

ASEAN Investment Report 2017

Foreign Direct Investment and Economic Zones in ASEAN

ASEAN@50 Special Edition





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The ASEAN Secretariat

**United Nations Conference on
Trade and Development**

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. The Member States are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

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The ASEAN Investment Report is produced to facilitate a better understanding of FDI developments in ASEAN. The findings, interpretations, and analysis in the Report should be treated with care, as work on harmonising and improving FDI quality across the region is on-going.

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FOREWORD

FDI flows into ASEAN in 2016 remained high despite a decline to USD 97 billion, which reflects the general downfall trend of global FDI flows into the developing economies. FDI flows from most ASEAN Dialogue Partners and intra-ASEAN investment actually increased, with the latter reaching an all-time high and accounting for a 25 per cent share of FDI flows into the region. However, these increases were not enough to help overcome the decline which was due to divestment, acquisition of foreign assets by ASEAN companies in their home countries and repayment of intracompany loans by affiliates within the region.

Many foreign companies have a long historical association with the region, some dating as far back as the 1800s and they continue to invest and expand in the region. This year's Report examines the historical investment development of two Dialogue Partners of ASEAN, namely the European Union (EU) and India. Major multinational enterprises (MNEs) from these countries have been present in ASEAN in a wide range of industries. Many of them operate in multiple locations across the region in different segments of the value chains.

This year's Report also features the development of economic zones in ASEAN. This is a welcome follow-up to the "ASEAN Guidelines for Special Economic Zones Development and Collaboration" adopted by ASEAN Economic Ministers (AEM) in 2016. ASEAN has at least 1,600 economic zones of various types. These zones, ranging from free trade zones, export processing zones, IT parks to mega special economic zones, have played a significant role in the socioeconomic development in the region and in attracting FDI. Given the rapid economic growth and demand, ASEAN Member States continue to develop more economic zones to boost FDI. Policy makers, entrepreneurs, and other stakeholders may find this Report useful in understanding economic zones in ASEAN, as well as the business and investment development in the region in general.



Le Luong Minh
Secretary-General of ASEAN

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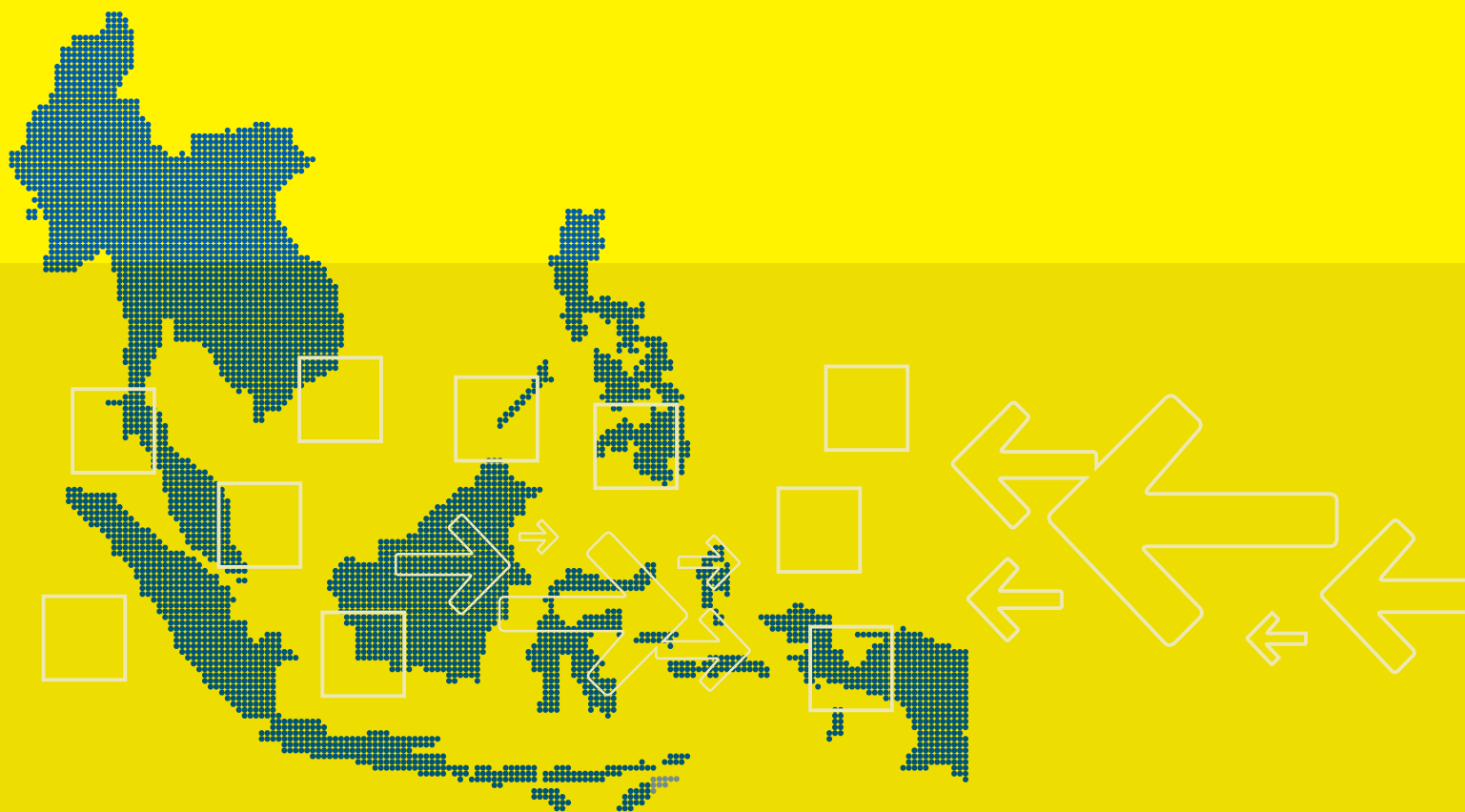
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ABBREVIATIONS

AEC	ASEAN Economic Community
AIR	ASEAN Investment Report
BPO	business process outsourcing
BSEZ	border special economic zone
EPC	engineering, procurement and construction
EPZ	export processing zone
EZ	economic zone
FCZ	free commercial zone
FDI	foreign direct investment
FIZ	free investment zone
FTZ	free trade zone
GLCs	Government-linked companies
GVCs	global value chains
IE	industrial estate
IT	information technology
JV	joint venture
LMW	licensed manufacturing warehouse
M&A	mergers and acquisition
MNEs	multinational enterprises
MW	megawatts
NEMs	non-equity modalities
OEM	original equipment manufacturer
OFDI	outward foreign direct investment
PPP	public-private partnership
REC	regional economic corridor
RVCs	regional value chains
SEZ	special economic zone
SOEs	State-owned enterprises
SMEs	small and medium-sized enterprises
UNCTAD	United Nations Conference on Trade and Development
WIR	World Investment Report

OVERVIEW



OVERVIEW

FDI DEVELOPMENT AND CORPORATE INVESTMENT TRENDS

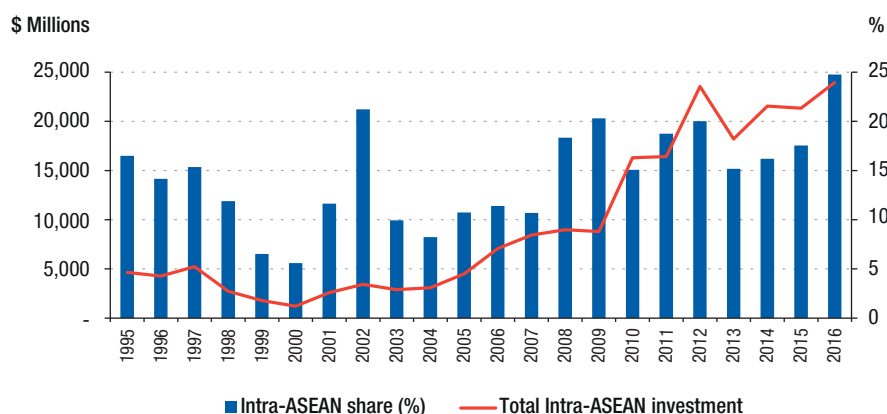
FDI flows in ASEAN remained at a high level in 2016 despite a decline to \$96.7 billion.

Flows to the region fell by 20 per cent, reflecting the general decline in global FDI flows and in flows to developing economies. A significant fall in FDI in two Member States, caused by one-off factors, dragged down inflows in the region. Flows from most ASEAN Dialogue Partners rose, but a single significant divestment, acquisitions of foreign assets by ASEAN companies in their home countries and large repayments of intracompany loans in one Member State contributed to the decline. Cross-border M&A sales in ASEAN fell by 25 per cent, from \$10.3 billion in 2015 to \$7.7 billion in 2016, which also contributed to the fall in FDI inflows.

There were some bright spots. **Inflows from a number of major source countries rose, but not enough to overcome the decline.** FDI flows from the European Union (EU) rose by 46 per cent to \$30.5 billion, those from China rose by 44 per cent to \$9.2 billion, those from the Republic of Korea rose by 3 per cent to \$6.0 billion and those from Australia rose by 77 per cent to \$3.4 billion. Significant FDI from the Netherlands, Ireland, Luxembourg, Denmark, Spain and France pushed up investment in ASEAN from the EU economies.

Intra-ASEAN investment rose to a record level (\$24 billion) in 2016 and accounted – for the first time – for a quarter of total FDI flows in the region (figure 1). Intraregional investment flows continued the uptrend they have been on since 2003 (except for a blip in 2013).

Figure 1. Intra-ASEAN investment, 1995–2016 (Millions of dollars and per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

The rise in intra-ASEAN investment in 2016 was driven by a two-thirds increase in investment in manufacturing, to \$8.3 billion, and a doubling of investment in finance, to \$5 billion. Intraregional investment from seven Member States rose. Singapore, Malaysia and Thailand dominated intra-ASEAN investment.

Major factors behind the rise in intraregional investment are the growing financial strength and significant cash holdings of ASEAN firms and their increasing drive to internationalize to build competitiveness and to access markets, natural resources and strategic assets. Review of a selection of 100 major ASEAN companies with operations in the region shows their presence in multiple ASEAN Member States and expansion of their regional footprint.

The CLMV countries continued to receive increasing attention from investors in 2016.

FDI flows to this group of ASEAN Member States (Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam) rose by 8 per cent, from \$17.4 billion in 2015 to \$18.9 billion in 2016. As a result, their share in total ASEAN FDI inflows rose from 10 per cent in 2015 to 13 per cent in 2016. FDI from developing Asian economies, including intra-ASEAN investment, remained the major source of investment in these Member States. China and ASEAN are major investors in Cambodia and the Lao People's Democratic Republic, ASEAN is a lead investor in Myanmar, and the Republic of Korea is the largest investor in Viet Nam. Activities of foreign companies in Cambodia concentrated in finance, light manufacturing and infrastructure activities, while the Lao People's Democratic Republic attracted strong infrastructure investment, particularly in power projects. FDI into Myanmar rose, with growing investor interest across all sectors. FDI flows in Viet Nam were dominated by strong manufacturing investments from the Republic of Korea.

FDI flows from major source economies concentrated in the manufacturing and services sectors. For instance, Japanese companies invested strongly in manufacturing, where flows rose significantly, from \$7.9 billion in 2015 to \$23.8 billion in 2016, reflecting the growing expansion of Japanese manufacturing companies' activities in the region. More than 50 per cent of the \$6.0 billion in FDI from the Republic of Korea in 2016 went to manufacturing; a majority of the investments were made in Viet Nam. FDI from Hong Kong (China) rose, concentrating in finance, electricity, manufacturing and real estate activities. Chinese FDI went mainly to finance, wholesale and retail trade, transportation and real estate. Australian FDI in ASEAN concentrated in finance, with flows into that industry increasing from \$568 million in 2015 to \$5.3 billion in 2016. FDI from both the EU and the United States went predominately to services, particularly in finance. Intra-ASEAN investment remained the largest source of investment in agriculture and mining. ASEAN companies were the largest investors in real estate activities, reflecting the growing demand for real estate and growth in the region, in particular in the CLMV Member States. In manufacturing, ASEAN was the second largest source of investment after Japan, with \$8.0 billion in FDI in 2016.

Significant investment in finance contributed to the dominance of FDI in services.

A majority of the investment in finance went to Singapore. These flows include intra-firm financial activities of non-financial MNEs, regional headquarters functions and holding company operations.

Many of the Fortune Global 500 companies continued to invest in the region. In 2016, they expanded their operations with multiple facilities both in the same ASEAN host country and across a number of Member States. They established or added plants or business functions (e.g. from manufacturing to research and development (R&D) activities) or upgraded their operations. MNEs that opened R&D facilities in the region include Nestle (Switzerland), Panasonic (Japan), Osram Opto Semiconductor (Germany), Honda (Japan), Nissan (Japan), Apple (United States) and Samsung Electronics (Republic of Korea). In 2016–2017, some MNEs also increased their investment in regional headquarters operations to coordinate their expanding networks and affiliates in the region.

Investments by major global automotive MNEs were concentrated in a few Member States such as in Indonesia, Malaysia and Thailand. Some have also expanded with activities in Viet Nam, the Philippines and Singapore. In addition to the global automotive manufacturers, parts and components manufacturers are also expanding in the region, with new investment and factories starting operations in 2016–2017. New factories are dominated by Japanese companies, with a large share of these factories set up in Thailand and in Indonesia.

Financial services MNEs are also expanding in ASEAN. Many American and European finance MNEs have been in the region for a long time. However, 2016 brought a few first-time investors, in particular Chinese companies in infrastructural finance. Chinese banks are also increasingly active in other financial services in the region. **MNEs continue to participate in infrastructure development in the region in various segments of the value chain.** They participate as owners and operators of power plants, as providers of engineering, procurement and construction (EPC) services and as equipment suppliers to infrastructure projects.

As in past reports, *AIR 2017* continues the tradition of examining in detail the trends in FDI development and corporate investment from two selected ASEAN Dialogue Partners. The report this year focuses on FDI and enterprises from the EU and India.

EUROPEAN UNION FDI AND MNEs IN ASEAN

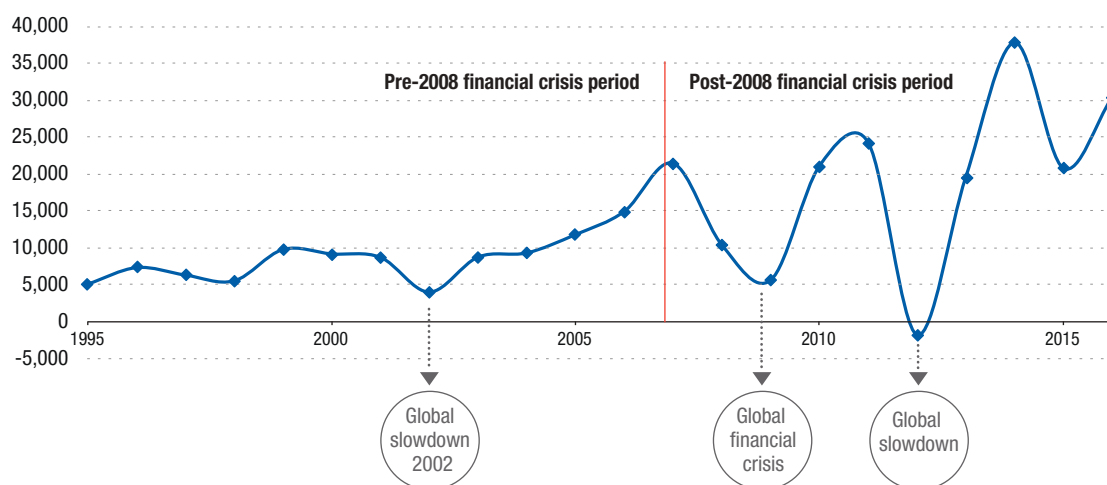
The EU is the largest investor group in ASEAN in value terms. It accounted for over 22 per cent of all FDI flows in the region from 2000 to 2016. These flows have been volatile, particularly since 2007, because of the impact of global economic factors and EU-specific events that affected EU MNEs' investment patterns. EU FDI flows into ASEAN have more than doubled in the past decade, registering in 2014 an all-time high of \$37.9 billion. After a decline in 2015, they rose by 46 per cent in 2016, to \$30.5 billion. However, less than 2 per cent of the EU's global outward FDI stocks are in ASEAN, as compared with 13 per cent for Japan.

EU FDI flows in the region can be divided into two periods: before and after the 2008 global financial crisis (figure 2). Flows between 1995 and 2007 were on a generally upward trend despite minor fluctuations and dips in 1998 and 2002, which were the effects of the 1997–1998 Asian financial crisis and the 2002 downturn in the stock markets in many economies. The fall in EU FDI flows in ASEAN mirrored the decline in global FDI in 2002. However, these

flows increased more than fivefold between 2002 and 2007, from just \$4 billion to \$21 billion. In the period after the financial crisis, EU FDI flows in ASEAN were more volatile, with steeper increases and declines over shorter periods.

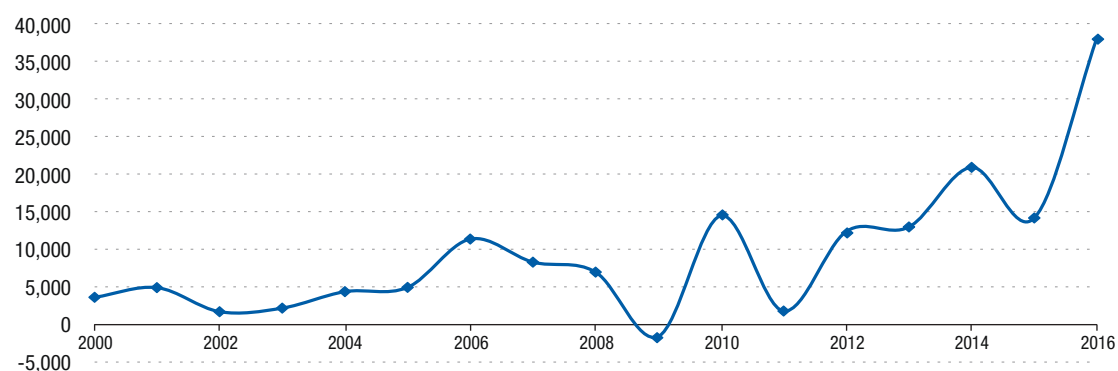
The sectoral distribution of EU FDI in ASEAN has changed in the last five years (2011–2016). In the preceding period (2005–2010), manufacturing investment dominated. In the more recent period, EU FDI into finance and other services has increased substantially, to at least 85 per cent of all EU FDI in ASEAN (figure 3). Flows to finance and insurance activities rose 93 per cent, despite annual fluctuations between the two periods. In the primary sector, investment in mining and quarrying rose by 71 per cent.

Figure 2. EU FDI flows in ASEAN, 1995–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 3. EU services FDI in ASEAN, 2000–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

More than 9,000 EU companies operate in ASEAN. The association of EU MNEs with ASEAN has a long history, dating back to the 1800s. Many of the activities of early EU MNEs were concentrated in plantations, finance and extractive industries in the region. Over time, more became involved in a wide range of industries. Many continue to be involved with development in the region through the expansion of operations and the incorporation of more business functions, such as regional headquarters and R&D activities. Although the services sector dominates their investment focus, significant numbers of EU MNEs invest in manufacturing as well.

