflows on the growth of NEMs. As with FDI, determinants of location include political and social stability, efficient and competitive policies, financial incentives, smooth trading procedures and conducive macroeconomic policies.

In addition to policy-related determinants that stimulate FDI, many other factors can support NEM development in host countries. First, as NEMs essentially include forms of contract-based TNC engagement in the host economy, these factors include stable contract laws and commercial laws. For example, in franchises (e.g., Starbucks Coffee, KFC, Pizza Hut and McDonald's) and contract farming (e.g., Erets Agro, Tesco and Kraft Foods), establishing sufficient intellectual property right protection is important.

Second, as with FDI, facilitation measures for promoting businesses are critical for stimulating the emergence and growth of NEMs. For example, promotion activities and financial incentives must be applied over a wide scope, such as when investment promotion agencies partner foreign franchisers with promising local companies. Also, access to capital procurement is an important factor for regional enterprises that has strong potential for promoting NEM expansion.

TNCs may also establish footholds from where they can support NEM businesses. These footholds can be minimal commercial presence, such as purchasing and quality management organizations that provide support for outsourced manufacturing, or, as in the case of retail and quick-service restaurants business franchises, logistics support operations that provide materials to franchise locations.

The existence of reliable and capable regional enterprises and the ability to engage them are important factors in NEM operations. Most NEMs require local partners that are powerful, efficient and capable of taking on risk on behalf of TNCs. For example, when TNCs do not enter contracts directly with individual farms, agricultural cooperatives act as intermediaries to reduce business risk and provide reliability (Barrett et al., 2010).

The third factor supporting NEM development is the degree of economic development and its association with social capital within a country. For example, consumer market scale and growth and access to regional markets are equally important to NEMs, such as franchises and out-licensing, as they are to FDI. Basic infrastructure provision, transport, energy and communications costs are all major areas of interest to companies.

Technological capabilities and the capacity to improve quality and productivity of regional enterprises are critical to both TNC and NEM operations. Government policies targeted at improving such capabilities in national firms and regulations to stimulate strong corporate social responsibility (CSR) practices and minimum labour conditions are also important to stimulate upgrading in both TNCs and NEMs. Such initiatives also help expand the pool of NEMs available to network with TNCs. For example, the Government of Malaysia has introduced a law specifically concerning franchises and has implemented other measures for promoting TNC participation in its regional economies.

Note also that idiosyncratic factors that prefer NEMs over FDI, including special treatment for specific citizens, contribute significantly to the widening and deepening of NEMs. For example, the prohibition of sales of Native Customary Rights (in Sabah and Sarawak) and Malay (in Peninsular Malaysia) land to foreigners and other Malaysian citizens offers Malaysia a significant opportunity to promote contract farming (Rasiah and Salih, 2019). It is equivalent to the prohibition of foreign ownership of land in Cambodia, Lao People's Democratic Republic (Lao PDR) and Thailand that

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Box 2. **Factors that make countries attractive NEM locations: The case of Malaysia** (Concluded)

has given local owners a significant advantage in establishing joint ventures with hotel and retail chains and contract farming.[2]

Factors such as these have contributed to the increased overall allure of ASEAN countries as sites for various types of NEMs. Box table 2.1 summarizes the major locational determinants of each mode.

Box table 2.1. **Location determinants for FDI and NEMs in ASEAN**

Relevant for FDI and NEMs	More relevant for FDI	More relevant for NEMs
	Policy framework	
• Economic, political and social stability • Competition policy • Trade policy • Tax policy	• Rules regarding entry and operations • Standards of treatment of foreign affiliates • International investment agreements • Privatization policy	• Stable general commercial and contract law • Specific laws governing NEM contractual forms (e.g., recognizing licensing, franchising contracts) • Intellectual property protection
	Business facilitation	
• Reduction of hassle costs (e.g., cost of doing business)	• Investment promotion • Investment incentives • Provision of aftercare • Provision of social amenities (e.g., quality of life)	• Facilitation efforts aimed at - upgrading of technological quality and productivity standards of local firms - enterprise development, increasing local entrepreneurial drive and business facilitation - subsidies and fiscal incentives for start-ups - information provision and awareness-building on NEM opportunities with local groups - support for minimum standards of working conditions and CSR in local firms
	Economic determinants	
• Infrastructure • Market size and per capita income • Market growth • Access to regional and global markets • Country-specific consumer preferences • Access to raw materials • Access to low-cost labour • Access to skilled labour • Relative cost and productivity of resources and assets • Other input costs (e.g. transportation, • communication, energy)	• Access to strategic assets • Created assets (e.g., technology and intellectual property) • Strategic infrastructure	• Presence of credible local entrepreneurs and business partners • Access to local capital

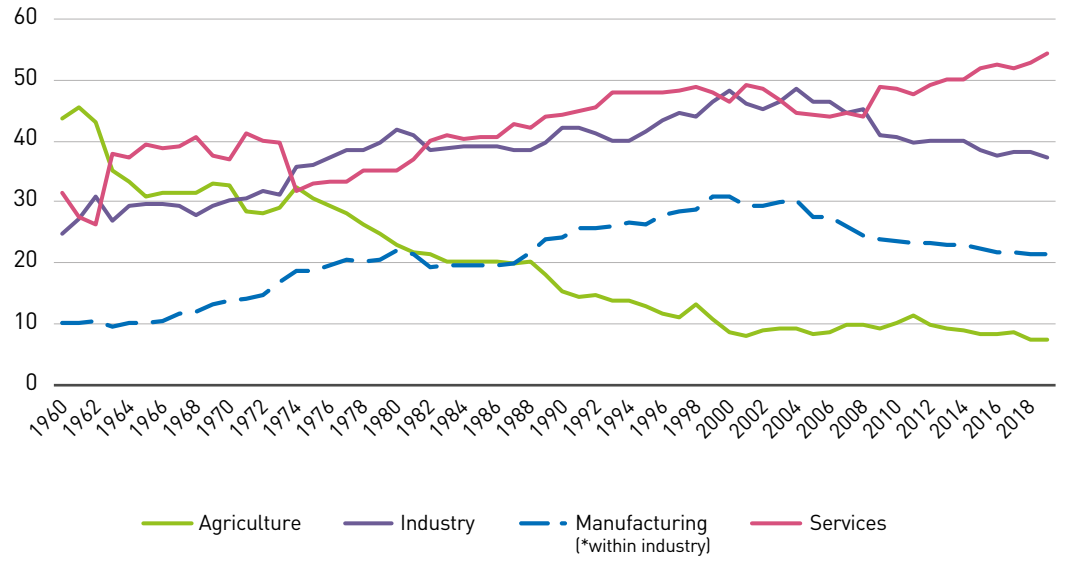
Source: AJC.

[2] ASEAN-Japan Centre, Non-Equity Modes of Trade in ASEAN, Paper 2 (Cambodia), Paper 4 (Lao PDR) and Paper 9 (Thailand).

Malaysia was a major recipient of FDI even before independence. Mining and agriculture were the prime targets of FDI during colonialism until 1972. Import-substitution industrialization generated industrial growth between 1958 until 1972 following the Pioneer Industry Ordinance of 1958 (Rasiah, 1995). However, the small domestic market restricted industrial expansion, which led to the introduction of export-oriented industrialization (EOI) starting with the enactment of the Investment Incentives Act of 1967. EOI effectively took off from 1972 following the opening of Free Trade Zones in 1972. Like the Philippines and Singapore, Malaysia took advantage of increased production fragmentation and internationalization of production by foreign TNCs to attract labour-intensive FDI from the early 1970s. Cambodia, Lao PDR, Myanmar and Viet Nam were closed to FDI at that time owing to the spread of communism and subsequent communist rule in these economies. China was closed to FDI until economic reforms were introduced in 1978. NEMs have already emerged in most sectors in the country to contribute to economic development, but primarily in manufacturing and services. Out of the four leading exports from Malaysia—electric and electronics (EE) products, oil and gas, palm oil and textiles and apparel—the first and last were initiated by FDI, followed by NEMs or together with NEMs. National firms largely dominate oil and gas and palm oil exports, which are exported directly to customers abroad. Hotels and food chains are important services that offer locational advantages to NEMs. Hence, the report focuses on EE, automotive products, textiles and apparel, hotels and food chains.

Agriculture was Malaysia's leading sector in the 1950s and 1960s. However, the industrial sector (comprising mining, manufacturing and construction) had become the leading sector in Malaysia by 1970 and was only overtaken by services starting in 2008 (see figure 3). Hence, although the Malaysian economic structure experienced a gradual fall in the share of agriculture in GDP starting in the 1960s and in industry (and manufacturing) starting in 2000 as services have become the leading sector in the country (figure 3), Rasiah (2011a, 2011b) and Chamhuri et al. (forthcoming) argue that these sectors contracted prematurely. Rasiah and Salih (2019) also show that agriculture

Figure 3. **GDP share by sector, Malaysia, 1960–2019** (%)



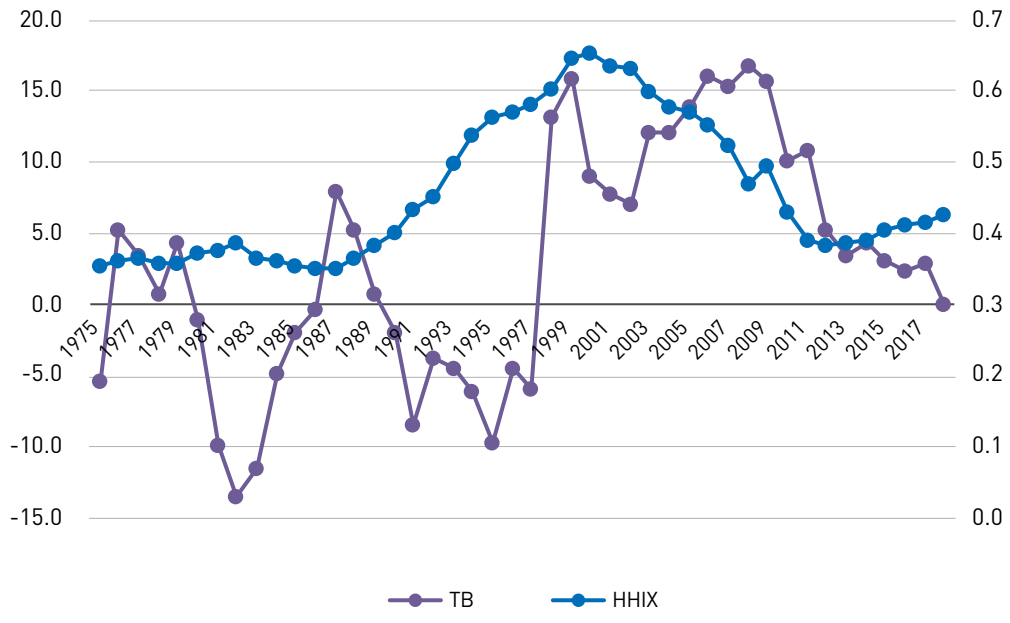
Source: Plotted from World Bank (2019).

underwent productivity growth from the 1970s until the early 1980s in rural small-scale farming and plantation agriculture, but the former has gradually stagnated since the mid-1980s, so that net food trade worsened over the period 1989–2019. Meanwhile, Rasiah (2011a, 2011b) offers other evidence to argue that Malaysia has undergone premature deindustrialization with productivity and wages growing slowly since 2000. In addition, the services sector has grown without a significant rise in productivity and wages. Hill et al. (2014) reinforce these arguments, considering Malaysia to be a country facing the middle-income trap.