Two thirds of the 100 largest EU MNEs have subsidiaries in ASEAN. This share highlights the significance of ASEAN as an investment destination for EU MNEs. More than half of the 75 largest EU MNEs in ASEAN have a presence in four or more Member States.

INDIAN FDI AND COMPANIES IN ASEAN

ASEAN is a major destination for outward FDI (OFDI) from India. About 22 per cent of Indian global OFDI stock was in ASEAN in 2015, and at least 1,950 Indian companies are present in the region. This proportion is much larger than the shares of global OFDI stocks of Japan, the United States, China and the EU in the region (i.e. 13 per cent, 5 per cent, 6 per cent and 2 per cent, respectively).

Indian OFDI flows to ASEAN fluctuated widely between 2005 and 2016, with a peak in 2012. Since the peak, flows have declined – until 2016, which saw inflows exceeded \$1 billion (table 1) – about 1 per cent of total ASEAN inflows.

Indian FDI in ASEAN is dominated by services activities, primarily in finance and insurance, repair of motor vehicles and motorcycles, and real estate activities. These three groups of services industries received the bulk of cumulative Indian FDI in ASEAN during 2012–2016. About 60 per cent of Indian FDI flows in ASEAN went to finance and insurance, with another 9 per cent in wholesale and retail trade in repair of motor vehicles and 8 per cent

Table 1. Indian FDI flows in ASEAN, by industry, 2012–2016 (Millions of dollars)

Industry	2012	2013	2014	2015	2016	2012–2016
Agriculture, forestry and fishing	8.7	4.6	4.7	3.5	4.4	25.8
Mining and quarrying	(0.7)	0.4	(0.1)	0.2	2.9	2.7
Manufacturing	109.4	66.2	34.2	(131.4)	20.2	98.6
Services	7,193.7	2,036.9	1,177.4	1,089.3	1,021.1	12,518.4
Of which:						
Wholesale and retail trade; repair of motor vehicles and motorcycles	633.9	192.1	25.1	131.5	199.0	1,181.6
Transportation and storage	(451.5)	(17.0)	36.6	0.4	41.0	(390.5)
Finance and insurance	5,619.6	1,067.6	771.5	525.7	(578.4)	7,405.9
Real estate	9.1	1.3	428.7	296.0	276.2	1,011.4
Total	7,311.1	2,108.1	1,216.2	961.6	1,048.6	12,645.5

Source: ASEAN Secretariat, ASEAN FDI database.

in real estate activities. Indian companies are increasingly establishing operations in higher-technology content activities, in e-commerce and technology start-ups in the region.

ECONOMIC ZONE DEVELOPMENT IN ASEAN

The ASEAN region has more than 1,600 economic zones of various types (tables 2 and 3). In this report economic zones refer to all types of industrial and non-industrial zones, estates or parks that facilitate investments, especially FDI.

Economic zones can be regarded as investment in industrial infrastructure to attract investments in productive assets. These zones have played an important role as industrialization tools for Member States in the ASEAN region.

The development of economic zones in ASEAN varies by country depending on institutional set-up, stage of industrial development and demand. The development of economic zones in some Member States involves government authorities at state or provincial levels owning and operating such zones (e.g. Malaysia and Viet Nam). In some Member States, all economic zones are regulated or coordinated through a central authority (e.g. the Industrial Estate Authority of Thailand and the Philippine Economic Zone Authority). In most Member States, the private sector is actively involved in the development and operation of economic zones. This report offers 10 country case studies of economic zone development and the role of such zones as investment facilitation tools.

Economic zones in ASEAN continue to evolve. Some economic zones are developed for a general purpose by attracting investors that operate in a wide range of manufacturing and services industries. Some Member States have developed specific types of economic zones earlier in their industrialization (e.g. FTZs in Malaysia or EPZs in Indonesia and Thailand). Some are developing new generations of economic zones with strong integrated elements and industrial-residential-commercial township features such as large-scale SEZs (e.g. the CLMV Member States and Indonesia) or regional economic corridors (e.g. Malaysia). Some ASEAN Member States are cooperating in developing border economic zones. Furthermore, some are developing dedicated or specialized economic zones reflecting the economic strengths of the locations or the zones (e.g. zones for IT and business process outsourcing (BPO) in the Philippines, tourism-linked SEZs in Indonesia and the Lao People's Democratic Republic, technology parks in various ASEAN Member States, aerospace parks in Singapore and the Rubber City Industrial Estate in Thailand).

Economic zones have made significant contribution to industrial development in ASEAN Member States. They have helped improve the general investment environment, generated employment (including for women), increased foreign exchange earnings, generated government revenues, caused spillover effects in the local economy, developed domestic contract manufacturers and linked the host country in global value chains controlled by MNEs. Evidence suggests that economic zones have helped Member States in the region achieve industrial development, develop export-oriented industries and, in some cases, develop strong

Table 2. Types of economic zones in ASEAN

Selected economic zones	Description	Example countries
Free zones	A designated and secured area in which commercial and industrial activities are carried out and gazetted. Investment projects often benefit from incentives and are usually for export purposes. Customs checkpoints control the movement of goods at the entry and exit points of the zone.	Indonesia, Malaysia, Philippines, Singapore, Thailand
Free industrial zones (FIZs) or free trade zones (FTZs)	A type of free zone focused on industrial activities, where most manufacturing activities are carried out for export purposes.	Indonesia, Malaysia, Singapore
Free commercial zones (FCZs)	A type of free zone focused on commercial activities, which facilitates trading, relabeling, repacking and other value added activities. FCZs usually cover commercial, trading and entrepôt trade activities. Most are located near a port.	Malaysia
Export processing zones (EPZs)	A specialized industrial estate located outside the customs territory and predominantly oriented to export production. Enterprises located in EPZs are allowed to import capital equipment and raw materials free from duties, taxes and other import restrictions.	Indonesia, Philippines, Thailand, Viet Nam
Industrial zones or industrial estates	There are two types: general and specialized. The latter can have free zone status (e.g. industrial estates in EPZs or FTZs). They are also referred to interchangeably as industrial parks or industrial estates.	All ASEAN Member States
Special economic zones (SEZs)	An SEZ may consist of one or more industrial estates, EPZs, FTZs, tourism centres, economic zones and other industrial structures (e.g. a port) in a defined or demarcated area.	Indonesia, Cambodia, Lao People's Democratic Republic, Myanmar, Philippines, Thailand
Border special economic zones	SEZs located in contiguous areas bordering another ASEAN Member State, to facilitate investment, trade, services and production linkages.	Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam
Licensed manufacturing warehouse	These are also bonded warehouses for manufacturing, with customs control. These can be a manufacturing unit (factory) granted to an investor for manufacturing and warehousing of approved products in the same premises. It caters to export-oriented industries.	Malaysia
Technology park	Facilities or areas that support and promote technological development including through research and attracting technology based companies. It aims to facilitate innovation and knowledge-based economy. Such parks provide an environment and ecosystem (e.g. proximity to research institutes, universities) conducive for technological activities.	Most ASEAN Member States
Science park	Facilities or areas that support and promote science and research activities. Such parks provide an environment and ecosystem (e.g. proximity to research institutes, universities) conducive for innovation, knowledge-based work, and research and development.	Most ASEAN Member States
Regional economic corridors	Large economic areas involving a number of contiguous States or provinces. Their development draws on the sectoral and geographical strengths of the constituent areas to support economic clusters and benefit from economies of scale.	Malaysia

Source: ASEAN Investment Report 2017 research, based on the definitions used by ASEAN Member States and countries' presentations at the ASEAN–UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok.

Note: Terms are those used in ASEAN Member States.

Table 3. Economic zones in ASEAN, as of December 2016

Country	Type of economic zone											
	FIZ	FCZ	EPZ	IE	EZ	SEZ	BEZ	CEZ	TP	REC	ITC	Other
Brunei Darussalam	..	..	..	>25	..	..	..	..	..	..	..	..
Cambodia	..	..	..	<10	..	16	..	..	..	..	..	..
Indonesia	3 ^a	..	..	75	..	11	..	..	..	..	..	14 ^b
Lao People's Democratic Republic	..	..	..	..	..	12	..	..	..	..	..	..
Malaysia	22	18	..	>500	..	..	..	..	..	5	..	..
Myanmar	..	..	..	<20	..	3	..	..	..	..	..	..
Philippines ^c	..	..	..	74	21 ^d	19 ^e	..	..	49 ^f	..	200	2
Singapore	10	..	..	>75 ^g	..	..	..	..	..	..	..	..
Thailand	..	..	10	58	..	10	..	..	..	..	..	..
Viet Nam ^h	..	..	3	325	..	..	28	16	3	..	..	..

Source: ASEAN Investment Report 2017 research.

Notes: BEZ = border economic zone and border-gate economic zone; CEZ = coastal economic zone; EPZ = export processing zone; EZ = economic zone; FCZ = free commercial zone; FIZ = free industrial zone; IE = industrial estate or park; ITC = information technology centre; LMW = licensed manufacturing warehouse or bonded warehouse; REC = regional economic corridor; SEZ = special economic zone; TP = technology park.

^a FTZs in Bintan, Batam and Karimun in Riau Province.

^b 14 KAPETs, a type of integrated economic development zone introduced in 1998.

^c Refers to economic zones registered with the Philippine Economic Zone Authority only.

^d Refers to agro-industrial economic zones.

^e Refers to tourism SEZs.

^f IT parks.

^g An estimate that covers industrial parks and business hubs developed by JTC, the Housing Development Board and Ascendas-Singbridge, as well as a few privately owned business parks that house light manufacturing activities.

^h BEZs and CEZs are considered economic zones in Viet Nam.

industrial clusters. With increasing demand in the region, more economic zones are being planned and developed.

The experience of ASEAN Member States with economic zones in attracting investment has been encouraging for various reasons. They facilitate quick set-up of operations for foreign investors, lower the transaction costs of investing and operating in the host country, ensure factories are more secure, induce agglomeration of firms and generate cluster benefits. To the extent that economic zones are able to reduce transaction costs, they increase their attractiveness to potential economic zone tenants. The need to provide good services in and to economic zones is important. The key issue is how to make them more effective in attracting FDI and in achieving the economic objectives of the host country.

Not all economic zones are successful. Some are more successful than others at attracting investments and developing clusters. Some zones have not been successful in attracting investment because of their lack of competitiveness and lack of good facilities. Some are located far from major road networks, ports or airports, or face other logistical challenges as well as issues such as a lack of housing facilities for workers or an inadequate pool of low-cost workers in the vicinity.

Economic zones are not without challenges. The challenges in economic zone development include whether demand exists to justify more such zones, as well as financing

aspects and sustainability issues. There are also risks to consider. They include concern about the footloose industries that some of these economic zones were established to attract, possible “enclave” consequences that can limit spillover effects to the local economy, possible fiscal losses associated with the provision of incentives, and social and environment risks. These challenges and risks need to be carefully addressed. In addition, countries need to develop or upgrade economic zones to be competitive or build next-generation zones to attract targeted industries, to support the stage of the country’s economic development. Furthermore, regional cooperation in economic zone development, to facilitate regional value chains and production networks, can be considered or pursued to improve the competitiveness and connectivity of economic zones in ASEAN.

KEY PLAYERS IN ECONOMIC ZONE DEVELOPMENT IN ASEAN

Actors involved in zone development include public and private owners and developers, service providers, foreign MNEs associated with economic zone development and zone tenants (table 4). For policy design, it is important to understand the roles of these different actors and how they contribute to economic zone development, industrial agglomeration and improvement in the competitiveness of the overall FDI environment.

The roles and involvement of players depend on factors such as the role of the government, institutional support, investment opportunities in industrial estates, stage of industrial development, the external environment and the demand for economic zones. For economic zones to be successful and for a country to be competitive, all players need to play their roles by providing suitable industrial facilities to facilitate investment to designated areas and by operating in them.

Local players (public and private sector) are the main contributors to economic zone development in ASEAN. They have contributed to shaping the landscape of industrial facilities through the zones they have built, owned and managed. The public sector regulates, encourages and develops economic zones, providing investors (tenants) with facilities across the country depending on their needs (e.g. near main customers, ports, airports, neighbouring countries, specialized industrial estates) and types of investment (e.g. energy-intensive operations, export-oriented, IT service).

In most cases, the private sector is the largest developer and owner of economic zones in the region (table 5). However, the public sector provides the crucial enabling environment through policy, institutional support and public–private partnerships.

Private sector players include major industrial estate developers, real estate companies and infrastructure corporations. Governments have actively encouraged them to play a significant role. In some cases, the public sector works closely with the private sector through public–private partnerships, concession arrangements and joint ventures (JV) in economic zone

Table 4. Economic zone development: roles and objectives of selected players

Category of player	Role in economic zone development	Objectives
Public sector economic zone developers (national government, State government, provincial government, municipalities)	<ul style="list-style-type: none"> Build, regulate, coordinate and supervise economic zone development 	<ul style="list-style-type: none"> Encourage industrialization and spread economic development across the country using economic zones as tools Create employment, generate exports, attract investment and develop specific industries Test policy framework in enclaves or demarcated areas
Local private economic zone developers (local real estate and infrastructure companies, and State-owned enterprises)	<ul style="list-style-type: none"> Build, manage and operate economic zones in line with corporate objectives and strategies Partner with government in JVs in economic zone development Form a consortium to develop, operate or market economic zones 	<ul style="list-style-type: none"> Expand business, generate revenues and profits Extend an integrated business model and to capture more segments of the business value chains Maximize stakeholders' interest
Foreign MNE economic zone developers (foreign trading companies, conglomerates, infrastructure or real estate companies, State-owned enterprises)	<ul style="list-style-type: none"> Build, manage and operate economic zones in overseas locations 	<ul style="list-style-type: none"> Pursue integrated business strategy by drawing on different business experiences within the group Maximize economic rent through exploitation of economic zone development knowledge Maximize shareholders' interest through expanding business abroad Involve in Government-to-Government cooperation
Foreign MNE economic zone management companies	<ul style="list-style-type: none"> Tap on the skills, experience, business networks and competitive advantages in marketing and selling economic zones facilities to clients Act as sales and management agents of economic zones 	<ul style="list-style-type: none"> Act as sales and marketing agents for third-party owners of economic zones
Foreign MNE manufacturer-led developer	<ul style="list-style-type: none"> Build and operate economic zones to house its operation and a network of suppliers 	<ul style="list-style-type: none"> Maximize value, logistics management and supply chain Provide an operating environment to benefit from economies of scale through agglomeration of firms
OEM (original equipment manufacturer) MNE tenants	<ul style="list-style-type: none"> Find competitive sites for operation in the host country Demand for more land to support factory expansion 	<ul style="list-style-type: none"> Lower cost of operation Improve efficiency Operate near market and supply chain
Supplier MNE tenants	<ul style="list-style-type: none"> Find competitive sites for operation in the host country 	<ul style="list-style-type: none"> Operate near customers and supply chain Lower cost of operation Improve efficiency

Source: ASEAN Investment Report 2017 research.

development. The public sector includes provincial authorities, State government, port authorities, municipalities and government agencies.

Foreign companies have also played an important role in the development of economic zones in ASEAN – often in JVs with local partners. MNEs from Japan, China and other countries are involved in economic zone development in the region. Companies from ASEAN Member States are increasingly participating in the development of economic zones in other ASEAN Member States.

Companies involved in economic zone development operate abroad for a combination of reasons. In general, the drivers and motives of FDI in economic zone development are similar to those for real estate and infrastructure investments. There are also strategic reasons, such

Table 5. Dominance of the private sector in economic zone developments in ASEAN, 2017

Country	Role of private sector participation	Share of private sector participation (%)	Share of foreign company participation (%)	Remarks
Brunei Darussalam	Not significant	<50	Not significant	Brunei Economic Development Board and Brunei Industrial Development Authority are two key developers of industrial infrastructures.
Cambodia	Very significant	>90	Significant (>50) ^a	Cambodia encourages FDI in SEZ development. Some 85 per cent of factories in SEZs are 100 per cent foreign owned.
Indonesia	Significant	>80	Not significant (<50)	Indonesian companies are dominant economic zone developers. In some cases, they partner with foreign companies.
Lao People's Democratic Republic	Very significant	>90	Significant (>50) ^a	The Government actively encourages private companies, including FDI, in the development of SEZs.
Malaysia	Not significant	<20	<10	State governments have power over land issues, and they are active economic zone developers. The Government and state authorities own all FIZs, FTZs, LMWs and RECs.
Myanmar	Very significant	>90	Significant (>50) ^a	The country is developing three major SEZs, and they all involve foreign investors.
Philippines	Very significant	>90	Significant	About 200 IT centres are included in the 365 economic zones.
Singapore	Not significant	<20 ^b	..	Most major industrial facilities or economic zones are developed by Government-linked companies or Government bodies, such as the JTC Corporation. Some private sector players have developed smaller industrial parks or buildings.
Thailand	Significant	80	Not significant (<50)	The Industrial Estate Authority of Thailand is an active developer. The private sector plays a significant role in the development of economic zones and in many cases in cooperation with the Authority.
Viet Nam	Very significant	81	Significant	Provincial governments and municipalities are active investors in economic zone development – often as a JV partner with the private sector.

Source: ASEAN Investment Report 2017 research estimate.

^a On the basis of SEZs.

^b Excluding JTC and its subsidiaries.

as bilateral cooperation in developing economic zones as tools to support industrialization. Such cooperation often takes the form of JVs between two State-owned enterprises or government-linked companies, such as the development of the various Vietnam–Singapore Industrial Parks in Viet Nam.

A number of “push” and “pull” factors also drive and motivate companies to invest abroad in developing, managing and operating economic zones. Push factors include economic zone developers with strong business records and business networks (e.g. with potential tenants), which offer these companies a specific advantage to venture abroad. Pull factors encompass locational and regional factors that encourage MNEs to invest in a host country (e.g. host-country-specific factors).

The success of an economic zone or industrial estate depends on efforts to bring in tenants, especially major anchor companies. Major anchor companies help attract other

investors or industrial estate tenants that supply them and other firms within the estate or in nearby facilities.

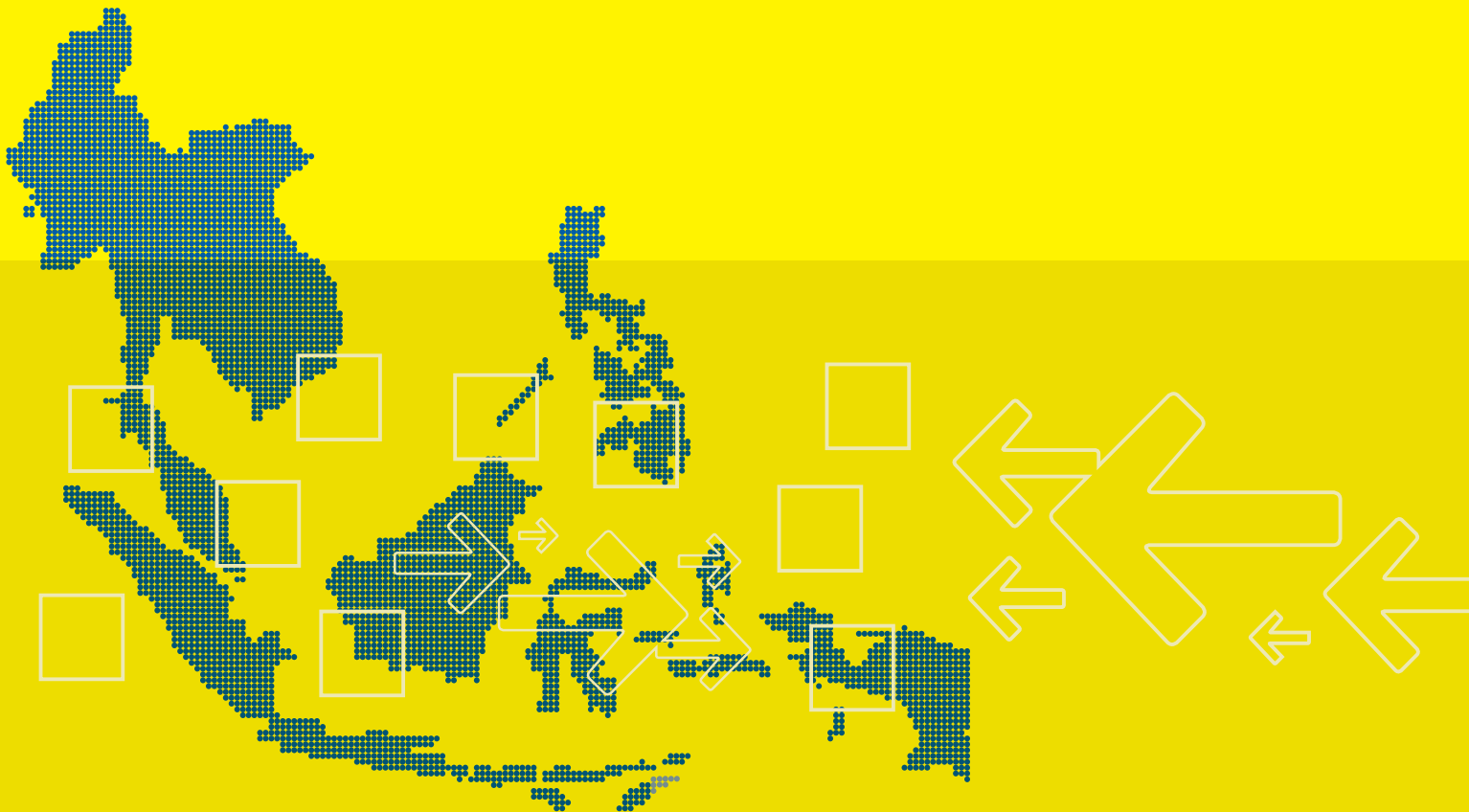
Although developers of economic zones play an important role, **it is a critical mass of tenants that makes a zone successful.** Interviews with firms for this report show that companies look for certain factors when deciding on site locations and the factors differ between tenants. However, common aspects include the strategic location of the industrial estate, the provision of competitive infrastructure facilities, security, access to labour, proximity to markets and supply chains, and a competitive cost environment, as well as the services and professionalism of the industrial estate's management company.

Understanding the relationship between economic zones and industrial cluster development, including how different zones or industrial estates are connected through intrafirm and interfirm activities, is essential. **Evidence from some ASEAN Member States suggests that economic zones have acted as catalysts for the development of industrial clusters.** Some economic zones in the region have facilitated the development of clusters in industries such as steel, electronics and automotive. They have been successful at attracting major anchor companies and related tenants, which has contributed to the development of industrial clusters (e.g. the Amata and Hemaraj industrial estates in Thailand for automotive and electronic clusters; Kota Jababeka and other nearby industrial estates in Java, Indonesia, for automotive clusters; and the various IT parks in the Philippines for the IT-BPO clusters). Other economic zones have also generated a critical mass of tenants, which play a catalytic role in the agglomeration of firms, as has happened in the garment, shoes, IT and other service industries. Although contemporary economic zone development in Cambodia, Myanmar and the Lao People's Democratic Republic is relatively recent, these Member States are beginning to attract a wider range of foreign firms operating in different industries to their SEZs.

Economic zones in and of themselves do not necessarily attract industrial clusters. Facilitating their development requires a combination of factors, a critical mass of firms in related industries and an interplay of economic, policy and geographic factors. If planned correctly and effectively, economic zones with appropriate facilities and support can be catalysts in developing industrial clusters. Achieving a critical mass of related tenants within and around the economic zone or in connection with other zones in the country is important. To the extent that economic zone developers have succeeded in attracting major or lead tenant companies, many suppliers of those tenants have tended to follow suit, to operate close to them in the host country. Such intra- and interfirm connections contribute to the growth of production networks within a country and to regional value chains in ASEAN (*AIR 2014*, *WIR 2013*). Some examples of economic zones that have facilitated the development of industrial clusters in ASEAN are presented in this report.

PART ONE

FDI and MNE Development in ASEAN



CHAPTER 1

FDI development and corporate investment trends

1.1. INTRODUCTION

FDI flows in ASEAN remained at a high level in 2016 despite a decline to \$96.7 billion. A significant fall in FDI in two Member States, caused by one-off factors, dragged down inflows in the region. Flows from most ASEAN Dialogue Partners rose, but a single significant divestment, acquisitions of foreign assets by ASEAN companies in their home countries and large repayments of intra-company loans by MNE affiliates in one Member State contributed to the decline.

The investment trend and pattern by investing countries varies. MNEs from the European Union (EU) and other Asian economies were active investors in a wide range of industries. Intra-ASEAN investment strengthened further and accounted for a quarter of total FDI inflows in the region – the largest share to date. ASEAN companies continued to expand regionally. Improved cash holdings, the drive to internationalize, regional integration and new opportunities were key factors encouraging ASEAN companies to invest in the region.

This chapter presents an analysis of FDI development and MNEs' activities in ASEAN in 2016 and the first half of 2017. It gives particular emphasis to intraregional investment and FDI and MNEs' activities in the CLMV countries (Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam).

As in past reports, *AIR 2017* continues the tradition of examining in detail the trends in FDI development and corporate investment from two selected ASEAN Dialogue Partners. The report this year focuses on FDI and enterprises from the EU and India, which are discussed in Chapter 2 and 3, respectively.

1.2. FDI TRENDS AND DEVELOPMENTS IN 2016

FDI flows to ASEAN in 2016 fell by 20 per cent, to \$96.7 billion, reflecting the general decline in global FDI flows and in flows to developing economies. Flows to those economies declined by 14 per cent, from \$752 billion in 2015 to \$646 billion in 2016 (*WIR 2017*).

The \$25 billion decline in FDI flows to ASEAN was due to one-off factors (table 1.1). Inflows in five Member States and cross-border M&A sales in the region fell. Inflows to Indonesia and Singapore together declined by about \$22 billion, which significantly depressed FDI in the

region. In particular, the intracompany loan component of FDI in Singapore fell to -\$12.4 billion in 2016, which suggests significant repayments of intracompany loans by affiliates based in that Member State. Repayment of intracompany loans should be interpreted in the context of affiliates being able to generate profits and revenues to repay intragroup loan obligations. In Indonesia, FDI declined significantly, from \$16.6 billion in 2015 to \$3.6 billion in 2016, a change linked with divestment of assets in finance, a reduction of round-tripping investment by Indonesian companies and the tax amnesty programme introduced between July 2016 and March 2017.¹

A number of significant acquisitions by Indonesian and Singaporean companies of foreign assets in their home countries also contributed to the decline in FDI inflows because of divestment effects. For instance, PT Ammam Mineral (Indonesia) acquired a 48.5 per cent

Table 1.1. FDI flows in ASEAN, by selected countries and regions, 2013–2016 (Millions of dollars)

	2013	2014	2015	2016
Intra-ASEAN	18,209	21,556	21,340	23,948
Australia	2,195	4,495	1,935	3,433
Canada	750	1,411	1,149	296
China	6,354	6,185	6,412	9,211
European Union 28	19,656	37,861	20,834	30,465
European Union 15	19,372	36,571	20,209	28,812
Austria	395	39	-152	75
Belgium	280	234	710	141
Denmark	-440	-116	985	3,101
Finland	316	-145	175	39
France	986	1,173	263	961
Germany	-836	49	-271	-81
Greece	2	0	3	7
Ireland	174	2,825	4,806	8,118
Italy	213	63	14	-20
Luxembourg	2,836	12,196	2,300	4,468
Netherlands	10,580	8,945	7,872	8,921
Portugal	-11	7	17	3
Spain	281	250	-13	1,246
Sweden	-43	283	-26	122
United Kingdom	4,639	10,767	3,527	1,711
Other European Union	285	1,290	624	1,652
India	2,108	1,216	962	1049
Japan	24,359	12,982	14,738	13,989
New Zealand	275	440	22	-468
Pakistan	0	10	-20	45
Republic of Korea	4,253	4,690	5,704	5,890
Russian Federation	608	-113	-29	57
United States	11,180	13,578	23,379	11,657
Others	30,105	28,746	25,195	-2,848
ASEAN Total	120,051	133,057	121,621	96,723

Source: ASEAN Secretariat, ASEAN FDI database.

stake in Newmont Nusa Tenggara in Indonesia for \$1.3 billion. The latter was owned by Newmont Mining (United States) and Sumitomo (Japan). The Oversea-Chinese Banking Group (Singapore) acquired the wealth and investment management business of Barclays Bank (United Kingdom) in Singapore for \$320 million.

On the supply side, inflows from non-Dialogue Partner countries contracted by some \$28 billion (from \$25.2 billion in 2015 to -\$2.8 billion in 2016) – the main contributor to the decline in FDI in 2016. Mauritius alone contributed to a -\$13.6 billion divestment, mainly associated with divestment of finance and banking assets in Indonesia and round-tripping investment associated with that Member State. Flows from the United States fell by 50 per cent to \$11.7 billion, while flows from Japan fell by 5 per cent to \$14.0 billion because of various factors.

Despite the declines, there were some bright spots. Intra-ASEAN investment and FDI inflows in the CLMV countries rose. Inflows from a number of major source countries also rose but not enough to help overcome the decline. In particular, FDI flows from the EU rose by 46 per cent to \$30.5 billion, those from China rose by 44 per cent to \$9.2 billion, those from the Republic of Korea rose by 3 per cent to \$6.0 billion and those from Australia rose by 77 per cent to \$3.4 billion. Significant FDI from the Netherlands, Ireland, Luxembourg, Denmark, Spain and France help pushed up the investment in ASEAN from the EU economies. FDI from a number of other ASEAN Dialogue Partner countries also rose (e.g. Pakistan and the Russian Federation).

FDI flows from major source economies differed in industry focus. Japanese companies invested strongly in manufacturing, where flows rose significantly from \$7.9 billion in 2015 to \$23.8 billion in 2016 (table 1.2), reflecting the growing expansion of Japanese manufacturing companies' activities in the region. However, Japanese companies divested some -\$17.2 billion in assets in finance. While FDI from the United States in finance rose by 8 per cent to \$20.6 billion – the largest source of investment in this industry – United States companies divested -\$10 billion in assets in manufacturing activities (primarily in one Member State). FDI from the EU was significant in finance, rising to \$18.8 billion from a divestment of -\$163 million in 2015. In manufacturing, EU companies divested -\$11.1 billion, which also was concentrated in one Member State. Korean FDI in the region concentrated in manufacturing activities. More than 50 per cent of the \$6.0 billion in FDI from the Republic of Korea in 2016 went to manufacturing, and a majority of the investments were made in Viet Nam. Korean FDI in finance rose from \$463 million in 2015 to \$1.2 billion in 2016. FDI from Hong Kong (China) rose, concentrating in finance, electricity, manufacturing and real estate activities. These four industries accounted for 72 per cent of FDI in ASEAN from that economy in 2016. Chinese FDI went mainly to finance, wholesale and retail trade, transportation and real estate. Chinese FDI in Cambodia, the Lao People's Democratic Republic and Myanmar remained significant. Australian FDI in ASEAN rose; it was concentrated in finance, with flows increasing from \$568 million in 2015 to \$5.3 billion in 2016.

ASEAN investors remained committed to investing in the region, as intraregional investment flows continued the uptrend they have been on since 2003 (except for a blip in 2013). In 2016, intraregional investment remained the largest source of investment in agriculture and mining. ASEAN companies were the largest investors in real estate activities, reflecting the

Table I.2. FDI flows in ASEAN, by country and industry, 2015 and 2016 (Millions of dollars)

2015	Emerging Markets of East Asia														
	Japan	United States	European Union	Republic of Korea	Hong Kong, China	Taiwan Province of China	China	Total	India	Australia	New Zealand	Russian Federation	ASEAN	Canada	Total
Agriculture, forestry, and fishing	50.2	9.3	61.9	100.3	920.3	9.0	62.2	1,091.8	3.5	2.6	0.2	0.3	4,125.9	0.0	5,389.4
Mining and quarrying	832.5	557.4	1,772.5	6.1	(25.0)	0.3	271.0	252.5	0.2	49.5	51.0	1.5	1,089.6	23.6	7,866.7
Manufacturing	7,872.7	982.0	3,695.7	2,708.5	450.0	717.4	798.3	4,674.2	(131.4)	(8.3)	6.2	2.5	5,072.3	40.7	29,147.6
Electricity, gas, steam and air conditioning supply	188.3	62.3	(212.4)	484.4	78.0	93.8	550.7	1,207.0	8.9	13.0	0.7	0.8	345.6	0.4	1,959.2
Water supply; sewerage, waste management and remediation activities	(2.2)	0.9	(143.4)	15.7	0.5	0.6	45.9	62.7	0.1	0.1	0.0	0.0	28.6	4.3	(40.0)
Construction	53.1	100.8	48.9	309.2	236.8	24.4	89.4	659.8	8.6	(93.1)	0.2	0.2	301.2	0.1	1,094.7
Wholesale and retail trade; repair of motor vehicles and motor cycles	1,491.8	213.5	483.5	1,164.3	552.6	261.7	778.4	2,756.9	131.5	3,319.5	18.2	0.2	1,042.0	15.9	7,569.2
Transportation and storage	372.6	52.2	458.1	(26.0)	89.0	44.9	206.2	314.1	0.4	(64.0)	0.1	0.0	420.4	(0.1)	3,644.5
Accommodation and food service activities	57.0	49.8	22.7	51.3	54.1	3.9	46.8	156.0	0.4	0.6	0.0	0.1	41.7	0.0	476.0
Information and communication	193.0	32.2	273.2	16.5	(283.9)	0.5	3.4	(263.5)	0.6	(17.1)	0.2	0.0	1,408.4	0.0	2,038.4
Financial and Insurance activities	2,990.0	19,144.3	(162.8)	463.0	348.6	784.4	1,221.5	2,817.5	525.7	567.6	(104.8)	(22.7)	2,270.4	985.4	36,363.7
Real estate activities	159.2	472.5	627.6	417.7	627.3	117.6	1,951.3	3,113.9	296.0	27.0	2.8	25.2	2,809.6	54.8	8,463.2
Professional, scientific and technical activities	120.3	(21.2)	158.4	33.6	48.5	7.5	12.7	102.3	11.9	(10.1)	0.7	0.1	(26.6)	(3.9)	247.5
Administrative and support service activities	55.2	43.8	86.5	8.0	1.8	1.7	1.2	12.6	0.2	1.0	0.1	0.0	26.4	(0.2)	261.4
Education	2.6	0.5	0.5	4.5	0.6	0.9	0.5	6.6	(3.9)	0.1	(0.3)	0.0	5.2	(9.1)	1.6
Human health and social work activities	70.2	17.8	0.7	3.0	0.4	0.4	2.2	6.0	0.9	5.0	0.0	0.0	30.3	0.0	133.1
Arts, entertainment and recreation	(3.8)	0.3	4.0	0.5	3.0	0.1	0.0	3.6	0.0	0.1	0.1	0.0	(18.5)	0.0	(14.3)
Other services activities	56.6	(112.1)	12,567.0	(88.6)	55.4	(11.2)	259.7	215.3	87.1	(1,899.9)	42.5	(37.2)	244.3	3.0	13,057.6
Unspecified	84.1	1,157.4	888.2	29.7	722.2	148.1	58.5	958.5	(0.1)	41.2	0.1	0.0	(107.3)	2.0	3,961.8
<i>Memorandum</i>															
Unclassified	95.1	615.1	202.9	2.4	180.0	134.9	52.4	..	21.0	..	4.1	..	2,230.6	32.3	..
Total	14,738.5	23,378.8	20,833.6	5,704.0	4,060.3	2,340.9	6,412.2	18,147.7	961.6	1,934.9	22.2	(28.9)	21,340.1	1,149.3	121,621.1

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Table I.2. FDI flows in ASEAN, by country and industry, 2015 and 2016 (Millions of dollars) (Concluded)

	Emerging Markets of East Asia										Total				
	Japan	United States	European Union	Republic of Korea	Hong Kong, China	Taiwan Province of China	China	India	Australia	New Zealand		Russian Federation	ASEAN	Canada	Total
2016															
Agriculture, forestry, and fishing	63.1	4.9	126.9	46.1	(506.9)	3.6	74.7	(382.5)	4.4	0.4	0.0	0.9	1,850.1	0.2	1,797.2
Mining and quarrying	957.3	(1,048.8)	837.2	38.1	37.6	3.0	115.0	193.7	2.9	(133.5)	(1.4)	(0.5)	1,189.8	(24.1)	3,885.1
Manufacturing	23,747.6	(10,024.6)	(11,081.4)	2,798.4	1,212.1	1,858.5	(6,499.6)	(630.6)	20.2	83.4	(252.3)	17.9	8,309.3	61.0	8,013.2
Electricity, gas, steam and air conditioning supply	54.6	9.5	(141.6)	95.0	2,178.6	19.4	450.1	2,743.1	0.4	2.1	0.1	0.2	101.7	0.3	3,080.2
Water supply; sewerage, waste management and remediation activities	29.0	(8.1)	103.8	86.3	27.0	19.3	15.7	148.2	1.1	4.9	0.2	0.6	84.3	1.5	395.7
Construction	200.8	7.6	93.0	72.1	283.5	24.2	519.2	899.0	(2.3)	52.5	0.2	0.8	128.5	1.3	1,480.5
Wholesale and retail trade; repair of motor vehicles and motor cycles	1,761.0	1,114.4	8,427.1	438.3	876.7	63.4	3,081.1	4,459.5	199.0	325.8	4.8	2.3	483.5	(74.8)	18,428.0
Transportation and storage	736.3	314.2	1,622.7	207.5	621.6	378.0	2,181.8	3,388.9	41.0	(48.8)	0.3	1.1	450.5	1.3	4,796.2
Accommodation and food service activities	57.1	45.4	24.3	93.9	66.6	16.1	103.4	280.1	0.9	3.9	0.2	0.6	178.7	0.6	632.0
Information and communication	230.3	326.4	52.8	23.4	906.1	14.0	29.3	972.7	3.0	(9.6)	(0.6)	0.4	478.7	0.5	2,584.5
Financial and Insurance activities	(17,236.9)	20,596.1	18,759.6	1,239.4	2,429.7	1,433.5	6,699.7	11,802.2	(578.4)	5,294.7	(47.8)	(3.1)	4,928.7	487.1	33,940.8
Real estate activities	431.4	414.7	426.2	328.3	1,129.4	158.4	2,022.2	3,638.2	276.2	126.1	3.2	23.7	2,800.6	36.9	7,775.7
Professional, scientific and technical activities	36.4	(82.3)	53.9	142.9	66.7	36.9	52.5	299.0	(7.9)	3.8	0.1	1.4	100.4	(127.5)	565.6
Administrative and support service activities	52.7	57.1	102.9	25.2	9.1	6.8	8.6	49.7	(0.3)	4.3	0.1	0.2	48.3	0.3	325.4
Public administration and defence; compulsory social security	-	-	18.4	-	-	-	-	-	-	-	-	-	-	-	18.4
Education	4.5	0.6	3.4	9.1	2.1	2.4	2.4	16.1	(2.2)	0.6	0.0	0.1	16.8	6.0	62.8
Human health and social work activities	(258.9)	(1.0)	7.5	7.8	33.7	2.1	5.0	48.6	1.2	6.6	0.0	0.1	46.5	0.1	(146.4)
Arts, entertainment and recreation	22.5	2.8	8.5	49.2	583.0	13.0	13.6	658.8	0.7	3.1	0.1	0.4	10.5	0.5	724.5
Other services activities.	1,439.6	50.0	8,622.9	80.4	(785.7)	(11.4)	121.4	(595.2)	1,086.6	(2,309.7)	(165.1)	9.3	709.1	1.2	2,416.1
Unspecified	1,645.1	1,267.2	1,557.2	76.4	286.7	78.3	8.9	450.4	(9.3)	21.8	0.5	0.3	348.9	21.2	5,947.1
Memorandum															
Unclassified	16.0	(1,389.5)	839.0	31.9	150.0	34.4	205.5	421.8	11.5	0.7	(10.7)	-	1,682.9	(97.5)	-
Total	13,989.4	11,656.6	30,464.5	5,889.7	9,607.8	4,153.7	9,210.5	28,861.7	1,048.6	3,433.2	(467.9)	56.6	23,947.9	295.9	96,722.7

Sources: ASEAN Secretariat, ASEAN FDI database.