The early phase of economic development in Malaysia was successful because of the ability of the country to sustain export diversification. In fact, except for the period 1989–1997, Malaysia largely enjoyed positive trade balances because of constant diversification of exports—for example, from tin and rubber to palm oil and subsequently a shift to export manufacturing (see figure 4). However, this structural shift slowed starting in the late 1990s as Malaysia began to face premature deindustrialization starting in 2000 and since the services sector started to dominate. The concentration of exports has lessened (the lower Herfindahl-Hirschman Index in figure 4). The share of manufacturing in GDP in the country fell from 30 per cent in 2000 to 21 per cent in 2018 (Rasiah, 2020).

While structural change is evident in the emergence of services as the leading sector in the Malaysian economy, the government has tried to shift the focus of economic growth from low to high value-added starting in 1991 when the New Development Policy was launched (Malaysia, 1991). However, economic growth in the Malaysian economy has slowed significantly since 2000. While the shares of

Figure 4. **Trade balance and concentration in Malaysia, 1976–2018**



Source: Data from Bank Negara Malaysia (2019) and World Bank (2019).
Note: Trade balance (TB, left) was computed using the formula $(X-M)/(X+M)$ where X and M refer to exports and imports of goods and services, respectively. The Herfindahl-Hirschman Index of exports (HHIX, right) refers to the export concentration index, which was computed using the formula $HHIX = [(S1^2+S2^2....Sn^2)/10{,}000]1/2$ where $S1$, $S2$ and Sn refer to export share of industries 1, 2 and nth biggest exports in total exports in year t.

manufacturing and agriculture in GDP have declined since 1970 and 2000, respectively, both sectors have also started to experience a trend fall in the value-added share of gross output (Rasiah, 2018; Rasiah and Gopi, 2020). While the services sector has become the dominant sector, it has not shifted significantly to high value-added activities. Consequently, the government launched the Industry 4.0 Master Plan in 2018 to revive the structural shift to higher value-added activities in the country. The Pakatan Harapan Government also embarked on strengthening and increasing the participation of local firms in the national economy, which offers NEMs a major fillip for their expansion.

Hence, a study on the promotion of NEMs in Malaysia is timely. The rest of the study is structured as follows. The next section will explain the characteristics and scope of NEMs by type and introduce types of NEMs with distinguishing characteristics in Malaysia. Section 3 will discuss opportunities and challenges in the selected industries to draw implications of NEMs for the Malaysian economy. The last section presents policy implications.

2. CHARACTERISTICS AND SCOPE OF NON-EQUITY MODALITIES

UNCTAD (2011) estimates global NEM production at more than $2 trillion in sales in 2010.[3] However, the report also states that the analysis of NEMs is complex because "the web of directly owned, partially owned, contract-based, and arm's-length forms of international operation of TNCs is entangled, so that some of the distinctions between the different modes are blurred". Thus, the analysis is limited to industries in which NEMs are especially important.

NEMs have generated significant exports in all major sectors in Malaysia (table 1). The expansion of the EE, automotive and textiles and apparel industries was originally dominated by the relocation of TNCs from North America, Japan and Europe, and subsequently from the Republic of Korea, Taiwan Province of China and Singapore with national firms also emerged starting in the 1980s. Oil palm cultivation replaced rubber on a large scale from the 1970s as Malaysia sought to avoid the risk associated with the exchange rate. These industries helped stimulate rapid economic growth and structural change in the country (Rasiah and Salih, 2019).

[3] Contract manufacturing and services outsourcing accounted for $1.1–1.3 trillion, franchising $330–350 billion, licensing $340–360 billion, and management contracts around $100 billion (UNCTAD, 2011).

Table 1. **NEM operations in major sectors, 2018**

Sector	Primary		Secondary		Tertiary
Industry (representative example)	**Oil palm and pineapples**	**Poultry farming**	**Textiles/apparel**	**Electronics**	**Hotel**
Product/services	Edible oil and pineapple fruits	Broiler chickens	Apparel (OEM)	Semiconductors	Welcome, comfort, quality, trust and safety services
No. of companies (NEM-related firms, estimation)	300,000 small farmers (oil palm)	4,300 farms	Malaysian Textile Manufacturers Association, 77 members	Malaysian Association of Electrical and Electronic Association, 238 members in 2019	Malaysian Association of Hotels, more than 900 members
Major foreign firms	United Plantations, Barlow Boustead	KFC	Penfabric	Intel, Texas Instruments, Motorola	Shangri-La
Major NEM companies	Sime Darby, IOI, United Plantations, FELDA Global Ventures, Kepong Kuala Lumpur, Genting Plantations	Ayamas	Penfabric	Globetronics, Unisem, Carsem ViTrox	Berjaya Hotels and Resorts, YTL
Estimated export volume (estimated export by NEM	$14.9 billion ($13.9 billion) (processed palm oil)	$120 million ($120 million) (poultry meat)	$4.2 billion ($4.2 billion) (apparel)	$53.5 billion ($16.1 billion) (semiconductor)	43,697 rooms (2018)
NEM modality	**Contract farming**		**Subcontracting**	**Subcontracting**	**Licensing, management contract**
Employment (estimated NEM employment)	1.6 million (total employment in agriculture) (1.5 million in NEMs)		252,000 (252,000 in NEMs)	580,000 (350,000 in NEMs)	3.5 million (tourism industry) (2018)
Average export growth	12.0% (2018–2019)	2.1% (2018–2019)	4.2% (2018–2019)	-2.3% (2018–2019)	3% average annual growth rate from 2019 to 2027
Export markets	Japan, China, Singapore, India	Singapore, Brunei Darussalam, Middle East	United States, Europe, Japan, Australia, South America	More than 40% of electronics products were exported to China, which was the main market in 2018	Mainly tourists from China, Japan, United States and Europe
Product/service	Assist poor farmers with access to funding, technology and markets	Assist local NEMs to earn income through provision of markets and technology	Local NEMs access low-cost fabric from TNCs to operate as international subcontractors	Malaysia is a major exporter of electronics products	Local partners have access to foreign brand names and wider coverage of markets

Source: AJC.
Note: Selected industries only. OEM = Original equipment manufacturer.

The characteristics and scope of the different NEM modalities vary, and hence, the unique elements associated with each of them are important to understand. Because several NEM modalities are unique to Malaysia, this section provides a systematic discussion.

2.1 Scale and scope of NEMs

Table 2 shows various forms of NEMs. NEMs are comparable to FDI from the perspective of the motivation of TNCs. For example, contract farming is motivated by a search for agricultural resource supply. Contract manufacturing and outsourcing or subcontracting are motivated by the desire to improve production efficiency by reducing costs. Licensing and franchising are motivated by the desire to expand markets. All these modes typically spread the risks to local players at host sites. Whereas subcontracting resembles FDI in that it consists of transferring resources, technologies and expertise to contractors in the form of "packages", licensing and management contracts involve little direct transfer. The following is an overview of the features of each NEM.

Table 2. **Description of selected non-equity modalities, including examples of typical industries, in Malaysia**

Modality	Description (in the international context)	Typical industries	Company examples
Subcontracting	Agreement whereby a TNC contracts out to a host-country firm one or more aspects of product design, processing or manufacturing. Includes contract manufacturing and design and outsourcing in the case of services and business processes.	Electronics	Globetronics, Carsem, Unisem, ViTrox
		Automotive products	Inggress Denso Malaysia
		Apparel	Pen Apparel, South Island Garments
Contract farming/ Mining	Agreement between a TNC buyer and host-country farmers/miners (including governments) that establishes conditions for the production and marketing of farm/mining products	Agriculture	KFC/Ayamas SALCRA FAMA
Licensing	Contractual relationship in which a TNC (licensor) grants to a host-country firm (licensee) the right to use an intellectual property (e.g., copyrights, trademarks, patents, industrial design rights, trade secrets) in exchange for a payment (royalty); includes brand licensing, product licensing, process licensing. (n.b., cross-licensing and intra-firm licensing)	Power	YTL (Siemens)
		Oil mining	Shell, Exxon
		Telecommunication	Motorola
Franchising	Contractual relationship in which a TNC (franchisor) permits a host-country firm (franchisee) to run a specified business model on a system developed by the franchisor in exchange for a fee	Fast food	KFC, McDonald's, Starbucks
		Hotel	Berjaya Hotels and Resorts/JW Marriot YTL Hotels and Resorts

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Table 2. **Description of selected non-equity modalities, including examples of typical industries, in Malaysia** (Concluded)

Modality	Description (in the international context)	Typical industries	Company examples
Management contracts	Agreement under which operational control of an asset in a host country is vested in a TNC contractor that manages the asset in return for a fee	Hotel	LP Holding (Hilton Worldwide)
Other, e.g., build-operate-transfer and the like	Includes concessions, leasing agreements, build-operate-transfer arrangements, etc., involving public-private partnerships	Infrastructure	Straits Construction Singapore

Source: AJC.

(1) Electronics: Subcontracting

The degree to which subcontracting accounts for overall production varies by industry type. In the toy, sporting goods, electronics and automotive industries, subcontracting generates around 50 per cent or more of value added. It accounts for less than 50 per cent of the value added in pharmaceutical products.[4]

Subcontracting grew significantly in the electronics industry starting in the 1990s as competition drove TNCs to outsource a significant share of components and parts to other firms to lower costs and to reduce inventory-holding risks, which offered firms from developing countries a window of opportunity to connect and upgrade their operations. During this period, major electronics companies dedicated themselves to peripheral aspects of research and development (R&D), product design and brand management, using electronics manufacturing services such as Celestica (Canada), Flextronics (Singapore) and Foxconn (Taiwan Province of China). Important TNCs that have stimulated spillover to local firms include Intel, Advanced Micro Devices (which was sold to Mubadalla Corporation and renamed Global Foundries in 2007), Texas Instruments, Fairchild, ST Microelectronics, Siemens (which sold its semiconductor division to Infineon and Qimonda) and Renesas (Rasiah, 1994, 2010). Malaysia has also evolved its own NEMs in the EE industry as Globetronics (box 3), Carsem and Unisem have expanded into successful subcontract producers of electronics chips with original equipment manufacturer (OEM) and original design manufacturing capabilities.

[4] Interview with Federation of Malaysian Manufacturers undertaken on 19 September 2019.

Box 3. **Globetronics: From a subcontractor to a chip integrator**

Globetronics was established in 1991 by two former employees of Intel. The founding members had 30 years of experience with Intel. When they established Globetronics, Intel offered them the opportunity to serve as a subcontractor. Intel provided their ex-employees with equipment and facilities to launch their businesses to secure their initial costs. Another important area of support that Globetronics obtained from Intel was Intel's certification of quality for their products that were to enter the supply chain.

After developing sufficient capabilities, Globetronics built on the initial support from Intel to diversify its operations. Through the process of product development and their own capabilities, the founders of Globetronics understood that, while TNCs, in general were willing to teach small and medium enterprises (SMEs) certain production methods, the level and volume of knowledge that would be passed on was restricted. Globetronics conceived and executed joint development work with its customers. For example, Intel outsourced just one item to Globetronics when the latter started operations. It was more economical for Intel to outsource this item than to continue producing it on its own as Globetronics was able to amortise its investments by supplying a wide range of customers. Because the item that Intel outsourced was not new technology, the TNC could minimize the risk in its initial dealing with Globetronics.[5]

Intel gave Globetronics a running start, which offered the latter the impetus to negotiate contracts with other firms, such as Sumitomo as its local client in Malaysia.