Note: Data under memorandum item refer to data from one Member State that are not classified by industry for confidential reasons. Data by country and industry are not available for Myanmar.

growing demand for real estate and growth in the region, in particular in the CLMV countries. In manufacturing, ASEAN is the second largest source of investment after Japan, with \$8.3 billion FDI in that industry in 2016.

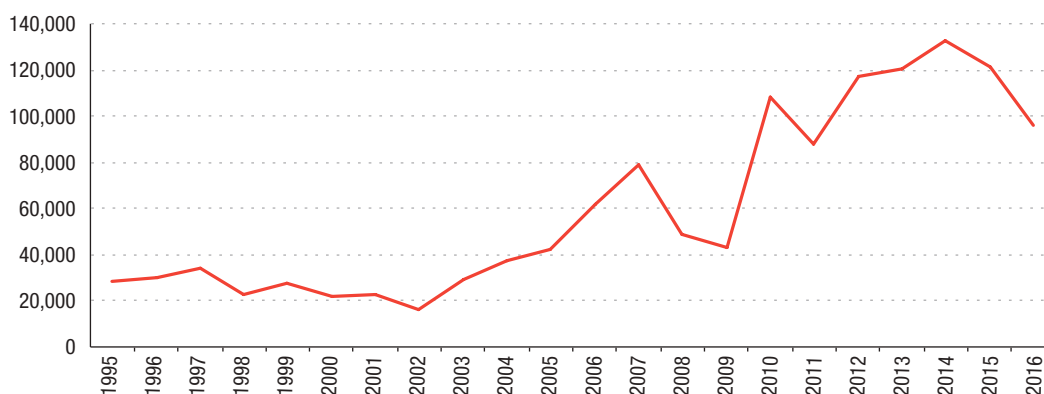
Overall, finance was the largest industry recipient, which accounted for 35 per cent of inflows in 2016. Other major industries include wholesale and retail trade (mainly in repair of motor vehicles and motorcycles), which accounted for a 19 per cent share followed by manufacturing (8 per cent). A majority of FDI in finance in ASEAN went to Singapore and these flows also include intra-firm financial activities of non-financial MNEs, regional headquarters functions and holding company operations.

While the performances of Member States in the region were uneven, FDI flows remained at a high level in 2016. ASEAN is a resilient region and continued to receive strong attention from investors (box 1.1). Many have expanded their operations in the region. Many have also indicated their investment plans and commitments in investing or expanding in ASEAN over the next few years (AmCham Singapore and US Chamber of Commerce 2017, and EU-ASEAN Business Council 2017).

Box 1.1. A resilient ASEAN: 20 years after the 1997 Asian financial crisis

The 1997 Asian financial crisis beset many ASEAN Member States and affected economic growth and financial flows to the region, including annual FDI flows in the immediate aftermath (box figure 1.1.1). FDI flows to the region started to rebound in 2003 (five years into the aftermath). The region was again affected by the 2007–2008 global financial crisis, with FDI flows plummeting in 2008–2009. The FDI recovery period after this crisis was much shorter than after the preceding one.

Box figure 1.1.1. FDI flows in ASEAN, 1995–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

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Box 1.1. A resilient ASEAN: 20 years after the 1997 Asian financial crisis (Concluded)

Twenty years after the Asian financial crisis, the region has shown significant resilience in weathering crises and in attracting FDI. The region came out of each crisis much stronger. Although FDI flows in 2016 (\$96 billion) declined for the second consecutive year, that happened for one-off reasons and the region nonetheless attracted 2.8 times more investment than the precrisis peak of \$34 billion in 1997.

A number of factors contribute to the resilience and attractiveness of the region for FDI. They include the rapid growth of economies in the region, a more integrated ASEAN, a greater regional division of labour exploited by MNEs, a more mature M&A environment, a significantly improved investment environment, the growth of new sources of FDI and an increasing number of more mature ASEAN companies that invested or expanded their presence in the region.

Source: ASEAN Investment Report 2017 research.

1.3. MNE ACTIVITIES AND OPERATIONS IN ASEAN

MNE activities in the region in 2016 and 2017 were mixed. Some expanded their activities in different industries and host countries, while others divested or reduced their operations. For instance, British American Tobacco (United Kingdom) closed a factory in Malaysia in 2017, Philips (Netherlands) shut down a fluorescent bulb factory in Thailand in 2016, Ford Motor (United States) closed its automotive facility in Indonesia in 2016, and Novartis (Switzerland) in Singapore announced plans in 2016 to move its research facility to the United States.

However, many of the Fortune Global 500 companies that are present in ASEAN continued to invest and expand in the region. Some have been in ASEAN for a long time (*AIR 2016*, chapter 2). They expanded their operations with multiple facilities both in the same ASEAN host country and across a number of Member States. They expanded with new or additional plants or new business functions (e.g. from manufacturing to research and development (R&D) activities), or upgraded their operations, and got more involved with value chains and production networks. A number of factors encouraged regional corporate expansion. They included improvements in the regional investment environment, new opportunities, rapid economic growth, improved cash or asset holdings of foreign and ASEAN MNEs, and regional integration that facilitates the division of labour and production networks.

Many major MNEs expanded their operations in ASEAN in 2016–2017. They included United States companies (Cargill, Coca-Cola, General Electric, HP, Morgan Stanley, PepsiCo and Wells Fargo) (box 1.2), Japanese firms (Aeon, Bank of Tokyo, Honda, Mitsubishi Corporation, Nippon, Panasonic and Toyota), European companies (AXA, BASF, BMW, DHL, IMC AG, Roche, Thales and Unilever), Korean firms (Doosan Heavy Industries & Construction, Hanwha, Hyundai Motor, LG Corporation, Posco, Samsung and Seoul Semiconductor) and Chinese companies (China Civil Engineering Construction, China Life Insurance, China National Petroleum Corporation, Dongfeng Motor, SAIC Motor and Sinopec). In addition to the largest MNEs, many indigenous ASEAN companies also expanded regionally in 2016–2017 (sections 1.5 and 1.6).

Box 1.2. United States companies' manufacturing activities in ASEAN in 2017

Some American MNEs expanded their operations or made new investments in ASEAN in 2017, reflecting their commitment to doing business in the region. Selected significant activities undertaken in 2017 included the following:

- ExxonMobil acquired InterOil Corporation's operation in Singapore for \$3.9 billion.
- Coca-Cola opened a \$79 million storage and distribution centre in Tuas, Singapore. The facility is designed to drive efficiency and support its growing business in Asia-Pacific.
- Prudential acquired a 49 per cent stake in PT Asuransi Jiwa Mega Indonesia, the life insurance subsidiary of Indonesia-based CT Corporation.
- Kraig Biocraft, a leading developer of genetically engineered, spider-silk-based fibre technologies, announced that its Viet Nam headquarters would be in Quang Nam Province.
- Hilton signed a deal worth \$650 million to manage a 610-room dual-branded hotel in Viet Nam.
- ExxonMobil Chemical announced the acquisition of Jurong Aromatics Corporation's plant on Jurong Island in Singapore. It is one of the largest in the world with an annual production capacity of 1.4 million tons.
- Sikorsky announced an agreement with Thai Aviation Services to form a Sikorsky Customer Support Centre in Thailand by the end of the year.
- Greenbelt Resources and Indonesia's Jababeka Infrastruktur signed an agreement to jointly develop a facility to process municipal food waste into a variety of resources.
- Sovereign Capital bought a minority stake in Printerous, an Indonesian digital printing start-up.
- ExxonMobil and PetroVietnam announced a \$10 billion project on a gas field off the central Vietnamese coast, which has some 150 billion cubic meters of gas in reserves. The project could supply enough gas for four power plants with a total capacity of at least 3,000 MW.
- United States-based PHI Group announced an agreement to acquire a majority stake in Viet Nam's Hoang Minh Chau Hung Yen LLC, which specializes in cultivating and processing turmeric.
- Chembio Diagnostics completed its acquisition of Malaysia's RVR Diagnostics Sdn Bhd, a privately held manufacturer and distributor of point-of-care diagnostic tests for infectious diseases.
- Cargill started construction of a poultry processing plant for Cargill Joy Poultry Meats Production in Batangas, Philippines.

Sources: Company websites and media reports.

Corporate expansion for different reasons, in multiple ASEAN Member States

Some MNEs expanded in multiple ASEAN Member States in 2016–2017. For example, BASF (Germany) expanded concurrently into four ASEAN Member States (Myanmar, the Philippines, Thailand and Viet Nam), while General Electric (United States) and Unilever (Netherlands–United Kingdom) expanded into three. In 2016, General Electric (United States) entered the Lao People's Democratic Republic for the first time through a joint research program with Électricité du Laos. This was after it expanded its operations in Viet Nam in 2016 through acquiring the heat recovery steam generator business of Doosan Engineering & Construction (Republic of Korea) for \$250 million. It is also expanding to other ASEAN Member States to provide support services, including opening its first Asia digital operation centre in Singapore. The centre

provides back-end support and boosts IT delivery within GE globally and particularly to affiliates in ASEAN Member States. Panasonic (Japan) expanded to a few ASEAN Member States in 2016–2017. In particular, it upgraded an air conditioning manufacturing plant in Malaysia to increase production capacity in 2016. The company also opened a solution and innovation centre in Thailand in 2016 and a refrigeration compressor business unit in Singapore in 2017.

Coca-Cola (United States) built a \$100 million plant in Cambodia in 2016 that has four production lines. In Indonesia, it increased its market-seeking activity by establishing a fourth distribution centre and is expanding further with a \$500 million investment in plant expansion and business infrastructure over the next few years. Coca-Cola also announced plans in 2016 to expand its operations in the Philippines, with a \$200 million investment annually for the next four years. Unilever (Netherlands–United Kingdom) in 2017 expanded into three ASEAN Member States. The company constructed the largest distribution centre in the Philippines. In 2016, Unilever Indonesia secured a \$500 million loan from Unilever Finance International for expansion in Indonesia over 2016–2020. In Myanmar, Unilever formed a joint venture with Europe & Asia Commercial Company (Myanmar) to focus on R&D, manufacturing and market development of consumer goods. Nestle (Switzerland) opened a factory in Viet Nam in 2017, bringing the number of its factories in that Member State to six. PepsiCo (United States) opened a \$93 million plant in Singapore in 2017 after having opened a manufacturing plant in the Philippines in 2016.

Some electronic companies also expanded their operations in the region in 2016–2017. For instance, FIH Mobile (a subsidiary of Foxconn (Taiwan Province of China)) and HMD Global (Finland) expanded its activities in Viet Nam through a \$350 million acquisition of a Microsoft manufacturing division in 2016. Amkor Technology (United States), Nippon Chemicon Corporation (Japan), Renesas Semiconductor (Japan), Kasatani Corporation (Japan), Western Digital (United States) and Rubicon Technology (United States) have all started operation of their new facilities in Malaysia in 2016. UKC Holdings (Japan) is building an electronic manufacturing plant in Viet Nam, to be completed in late 2017, to increase its production capacity. New Kinpo Group (Taiwan Province of China) in 2017 opened a \$31.5 million plant in the Philippines and plans to invest a further \$31 million to increase the production of electronics components. In 2017, AMS AG (Austria) opened a new facility in Singapore to undertake manufacturing and provide advanced sensor solutions. The company announced plans to invest a further \$100 million in that Member State.

Other MNEs in other industries also expanded in ASEAN. They included Mitsubishi Corporation (Japan), which opened a \$10 million plant in Brunei Darussalam for the production of an antioxidant food additive in 2016, and 3M (United States), which started expansion of its manufacturing plant in Singapore through a \$100 million investment. In addition, AkzoNobel (Netherlands) opened a performance coatings facility in Thailand in 2017, while JX Nippon Oil (Japan) – in partnership with Petronas (Malaysia) – signed a \$552 million investment for liquefied natural gas (LNG) production. And Spirit AeroSystems (United States) announced the expansion of its manufacturing operation, to increase capacity.

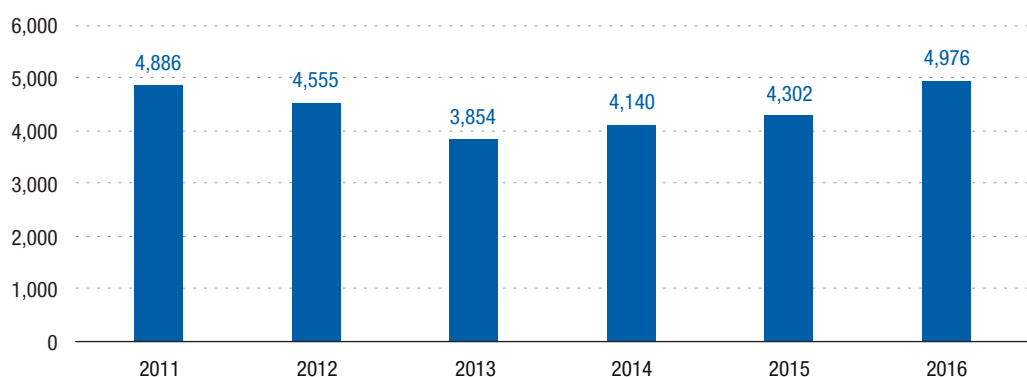
MNEs that expand in ASEAN are not driven by only one motive; some undertake both efficiency-seeking and market-seeking activities in the same host country. Some undertake broader value

chain activities (e.g. from farm or refinery to markets and shelves, or from production to marketing, R&D activities). Some MNEs undertake only market-seeking activities (e.g. insurance MNEs entering ASEAN for market reasons) or only efficiency-seeking activities (e.g. Korean electronics companies in Viet Nam (box 1.3)). However, the driver for investing in ASEAN is not limited to one motive in many cases. Large MNEs, for example in the consumer goods industry, undertake research, production and market-seeking activities in different ASEAN Member States. These MNEs and the interconnection of their activities in different ASEAN Member States form growing regional value chains, which connect firms and countries (*AIR 2014*).

Box 1.3. Korean FDI flows to ASEAN in 2016–2017

Korean outward FDI (OFDI) flows to ASEAN rose significantly to nearly \$5 billion in 2016 – recording the highest growth rate (15.7 per cent) since 2013 (box figure 1.3.1). This strong growth pushed up ASEAN's share of Korean OFDI to Asia to 48 per cent, from 39 per cent in 2015. This implies a growing preference by Korean firms to invest in the region. Korean OFDI flows to ASEAN remained highly concentrated, with three ASEAN Member States accounting for more than 80 per cent in 2016: Viet Nam (46 per cent), Singapore (23 per cent) and Indonesia (13 per cent).

Box figure 1.3.1. Korean FDI flows to ASEAN, 2011–2016 (Millions of dollars)



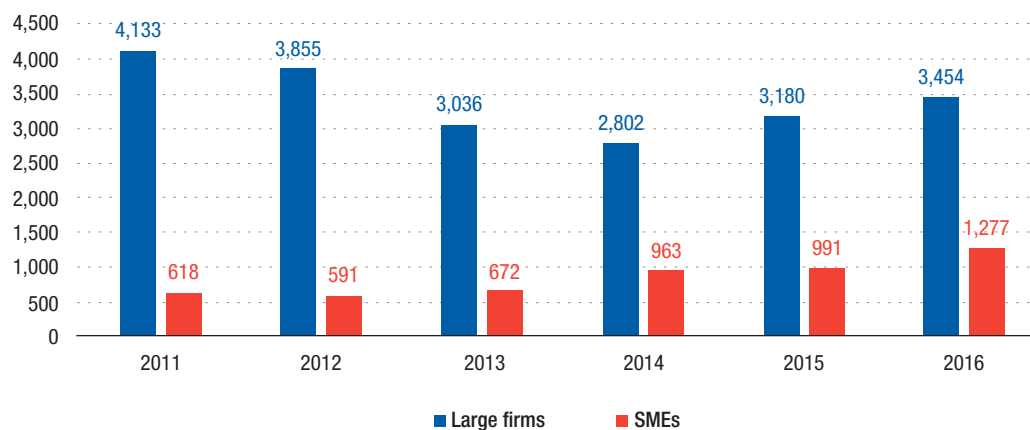
Source: Korea Eximbank FDI database.

Korean investments in non-manufacturing activities in ASEAN grew more visibly in 2016 in real estate, transportation, construction, finance and insurance. However, manufacturing received the largest share of Korean outward FDI (OFDI), 45 per cent, because of strong Korean manufacturing FDI into Viet Nam. The industrial distribution of Korean OFDI to Viet Nam is expanding beyond manufacturing to services industries (e.g. real estate, construction and distribution). The acceleration of Korean investment in Viet Nam is occurring because the host country is increasingly being seen not only as a manufacturing base but also as a growing domestic market with proximity to customers and supply chains.

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Box 1.3. Korean FDI flows to ASEAN in 2016–2017 (Concluded)

Another significant trend in Korean investments in ASEAN in 2016 was the changing share of activities of large MNEs and small and medium-size enterprises (SMEs). Although large MNEs dominated with 69 per cent of Korean outward FDI flows to ASEAN, SMEs from the country are increasingly active – in part because of their strategy of following customers to host countries (box figure 1.3.2). For instance, many Korean SME suppliers to MNEs such as Samsung and LG invested in Viet Nam in 2016. Some 73 per cent of Korean SMEs' FDI flows to ASEAN were concentrated in Viet Nam, reflecting similar moves by Korean MNEs. Outward FDI to ASEAN by Korean SMEs grew faster than FDI by Korean MNEs – by 32 per cent in 2016 as compared with only 8 per cent for the latter.