Globetronics does little to no business with Intel today. In fact, all its end customers are overseas. Globetronics proudly claims to be the first company in the world to integrate the proximity sensor and emitter into a single chip, which most companies apparently cannot achieve due to limitations in sensitivity and in technology.

Globetronics has significant exposure to the Apple supply chain, which produces components for the Apple iPhone.[6] This case study shows how engagement by a NEM firm with a TNC can be an important avenue for entrepreneurs who wish to create new SMEs with the capacity to innovate. TNCs such as Intel and Sumitomo Group Company could see mutual benefits from contracting out to ex-employees endowed with tacit knowledge, rather than taking on risks with unknown firms.[7]

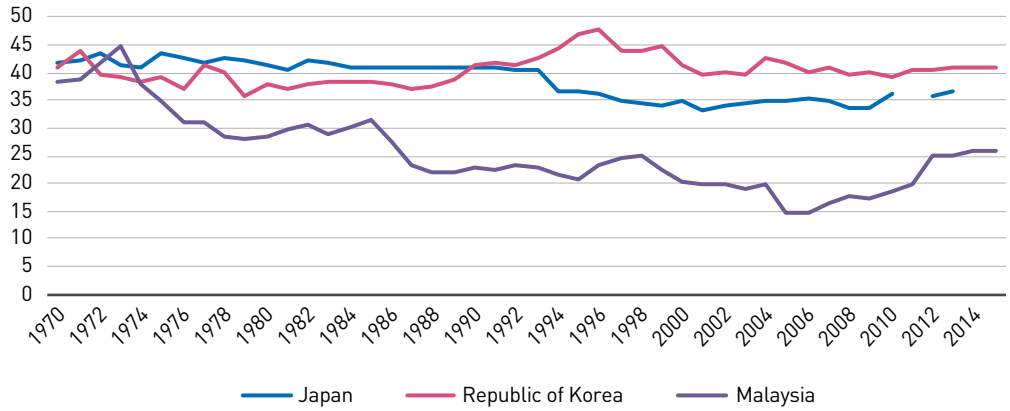
The value-added share of EE firms in Japan, Malaysia and the Republic of Korea were similar in the early 1970s as export-oriented TNCs enjoyed tax holidays and tariff-free operations (figure 5). TNCs then practiced transfer pricing to record most profits at host sites enjoying tax holidays, and Malaysia was one of the generous providers of such relief. However, the value-added recorded as a share of gross output in the industry in Malaysia has fallen apart from a slight uptick between 2006 and 2012 (figure 5). A combination of the introduction of taxes (with tariff-free operations still intact) and a slow upgrading is the cause of this shift. The revival starting in 2006 is the result of new firms relocating to enjoy tax holidays again. While several local firms have emerged to strengthen the role of NEMs in the industry, policy efforts must be implemented to stimulate catch-up as Malaysian electronics firms have largely remained in low value-added activities (Rasiah et al., 2015).

5 Accessed on 06 April 2021 from http://www.globetronics.com.my/index.php?option=com_content&view=article&id=222:pioneering-semiconductor-player-globetronics-still-hungry&catid=35:press-releasecoverage&Itemid=123

6 Accessed on 06 April 2021 from https://www.klsescreener.com/v2/news/view/523102/Rebound_seen_in_smartphone_sales_boost_for_some_M_sian_tech_firms

7 Accessed on 06 April 2021 from http://www.ngked.co.jp/company/history.html

Figure 5. **Share of value-added in gross output, electric and electronics industry in Japan, Malaysia and the Republic of Korea, 1970–2015** (%)



Source: Data from UNIDO (2017).

(2) Textiles and apparel: Subcontracting

Subcontracting has also expanded into low value-added industries, such as apparel, footwear and toy industries. Whereas foreign textile TNCs in Malaysia, such as the Pen group of companies owned by Toray (Japan), undertake polymerisation, texturization spinning and weaving, Malaysian NEMs have grown to manufacture apparel and accessories with local brand names, such as Padini and Allan Dillon. While local brands have only managed to sell in Southeast Asia, Malaysian apparel firms have been able to handle a wide range of segments in the apparel value chain, including logistics. The main export markets are the United States, Japan, Turkey, Indonesia and China. Japanese TNCs, such as the Toray group specializing in polyester and polyester-enhanced cotton fabric, started operations in the early 1970s, while Taiwanese knitting firms relocated to Malaysia in the 1980s. South Island Garments, TPI Industries (box 4), Whitex Garments (box 5) and South Island Garment (box 6) are Malaysian NEMs that produce apparel for export. Although electronics TNCs relocated operations to Malaysia in the 1960s and 1970s, apparel TNCs have remained the largest manufacturing operations in Malaysia.

Box 4. **TPI Industries**

Founded in 1981, TPI Industries is in Malacca. The firm produces casual wear for women and men with 70 per cent of output sold domestically and 30 per cent exported. Exports mainly go to the United States, Canada and Europe (United Kingdom). The company had a share capital of MYR22.[8] million ($5.5 million) in 2019.

With 200 workers in 2019, TPI Industries has an automated production line with cutting-edge inventory and quality control systems to reduce its dependence on foreign workers.8 The company has started to use solar energy through its own installations, thereby increasing the use of renewable energy.

[8] Accessed on 24 March 2020 from https://www.ctoscredit.com.my/business/TPI-INDUSTRIES-SDN-BHD-0074899D

Box 5. **Whitex Garments**

Whitex Garments Limited Company is a fully locally owned firm incorporated in 1984. Located in the state of Selangor, the company employed 450 employees in 2019 with a paid-up capital of MYR19.6 million ($4.7 million). The company specializes in knitted undergarments for men, women and children. From operations in a single factory, Whitex Garments Limited Company now has operations in three locations: West Malaysia, Bangladesh and Viet Nam. In June 2006, Whitex Knitting Sdn. Bhd. was established in Malaysia to manufacture seamless undergarments, the first of its kind in Malaysia.

Whitex Garments Limited Company manufacturers all types of knitted and seamless undergarments as per customer requirements specified by the big brand holders. It supplied 59 customers in 2019. All output is exported. Although its main markets are in North America and Europe, the firm exported 99.4 per cent of its output to the United States in 2019 with the balance going to Sri Lanka and Mexico.[9] The firm has modernized its operations to automate several processes, while handling the packaging and delivery of the apparel to the United States. It next plans to introduce Industry 4.0 technologies to reduce the use of foreign labour.[10]

Box 6. **South Island Garment**

South Island Garment (SIG) is an international subcontracting firm started in 1975 by local manufacturers utilizing largely fabric produced by foreign TNCs in Malaysia. SIG primarily used woven fabric from Penfabric and knitted fabric from Eastern Knitters when it first started. Penfabric, a Japanese multinational corporation, is its main supplier of polyester and polyester-cotton blended fabric. Manufacturing a wide range of apparel for export, SIG, headquartered in Penang, performed remarkably well with revenue growing from MYR0.7 billion ($214 million) in 2014 to MYR1.1 billion ($272.9 million) in 2018. Its assets grew from MYR0.3 billion ($91.7 million) in 2014 to MYR0.5 billion ($124 million) in 2018.[11] It had 1,017 employees in 2019. Its export markets in 2019 included the United States, Europe, South America, China, Japan, Mexico, Australia and Canada.

Equipped with computer-aided design and computer-aided manufacturing, the company has skilled and technically trained personnel to coordinate inventory control and meet quality and delivery specifications for global brand holders. It has also launched its own brands that are sold domestically and marketed regionally. The principal activity of SIG is the manufacture of internationally renowned branded sports and leisure outerwear. With headquarters in Penang, SIG also operates in Viet Nam through a strategic manufacturing partnership with its Vietnamese partner.[12]

9 Accessed on 24 March 2020 from https://panjiva.com/Whitex-Garments-Sdn-Bhd/1315090

10 Firm interview and accessed on 24 March 2020 from https://panjiva.com/Whitex-Garments-Sdn-Bhd/1315090

11 Accessed on 24 March 2020 from https://www.emis.com/php/company-profile/MY/South_Island_Garment_Sdn_Bhd_en_3725644.html

12 Accessed on 24 March 2020 from https://www.apollo.io/companies/South-Island-Garment-Sdn--Bhd-/55fa82e7f3e5bb7f7e001e80?chart=count

With the withdrawal of the Multi-Fiber Arrangement in 2004, Malaysia was among the nations that lost preferential access to major markets. Also, rising production costs stemming from rapid industrialization and falling unemployment levels have undermined the competitiveness of the industry in Malaysia. Malaysian firms have since hired foreign labour from Bangladesh, Indonesia and Myanmar, which comprised 75 per cent of its labour force in 2016 (Malaysia, 2017). Industry players now have the options of raising productivity through the implementation of Industry 4.0 technologies or/and back-integrating into producing fibres, yarn and fabric, the route Japan, the Republic of Korea and Taiwan Province of China have taken. The other option is what firms in Malaysia, the Republic of Korea; Taiwan Province of China; Hong Kong SAR, China and China took, which was to relocate operations to Bangladesh and Cambodia to enjoy preferential access and cheap labour.

(3) Vegetables and fruits: Contract farming

TNCs use contract farming in more than 110 developing countries and are involved in a diverse range of agricultural products, including fruits, vegetables and tubers. Contract agriculture is a tool for efficient procurement of agricultural products because TNCs can secure the necessary quantity and quality while leaving production in the hands of national producers. Where strong regulatory frameworks exist, farmers can also secure stable prices and sales to improve their income. TNCs demand high quality from contract farmers, and the latter can sell at prices higher than domestic market prices owing to demand from richer consumers in developed countries. In addition, contract farming also offers farmers the opportunity to acquire new information and technology by trading with TNCs.

Contract farming contributes extensively to employment as it is largely undertaken by large numbers of small-scale farms. This employment has a measurable impact on reducing poverty. Although the total number of contract farms is hard to quantify, individual projects can have several tens of thousands of participating farms.

Malaysia is among the countries that has experienced economic synergies from contract farming. Contract farming has evolved rapidly across the world, both in terms of the spread of host-country farmers and in terms of the nature of contractual relationships. In Malaysia, government promotion of contract farming strengthened with the Ninth Malaysia Plan of 2006–2010 with most farm products exported through the Federal Agricultural Marketing Authority (FAMA) (box 7) (Malaysia, 2006). Through FAMA the government announced in 2014 the opening of 7,500 hectares of land involving 4,500 farmers for contract farming.[13] While Kaur et al. (2015) argue strongly that contract farming helped raise farmers' incomes in Malaysia, the growing deficit in agro-food trade suggests a serious need to raise productivity in the industry. Also, unlike other sectors, NEMs are less prevalent in agriculture as plantation agriculture (e.g., palm oil, rubber and cocoa cultivation) exports directly to final markets. Nevertheless, contract farming in Malaysia has strong potential to not only help stem the chronic food trade deficit the country has faced since 1989, but it can also expand further export revenue.

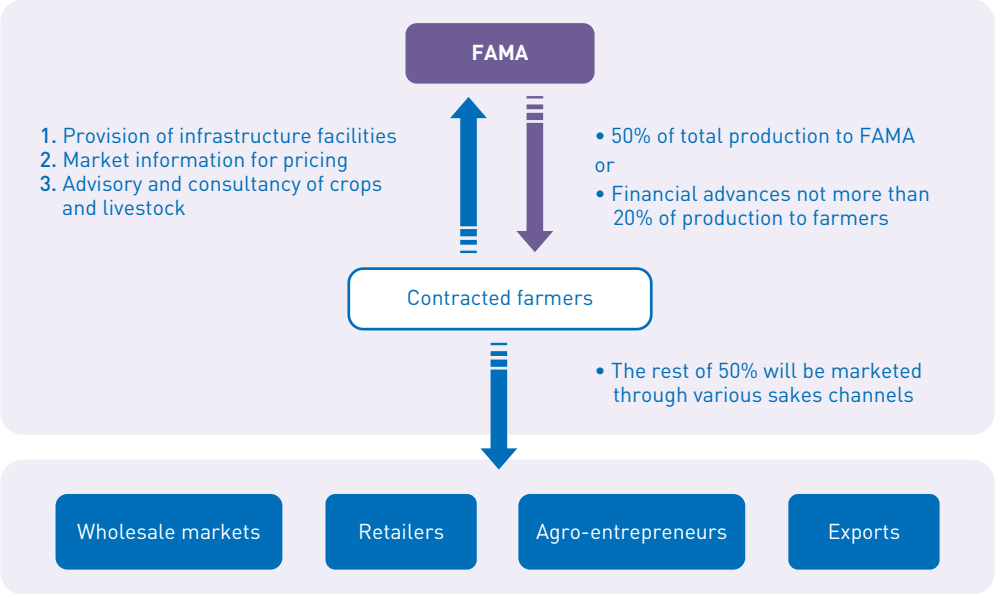
[13] Accessed on 06 April 2021 from https://www.thestar.com.my/news/community/2014/10/31/fama-targets-7500ha-for-contract-farming

Box 7. **The Federal Agricultural Marketing Authority: Nationwide contract farming to foster the agricultural sector**

FAMA was one of the leading agencies that promoted the contract farming programme in Malaysia under the Ninth Malaysia Plan (2006–2010), which was aimed at raising the annual growth rate of the agriculture sector to 4.1 per cent. Previously the annual growth rate in this sector had been declining since the 1970s.

The objectives of this programme were to provide guaranteed markets for farmers and increase their income, enhance fruit and vegetable production, ensure quality agricultural production while meeting market needs and improve technology transfer along the entire supply chain (box figure 7.1).

Box figure 7.1. **Mechanism of the contract farming programme in Malaysia**



Some examples of the implementation of contract farming programmes in developing countries exist. However, usually only the private sector is involved, unlike the Malaysian scenario where the government is directly involved as the contractor or buyer of produce from smallholder farmers.

To measure the income generation of and satisfaction with the contract farming programme, FAMA conducted face-to-face interviews with 107 contract farmers. The results of income transition indicated that prior to the contract farming programme, the average total income of farmers for the five years in 2008–2012 was only MYR4.7 million ($1.45 million). However, in the five years after the contract farming programme was implemented, the farmers' average total income increased by 34 per cent to MYR7.1 million ($1.92 million) (box figure 7.2).

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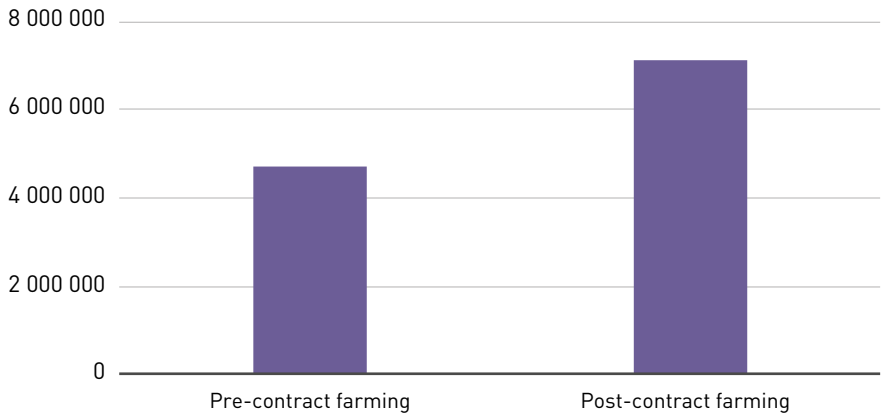
Box 7. **The Federal Agricultural Marketing Authority: Nationwide contract farming to foster the agricultural sector**

Box figure 7.2. **Total income before and after implementation of contract farming through the FAMA programme (MYR)**



Source: Kaur et al. (2015).

Out of all the respondents, 74 per cent also expressed that they felt confident to continue with the programme thus giving a positive indication about the effectiveness of contract farming in improving the country's food production. The success of this programme has attracted more small farmers to take part. In 2014, the government targeted a total of 1,620 new players. Within half a year, 55.6 per cent of the target had already been achieved with a total of 901 new participants joining the programme (Shadiya et al., 2017).

Agriculture has enjoyed a positive balance of trade largely because of the strong performance of the palm oil sector. Indeed, palm oil exports have been a major driver of export growth in Malaysia.[14]

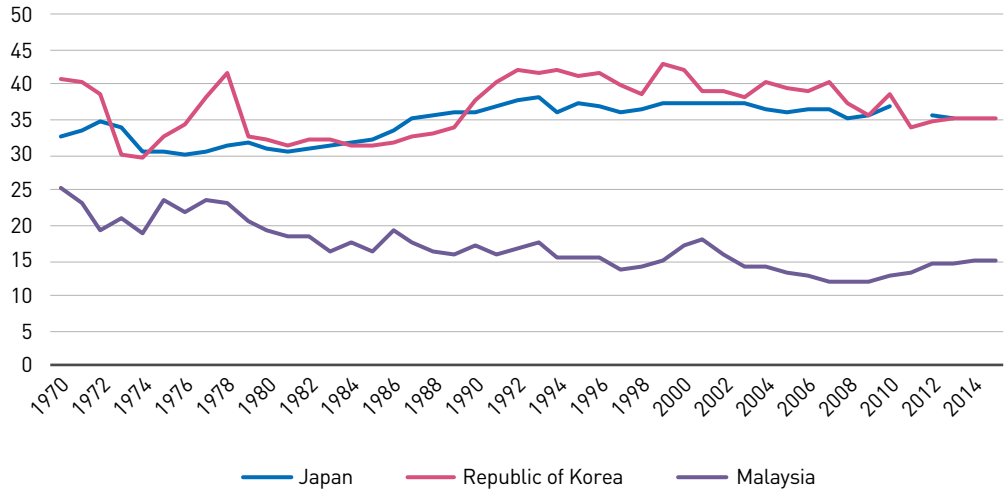
As part of national initiatives to power integration and upgrading, the government introduced the corridor development policy in 2008. Contract farming was one of the initiatives involved. This initiative took on a transformational shift following the launching of Industry 4.0 in 2018. The application of artificial intelligence through robots and drones and the broadening of the digital infrastructure has helped raise yields in Malaysia. For example, the Estate Management Model (EMM) programme, a strategic partnership between estate farmers and stakeholders that centralises farm management has helped to double the income of farmers via increased padi (or "rice field" in Malay) yield from an average of 4 to 6 tons per season using EMM1.0. EMM2.0 is targeted to raise yield further to 8 tons of rice per hectare per season.[15]

[14] Accessed on 06 April 2021 from https://www.miti.gov.my/miti/resources/MITI%20Report/MITI%20REPORT%202017.pdf

[15] *Free Malaysia Today* (1 July 2019), "Malaysia: Investment Corridor Courts High Tech Contract Farming," accessed on 20 March 2020 from https://www.freemalaysiatoday.com/category/nation/2019/06/27/good-times-ahead-for-farmers-in-the-north-as-ncer-plans-take-off/

Despite significant improvements in farm productivity after the launch of the New Economic Policy in 1971, productivity improvements have only continued in the export-oriented plantation sector since the 1980s (Rasiah, 2018). Figure 6 shows that Malaysia's value-added share of gross output in the food and beverages industry has remained significantly lower than that of Japan and the Republic of Korea. Consequently, the Government of Malaysia is particularly concerned that the worsening trend of the trade balance in the food and beverages industry will continue. Inter alia, contract farming, which has thus far emerged as an important strategy to promote NEMs in Malaysia, was also earmarked in the Tenth Malaysia Plan 2011–2015 (Malaysia, 2011).

Figure 6. **Value-addedin gross output in the food and beverages industry, Japan, Malaysia and the Republic of Korea, 1970–2015** (%)



Source: Data from UNIDO (2017).

(4) Hotels and resorts: Franchising

Franchising is a well-known channel in marketing and distributing products and services. The formula is being applied to the retail industry, including high street retail stores, restaurants, hotels, business services, education and various other business practices. In franchise agreements, franchisers normally provide franchisees with various types of support for franchise business operations. This support can include initial and ongoing support, training, management guidance, marketing and administration and human resource advice.

The tourism industry in Malaysia has grown rapidly over the years, and with that the number of hotels has also risen sharply in the country. Both the number of arrivals and receipts show a rising trend from 21.0 million and MYR53.4 billion ($15.5 billion) in 2007 to 25.8 million and MYR84.1 billion ($20.8 billion) in 2018, respectively. Both eco-friendly and traditional hotels and motels have mushroomed in the country. These figures are expected to contract sharply in 2019 and 2020 owing to the coronavirus outbreak, which has devastated the travel industry. The Government of Malaysia has responded by reducing visa fees and special charges on hotels to reduce this damage.

Nine hundred hotels were registered with the Malaysian Hotels Association in 2018. The Ministry of Tourism, Art and Culture and several state governments play an active role in promoting tourism in Malaysia through advertisements all over the world.

Table 3 shows typical hotel operations by type. Given that Malaysia is an upper-middle-income country, Malaysians run the bulk of the hotels, and hence, foreign managers do not dominate their top management. Thus, the hotels examined in this report are largely made up of franchise agreements with foreign brand holders. In addition, booking companies play an important role in promoting hotel bookings.

Table 3. **Hotel operations by type**

	FDI	Management contract	Franchise agreement
Ownership of the land and hotel	owns hotels	without ownership	without ownership
Management control	direct control	direct leadership by expatriates from headquarters	management training through manuals
Contract fees	not applicable	tend to be higher (10% or more of profit)	lower (less than 10% of profit)
Promotion and support	booking arrangements	booking arrangements	booking arrangements
Scale and speed of the hotel chain	slow, smaller scale	faster, medium scale	very fast, larger scale
Hotel categories	first stage of hotel chain, five-star hotels, independent type hotel	mostly four- and five-star class	mostly four- and five-star class

Source: Adapted and expanded from Shinomiya (2016).

The following examines three hotels with various NEM arrangements: YTL Hotels (box 8), Berjaya Hotels and Resorts and Shangri-La Hotels and Resorts. All three enjoy promotional support from travel agencies, such as Traveloka, Booking.com and Expedia. YTL Hotels and Berjaya Hotels and Resorts use foreign brands through franchising with national management, while Shangri-La Hotels and Resorts uses its own brands with management largely from Malaysia.