Box figure 1.3.2. Korean outward FDI flows, by size of firms, 2011–2016 (Millions of dollars)

Source: Korea Eximbank FDI database.

The significant presence of Korean companies and factories is generating other spillover effects in other related industries and local companies. Some Korean MNEs are not only involved in production upgrading (e.g. electronics) but also invest by expanding from manufacturing to other service industries such as in construction and distribution (e.g. wholesale, retail). For example, because of the fast-growing logistics markets in Viet Nam, Samsung SDS made an agreement with Viet Nam's largest aviation logistics company, Aviation Logistics Service, in 2016 to provide global and inland transportation, warehousing and customs brokerage services. The rapid growth of the e-commerce market in Viet Nam led the Lotte Group to establish online shopping sites in Viet Nam in 2016 based on its retail networks of Lotte affiliates (e.g. Lotte Department, Lotte Mart, Lotte Home Shopping). The online mall will provide business opportunities for Korean SMEs to supply goods and services to the emerging host market.

Source: ASEAN Investment Report 2017 research.

Research and development activities

Some MNEs are increasing their research and knowledge-based activities in the region. They set up R&D facilities in different industries, strengthening and expanding regional value chains. However, such R&D investment activities are concentrated in a few ASEAN Member States. Nestle (Switzerland) opened the Nestlé Research Centre Asia in Singapore in 2016. Panasonic's recent investment in a refrigeration compressor business unit in Singapore focuses on R&D. Vacuum manufacturer Dyson (United Kingdom) opened a \$561 million technology centre in Singapore in 2017 to carry out advanced R&D activities. In 2017, Osram Opto Semiconductor (Germany) opened a global solid state lighting headquarters and an R&D centre in Malaysia. Motorola (United States) established an R&D facility in Penang, its largest R&D facility outside the United States. Honda (Japan) in 2016 and Nissan (Japan) in 2017 opened R&D plants in Thailand. In Indonesia, Apple (United States) opened its first R&D centre in 2017 after announcing at the end of 2016 plans to open two R&D facilities in the coming years. Samsung Electronics (Republic of Korea) is establishing a \$300 million mobile R&D centre in Viet Nam, and Denka (Japan) opened a chemical R&D facility, the Denka Life Innovation Research Centre, in Singapore in 2017.

Regional strategies and headquarters

In 2016–2017, some MNEs increased their investment in regional headquarters operations to coordinate their expanding networks and affiliates in the region. In 2016, HP Thailand announced plans to expand into Myanmar, Cambodia, and the Lao People's Democratic Republic, using Thailand as a digital operations hub. The hub provides marketing and consultancy support and exports products to these three ASEAN Member States. In 2017, 20th Century Fox (United States), TransferWise (United Kingdom) and Qualtrics (United States) established their regional headquarters in Singapore, with Swiss Re (Switzerland) planning to establish one there in 2018. CNH Industrial (United States) in 2017 established a \$10 million regional headquarters in Thailand to coordinate operational activities across the region. Lenovo (China) in 2017 established its regional hub in Thailand, which will also be the business unit coordinating operations that target ASEAN Member States. Huawei (China) and Subsea 7 (United Kingdom) each set up their regional headquarters in Malaysia in 2016, and Delaware Consulting (Belgium) established its regional headquarters in the Philippines. Sumitomo (Japan) announced plans in 2016 to establish a headquarters of Sumitronics Manufacturing in Cambodia to provide electronics manufacturing services in collaboration with affiliate Alpine Technology Manufacturing. They cited the ASEAN Economic Community (AEC) as a driving reason for doing so.²

Although some MNEs have established regional headquarters in one ASEAN Member State to coordinate activities in other ASEAN Member States, there are also MNEs that established affiliates in 2016–2017 whose primary purpose is to export to other ASEAN Member States. BASF (Germany) increased its production capacity for polyurethane systems in Thailand, to be a hub for the ASEAN region. Other MNEs such as AkzoNobel (Netherlands), ExxonMobil

(United States) and Sinopec (China) have plants in one ASEAN Member State that also serve other ASEAN Member States.³ The extent to which MNEs adopt regional strategies is not always determined by the industry they operate in. In the chemical industry, for instance, several investments were made to serve the domestic market. In 2016, BASF (Germany) opened its first plants in the Philippines and in Myanmar, focusing on construction chemicals to meet growing domestic demand. Some companies have a mixture of domestic and regional strategies. They produce some of their products in one ASEAN Member State and then export to other ASEAN Member States, while also producing other products in multiple ASEAN Member States to serve domestic markets. This mixture of strategies has been adopted by companies such as Bel Group (France), Henkel (Germany), Nestle (Switzerland), Procter and Gamble (United States) and Unilever (Netherlands–United Kingdom).⁴

Automotive sector

Many of the major global automotive MNEs continued to expand their activities, with a strong concentration in a few Member States such as Indonesia, Malaysia and Thailand. Some have also expanded with activities in Viet Nam, the Philippines and Singapore (table 1.3). In addition to the global automotive manufacturers, part and component manufacturers are also expanding in the region, with new investment and factories that started operations in 2016–2017. New factories are dominated by Japanese companies, with a large proportion of them set up in Thailand and in Indonesia. Hyundai Motor (Republic of Korea) formed a joint venture in manufacturing with a local company in Viet Nam in 2017. It plans to export vehicles from Viet Nam to other ASEAN Member States. Mitsubishi Motors (Japan) opened a \$565 million manufacturing plant in Indonesia in 2016, while Toyota (Japan) made a \$70 million investment to increase production capacity in the Philippines. Honda (Japan) started engine production in a new plant in Thailand, from which it exports engines to other Honda assembly plants in Asia and Oceania. Toyota (Japan), which already has a significant presence in ASEAN, announced in 2016 that it is building a second vehicle manufacturing plant in Malaysia, which will start production in 2019. SAIC-GM-Wuling (China–United States) started operation of a \$700 million production plant in Indonesia in 2017.

Automotive MNEs are not only expanding the production of motor vehicles, many are also establishing R&D facilities in the region – moving up in the value chains. Delphi (United Kingdom) has started to conduct advanced development of autonomous (driverless) cars in 2016 in Singapore. Scania AB (owned by the German Volkswagen Group) announced plans to open an industrial plant in Thailand by 2018 to carry out R&D activities. Honda (Japan) opened an R&D centre in Thailand in 2017, its first such centre outside Japan and the United States. In 2016, Nissan further expanded its R&D centre with a new test centre in Thailand that will be the main R&D hub for ASEAN. The R&D test centre will also serve Indonesia, the Philippines, Malaysia and Viet Nam.

The presence of many global automotive MNEs in the region attracted part and component manufacturers to establish plants and operate in the growing automotive clusters. Some of the first-tier ones, which already have multiple plants in ASEAN, expanded because of growing

Table 1.3. Automotive MNE expansions in ASEAN, 2016–2017 (Selected cases)

Name	Year	Nationality	Host country	Activity
Toyota Motor	2016	Japan	Philippines	Increased production capacity with a \$70 million investment
	2016	Japan	Indonesia	Established an engine plant
Nissan Motor	2016	Japan	Thailand	Expanded the R&D centre in Thailand with a \$28 million additional investment
Daihatsu Motor	2016	Japan	Malaysia	Opened an engine plant, with a local partner, in Malaysia
Honda	2016	Japan	Thailand	Started operation of a \$476 million plant
Nissan	2016	Japan	Myanmar	Commenced production (first time in the country) with local partner
Foton	2016	China	Philippines	Opened an assembly plant
Daimler	2016	Germany	Singapore	Opened a regional centre for commercial vehicles
Mitsubishi Fuso Truck and Bus Corp	2016	Japan	Indonesia	Expanded facilities to provide customer support
Wuling Motors	2016	China	Indonesia	Construction of an auto parts plant
Mazda Motor Corporation	2016	Japan	Thailand	Increased engine production capacity
Mitsubishi Motors	2016	Japan	Philippines	Expansion of production
Mercedes	2016	Germany	Thailand	Expansion of factory
Tata	2016	India	Thailand	Expansion of production
Subaru cars (manufactured by Fuji Heavy Industries Ltd)	2017	Japan	Thailand	Started production of vehicles
Honda	2017	Japan	Thailand	Opened a \$40 million testing facility
BMW Group	2017	Germany	Malaysia	Established a regional parts distribution centre
SAIC-GM-Wuling	2017	China–United States	Indonesia	Developed a \$700 million production facility
Mitsubishi Motors	2017	Japan	Indonesia	Established a \$565 million manufacturing plant
Scania	2017	Sweden	Thailand	Building a \$ 23 million facility for industrial and commercial operations
Hyundai Motor	2017	Republic of Korea	Viet Nam	Established a JV in manufacturing with a local partner
PSA Group	2017	France	Viet Nam	Expansion of assembly activities for production of Peugeot vehicles
Astra Daihatsu Motor	2017	Japan	Indonesia	Opened an R&D centre
Mercedes-Benz	2017	Germany	Thailand	Expansion of warehouse and training centre
FOMM Corporation	2017	Japan	Thailand	Opened a plant
Harley-Davidson	2017	United States	Thailand	Established an assembly plant
BMW Group	2017	Germany	Thailand	Established a new production line

Sources: Company websites, media reports and Marklines.

demand. They also contributed to attracting new investment from lower-tier manufacturers. In Thailand, Kitigawa (Japan) and Bosch (Germany) each opened a facility in 2016 and Umicore (Belgium) opened a factory in 2017. Two German companies (SGF and Continental) are also constructing a plant in Thailand.

Automotive parts manufacturers have further expanded their presence in ASEAN to better serve or be close to customers (table 1.4 and table 1.5). Large automotive companies act as anchor firms, attracting their suppliers to follow them, and as a result facilitate the development of automotive ecosystems or clusters (chapter 5). A majority of the auto part manufacturers

Table 1.4. Expansion of Japanese automotive parts and components manufacturers in ASEAN, 2016–2017
(Selected cases)

Name	Year	Products	Host country	Activity
Hitachi Automotive Systems	2016	Automotive systems	Indonesia	New production
Daido Steel	2016	Forged transmission parts	Thailand	New production
Toray Hybrid Cord	2016	Fibre materials for timing belts	Thailand	New production
Nitta	2016	Hose and tube products	Thailand	New production
Sumitomo Rubber Industries	2016	Tyres	Thailand	Expansion of production
Asahi Tec	2016	Aluminium wheels	Thailand	Expansion through an acquisition
Oiles Corporation	2016	Bearings	Thailand	Expansion of production
Asahi Glass	2016	PVC production	Thailand	Expansion of production
Yokowo	2016	Antenna and relay cords	Thailand	Expansion of production
Kobe Steel	2016	Steel wire rods	Thailand	Expansion of production through a JV with a local company
Saitama Kiki	2016	Steering parts	Thailand	Expansion of production
Asahi Glass	2016	Glass	Indonesia	Expansion of production
Aisin Chemical	2016	Chemicals	Indonesia	Set up a marketing subsidiary
Denso and Toyota Tsusho	2016	In-vehicle software	Thailand	Joint venture
Toray Industries	2016	Tire cords	Thailand	New company
Furukawa Denshi	2016	Automotive coils	Philippines	New plant
Denso	2016	Components manufacturer	Thailand	Opened a branch
Bridgestone	2016	Anti-vibration rubber	Indonesia	New plants
JTEKT	2016	Diverse	Thailand	Made Thailand an ASEAN hub
Marugo Rubber	2016	Rubber	Thailand	New plant
Press Kogyo	2016	Pickup truck parts	Thailand	Increased capacity
Sumitomo Electric Wintec	2017	Electric	Thailand	Expansion
Bridgestone	2017	Aircraft tyres	Thailand	New production plant
Aisin AW	2017	Automatic transmissions	Thailand	Production from a new automatic transmission plant
Shin-Etsu Chemical	2017	Silicon monomers	Thailand	Expansion of production
	2017	Chemicals	Viet Nam	Expansion of production capacity
Daido Kogyo	2017	Chains	Viet Nam	Produce of motorbike chains
Kusumoto Chemicals	2017	Chemicals	Thailand	New plant
Sawafuji Electric	2017	Engine starters	Thailand	Expansion of production capacity
Hitachi Chemical	2017	Chemicals	Thailand	Expansion via acquisition
Nippon Steel & Sumitomo Metal	2017	Steel	Indonesia	A joint venture with two Japanese company
Nitto Seiko	2017	Diverse	Indonesia	Acquisition of industrial fastener plant
Asahi Kasei	2017	Chemicals	Singapore	Expansion of production capacity
Kobe Steel	2017	Steel	Thailand	Established South and South-East Asia headquarters
Toda Kogyo	2017	Magnetic production	Thailand	Started magnetic compound
Toyoda Gosei	2017	Airbag parts	Viet Nam	New plant

Sources: Company websites, media reports and Marklines.

serve more than one anchor company. The expansion in the industry has meant that steel and chemical companies are also expanding in ASEAN to serve automotive companies and suppliers. For example, AkzoNobel (Netherlands) built a new performance coating facility in Thailand to be close to and serve the automotive industry.

Table 1.5. Non-Japanese automotive part and component manufacturers expanding in ASEAN, 2016–2017
(Selected cases)

Company	Year	Nationality	Products/services	Host country	Activity
TuV Rheinland	2016	Germany	Tire testing	Indonesia	First entrance
Schaeffler	2016	Germany	Rolling element bearings	Thailand	Opened first plant
Mann+Hummel Group	2016	Germany	Filtration	Singapore	Opened “Internet of Things” lab
Robert Bosch	2016	Germany	Electronics	Thailand	New factory and R&D centre
Delphi	2016	United Kingdom	Autonomous car	Singapore	R&D
SKF	2017	Sweden	Bearings and seals	Malaysia	Expanding production capacity
Umicore	2017	Belgium	Materials	Thailand	New manufacturing plant
Alpha Corporation	2017	United States	Automotive components	Thailand	New design and development centre
Continental	2017	Germany	Diverse	Thailand	Constructing a €250 million plant, with operations to start in 2019
BorgWarner	2017	United States	Components and parts supplier	Thailand	New turbocharger plant

Sources: Company websites and Marklines.

Services industries

Many of the financial service MNEs are expanding in ASEAN (table 1.6). Their recent investments in the region are not new; many American and European finance MNEs have been in the region for a long time (chapter 2). However, there are a few first-time investors, in particular Chinese companies – many of them focusing on infrastructural finance. The drive to invest was partly due to the Belt and Road Initiative involving ASEAN Member States. This key reason was highlighted by the Bank of China’s investment in Brunei Darussalam in 2016⁵ and that of the China Construction Bank in Malaysia in 2017.⁶ Aside from involvement in infrastructural finance, Chinese banks are also increasingly active in other financial services in the region. The Industrial and Commercial Bank of China is now the largest commercial bank in the Lao People’s Democratic Republic, after expanding in that Member State in 2016.

MNEs’ expansion in the financial sector covers operations to strengthen marketing functions as well as diversification into other product ranges. This is particularly the case in wealth management. Deutsche Bank increased such activities in ASEAN in 2016 in response to the growing number of high-net-worth individuals.⁷ Some expansions and entrances into the ASEAN market follow the M&A or joint venture (JV) route. In 2017, Aviva acquired its JV partner share (VietinBank’s 50 per cent shareholding) in Viet Nam. AXA (France) in the Philippines, Munich Re (Germany) in Singapore and Zurich Insurance Group (Germany) in Malaysia all expanded in these Member States through acquisitions in 2016.

In IT-BPO businesses, ASEAN Member States such as the Philippines continued to attract foreign companies to establish operations because of competitive investment environments, access to a low-wage labour force with English language skills and cluster development (table 1.7, chapter 5). The Member States has also accumulated over two decades of experience as a destination for IT-BPM services and increased its capabilities in offering non-voice IT-BPM services to a broader set of clients worldwide, particularly in finance and accounting, human resources, procurement, engineering services and data analytics.

Table 1.6. Expansion of insurance and financial services companies in ASEAN, 2016–2017 (Selected cases)

Company	Year	Nationality	Services	Host country	Activity
Industrial and Commercial Bank of China	2016	China	Financial services	Lao People's Democratic Republic	Expansion
Bank of China	2016	China	Financial services	Brunei Darussalam	Entrance
				Cambodia	Expansion
Bank of Tokyo-Mitsubishi UFJ	2016	Japan	Financial Services	Singapore	Expansion
Woori Bank	2016	Republic of Korea	Financial services	Viet Nam	Expansion for market-seeking activities
				Philippines	Expansion through acquisition
Wells Fargo	2016	United States	Banking, financial services	Philippines	Expanding its business processing support centre, which will be operational in 2018
Industrial and Commercial Bank of China	2016	China	Financial services	Singapore	Expansion
Prudential	2016	United Kingdom	Insurance	Lao People's Democratic Republic	Commenced operations
China Construction Bank	2016	China	Financial services	Indonesia	Expansion through M&A
				Viet Nam	Expansion
AXA	2016	France	Insurance	Philippines	Expansion through acquisition of Charter Ping An (Philippines)
Munich Re	2016	Germany	Insurance	Singapore	Expansion, including making Singapore a regional headquarters
Zurich Insurance Group	2016	Germany	Insurance	Malaysia	Expansion through acquisition
Shanghai Pudong Development Bank	2017	China	Financial services	Singapore	Expansion
China Construction Bank	2017	China	Financial services	Singapore	Expansion
				Malaysia	New entrance
Morgan Stanley	2017	United States	Financial services	Singapore	Expansion
HSBC	2017	United Kingdom	Financial services	Malaysia	Expansion of business with a further \$250 million investment injection to build a headquarter office
				Indonesia	Expansion
BNP Paribas	2017	France	Financial services	Indonesia	With PT Trimegah Sekuritas Indonesia Tbk, signed an exclusive agreement to jointly produce equities research
Woori Bank	2017	Republic of Korea	Financial services	Indonesia	Expansion through cash injection
Aviva	2017	United Kingdom	Insurance	Viet Nam	Expansion- Aviva acquired all shares in their Vietnamese JV
Prudential	2017	United Kingdom	Insurance	Indonesia	Entrance, through a JV with CT Corporation

Sources: Company websites and media reports.