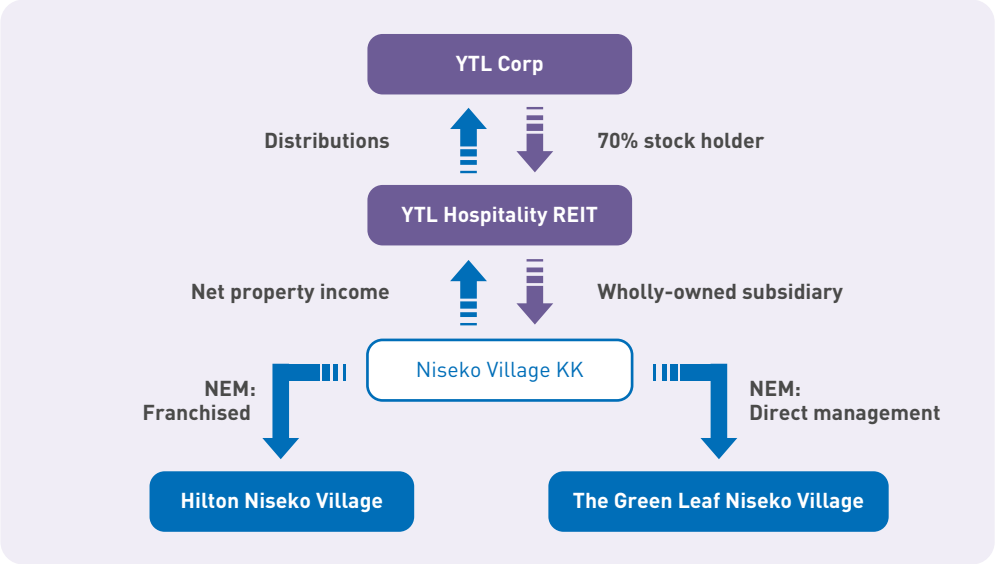
Box 8. **YTL Corporation Berhad: Malaysian conglomerate ventures into Japanese market**

YTL Corporation Berhad (YTL Corp) is the parent company of YTL Hospitality Real Estate Investment Trust (REIT), owning a 70 per cent stake. YTL Corp is among the largest companies listed on Bursa Malaysia Securities Berhad (the Kuala Lumpur stock exchange). YTL Corp also has a secondary listing on the Tokyo Stock Exchange since 1996 and was the first non-Japanese Asian company listed on the Tokyo exchange.

In 2011, YTL Hospitality REIT acquired nine additional hotel properties, one of which was Hilton Niseko Village, previously known as Niseko Higashiyama Prince Hotel, in Japan.[16] In August 2018, Starhill REIT Niseko GK, a wholly owned subsidiary of YTL REIT entered into a purchase agreement with Niseko Village KK to acquire The Green Leaf for JPY 6 billion.[17]

Since then, Niseko Village, owned by YTL REIT, has NEM agreements with the Hilton Niseko Village (franchising) and The Green Leaf (management contract), both of which are situated in Hokkaido, Japan, and operate under fixed lease arrangements, ensuring stable income for YTL REIT (box figure 8.1). Therefore, Japanese properties contributed 5 per cent of total revenue, or MYR25.24 million ($6.1 million) in 2019.

Box figure 8.1. **Business structure of YTL Corp**



The Niseko region's tourism industry (a well-known ski resort in Japan) continued to register strong tourist numbers from Japanese visitors and many international tourists, mainly from China; Hong Kong SAR, China and Taiwan Province of China. Due to this strategic trend of the investment portfolio of YTL REIT, the organization's assets in Japan grew to MYR530 million ($127.9 million) in 2019, 11 per cent of their entire assets that year and almost two times as much as in 2017 (box figure 8.2).

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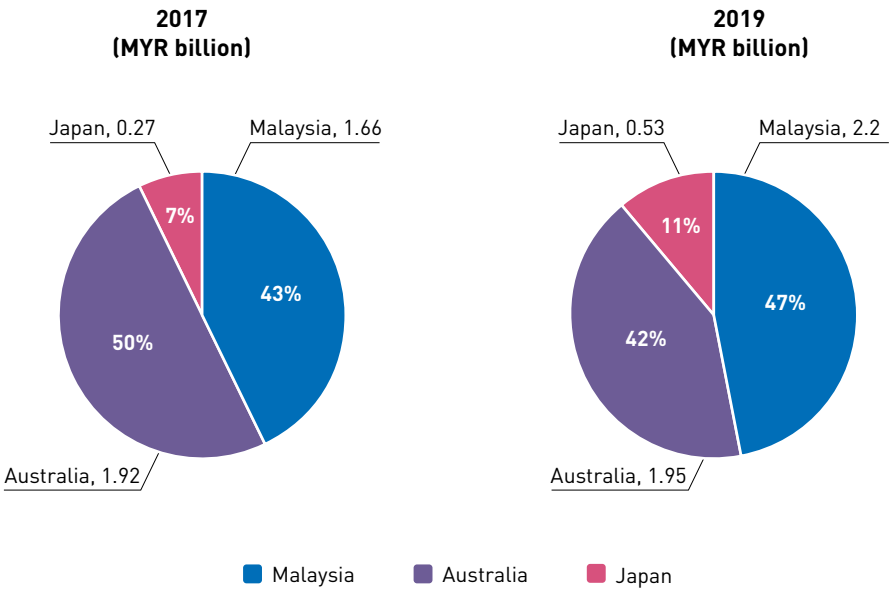
[16] Accessed on 14 May 2021 from https://www.ytlhospitalityreit.com/overview.asp
[17] Accessed on 06 April 2021 from https://www.theedgemarkets.com/article/ytl-reits-niseko-village-buy-seen-good-earnings-visibility

Box 8. **YTL Corporation Berhad: Malaysian conglomerate ventures into Japanese market** (Concluded)

Box figure 8.2. **Asset breakdown of YTL REIT by country**



Source: Accessed on 18 March 2021, https://www.ytlesolutions.com/iims2/ytlcommunity/upload/financialreports/YTL-HospReit-AR-2019.pdf and https://www.ytlesolutions.com/iims2/ytlcommunity/upload/financialreports/YTL-HospReit-AR-2017.pdf.

Furthermore, in December 2017, Marriott International and the owner of Niseko Village YTL Hotels announced an agreement for three new hotels at Niseko Village: the Ritz-Carlton Reserve and the EDITION and W hotels.[18]

Overall, this case study shows that Japan is becoming a major investment target of Asian conglomerates by utilizing foreign brand franchise and contract management, which are major NEM approaches.

[18] Accessed on 06 April 2021 from https://www.niseko.ne.jp/en/news/niseko_village_signs_new_hotel_agreement_with_marriott/

2.2 NEMs by modalities

Table 2 illustrates the different NEM modalities and their significance in Malaysia. Each modality varies with the industries specified. Table 1 summarizes the main industries where NEMs have evolved in Malaysia.

Several foreign firms and TNCs are doing business with local partners under NEMs in various industries in Malaysia. How they are involved in NEMs and FDI and their contribution to the Malaysian economy vary by modality and industry (table 4).

Table 4. **Outsourcing and offshoring by activity type**

		Location	
Mode		**Home**	**Abroad**
Control	*Internal (equity)*	Domestic operation	Captive offshoring
	External (non-equity)	Outsourcing	Offshore outsourcing

Source: AJC.

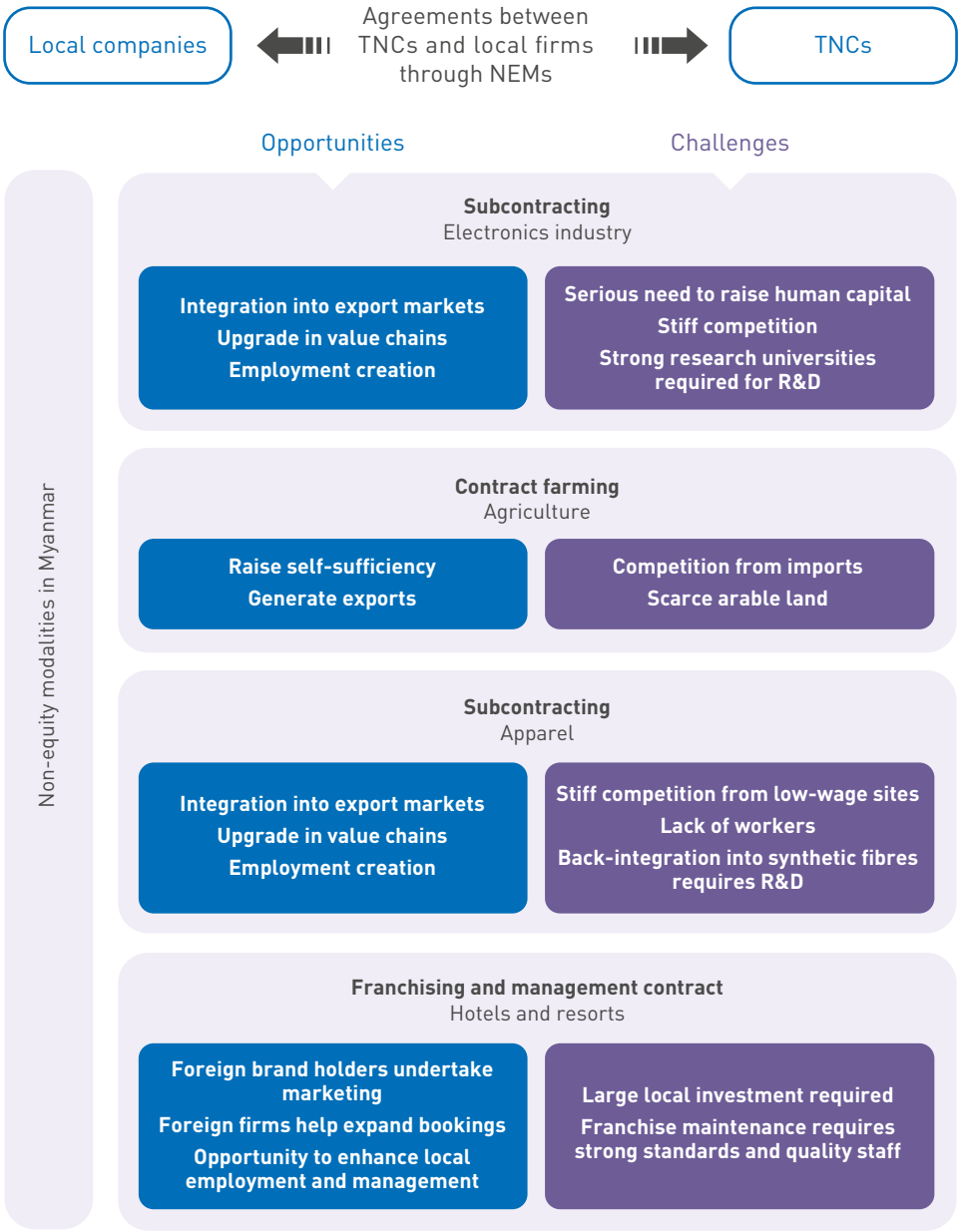
The development of the Malaysian electronics industry started when Matsushita established the first assembly plant in 1965 in Shah Alam. Big component firms subsequently relocated starting in the early 1970s to take advantage of low wages, good basic infrastructure and political stability and security to relocate operations to Malaysia. U.S., Japanese and European firms such as National Semiconductor (United States), Advanced Micro Devices (United States), Hewlett Packard (United States), Intel (United States), Clarion (United States), Hitachi (Japan) and Siemens (Germany) were the earliest to start production in Malaysia. While the foreign-led electronics industry drove export-oriented manufacturing in Malaysia, the industry also evolved local suppliers that have become internationally competitive as subcontract manufacturers (Rasiah, 1995).

Similarly, the textiles and apparel industry grew rapidly from the 1960s, but especially in the 1970s when giant Japanese firms relocated polymerization, texturization, spinning and weaving activities in Malaysia. Hong Kong and Taiwanese firms subsequently expanded operations. Penfabric, Penfibre, Kanebo, Eastern Knitters and Pen Apparel are some of the major foreign, particularly Japanese, textile firms operating in Malaysia. The expansion of textile manufacturing helped support NEM firms to emerge, and several eventually became internationally competitive subcontract apparel manufacturers such as South Island Garment.

3. OPPORTUNITIES AND CHALLENGES

Although Malaysia is an upper-middle-income country, its economic activities are largely confined to low and medium value-added activities. This section analyses the opportunities and challenges Malaysia faces in promoting and utilizing NEMs. Industries will face and benefit from several opportunities and challenges by establishing NEM agreements with TNCs (figure 7; table 5).

Figure 7. **Opportunities and challenges for NEMs in Malaysia**



Source: AJC.
Note: Major industries only.

Table 5. **Opportunities and challenges for local firms engaged in NEM**

Opportunities	Typical industries	Challenges
Continuity problems		
Easier to find TNC partners both in and outside the country through, for example, matching events (because TNCs do not invest directly in the business).	Electronics Apparel Contract farming	NEM firms are vulnerable to termination of contract agreements, and long-term agreements are seldom available. Also, major low-cost competitors in contract farming exist in Cambodia and Lao PDR.
Characteristic issues of NEMs		
Easier to enter a new market or new area even though demands are not present in the country. Skills, talents or resources, which are available but not required in the country can be usefully utilized outside the country.	Electronics Apparel Hotel	Difficult to sustain when demands and markets are outside the country (e.g., customers of electronics, apparel and contract farming products). Demands of buyers may change depending on the interest and taste of their clients (e.g., changes in trends in tourism destinations, apparel markets, cash crops). The coronavirus pandemic threatens to change this further.
Capacity-building issues		
Easier for local employees to work in apparel firms, hotels and contract farms.	Apparel Hotel Contract farms	Not easy for local firms to build further capacity apart from receiving orders from customers, as they at most only receive relevant know-how (e.g., upgrading value chain activities only by local firms' efforts is difficult).
Initiatives and local embeddedness issues		
Local firms adopt to foreign design and management and do not need to think local values and localization strategy (quicker for local firms to make profits by using the TNC business model).	Electronics Apparel Hotel Local farmers could eventually own the technology and become independent	Local firms may lose own initiatives, design ability and traditional values, apart from designing for limited products. (e.g., local firms may follow TNC business models in the electronics industry and hotel industry as they do not need to implement a localization strategy).

Source: AJC.

Much of Malaysian rapid economic growth was initiated under foreign aegis, starting with tin mining and rubber, which became large-scale operations under colonial rule from the 19th and early 20th centuries (Kim, 1997). From initially import-substitution activities in the 1960s, the nascent independent government promoted export-oriented industrialization through the opening of Free Trade Zones and Licensed Manufacturing warehouses in the early 1970s. EE and textiles and apparel became major industries driven by foreign TNCs. While government focus on local agriculture started in the 1960s and intensified in the 1970s and the 1980s, local manufacturing received a major push starting with the introduction of the Look East Policy in 1981, which was largely oriented to imitate the Japanese and Korean experiences (Jomo, 1985). Heavy industrialization and large-scale projects

through technology tie-ups with Japanese and Korean firms expanded into automobile, cement, steel and highways from the 1980s. However, this initiative lost steam as a cyclical downturn in the electronics industry, falling commodity prices and a rising real effective exchange rate undermined the Malaysian economy, which for the first time contracted in 1986.

The government responded by devaluing the ringgit and offered generous financial incentives to attract Japanese, Korean, Taiwanese and Singaporean TNCs that were seeking to relocate operations following the appreciation of their currencies after the Plaza Accord of 1985 and the withdrawal of the Generalized System of Preferences from the newly industrialized countries in 1988. Consequently, foreign capital in Malaysia began to rise again, which by the 1990s had started to cause overheating owing to labour shortages and infrastructure bottlenecks (Rasiah, 1995). The government took the initiative to stimulate technological upgrading, launching the Action Plan for Industrial Technology Development. Key science, technology and innovation (STI) parastatals were developed: for example, the Malaysian Institute of Microelectronic Systems was corporatized, and the Human Resource Development Fund, the Multimedia-Media Development Corporation, the Malaysian Technology Development Corporation, the Multi-Media Super Corridor and Malaysia, Industry, Government, High Tech were launched in the 1990s to provide the STI infrastructure to solve firm-level collective action problems related to technological upgrading. The government also started to offer R&D grants in 1991, although foreign TNCs were not allowed to access it until 2003. Initiatives were taken to consolidate SMEs for their own growth and to strengthen linkages between them and foreign TNCs (Rasiah, 1995).

The government launched a purposive policy to support SMEs in 2008 within the regional corridors based on natural and evolved endowments. The policy was targeted to complement and integrate SMEs by adding the missing components and synergizing them with incentives. The comprehensive intersectoral development plans, which included the Northern Corridor Economic Region, the East Coast Economic Region, Iskandar Malaysia in Johore, the East Malaysia corridors, the Sabah Development Corridor and the Sarawak Corridor of Renewable Energy, were to provide the building blocks for Malaysia to reach a developed status by 2020 (Malaysia, 2011; Rasiah and Gopi, 2020).

However, a combination of the 2007–2008 global economic crisis and a lack of technological upgrading slowed down economic growth, leading the government to defer its developed status target to 2030 through the Shared Prosperity Vision, which additionally sought to lower economic inequality in the country (Malaysia, 2019). The Government of Malaysia launched three more major support policies to stimulate the economy: the Eleventh Malaysia Plan 2016–2020, National Transformation 2050, and Industry 4.0 Policy 2018. As an upper-middle-income country, the country is equipped largely with global basic infrastructure, including transport and telecommunication systems, access to education and health care with policies in place since 1991 to develop its STI infrastructure (Malaysia, 1991). Efforts to strengthen NEM modalities should act as a critical vehicle to achieve the goal of becoming a developed nation and to achieve the country's sustainable development targets. Hence, this provides recommendations on how to synergize NEMs to achieve national policy goals.

3.1 Local capabilities

Linking up with TNCs' global value chains as suppliers through the operations of local firms will help realize far more profits in the country than would the direct operations of foreign TNCs, but this also presents challenges.

TNCs typically make decisions on whether to produce in-house or to subcontract out based on many factors. One key factor is the existence or potential emergence of competent suppliers. TNCs are likely to contract out to local firms if they benefit economically from outsourcing relative to

producing supplies in-house. Such contractual arrangements can benefit host countries as most of the profits arising from such operations are most likely to stay within the host country. Thus, potential opportunities exist for national firms in apparel, IT and hotel businesses, and in other industries, to have contractual agreements with TNCs. However, local firms can only take effective advantage of such opportunities if they acquire and develop the requisite capabilities to participate in such contract relationships. Such capabilities include management, inventory and quality control systems and production technology. There will also be a pressing need to sustain rapid technological upgrading among national NEMs for them to remain connected to global value chains and to enjoy movement to higher value-added activities. This is how Malaysian EE firms retain their contracting businesses with foreign TNCs. Also, unless national NEMs succeed in remaining competitive, for example in hotel franchising, TNCs will switch suppliers or terminate their brand licensing. NEMs are often vulnerable to the vicissitudes of volatile demand fluctuations. In industries such as the apparel industry, TNCs often engage a few suppliers simultaneously so that orders from successful upgrading firms can be stepped up to cover for orders terminated by poorly performing firms.

3.2 Relationships between NEM modalities and industries

As Section 2 shows, NEM modalities differ by industry and in some cases by the host country involved. Malaysian EE and textiles-apparel industries have strongly evolved to have OEM capabilities, and several sell to TNCs in Malaysia and export abroad. In EE there is a different range of modalities in Malaysia. TNC-owned subsidiaries still dominate in semiconductor manufacturing, but local NEMs, such as Globetronics Technology, Carsem, Unisem and ViTrox have evolved to export. These subsidiaries largely emerged from offshore outsourcing by foreign TNCs. This type of modality creates opportunities for local employees to be integrated into the business activities of both local NEMs and TNC subsidiaries. However, it does not provide opportunities for capacity building in local firms. Initiatives to upgrade NEM firms beyond OEM to participate more in original design activities will be important to sustain value-added increments. Local NEMs have experienced considerable technology transfer in both industries from U.S., Japanese, European, Korean and Taiwanese firms. TNC affiliates also have a modality via captive offshoring, which is done through FDI (non-NEM) operations, but it will be potentially good for the Malaysian government to stimulate more NEMs especially among SMEs. Being a complementary industry that supports all industries, it is pertinent that the government promotes local IT firms that can then connect with TNCs located abroad.

Different types of modalities are also linked to the hotel industry. Most brand holders in the hotel industry use management contracts and franchising modalities. Several five-star hotels are owned by local owners in Malaysia. Exceptions include the Shangri-La Hotel, which is owned by Robert Kuok from Singapore. The management contract and franchising modality should be promoted as foreign brand holders have demonstrated strong global marketing capability to attract tourists both to Malaysia and to their hotels worldwide. Berjaya Hotels and Resorts and YTL use the brands of JW Marriot and Hilton in several parts of the world. Foreign booking companies, such as Traveloka, Booking.Com and Expedia have played important roles in expanding the customer base for Malaysian hotels. However, because brand holders impose stringent conditions to protect their brands, local owners must maintain high operating standards to remain attractive to the brand holders. Indeed, throughout ASEAN, management contracts and franchise agreements are typical modalities that TNCs engage in, though some hotels are also owned and managed directly by foreign hoteliers (e.g., Shangri-La). Capitalizing on tourism synergies from the promotion of NEMs in the hotel industry will also require that the government improves infrastructure (including IT support) and security throughout the country.

3.3 Ownership and control

Although foreign firms have no direct ownership in NEMs, foreign firms often control the operations of NEMs. Such control can take the form of buyer firms dominating pricing decisions, assessment of quality and determination of lead times. In apparel manufacturing, for instance, buyers determine even the suppliers of inputs under the arrangements by CMP Products Ltd. Under free (or freight) onboard operations NEMs have the autonomy to determine such sources but are completely reliant on buyers with respect to lead times, specs used and materials sourced. Although local firms in Malaysia have climbed the value chain, most still specialize in low value-added and OEM activities. Globetronics Technology, Carsem, Unisem and ViTrox are examples of Malaysian firms that operate as OEMs. Such modalities should be expanded to raise foreign exchange (Rasiah, 2020).

Similarly, in the hotel industry, franchise holders determine the terms and conditions under which NEMs must operate, though several Malaysian companies, e.g., Berjaya Hotels and Resorts and YTL, enjoy the experience and technological capabilities to function almost horizontally with foreign franchise holders, such as JW Marriot and Hilton. The positive side of these conditions includes the pressure TNCs impose on NEMs to upgrade, though NEM firms that remain suppliers will always be exposed to contract termination whenever TNCs are dissatisfied with their supplies or if more capable suppliers emerge. Such circumstances often arise when TNC operations evolve to high value-added activities that require their suppliers to also upgrade. They can also emerge if the TNCs find supplier bases in other countries to be more efficient. Nevertheless, NEM firms that catch the wave of competition major export markets offer to upgrade enjoy the opportunity to climb the value chain and, in some cases, such as in the Republic of Korea and Taiwan Province of China, to leapfrog incumbents. Samsung and Taiwan Manufacturing Company now lead the memory and logic chip value chains with late start of operations in 1975 and 1987, respectively (Rasiah et al., 2015; Yap and Rasiah, 2017).