Table 1.7. Philippines: IT-BPO companies investment and operation in 2016–2017 (Selected cases)

Company	Nationality	Type of IT-BPO company
Gluon	Italy (49.2%) France (49.2%) Philippines (1.6%)	Dedicated support service to Gluon headquarters and affiliates; provides solutions for third-party clientele
Complete Business Online	Australia	Provides solutions for clients
China Online Innovation	China	Provides solutions mainly for Chinese clients in China
CS-PAC Global BPO	China	Provides solutions for clients in the freight forwarding industry
Asiainspection Philippines	China	Dedicated support services for Asiainspection headquarters and affiliates
1902 Software Development Corporation	Denmark	Provides solutions for clients worldwide
Bayer Business Services Philippines	Germany	Dedicated service for the Bayer group worldwide
Merck Business Solutions Asia	Germany	Dedicated support service for Merck headquarters, its affiliates and other members of the group in the pharmaceutical industry
Maxim Integrated Products International	Ireland	Dedicated support services for its headquarters and affiliates
Tsukiden Global Solutions	Japan	Solutions for original equipment manufacturer (OEM) clients worldwide
Wolk Huren Philippines	Japan	Solutions for clients worldwide
Synkom IC Technology	Japan	Dedicated support service for Synkom headquarters and affiliates in Japan
Vauldex Technologies	Japan	Dedicated support service for Vauldex headquarters in Japan and third-party clientele
AE Group	Netherlands	Dedicated support service for AE Group and affiliates, and third-party clients
Cimpress Philippines	Netherlands	Dedicated support service for Cimpress headquarters and affiliates, and third-party clients
Ceva Logistics Holdings	Netherlands	Dedicated support services for Ceva headquarters and affiliates; also provides solutions-based services to its own clientele
FCTG South East Asia (Philippines)	Singapore	Dedicated support service for FCTG headquarters and affiliates
Avid Technology (S.E. ASIA) - Philippine Branch	Singapore	Dedicated support services for Avid headquarters and affiliates
Delaware Managed Services and IT Consulting	Singapore	Dedicated support services for Delaware affiliates in Singapore and Belgium; also provides solutions-based services to its own clientele
Tecsurge	Singapore	Provides IT services to clients
Stok MNL	Sweden	Supports Stok headquarters in Sweden; also provides solutions to its own clientele
TAS Tradesoft Corporation	United States	Dedicated service supporting TAS Tradesoft offices and clients worldwide
GoPro Philippines	United States	Dedicated support service for GoPro headquarters and affiliates worldwide
Zendesk Incorporated	United States	Dedicated support service for Zendesk headquarters and affiliates worldwide

Sources: PEZA and company information.

Infrastructure

MNEs are involved in different types and levels of infrastructure projects in ASEAN, from owning and operating power plants to providing engineering, procurement and construction (EPC) services as contractors in building or upgrading bridges, roads and railway lines (section 1.6). In 2016, Amec Foster Wheeler (United Kingdom) was awarded a front-end engineering and design contract for a refinery owned by Chevron (United States) and for Singapore Refinery Company in Singapore. In the same year, McConnell Dowell (New Zealand) won a contract for

the fabrication, supply, installation and commissioning of regulation gates at the Maris Dam in the Philippines, and Doosan Heavy Industries & Construction (Republic of Korea) was awarded an \$850 million EPC contract for the Subic Redondo thermal power plant in the same country.

In 2017, LS Cable & System (Republic of Korea) secured a \$326.6 million contract to install high-voltage cables in Singapore, while General Electric (United States) with SPR Energy (Malaysia) was awarded an 18-year contract to provide operations and maintenance for the Kimanis Sabah combined-cycle gas-fired power plant in Malaysia, and Siemens (Germany) won a contract to build and operate the 60 MW, 20-turbine Tolo wind farm in Indonesia. Toshiba (Japan) was awarded a supply equipment contract in 2017 for the expansion of the Tanjung Jati B plant, a coal-fired power plant in Indonesia. Also in 2017, a consortium of WSP Engineering (Canada), Mott MacDonald (United Kingdom) and Ernst & Young (United Kingdom) was awarded a joint development partner contract for the Kuala Lumpur–Singapore high-speed rail project. These companies will provide project management and technical support. Thyssenkrupp (Germany) secured a contract in 2017 to build a fertiliser plant in Brunei Darussalam, to be completed by 2021.

1.4. CROSS-BORDER M&As IN ASEAN

Cross-border M&A sales (net basis) in ASEAN fell by 25 per cent, from \$10.3 billion in 2015 to \$7.7 billion in 2016 (table 1.8). The decline partly contributed to the fall in FDI inflows last year. Two ASEAN Member States saw cross-border M&A sales rise (Thailand and Viet Nam) as compared with five in 2015. Companies from developed countries divested -\$682 million in assets. Cross-border M&A sales by developing economies rose by just \$110 million to

Table 1.8. Net M&A sales and purchases in ASEAN, 2014–2016 (Millions of dollars)

Region or country	Sales			Purchases		
	2014	2015	2016	2014	2015	2016
World excluding Caribbean financial centres	5,604	10,309	7,727	18,032	29,538	12,871
Developed economies	5,480	1,718	-682	7,755	20,016	6,872
Developing countries excluding Caribbean financial centres	-9	8,191	8,301	10,278	7,272	5,726
Asia and Oceania	-125	8,191	7,864	7,384	7,040	4,947
South, East and South-East Asia	787	8,191	6,587	7,443	5,447	4,673
ASEAN	-2,592	4,667	2,663	-2,592	4,667	2,663
Brunei Darussalam	..	..	..	0	-47	..
Cambodia	..	..	..	-2	5	0
Indonesia	306	2,000	43	423	2,321	-209
Lao People's Democratic Republic	..	..	..	..	1	0
Malaysia	-1,042	6	-919	-142	2,158	109
Myanmar	..	..	..	7	-1	46
Philippines	..	98	45	437	84	7
Singapore	1,293	2,339	1,611	-3,363	77	-116
Thailand	-3,148	223	1,832	34	13	1,001
Viet Nam	-2	-	49	12	56	1,823
Unspecified	133	400	108	..	..	..

Source: UNCTAD M&A database.

\$8.3 billion in 2016; the group nonetheless remained the largest acquirers of assets in ASEAN for the second consecutive year. The developing economies' dominance was helped by Chinese firms that acquired \$4.2 billion assets, up from \$1.6 billion in 2015. The rise in Thai and Vietnamese intraregional acquisitions also contributed.

Cross-border M&A sales in primary and manufacturing industries fell (table 1.9). Some -\$1.3 billion in assets in mining of metal ores were divested in 2016 (primarily in Indonesia), while cross-border M&A sales in manufacturing declined by 51 per cent to \$1.5 billion. However, cross-border M&A sales in services rose from \$3.6 billion in 2015 to \$7.8 billion in 2016 (particularly in finance and in infrastructure-related industries such as electricity, transportation and telecommunication).

Although 21 megadeals (those exceeding \$300 million) contributed \$17 billion in cross-border M&A sales in 2016 (annex table 1.1), the combined value of these deals was offset by divestment of assets by other companies. These megadeals involved a wide range of industries but most concentrated in services. Singapore, Malaysia and Viet Nam accounted for 71 per cent of these deals in 2016. Significant purchases were made by four ASEAN companies. They include Temasek's (Singapore) acquisition of a 21 per cent stake in Intouch (Thailand) for \$1.2 billion, Central Group's (Thailand) acquisition of Big C stores in Viet Nam from Casino Guichard-Perrachon (France) for \$1.1 billion, TCC Holding's (Thailand) acquisition of Metro Cash and Carry in Viet Nam for \$705 million and GIC's (Singapore) acquisition of a stake of Trans Retail in Indonesia from CT Corporation (Indonesia) for \$398 million.

Table 1.9. Net M&A sales in ASEAN, selected industries, 2014–2016 (Millions of dollars)

Selected industry	2014	2015	2016
Total	5,604	10,309	7,727
Primary	-336	3 468	-1,624
Mining of metal ores	7	10	-1,321
Manufacturing	581	3,190	1,559
Food, beverages and tobacco	690	1,153	-14
Manufacture of rubber and plastics products	52	75	314
Manufacture of computer, electronic, optical products and electrical equipment	28	943	150
Manufacture of computer, electronic and optical products	28	904	141
Motor vehicles and other transport equipment	-17	8	91
Tertiary	5,360	3,651	7,792
Electricity, gas, steam and air conditioning supply	296	-36	2,316
Retail trade, except of motor vehicles and motorcycles	22	9	-2,710
Transportation and storage	1,592	1,709	3,199
Information and communication	304	18	1,024
Financial and insurance activities	2,012	630	1,481
Business activities	48	135	930

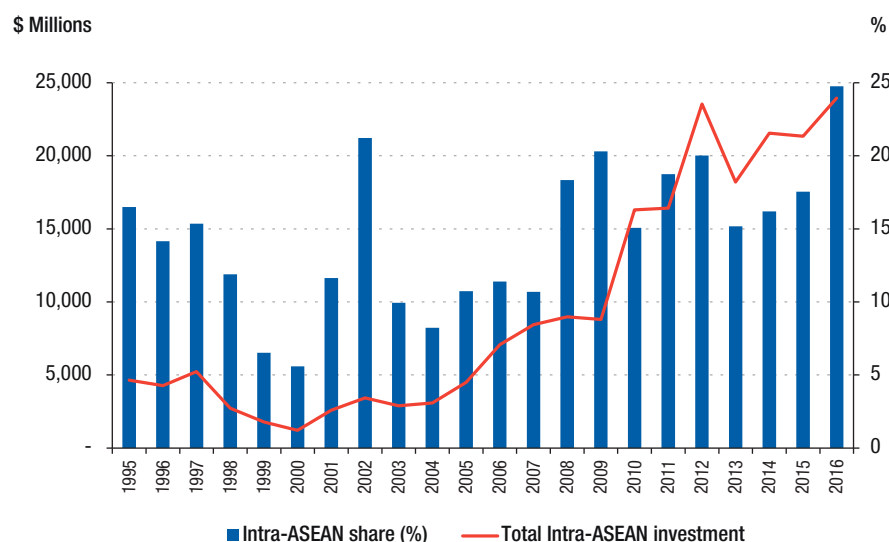
Source: UNCTAD M&A database.

A significant development in the M&A environment is the number of deals involving ASEAN companies acquiring foreign-owned assets in their home countries (annex table 1.2). Such transactions further highlight the rise of ASEAN companies in making significant deals – an indication of their strengthening financial prowess, competitiveness and corporate expansion. For instance, in 2016, the Thai Charoen group acquired a majority stake of Big C Supercenter in Thailand for \$3.4 billion from Casino Guichard-Perrachon (France), PT Sarana Menara (Indonesia) bought telecommunication towers in Indonesia from Axiata (Malaysia) for \$267 million and Halcyon Agri (Singapore) acquired Sinochem International's (China) natural rubber investment business in Singapore for \$146 million.

1.5. INTRA-ASEAN INVESTMENT AND ENTERPRISE REGIONALIZATION

Intra-ASEAN investment rose to a record level (\$24 billion) in 2016, exceeding the peak of 2012 and accounted for the first time for a quarter of total FDI flows in the region (figure 1.1). In contrast, intra-ASEAN investment between 1995 and 2010 accounted for an annual average of only 13 per cent of the total. The rise in intra-ASEAN investment in 2016 was driven by a 64 per cent increase in investment in manufacturing to \$8.3 billion and a 117 per cent increase in investment in finance to \$5 billion (table 1.10). Intraregional investment from seven Member States rose. Singapore, Malaysia and Thailand dominated intra-ASEAN investment, focusing on different industries.

Figure 1.1. Intra-ASEAN investment, 1995–2016 (Millions of dollars and per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Table I.10. Intra-ASEAN investment, by industry, 2015–2016 (Millions of dollars)

2015	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam	Total
Agriculture, forestry, and fishing	0.9	-	-	0.2	313.6	-	0.0	3,618.6	29.0	163.5	4,125.9
Mining and quarrying	0.3	-	407.3	0.0	429.9	(0.0)	0.9	(36.1)	269.8	17.5	1,089.6
Manufacturing	54.7	3.7	85.3	1.2	955.8	(1.5)	87.1	3,762.6	117.4	1.5	5,072.3
Electricity, gas, steam and air conditioning supply	9.7	-	1.4	0.2	170.4	-	0.3	137.2	26.5	-	345.6
Water supply; sewerage, waste management and remediation activities	0.1	-	0.0	0.0	2.6	-	(0.0)	25.8	0.1	-	28.6
Construction	2.5	-	2.8	0.0	136.3	0.1	(0.1)	144.8	11.6	2.5	301.2
Wholesale and retail trade; repair of motor vehicles and motor cycles	3.3	0.1	(24.0)	0.0	99.3	4.9	(28.2)	912.3	68.5	6.1	1,042.0
Transportation and storage	0.5	0.0	(1.0)	0.0	183.6	0.0	1.1	185.9	51.1	(1.0)	420.4
Accommodation and food service activities	(2.5)	0.0	0.2	0.0	6.9	0.0	0.0	29.4	5.3	2.3	41.7
Information and communication	0.3	(0.0)	(0.9)	(0.1)	180.2	0.0	(0.1)	1,185.0	0.1	43.9	1,408.4
Financial and Insurance activities	(41.3)	39.2	(440.2)	0.0	(368.0)	2.0	723.8	2,306.0	55.3	(9.2)	2,270.4
Real estate activities	9.6	4.1	3.4	0.9	1,432.0	22.4	(20.4)	605.9	15.5	0.5	2,809.6
Professional, scientific and technical activities	(0.5)	0.0	(0.6)	0.0	12.2	0.7	0.4	(45.8)	6.1	0.7	(26.6)
Administrative and support service activities	0.2	-	0.0	0.0	8.8	0.0	0.0	16.9	0.5	0.0	26.4
Education	0.1	-	0.0	0.0	1.3	-	0.0	1.8	2.0	0.0	5.2
Human health and social work activities	0.0	-	0.0	0.0	0.8	-	0.0	20.7	8.7	-	30.3
Arts, entertainment and recreation	0.0	-	0.3	0.0	0.2	-	0.0	(19.1)	0.0	0.1	(18.5)
Other services activities.	0.1	-	15.1	0.0	(70.5)	0.1	53.0	216.0	(3.0)	12.9	244.3
Unspecified	8.3	0.1	0.6	0.0	7.8	0.1	0.0	1,434.7	552.1	119.7	2,123.4
<i>Memorandum</i>											
Unclassified	1.9	-	666.8	-	-	1.9	4.4	-	26.1	47.4	..
Total	48.2	47.3	716.8	2.3	3,503.2	30.8	822.4	14,502.6	1,242.8	408.6	21,340.1

/...

Table I.10. Intra-ASEAN investment, by industry, 2015–2016 (Millions of dollars) (Concluded)

2016	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam	Total
Agriculture, forestry, and fishing	0.7	0.0	0.1	0.0	316.3	0.0	0.1	1,380.1	27.3	125.5	1,850.1
Mining and quarrying	(0.2)	0.0	39.6	0.0	287.6	(0.2)	0.1	287.8	545.7	29.3	1,189.8
Manufacturing	111.9	(11.8)	19.4	4.7	(1,002.2)	3.0	49.5	4,840.2	4,157.0	40.5	8,309.3
Electricity, gas, steam and air conditioning supply	0.9	0.0	0.5	0.0	1.3	-	0.2	83.4	15.5	0.0	101.7
Water supply; sewerage, waste management and remediation activities	3.3	0.2	0.2	0.1	14.3	-	0.6	58.2	7.4	0.0	84.3
Construction	4.1	0.2	0.1	0.2	42.3	0.0	3.7	65.3	9.0	1.3	128.5
Wholesale and retail trade; repair of motor vehicles and motor cycles	9.6	0.8	(161.4)	0.6	(130.3)	(0.2)	13.1	816.5	(116.4)	52.0	483.5
Transportation and storage	5.9	0.3	23.5	0.3	171.3	0.0	5.7	100.5	142.5	1.1	450.5
Accommodation and food service activities	(0.3)	0.1	0.2	0.1	8.0	0.0	0.5	157.9	12.0	0.1	178.7
Information and communication	2.5	0.1	(0.3)	0.2	343.8	(0.0)	0.2	169.2	7.5	(44.5)	478.7
Financial and Insurance activities	8.0	0.2	583.6	14.7	3,250.4	34.1	(136.1)	3,955.7	(2,768.6)	(16.1)	4,928.7
Real estate activities	15.3	4.2	4.5	2.3	1,307.9	23.8	(2.5)	774.3	29.1	0.3	2,800.6
Professional, scientific and technical activities	6.8	0.3	(4.7)	0.3	17.8	0.0	1.9	69.1	10.4	(1.4)	100.4
Administrative and support service activities	1.1	0.2	0.1	0.0	6.5	0.0	0.2	36.5	2.6	1.0	48.3
Education	0.4	0.0	0.0	0.0	1.2	-	0.1	12.9	2.1	-	16.8
Human health and social work activities	0.3	0.0	0.0	0.0	1.0	-	0.1	37.7	7.3	-	46.5
Arts, entertainment and recreation	2.2	0.1	0.2	0.1	6.4	-	0.4	(3.8)	4.9	-	10.5
Other services activities.	0.5	0.0	36.1	0.0	(115.2)	0.2	78.0	509.7	111.6	10.6	709.1
Unspecified	16.5	0.5	2.3	0.0	87.5	0.1	0.0	1,817.2	99.6	8.1	2,031.8
Memorandum											
Unclassified	(0.10)	-	531.30	-	-	(7.60)	132.10	-	58.10	73.80	-
Total	189.3	(4.5)	1,075.2	23.8	4,616.0	53.4	147.8	15,168.6	2,364.4	281.7	23,947.9

Source: ASEAN Secretariat, ASEAN FDI database.

Note: Data under memorandum item refer to data from one Member State that are not classified by industry for confidential reasons. Data by country and industry are not available for Myanmar.

Intra-ASEAN investment from Singapore in manufacturing and finance rose, accounting for 56 per cent of that Member State's intraregional investment in 2016. Intra-ASEAN investment from Malaysia rose in finance and real estate activities. However, Malaysian companies divested some -\$1 billion in manufacturing assets in the region. Although Thai firms divested -\$2.8 billion intraregional investment in finance, their investment in the region's manufacturing industry rose by 35 times to \$4.2 billion, more than compensating for the decline in the former. Thai investment in the region's manufacturing industry was at almost the same level of that from Singapore, traditionally the largest regional investor.

The significant rise in intra-ASEAN investment since 2010 marked a new wave of intraregional investment and the growing interest of firms in ASEAN in investing and expanding regionally. With growing investment opportunities, and strengthening regional integration as well as regional value chains, intra-ASEAN investment is expected to continue to grow in both absolute and percentage terms.

Major factors behind the rise in intraregional investment are the growing financial strength of ASEAN firms and their increasing drive to internationalize or regionalize to build competitiveness and to access markets, natural resources and strategic assets (Wee 2007, UNCTAD 2007). A selection of 100 major ASEAN companies, with operations in the region, reveals their strong cash position. The cash holdings of these companies in 2016 are more than \$250 billion, more than twice the combined GDP of Brunei Darussalam, Cambodia, Lao People's Democratic Republic and Myanmar. The combined assets of these companies are considerably larger than the combined GDP of all ASEAN Member States in 2016 (table 1.11). Many of these companies have a presence in multiple ASEAN Member States, and they expanded their regional footprint. Their significant cash holdings play an important role encouraging and supporting regional investment and expansion.

Although intra-ASEAN M&A sales, on a net basis, declined in 2016, from \$4.7 billion to \$2.7 billion (table 1.12), companies from some ASEAN Member States remained active acquirers of assets in the region. Thai companies acquired \$1 billion in assets in other ASEAN countries, up from just \$13 million in 2015. Vietnamese companies top the list with a 33-fold increase in intraregional M&A activities, albeit from a low base compared with 2015. Malaysian firms acquired fewer assets, with intraregional M&A activities declining from \$2.1 billion in 2015 to \$109 million. Companies from Indonesia and Singapore divested some -\$209 million and -\$116 million in assets, respectively, in the region.