If the buyer subsidiaries of TNCs are in the host country, the control that TNCs exert can be stronger than otherwise. In some cases such TNCs not only will train the workforce of the host country's NEM suppliers, they also often invest in skills development centers to develop the host country's human resources or implement rooting strategies for their own expansion (Rasiah, 1995). The host government often plays a leveraging role to initiate and coordinate such developments. The Economic Development Board of Singapore and the Penang Development Corporation successfully played such a role (Rasiah and Yap, 2019, 2016a, 2016b). Also, this is how TNCs got together to jointly finance the Penang Skills Development Center in 1989, which experts view as a world-class training center (Rasiah, 1995). The EE and textiles and apparel industries in Malaysia have also benefitted from adapting such a framework.

Given that linkages with foreign TNCs can never be taken for granted, local NEM firms must take advantage of opportunities to launch new businesses, which will then stimulate sales growth, job creation and exports. Governments often initiate promotional mechanisms to support entrepreneurial synergies both in rich and in poor countries. Malaysia already has excellent basic infrastructure in the Western corridor, and plans are already being implemented to develop similar highways in the Eastern corridor and the Borneo corridor. In addition to basic infrastructure, governments also need to develop the STI infrastructure needed to stimulate entrepreneurial synergies. The Malaysian government initiated significant efforts to develop the STI infrastructure starting in 1991 following the launch of the "Way Forward". However, the government needs to rethink its governance framework to synchronize the link among firms, start-ups, organizations, policy instruments and human capital to stimulate strong economic synergies from its science and technology parks and universities.

3.4 Localization strategies

ASEAN governments have often launched localization strategies when foreign TNCs engage in manufacturing for the domestic market. This is how Indonesia, Malaysia and Thailand initially promoted local suppliers in the automobile industry (Rasiah, 2009). However, such initiatives have been rationalized since the launch of the ASEAN Free Trade Area in 1992 and the establishment of the World Trade Organization in 1995. Nevertheless, governments can still promote linkages with local NEM firms without infringing on the trade-related investment measures instrument of the World Trade Organization, which prohibits differential trade treatment based on national ownership (Rasiah, 2005). Linkage strategies can ensure that the government can use its bargaining strength to impose conditions for TNCs to train national workers and to source from capable NEM firms, especially when the TNCs enjoy incentives or benefit from sales in the domestic market in Malaysia, such as poultry supply by Ayamas to KFC. The apparel, hotel and related industries can be targeted for the development of NEMs as suppliers, which can then also export once sufficient capabilities have been developed. However, the challenges include the need to stimulate human capital development and for local firms to undergo massive technological upgrading to meet international standards.

Several Malaysian apparel firms have successfully won contracts to manufacture and deliver products to the big stores (e.g., Walmart, JC Penney and H&M) in developed countries. Similarly, foreign TNCs can outsource a part or the whole of several other goods or services, or even part of their GVCs to Malaysian local firms when the government uses its leverage to call for localization. Globetronics Technology, Carsem, Unisem and ViTrox have the potential to upgrade further in their value chains. Also, TNCs supplying the domestic market may also seek NEM suppliers to reduce transport costs and effectively coordinate the implementation of just-in-time inventory control systems. For this reason foreign TNCs have evolved proximate suppliers in the automobile industry, though unless local capabilities are developed foreign suppliers often fill the void. In the apparel industry, Malaysian NEM firms can back-integrate into fibre manufacturing and introduce Industry 4.0 technologies to improve quality, eliminate defects and lower unit costs. That way the apparel industry can build stronger backward linkages right up to polymerization, texturization and the harvesting of synthetic and mixed fabric. Local NEM firms should take initiatives independently to integrate their operations and activities with the overall production networks of TNCs and GVCs.

4. POLICY IMPLICATIONS

Although the protectionist forays in many parts of the world and the coronavirus outbreak in 2020 have dampened trade and economic growth worldwide, the attempt to strengthen trading ties in ASEAN promises to enhance the role that NEMs can play in the newly emerging trading system. ASEAN countries, including Malaysia, are introducing fiscal stimulus to mitigate the economic damage from the coronavirus. These developments suggest that TNCs can be provided with opportunities to continue to facilitate trade around the world. NEMs then can help increase the value added enjoyed at host sites as trade grows. The deep integration of Malaysia into global trade particularly since colonialism and subsequently following the introduction of export-oriented manufacturing in 1971 enables the country to benefit from strong economic synergies from more open trading initiatives.

Furthermore, because firms owned fully or jointly by local and foreign TNCs rely on export markets, they have been the most vulnerable to external shocks, such as those experienced by Malaysia, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China and Thailand during the

global financial crisis of 2007–2008. Consequently, it is prudent for countries highly integrated into external markets to organize their macroeconomic (both monetary and fiscal) policies to face such random crises. These countries learned from the 1997–1998 Asian financial crisis to keep their non-performing loans low and to limit their exposure to external debt (Rasiah, 2001), which in turn helped them minimize the damage caused by the global financial crisis of 2007–2008 (Stiglitz, 2010).

Nevertheless, because TNCs often repatriate their profits back to home countries, local NEM firms can help reduce the wholescale repatriation of profits as they are nationally owned firms. The development of resilient NEM firms will also help widen the reservoir of domestic capital for national expansion. Hence, government policy should strongly consider the promotion of NEMs as a critical economic growth strategy. The government can focus on the following broad institutional changes.

4.1 Enhancing capabilities of local firms

Several local firms and plantations have grown to at least undertake original design products in manufacturing and original brand activities in agriculture. However, most firms and farms, especially SMEs, still languish in the lower rungs of the technology ladder. Consequently, the capabilities of local firms in both technological and management skills should be enhanced so that they can meet the current and potential demand of TNCs and to eventually export directly. Once these necessary capabilities have been attained, they can have more business initiatives or autonomy in their operations; they can find potential customers through networks; and independently from TNCs in terms of autonomy or initiatives, local firms can then create their own business activities in the long run. The government needs to support the development of the overall capabilities of local firms at the individual firm level and at the industry level. At the individual firm level, the government can:

- Strengthen the Human Resource Development Fund, launched in 1993. The Fund requires manufacturing firms with more than 50 employees to contribute 2 per cent of their payroll, which they can then reclaim using approved training receipts, to be complemented with the upgrading of technical and vocational education training and skills development centres in the country. The Penang Skills Development Center is an exception here as it focuses on cutting-edge skills training promoted by TNC members. SMEs with fewer than 50 employees are given double tax exemptions on approved training receipts, but the take-up has been low, suggesting the need to introduce complementary measures to raise its incidence. The Ministry of Human Resource Development should assist by anticipating and coordinating changes in skills required from structural change.
- Establish a business advisory centre as a complementary body in the Small and Medium Industries Board. The organization hosts experienced managers and members from various ministries where local firms can learn NEM operations or activities. Local firms need to be aware of the big picture of changes or future demand in the industry rather than focusing solely on their current operations. The government can support this by connecting individual firms—horizontally and vertically—in the industry. The centre should cover all aspects of NEM establishment: forming, executing and evaluating contracts and increasing knowledge about NEM operations and recommending for access to preferential funds.
- Create a conducive environment for local firms to facilitate their globalization and localization strategies. Local firms need to familiarize themselves with the changing strategies of TNCs to be able to connect and evolve in their value chains. NEM firms need to learn their customers' strategies, e.g., understanding the buyers, sellers and organizations supporting their activities. Therefore, the government can offer support for different types of strategies in the different industries at the individual firm level, without just focusing on the overall industry level.

At the industry level, industrial or business associations and the government can jointly support:

- Creating a better environment for competition and cooperation so that NEM industries can become more competitive internationally. This can be between local and foreign firms and between local SMEs and large firms. The presence of TNCs can bring both the competition and demonstration effects to raise the technological capabilities and competitiveness of local firms, be they small or large.
- Promoting local firms to gradually upgrade within GVCs, which is necessary as shifts in demand by TNCs and changes in the GVC of TNCs are mostly due to TNCs driving toward cost reduction and improvement of quality and shorter lead times. The government can promote upgrading of local firm capabilities explicitly through support for innovation and technical upgrading activities. Only then may NEMs be able to sustain their partnership with foreign TNCs. This would require the launching and upgrading of the STI infrastructure in the country.
- Implementing innovation policy for local firms to encourage and protect technologies required to perform as NEM operators. While the country has paid attention to innovation policy and intellectual property rights, room exists for further improvement.

4.2 Strengthening basic infrastructure

The government should strengthen the four pillars of the systemic quad (table 6) simultaneously to attract TNCs and to encourage them to upgrade. Malaysia generally enjoys excellent basic infrastructure, especially in the Western Corridor of Peninsular Malaysia. Internet connectivity in the country rose from 71 per cent in 2015 to 80 per cent in 2017 and 81 per cent in 2018. Its mobile subscription rate was 134.5 per 100 people in 2018 (UNESCO, 2020). However, for NEMs to thrive in the Eastern Corridor and East Malaysia the government must strengthen the basic infrastructure—the first of the four systemic pillars—where these firms would potentially locate. The states of Sabah and Sarawak also lack adequate provision of power supply and water in remote areas. Contract farming in these states would benefit strongly if NEMs can enjoy low cost and quick access to essential services.

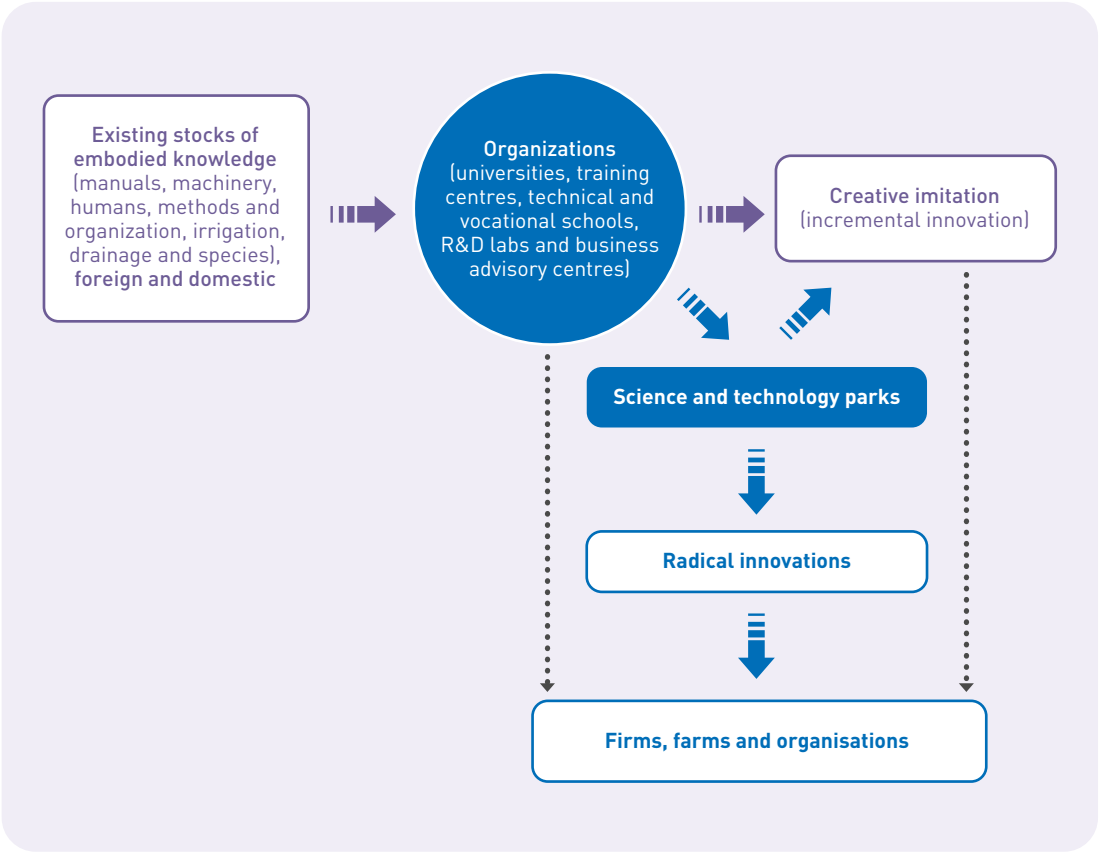
Table 6. **Critical pillars of the systemic quad**