Some of the intra-ASEAN M&A deals include Central (Thailand) acquisition of the Big C supermarket chain in Viet Nam from Casino Guichard-Perrachon (France) for \$1.1 billion, TCC Holding (Thailand) acquired Metro Cash and Carry in Viet Nam for \$705 million and GIC (Singapore) acquired a stake in Trans Retail PT in Indonesia for \$398 million in 2016 (annex table 1.3). Other ASEAN companies, such as Nippon Indosari Corpindo (Indonesia), Kharisma Mutiara Agung (Indonesia), Ayala (Philippines), Philippine Long Distance Telephone, Xurpas (Philippines), Thai Beverage (Thailand), Electricity Generating Company (Thailand) and Vinamilk (Viet Nam), acquired assets in other ASEAN Member States in 2016 and 2017. Some Malaysian and Singaporean companies also acquired assets in the region. They included transactions by

Table 1.11. 100 Major ASEAN MNEs with regional presence, 2015–2016 (Ranked by assets)

Name	Headquarters	Industry	Cash and near-cash items (\$ millions)		Total assets (\$ millions)		Presence in selected ASEAN Member States
			2015	2016	2015	2016	
DBS Group	Singapore	Banking	13,287	18,551	323,078	332,852	Indonesia, Thailand
Oversea-Chinese Banking Corporation	Singapore	Banking	14,946	11,446	275,344	283,304	Indonesia, Malaysia, Thailand, Viet Nam
United Overseas Bank	Singapore	Banking	22,797	16,811	222,999	235,020	Indonesia, Malaysia, Philippines, Thailand
Malayan Banking	Malaysia	Banking	15,531	16,386	164,567	164,020	Cambodia, Indonesia, Philippines, Singapore, Thailand, Viet Nam
CIMB Group	Malaysia	Banking	8,600	7,844	107,236	108,261	Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, Philippines, Singapore, Viet Nam
Public Bank	Malaysia	Banking	5,656	4,365	84,510	84,701	Cambodia, Indonesia, Philippines, Singapore, Thailand, Viet Nam
Bangkok Bank	Thailand	Banking	1,703	1,850	78,632	82,124	Malaysia, Philippines, Singapore
Siam Commercial Bank	Thailand	Banking	1,081	1,129	76,925	81,254	Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, Philippines, Singapore, Viet Nam
Kasikornbank	Thailand	Banking	1,559	1,690	70,853	79,380	Lao People's Democratic Republic
Bank Mandiri	Indonesia	Banking	5,873	5,568	65,637	76,714	Malaysia
Krung Thai Bank	Thailand	Banking	1,982	2,011	78,063	75,017	Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Singapore, Viet Nam
Bank Rakyat	Indonesia	Banking	7,052	6,661	63,356	74,124	Singapore
PTT PCL	Thailand	Oil and gas	6,654	6,013	60,280	62,267	Cambodia, Malaysia, Myanmar, Philippines, Singapore, Viet Nam
RHB Bank	Malaysia	Banking	4,218	4,218	52,956	52,748	Cambodia, Lao People's Democratic Republic, Indonesia, Singapore, Thailand
Hong Leong Financial Group*	Malaysia	Banking	3,446	3,982	52,721	50,738	Cambodia, Singapore, Viet Nam
Bank Central Asia	Indonesia	Banking	4,012	4,458	42,869	49,981	Singapore
Great Eastern Holdings*	Singapore	Insurance	2,464	2,438	46,447	49,159	Indonesia, Malaysia, Viet Nam
BDO Unibank	Philippines	Banking	6,702	7,244	43,282	46,926	Indonesia, Malaysia, Singapore, Thailand, Viet Nam
Bank Negara Indonesia	Indonesia	Banking	3,161	3,516	36,682	44,537	Singapore
Bank for Investment and Development	Viet Nam	Banking	1,259	1,885	37,833	44,209	Cambodia, Lao People's Democratic Republic
Vietnam JS Commercial Bank	Viet Nam	Banking	755	821	34,667	41,664	Lao People's Democratic Republic
Metropolitan Bank and Trust Co	Philippines	Banking	5,268	5,356	37,517	37,865	Singapore
Wilmar International	Singapore	Food products	1,804	2,785	36,926	37,032	Indonesia, Malaysia, Viet Nam
Bank of the Philippine Islands	Philippines	Banking	5,341	5,555	32,310	34,831	Malaysia, Singapore
Bank for Foreign Trade JSC	Viet Nam	Banking	1,256	1,189	29,993	34,603	Singapore (plan to open operations in Cambodia and the Lao People's Democratic Republic in 2017)
Tenaga Nasional	Malaysia	Electric utilities	592	976	28,037	32,662	Indonesia
ANMB Holdings	Malaysia	Banking	32,061	30,304	34,260	32,246	Brunei Darussalam, Indonesia, Singapore
Capitaland	Singapore	Real estate development	2,931	3,302	33,203	31,615	Malaysia, Viet Nam
Singapore Telecommunications Group	Singapore	Diversified telecommunication services	3,468	3,739	30,598	31,534	Indonesia, Malaysia, Philippines, Thailand
Tharachart Capital	Thailand	Banking	370	337	27,661	26,969	Indonesia, Malaysia, Philippines, Singapore, Viet Nam
San Miguel Corporation*	Philippines	Conglomerates	703	597	26,550	26,377	Indonesia, Malaysia, Singapore, Thailand, Viet Nam
TMB Bank	Thailand	Banking	479	461	23,262	22,900	Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Viet Nam
Genting	Malaysia	Hotels, restaurants and leisure	5,486	5,643	20,777	20,625	Indonesia, Myanmar, Singapore
Keppel Corporation	Singapore	Conglomerates	1,336	1,443	20,408	20,206	Indonesia, Myanmar, Philippines, Viet Nam
Ayala Corporation	Philippines	Diversified financial services	1,751	1,216	16,920	18,402	Indonesia, Malaysia, Singapore, Viet Nam
Fraser's Centrepoint*	Singapore	Real estate development	964	1,591	16,199	17,752	Indonesia, Malaysia, Myanmar, Philippines, Thailand, Viet Nam

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Table 1.11. 100 Major ASEAN MNEs with regional presence, 2015–2016 (Ranked by assets)

Name	Headquarters	Industry	Cash and near-cash items (\$ millions)		Total assets (\$ millions)		Presence in selected ASEAN Member States
			2015	2016	2015	2016	
SM Investments Corporation	Philippines	Conglomerates	1,242	1,513	16,737	17,387	Indonesia, Malaysia, Singapore, Thailand, Viet Nam
Singapore Airlines	Singapore	Airline	2,949	..	17,648	17,205	Indonesia, Malaysia, Philippines, Thailand, Viet Nam
LT Group*	Philippines	Conglomerates	2,931	3,526	15,971	16,734	Singapore
Charoen Pokphand Foods	Thailand	Food products	1,011	951	13,705	16,239	Cambodia, Lao People's Democratic Republic, Malaysia, Philippines
Olam International	Singapore	Food and staples retailing	1,512	1,482	14,672	16,221	Indonesia, Lao People's Democratic Republic, Malaysia, Thailand, Viet Nam
YTL Corporation	Malaysia	Multi-utilities	5,427	5,112	17,081	16,216	Indonesia, Singapore
Axiata Group	Malaysia	Wireless telecommunication services	1,276	1,122	13,038	15,710	Cambodia, Indonesia, Philippines, Singapore, Thailand, Viet Nam
Sime Darby Group	Malaysia	Conglomerates	1,076	849	15,936	15,478	Indonesia, Myanmar, Singapore, Thailand
Sembcorp Industries	Singapore	Conglomerates	1,134	1,301	14,054	15,407	Indonesia, Myanmar, Philippines, Viet Nam
Affin Holdings	Malaysia	Banking	1,446	1,448	15,662	15,352	Indonesia, Myanmar, Philippines, Singapore
Siam Cement	Thailand	Construction materials	446	773	14,141	15,054	Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, Philippines, Singapore, Viet Nam
Saigon Thuong Tin Commercial	Viet Nam	Banking	626	651	13,011	14,637	Cambodia
BIMB Holdings	Malaysia	Banking	561	1,310	13,327	14,073	Indonesia
City Developments	Singapore	Real estate development	2,430	2,539	14,338	13,684	Malaysia, Thailand
JG Summit Holdings	Philippines	Conglomerates	965	876	12,707	13,449	Singapore
Telekomunikasi Indonesia	Indonesia	Telecommunication services	2,028	2,198	11,985	13,265	Malaysia, Singapore
MISC	Malaysia	Marine	1,314	1,462	11,045	12,514	Singapore, Viet Nam
Bank Permata	Indonesia	Banking	1,071	931	13,176	12,225	Singapore
Military Commercial Joint Stock	Viet Nam	Banking	419	506	9,831	11,254	Cambodia, Lao People's Democratic Republic
Asia Commercial Bank	Viet Nam	Banking	330	380	8,960	10,263	Malaysia
DFB-HICOM Bhd*	Malaysia	Automobiles	785	733	10,854	10,135	Brunei Darussalam, Indonesia, Singapore, Thailand
CP ALL	Thailand	Food and staples retailing	597	933	9,125	9,826	Myanmar, Viet Nam
Malaysia Building Society	Malaysia	Thriffs and mortgage finance	1,610	1,480	9,546	9,643	Singapore
PLDT	Philippines	Wireless telecommunication services	990	782	9,697	9,590	Malaysia, Singapore
Abolitz Equity Ventures	Philippines	Conglomerates	1,355	1,289	7,247	9,367	Singapore, Viet Nam
Hong Leong Finance	Singapore	Consumer finance	1,267	1,027	9,376	8,511	Cambodia, Indonesia, Malaysia, Thailand, Viet Nam
Sapura Energy	Malaysia	Energy equipment and services	470	795	8,799	8,462	Brunei, Indonesia, Thailand, Singapore
Berli Jucker*	Thailand	Conglomerates	31	97	1,239	8,419	Malaysia, Myanmar, Singapore, Viet Nam
Golden Agri-Resources*	Singapore	Food products	227	123	8,036	8,306	Indonesia
IHH Healthcare	Malaysia	Health care providers and services	460	544	8,247	8,288	Indonesia, Myanmar, Singapore, Viet Nam
UOL Group	Singapore	Real estate development	195	208	8,116	7,989	Malaysia, Myanmar, Viet Nam
Thai Airways International	Thailand	Airlines	576	373	8,387	7,897	Singapore
Bangkok Life Assurance	Thailand	Insurance	197	366	6,920	7,876	Cambodia, Myanmar, Lao People's Democratic Republic, Philippines, Singapore
Advanced Info Service	Thailand	Wireless telecommunication services	274	313	5,040	7,689	Singapore
Tisco Financial Group	Thailand	Banking	31	32	7,772	7,567	Cambodia, Viet Nam
First Philippine Holdings Corporation*	Philippines	Electric utilities	2,255	2,086	7,492	7,312	Philippines, Indonesia

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Table 1.11. 100 Major ASEAN MNEs with regional presence, 2015–2016 (Ranked by assets) (Concluded)

Name	Headquarters	Industry	Cash and near-cash items (\$ millions)		Total assets (\$ millions)		Presence in selected ASEAN Member States
			2015	2016	2015	2016	
Indorama Ventures*	Thailand	Chemicals	90	83	6,146	7,207	Indonesia, Malaysia, Myanmar, Philippines, Singapore
CapitaLand Mall Trust	Singapore	Equity real estate/Investment trusts	426	334	7,308	7,138	Malaysia, Viet Nam
Petronas Chemicals Group*	Malaysia	Chemicals	1,951	1,850	7,163	7,120	Thailand, Viet Nam
Metro Pacific Investments*	Philippines	Diversified financial services	510	393	6,439	7,097	Thailand, Viet Nam
Banpu	Thailand	Oil, gas and consumable fuels	396	455	6,557	6,969	Lao People's Democratic Republic, Singapore
Indat Kiat Pulp and Paper*	Indonesia	Paper and forest products	172	211	7,038	6,879	Malaysia
Malakoff Corporation	Malaysia	Independent power producers	663	670	6,874	6,745	Indonesia
Adaro Energy	Indonesia	Oil, gas and consumable fuels	702	1,077	5,959	6,522	Singapore
Kiatrakin Bank	Thailand	Banking	29	33	6,548	6,521	Lao People's Democratic Republic
Sembcorp Marine*	Singapore	Machinery	444	841	6,493	6,507	Indonesia
Petron Corporation*	Philippines	Oil, gas and consumable fuels	402	350	6,270	6,436	Malaysia, Singapore
Genting Malaysia	Malaysia	Hotels, restaurants and leisure	1,050	1,082	6,394	6,217	Singapore
Thai Oil	Thailand	Oil, gas and consumable fuels	992	868	5,328	6,073	Singapore, Viet Nam
Bejiaya Corporation	Malaysia	Conglomerates	1,660	1,918	5,708	6,005	Brunei Darussalam, Cambodia, Indonesia, Myanmar, Philippines, Singapore, Viet Nam
Singapore Tech Engineering	Singapore	Aerospace and defense	671	625	5,785	5,782	Malaysia, Myanmar, Thailand
Alliance Global Group*	Philippines	Real estate development	485	331	5,363	5,626	Indonesia, Malaysia, Singapore, Viet Nam
OUE Realty	Singapore	Hotels, restaurants and leisure	122	165	5,737	5,587	Malaysia
Telekom Malaysia	Malaysia	Telecommunication services	816	652	5,672	5,572	Singapore
Electricity Generating	Thailand	Independent power producers	243	125	4,986	5,502	Lao People's Democratic Republic
IOI Properties Group	Malaysia	Real estate development	1,682	1,916	4,721	5,499	Singapore
Thai Beverage	Thailand	Beverages	1,403	1,420	5,240	5,316	Myanmar, Viet Nam
PPB Group*	Malaysia	Food Products	168	263	5,094	5,060	Indonesia, Myanmar, Singapore, Viet Nam
MMC Corporation	Malaysia	Conglomerates	302	273	5,058	5,059	Several ASEAN countries
Globe Telecommunication	Philippines	Wireless telecommunication services	252	174	4,170	5,043	Singapore
Burnt Armada	Malaysia	Energy equipment and services	354	672	4,199	4,923	Indonesia, Singapore
AirAsia	Malaysia	Airlines	564	388	4,952	4,881	Most ASEAN Member States
Batu Kawan	Malaysia	Chemicals, palm oil products, real estates	615	375	4,245	4,799	Indonesia
Felda Global Venture	Malaysia	Palm oil producers	467	412	4,969	4,699	Cambodia, Indonesia, Thailand
Total 100 major ASEAN MNEs			255,687	251,244	2,996,868	3,140,646	

Sources: ASEAN Investment Report 2017 research, based on Bloomberg, Orbis and company reports.

Notes: *refers to member of a group of companies or conglomerates. For instance, Petronas Chemicals with Petronas (Malaysia), Indah Kiat Pulp and Paper with the Sinar Mas Group (Indonesia), San Miguel Corporation a member of the Top Frontier Investment Holdings, Great Eastern Holdings a member of the OCBC Group (Singapore) and Hong Leong Financial Group a member of the Hong Leong Group (Malaysia). Some major conglomerates and companies are not in the list such as Petronas (Malaysia), Sinar Mas (Indonesia) and TCC Corporation (Thailand). Some of the companies are State-owned enterprises or Government-linked companies. These companies, for instance, include Indonesia: Bank Negara Indonesia, Bank Rakyat, Bank Mandiri, Malaysia: Axiata Group, IHH, Singapore: Singapore Telecommunications, Singapore Airlines; Thailand: PTT, Krung Thai Bank; Viet Nam: Bank for Foreign Trade, Bank for Investment and Development, Vietnam Commercial Bank.

Table 1.12. Intra-regional M&A purchases, net basis, 2013–2016 (Millions of dollars)

	2 013	2 014	2 015	2 016
Brunei Darussalam	0	0	-47	..
Cambodia	166	-2	5	0
Indonesia	1 481	423	2 321	-209
Lao People's Democratic Republic	..	..	1	0
Malaysia	-31	-142	2 158	109
Myanmar	-2	7	-1	46
Philippines	-74	437	84	7
Singapore	24	-3 363	77	-116
Thailand	94	34	13	1 001
Viet Nam	121	12	56	1 823
Total	1 780	-2 592	4 667	2 663

Source: UNCTAD M&A database.

Malaysian companies such as Axiata, UEM, Genting, Sunway and Dialog and by Singaporean companies such as CapitaLand, Keppel Corporation, SATs, Hatten Land, Cordlife Group and Mandala Energy.

Aside from intra-regional M&A activities, ASEAN companies also expanded through the establishment of new factory facilities and business operations in different ASEAN countries in various industries in 2016–2017 (section 1.6). For instance, in 2016 some ASEAN electronics companies such as Testech (Philippines), Trio Tech International (Singapore), Telford Industries (Singapore) and Sunbright (Singapore) started operations in Malaysia.

1.6. CLMV COUNTRIES

The CLMV countries received increasing attention from investors in 2016. FDI flows to this group of ASEAN Member States rose by 8 per cent, from \$17.4 billion in 2015 to \$18.9 billion in 2016 (table 1.13). The share of FDI flows in ASEAN that went to the CLMV countries rose from 10 per cent in 2015 to 13 per cent. However, inflows in the Lao People's Democratic Republic were flat. In general, investment in manufacturing, services and infrastructure rose. FDI from developing Asian economies, including intra-ASEAN, remained the major source of investment in these Member States. China and ASEAN are major investors in Cambodia and the Lao People's Democratic Republic, whereas ASEAN is a lead investor in Myanmar, and the Republic of Korea dominates in Viet Nam.

Table 1.13. FDI flows in CLMV countries, 2012–2016 (Millions of dollars)

Host country	2012	2013	2014	2015	2016
Cambodia	1,557	1,275	1,727	1,701	2,280
Lao People's Democratic Republic	294	427	913	1,079	1,076
Myanmar	1,354	2,621	946	2,824	2,989
Viet Nam	8,368	8,900	9,200	11,800	12,600
CLMV Total	11,573	13,223	12,786	17,404	18,945

Source: ASEAN Secretariat, ASEAN FDI database.

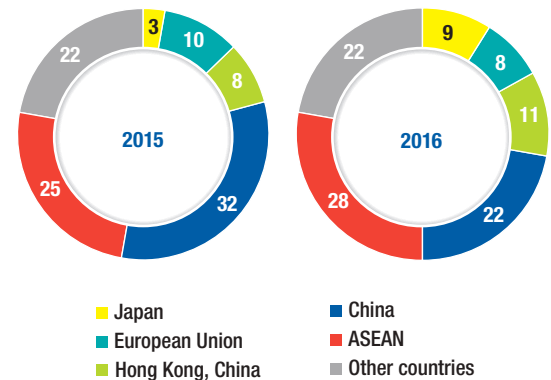
Cambodia: Foreign companies concentrated in finance, light manufacturing and infrastructure activities

ASEAN emerged as the largest investor group in Cambodia in 2016, accounting for 28 per cent of all FDI flows, followed by China with a 22 per cent share (figure 1.2). China was the largest investor in 2015 with a 32 per cent share. The financial sector was the major recipient with a 28 per cent share, with strong growth in real estate activities (figure 1.3). Flows in finance rose from \$514.7 million in 2015 to \$645.5 million in 2016, while FDI in manufacturing fell by 16 per cent, to \$379.6 million. That said, Cambodia is receiving more investment in light and non-garment manufacturing industries (e.g. automotive, beverages, consumer goods), where a majority of the operations are efficiency-seeking. MNEs manufacture products in Cambodia for export to affiliates or customers in ASEAN or globally.