Basic Infrastructure	STI Infrastructure
• Provision of water, power, roads and telecommunications • Provision of financial needs • Customs coordination • Security • Health care • Basic education	• Technical and vocational training • University education and research • Skills development centres • Standards organizations • R&D incentives, grants and centres • Intellectual property rights • Science and technology parks • Venture capital
Network Cohesion (Connectivity and Coordination)	**Integration in Global Factor and Final Markets**
• Between firms and suppliers and buyers • Between firms and basic infrastructure • Between firms and high-tech infrastructure • Between firms and intermediary organizations and customers	• Integration with input and product markets globally • Integration with knowledge nodes globally • Human capital suppliers • Research universities • Integration in GVCs

4.3 Strengthening science, technology and innovation infrastructure

While an efficient basic infrastructure is important to raise efficiency levels of firms, STI infrastructure (the second systemic pillar in table 6) is critical to stimulate firms' participation in innovative activities. Several science parks equipped with incubators sprang up in Malaysia in the 1990s (Malaysia, 1996, 2001). However, none of these incubators has produced tangible commercialization in the country. Although Singapore and Taiwan Province of China are significantly more developed economies, science parks specialized in ICT and biotechnology have played major roles in the upgrading of firms (Rasiah, 2020). Figure 8 shows a stylized model for Malaysian policy makers to consider in reshaping the country's current national innovation framework.

Figure 8. **Institutional framework to support industrial upgrading**



Source: Rasiah (2020).

Through the Eleventh Malaysia Plan 2016–2020, the government continued to emphasize R&D but prioritized the translation of innovation to wealth by strengthening relational capital to foster stronger linkages, collaboration and trust among stakeholders (Malaysia, 2016). In doing so, the government sought to meet the national STI policy target of achieving a gross expenditure on R&D of at least 2.0 per cent by 2020.

The government subsequently launched the National Transformation Policy 2050 in 2017 targeted at using science and technology to transform the national economy with the policy taking effect from 2020 and to be achieved by 2050 (Malaysia, 2017). The blueprint focused on making the Malaysian economy advanced and sustainable. Given its upper-middle-income status, both incremental and radical innovations will be critical for Malaysia to achieve the goals set out in the Eleventh Malaysia Plan (Malaysia, 2016), the National Transformation Plan 2050 (Malaysia, 2017) and the Industry 4.0 Master Plan (Malaysia, 2019).

In addition to assisting the local community to address critical problems, the government must rejuvenate science parks as incubators, which are critical to scale up innovations and to adapt existing stocks of knowledge for innovation. Linking science parks with national universities and public laboratories, and with industry, will be important to stimulate technological upgrading in NEM firms. Such essential knowledge support will not only ensure NEM firms meet the market demands of contracting local firms and TNCs, it will also offer them the opportunity to raise value added.

4.4 Promoting connectivity and coordination

The co-location of organizational support for NEM firms is insufficient to stimulate technological upgrading. Connectivity and coordination between the basic and STI infrastructure organizations and with NEM firms must be strengthened (the third systemic pillar in table 6). Whereas emphasis on basic infrastructure will offer firms efficient business practices with short lead times and low costs, the development of STI infrastructure—science parks, industry-university linkages, standards organizations, quality technical and skilled workers and university graduates—will help stimulate innovation synergies in firms. The latter is critical for NEM firms to upgrade technologically so that they can participate in high value-added activities in GVCs.

The government should form a one-stop agency like the Economic Development Board of Singapore, which should promote investment and establish and increase interactions among firms, organizations and government agencies responsible for providing basic and STI infrastructure services. Basic infrastructure includes security, transport networks and customs control. The broader human resource development organizations, such as schools, technical and vocational education and training institutes and universities should also be connected with firms so that a two-way flow of demand-supply coordination exists between them.

4.5 Promoting integration into regional and global markets

External markets offer scale and scope opportunities and competition and learning effects for NEMs to upgrade and operate with the highest possible efficiency and quality. Malaysia largely enjoys excellent trade linkages in the global economy. Whereas such linkages are good when involving large NEM firms, most local SME NEMs in Malaysia have yet to integrate with the global economy, establish links with R&D labs and incubators and establish a sufficiently networked set of links with the knowledge nodes in the Malaysian innovation system to take effective advantage of innovation synergies. Thus, local Malaysian SME NEMs should be integrated into ASEAN, East Asian and global

markets (the fourth systemic pillar in table 6). The ASEAN Economic Community offers low to zero tariffs in almost all product lines for regional ASEAN firms.

The government can offer double deduction tax incentive on expenditures incurred on exported value of firms, while seeking ways to lower transaction costs involving export and customs procedures and provide preferential interest rates on loans to SME NEMs. The government can also include these firms in their international exhibitions to promote exports.

4.6 Mainstreaming sustainable development

Given the focus on sustainable development advanced by the United Nations, government initiatives should shape the conduct of NEM firms to mainstream the 17 United Nations Sustainable Development Goals, particularly climate change and the environment (goal 13) and workers' human rights (goal 8).

Climate change has become important in bilateral and multilateral trading relationships. Malaysia is a signatory to the Paris Accord of 2015 and has submitted its Intended Nationally Determined Contribution to the United Nations Convention for Climate Change, which agrees to shift to renewable energy to account for 45 per cent of overall energy consumption by 2030. The ministry in charge launched three large-scale solar projects to first raise the share of renewable energy to 20 per cent by 2025 from 5.2 per cent of total energy consumption in 2015 (Malaysia, 2019).[19] The Ministry of Science, Technology and Innovation was, inter alia, renamed as the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC).

In addition, the Sustainability Energy Development Authority began implementing the *MySuria* programme, which aimed to install 1,620 homes from the bottom 40 per cent of income earners with 3 kW solar photovoltaic systems by 2018. Furthermore, MESTECC implemented a campaign in 2018 to eliminate the use of plastics and to scale down or stop all new dam construction projects to check deforestation and landslides. Following a change in government again in 2020, MESTECC was divided into three ministries to address the environment, energy, and science and technology separately.

On labour, the government has ratified most covenants of the International Labour Organization (ILO), including minimum wages and freedom of association. However, Malaysia has yet to sign the broader International Convention on the Elimination of All Forms of Racial Discrimination. Nevertheless, NEM firms allow the unionisation of workers and freedom of association, among other things. Contract farming organizations should also observe the standards imposed as conditions by TNCs and other buyers. Similarly, established hotel brands also require their hosts to observe such standards. Such monitoring by developed country buyers has increased over the years. Many such monitoring systems use telemonitoring with buyers viewing at any time the production flow in NEM firms. According to the United Nations (2011), due diligence on human rights "should cover adverse human rights impacts that the business enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products or services by its business relationship" (p. 17).

[19] The first low sulphur fuel surcharge (LSS) resulted in the approval of 66 contractors to install solar panels to generate 1,228 MW capacity of energy supply. The second LSS offering of 563 MW capacity was launched in 2018 and was expected to be fully operational by 2020 (accessed on 27 May 2021 from https://www.pv-tech.org/malaysia-announces-winners-of-second-lss-solar-auction/). The third LSS was approved with solar capacity to establish 500 MW capacity in February 2019 (accessed on 29 February 2021 from https://www.thestar.com.my/business/business-news/2018/04/11/malaysia-awards-1228mw-projects/).

Within the overall policy framework of NEMs articulated previously, the Malaysian government should consider evaluating NEMs or NEM-related operations in the country from time to time. Assuming that no such evaluation methodology is available, AJC proposes the following checklist (table 7). This proposal is based on the corporate code of conduct by the Tokyo Chamber of Commerce and Industry, adapted with some alterations. It provides some hints for the government to check NEM agreements and their operations.

Table 7. **Checklist for NEM agreements and operations to maximize benefits from and minimize costs of NEMs**

NEM policy by the Malaysian government	Compliance with laws	Whether there is an agreement on contract performance
		Whether there is an agreement on contract terms (durations)
		Whether there is an agreement on contract termination and its process
		Whether there is an agreement on contract arrangement (additional contract) and its process
	Respect for human rights	Whether there are rules on non-discrimination (ILO covenant)
		Whether there are rules on basic human rights
		Whether there are rules on harassment (power balance between local NEM firms and TNCs)
		Whether there are rules on freedom of association (ILO covenant)
		Whether there is minimum wage legislation (ILO covenant)
		Whether there are rules against forced labour (ILO covenant)
		Whether there are rules against child labour (ILO covenant)
	Environmental consideration	Whether there are guidelines on air pollution by local NEM firms
		Whether there are guidelines on water contamination by local NEM firms
		Whether there are guidelines on environmentally friendly goods or services by local NEM firms
		Malaysia submitted its Intended Nationally Determined Contribution milestones to the United Nations Framework Convention on Climate Change policy in 2016. It seeks to achieve 20 per cent renewable energy by 2025 and 45 per cent renewable energy by 2030.
	Work environment	Whether there are employment rules (laws) on ages under the NEM agreement
		Whether there are employment rules (laws) on gender under the NEM agreement
		Whether there are guidelines on a safe and pleasant work environment for local NEM firms
		Whether there are employment rules (laws) on working environments under the NEM agreement
		Whether there are employment rules (laws) on working conditions under the NEM agreement
		Whether there are employment rules (laws) on working hours under the NEM agreement
		Whether there are employment rules (laws) on taking holidays under the NEM agreement

.../

Table 7. **Checklist for NEM agreements and operations to maximize benefits from and minimize costs of NEMs** (Concluded)

NEM policy by the Malaysian government	Work environment	Whether there are employment rules (laws) on treatment of absence under the NEM agreement
		Whether there are employment rules (laws) on maternity-related leaves under the NEM agreement
		Whether there are guidelines on provision of support system of childcare and nursing care
		Whether there are employment rules (laws) on terminating employment contracts under the NEM agreement
	For local firms' development	Whether there is a programme that local NEM firms can take to improve their technology/capacity
		Whether there is a programme that local NEM firm employees can learn
		Whether there is a programme that local NEM firms can take to understand NEM policy
		Whether there is a programme that local NEM firms can take to understand the business environment of the industry
	Subcontractors/ suppliers	Whether there are guidelines for similar NEM policies for local subcontractors/suppliers
	Earning the trust of customers and consumers	Whether there are guidelines for TNCs to provide correct information on their products or services
	Mutual growth with partner companies	Whether there are guidelines for TNCs to respect free and fair-trade rules
		Whether there are guidelines for TNCs to provide relevant information required for trade
		Whether there are guidelines for TNCs to develop relationships based on trust with local NEM firms
	Coexistence with local communities	Whether there are guidelines for TNCs to establish and maintain a good relationship with the community where local NEM firms are located

Source: Adapted from Tokyo Chamber of Commerce and Industry (2013).

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