Manufacturing

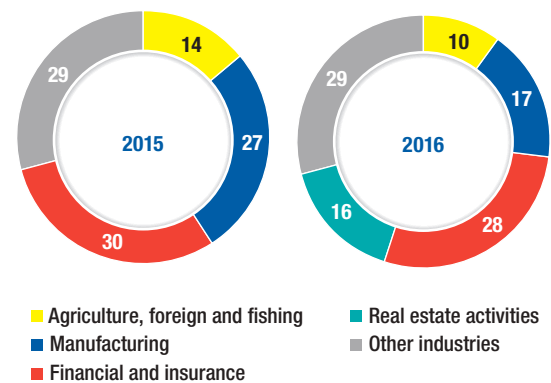
The garment industry remained a major recipient of manufacturing FDI in Cambodia, despite its declining share in recent years. The Member State has increasingly attracted FDI in light manufacturing industries. Some of these investments are part of regional supply chains, with production targeted for export to neighbouring countries such as Thailand. For instance, Denso (Japan) opened a \$19 million second plant in 2016 to produce magnetos and oil coolers. Production from the new plant is exported to Denso's Thailand subsidiary, where it undergoes quality assurance before being supplied to the motorcycle and automotive industry in that country and other ASEAN Member States. A joint venture between NHK Spring (Japan) and Chai Watana (Thailand) opened a plant in 2016 to sew fabric and leather seat covers. Production from this plant is then exported to Thailand, primarily to Toyota facilities. The factory is located two hours' drive from where Toyota stitches car seat covers in Thailand.

Figure 1.2. Cambodia: FDI flows, by country, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 1.3. Cambodia: FDI flows, by industry, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

In 2016, Sumitronics, a joint venture between Sumitomo (Japan) and Aline Technology Manufacturing (Thailand) set up an electronics manufacturing service to serve Japanese clients based in Thailand. SVI (Thailand) started construction of a \$60 million electronics plant in 2016 to produce digital security cameras for export to Europe. Minebea (Japan) opened its third manufacturing plant in late 2016 to produce machinery and electronic products for export.

Other companies, such as Taisun International (Taiwan Province of China), started a plant for personal hygiene care products and Tanaka (Japan) opened an eyewear factory in 2016. In 2017, Kampot Cement (Thailand) started construction of a third plant, which will begin production in 2018. Zuellig Pharma (Hong Kong, China) expanded its presence in Cambodia with a new investment facility in 2017, and Sichuan Grand Royal Group (China) and its JV partner (Try Pheap Group-Cambodia) opened a \$20 million motorcycle assembly plant this year.

Garments

Although there were closures of garment factories in 2016–2017, new factories were also established. Among the owners: Apex International (India), Best View (China), Capital Island (Canada and Singapore), Jie Leda Clothing Accessories Factory (China), JVYT Sports (Republic of Korea), KMCC Company (Thailand), Kyungshin Corporation (Republic of Korea), New Huamei Knitting & Clothing (China), Raytecs (Netherlands), Team Best Textile (China), Vintage Denim (Australia), Windeson Enterprise Garment (China), Y.L Labels (China) and Yue Yan Industrial (Hong Kong, China). Sritex (Indonesia) is opening a garment manufacturing plant in a joint venture with the Cambodian Government. Most products produced by these garment factories are exported globally. For example, Crystal Apparel (Hong Kong, China), which recently opened a factory in Cambodia, exports to companies in Europe and the United States. Nike (United States) opened a flagship store in 2017 with products sourced from local factories.

Food and beverages

Coca-Cola (United States) opened its second bottling unit, which started production with two lines in 2016. A number of major investments in food and beverages also took place. They included Crown Holdings (United States), which opened a beverage can plant in a joint venture with Khmer Brewery (Cambodia), while Vinamilk (Viet Nam) opened a \$23 million dairy factory in a joint venture with BPC Company (Cambodia). Chinese-owned Rui Feng International opened Cambodia's largest sugar production factory for export to China and Europe. The company has also announced plans to invest a further \$1 billion in the Member State in coming years. Betagro (Thailand) opened a \$30 million manufacturing facility for production of animal feed for the local market and exports. Companies such as YHS Food & Beverage (Singapore), J's Factory (Japan) and Thai President Food (Thailand) also invested in Cambodia in 2016. In 2017, Heineken (Netherlands) opened its second brewery with a \$100 million investment, and Vedan International Holdings (Hong Kong, China) was establishing a subsidiary to produce food additives.

Infrastructure

MNEs play a key role in infrastructure development in Cambodia. For example, both Sika (Switzerland) and Omura Concrete (Japan) opened concrete plants in 2016 to serve Cambodia's growing construction and real estate industry. Sumitomo Mitsui (Japan) and Swing Corporation (Japan) won a contract in 2016 to construct a waterworks system. In 2016, Hyundai Engineering (Republic of Korea) won a \$120 million contract to construct a four-story shopping mall, which is due to be completed in 2018. Also in 2016, a Sino Great Wall International (China) consortium won a \$2.7 billion contract to build the 133-storey Twin Trade Centre in Cambodia, which will be one of the world's tallest buildings.

Toshiba (Japan) is building a 150 MW coal-fired plant with other foreign partners and contractors in 2017. They include TPSC Engineering (Malaysia), Toshiba Plant Systems & Services (Thailand) and Pöyry (Finland), and General Electric (United States) is to supply equipment to the plant. In 2017, PESTECH International Bhd. (Malaysia) won a contract to construct the \$100 million, 230 kV Stung Tatay hydropower plant. China National Petroleum Corporation is building a \$620 million oil refinery, while a consortium of Vinci Group (France) and Muhibbah Engineering (Malaysia) won a contract to build a \$23 million domestic airport terminal at Phnom Penh. Sino Great Wall (China) with Oxley Gem (Cambodia) was awarded a \$285 million contract in 2017 to build a 55-storey, multi-purpose property. In 2017, Vinci (France) was also awarded a \$23.5 million contract to upgrade a water treatment plant and to expand water production capacity.

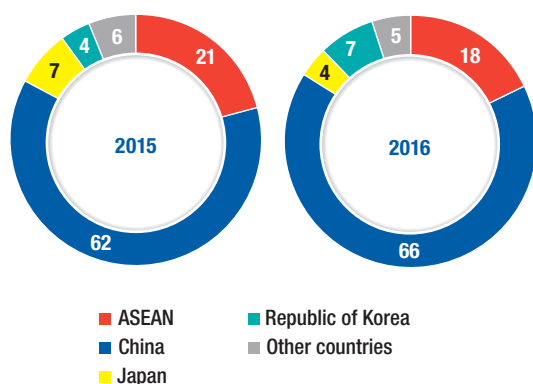
Finance and insurance

Foreign companies continue to invest and expand their presence in the banking and insurance industry in Cambodia. Dai-ichi Life Insurance (Japan) opened a representative office in the country, while Bangkok Life (Thailand) set up an insurance subsidiary with PT Asuransi Central Asia (Indonesia) and Bangkok Insurance (Thailand) in 2016. Muang Thai Life Assurance (Thailand) and Canada Investment Holding (Canada) formed a \$7 million joint venture to open an insurance subsidiary in the same year. KB Kookmin Bank (Republic of Korea) opened a digital bank in 2016 to offer technology-based financial service and RHB Bank (Malaysia) expanded its presence in Cambodia by opening two new branches.

In 2017, insurance company AIA Group (Hong Kong, China) opened its first subsidiary. Tokio Marine & Nichido Fire Insurance (Japan) opened a representative office to offer insurance services to Japanese companies operating in Cambodia. In addition, Blackwell Global (United Kingdom), a multi-asset brokerage, opened an office in 2017 to operate a foreign exchange and brokerage business. DEG (Germany) expanded its operation in 2017 through a capital injection to support finance for SMEs. Accounting firm Grant Thornton (United Kingdom) expanded its presence in Cambodia by opening an office in 2016. Mizuho Bank (Japan), which set up a representative office in Cambodia in 2013, opened its first official branch in 2017. BRED Bank (France) opened its first branch with a \$30 million investment in 2017 to offer loans to SMEs in that Member State. In the same year, Vietcombank (Viet Nam) opened a subsidiary in Cambodia and Kasikornbank (Thailand) opened a branch to serve Thai companies, including to provide microfinancing to Cambodian clients.

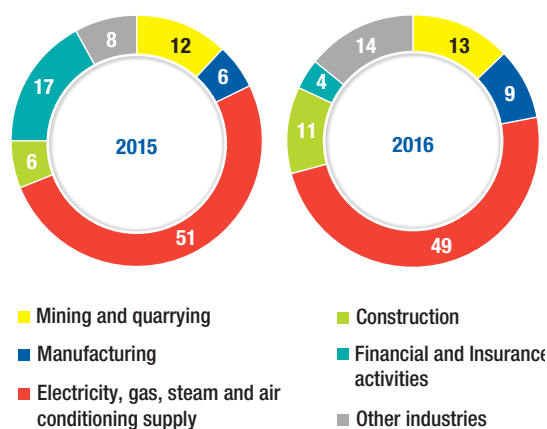
Lao People's Democratic Republic: Infrastructure investment continued to dominate

Figure 1.4. Lao People's Democratic Republic: FDI flows, by country, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 1.5. Lao People's Democratic Republic: FDI flows, by industry, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

China remained the largest investor in the Lao People's Democratic Republic, with a 66 per cent share of FDI inflows in 2016 (figure 1.4). ASEAN was the second largest investor. Infrastructure continued to dominate FDI flows, in particular in electricity projects (figure 1.5), which accounted for nearly 50 per cent of inflows in 2016 and was led by Chinese investment. FDI in manufacturing rose by 36.2 per cent, while FDI in finance fell by 73.4 per cent.

Infrastructure

Chinese and ASEAN companies are active participants in infrastructure development in the Lao People's Democratic Republic. Some ASEAN companies also invested in and expanded their power operations. These companies include Bangkok Expressway (Thailand), Banpu (Thailand), Ch.Kanchang (Thailand), EGAT International (Thailand), EGCO (Thailand), Hydro Engineering Co. (Thailand), Natee Synergy (Thailand), Ratchaburi Electricity (Thailand), AP Bizlink Group (Malaysia), Mega First (Malaysia), Hoang Anh Gai Lai (Viet Nam) and Viet-Lao Power (Viet Nam) (table 1.14).

A number of power projects were completed in 2016, including power plants developed by Viet-Lao Power (Viet Nam), Energy Development (Norway), Far East Industrial (Hong Kong, China) and China Electrical Equipment Corporation. Other non-ASEAN MNEs have also invested in power development projects, with plants starting operation in 2016–2017 and some expected to commence operation in 2018–2020. These companies include Kansai Electric (Japan), Kobe Green Power (Japan), Korea Western Power (Republic of Korea) and SK Engineering & Construction (Republic of Korea).

Other EPC contractors have also been involved in power plant development in 2016–2017 such as ABB (Switzerland), Andritz AG (Austria), POSCO

Table 1.14. Lao People's Democratic Republic: Power projects, 2016–2020 (Selected cases)

Project	Location	Installed capacity	Investors (sponsors)	Date of operation	Planned market
Xekaman 1	Attapue	322 MW	Viet-Lao Power (Viet Nam), 100%	2016	Viet Nam, Lao People's Democratic Republic
Nam Sim	Houaphanh	8 MW	Electrical Construction and Installation (Lao People's Democratic Republic), 25% Energy Development (Norway), 75%	2016	Lao People's Democratic Republic
Nam Mang 1	Bolikhamxay	64 MW	Électricité du Laos (Lao People's Democratic Republic), 15% Far East Industrial (Hong Kong, China), 85%	2016	Lao People's Democratic Republic
Nam Beng	Oudomxay	34 MW	China Electrical Equipment Corp, 100%	2016	Lao People's Democratic Republic
Nam Lik 1	Vientiane	61 MW	Électricité du Laos (Lao People's Democratic Republic), 20% Hydro Engineering Co. (Thailand), 80%	2017	Lao People's Democratic Republic
Nam Phay		86 MW	Électricité du Laos (Lao People's Democratic Republic), 15% Norinco (China), 85%	2018	Lao People's Democratic Republic
Nam Tha 1	Louangnamtha and Borkeo	168 MW	Électricité du Laos (Lao People's Democratic Republic), 25% China Southern Grid Co. (China), 75%	2018	Lao People's Democratic Republic
Xayabouly (Mekong)	Xayabouly-Luangphabang	1285 MW	Électricité du Laos (Lao People's Democratic Republic), 20% Ch.Kanchang (Thailand), 30% Electricity Generating Public Company (Thailand), 12.5% Natee Synergy (Thailand), 25% Bangkok Expressway (Thailand) 7.5% PT Construction & Irrigation, 5%	2019	Thailand, Lao People's Democratic Republic
Sepian-Xenamnoy	Attapeu and Champasak	410 MW	LLHSE, 24% SK Engineering & Construction (Republic of Korea), 26% Korea Western Power Co, Ltd, 25% Ratchaburi Electric Generating Holding Public Company Limited, 25%	2019	Thailand, Lao People's Democratic Republic
Nam Ngiep 1	Bolikhamxay	290 MW	Lao Holding State Enterprise, 25% Kansai Electric (Japan), 45% Electricity Generating Authority of Thailand International (Thailand), 30%	2019	Thailand, Lao People's Democratic Republic
Nam Pha	Luangnamtha	130 MW	AP Bizlink Group (Malaysia), 100%	2019	Lao People's Democratic Republic
Nam Phak	Champasak	45 MW	Électricité du Laos (Lao People's Democratic Republic), 20% Kobe Green Power Co, Ltd (Japan), 40%	2020	Lao People's Democratic Republic
Don Sahong	Champasak	240 MW	Government of the Lao People's Democratic Republic, 20% Mega First (Malaysia), 80%		Lao People's Democratic Republic
Nam Ou 1, 3, 4 and 7	Luangphabang Phongsaly	732 MW	Sinohydro (China), 85% Électricité du Laos (Lao People's Democratic Republic), 15%		Lao People's Democratic Republic

Source: Lao People's Democratic Republic, Ministry of Energy and Mines.

Engineering and Construction (Republic of Korea), Pöyry (Finland) and Obayashi (Japan). In addition, General Electric (United States) and Électricité du Laos launched in 2016 a joint research and training program for the long-term development of the energy sector in the Lao People's Democratic Republic. Impact Energy Asia (Thailand) is building a \$1.5 billion wind farm, the largest in ASEAN, to be operationalized in 2019.

Foreign MNEs were also active in other infrastructure projects. For instance, a Chinese consortium won a \$1.2 billion contract to build the Boten-Vientiane railway in 2016. The companies include China Railway No. 5 Engineering Group, China Railway International Group and China Railway No. 8 Engineering Group. Hazama Ando (Japan) is building the \$61 million Wattay Airport expansion, which is targeted for completion in 2018. In 2017, a consortium led by IL&FS Transportation (India) won a \$165 million contract for a road development project, and Boart Longyear (United States) started a multi-site mining drilling project. Siam Cement Group (Thailand) started commercial operation of a cement plant in 2017 to meet the increase in demand from the construction and infrastructure industries in the country.

A number of Chinese companies were involved in other construction projects in 2016–2017. They included China Machinery Engineering, China National Electric Engineering Company, China Communications Construction, China Gezhouba Group and China Civil Engineering Construction.

Manufacturing

The Lao People's Democratic Republic is also receiving an increasing level of manufacturing FDI in various industries. Jui-Fang Electronics (Taiwan Province of China) in 2016 expanded its electronic and wire harness product assembly business. Chiem Patana (Thailand) started production in 2016 of woven fabrics for export, and Lao Comfort Garment Manufacturing (Hong Kong, China) was established the same year to manufacture workwear products.

Isuzu Motors (Japan) established a service shop in 2017 to help boost Isuzu aftersales service for trucks. Mani (Japan), a medical equipment manufacturer, opened a factory in 2017. Production from the factory is for export. The factory also manufactures dental equipment, which is sent to Viet Nam for assembly and for export to Japan and globally. VT Greater Pharma, a JV of Greater Pharma (Thailand) and Viengthong Pharma (Lao People's Democratic Republic), completed construction of a herbal products factory in 2017, where the company will work with local farmers to grow medicinal plants. Hoang Anh Gia Lai Group (Viet Nam) opened a \$9 million latex processing plant in 2017.

Services

FDI in services go primarily to finance and the retail trade. Kasikornbank (Thailand) opened a head office in the Member State in 2017 after Maybank (Malaysia) expanded its activities in 2016 by opening a second branch. Prudential Corporation (United Kingdom) entered the Lao People's Democratic Republic for the first time, focusing on the life insurance market. The Face Shop (Republic of Korea), a retail franchise, opened its first store in the Lao People's

Democratic Republic in late 2016 with plans for a large roll-out of other stores. Major Cineplex Group (Thailand) plans to have 30 screens in the country; in 2016 it opened four and in 2017 it announced seven more. Siam Makro, a supermarket chain, owned by CP (Thailand), announced plans in 2016 to invest in the host country. Sayam International (Thailand) and Dao-Heuang Group (Lao People's Democratic Republic) are building a duty-free mall in Vientiane.

Myanmar: FDI rose with increasing investor interests across all sectors

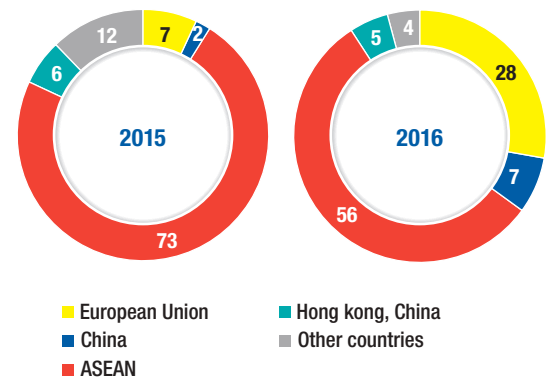
FDI flows into Myanmar rose to \$3 billion in 2016. ASEAN was the largest investor, contributing 56 per cent of inflows (figure 1.6). FDI from ASEAN fell from \$2.2 billion in 2015 to \$1.7 billion in 2016. FDI from the EU contributed 28 per cent – the second largest investor group. EU FDI flows increased more than four-fold, from \$203 million in 2015 to \$839 million in 2016. FDI flows were dominated by mining and quarrying, which attracted a 39 per cent share in 2016, up from a 27 per cent share in 2015 (figure 1.7). However, manufacturing FDI fell by 47 per cent.

Manufacturing

ASEAN and foreign companies invested in a wide range of manufacturing industries. For instance, Marubeni (Japan) started an \$18.5 million manufacturing fertiliser and repackaging business with a local partner in 2016. Nippon Concrete Industries (Japan) and a local partner opened a \$5 million concrete manufacturing facility in 2017, while Aju Group (Republic of Korea), a construction materials company, started construction of a factory.

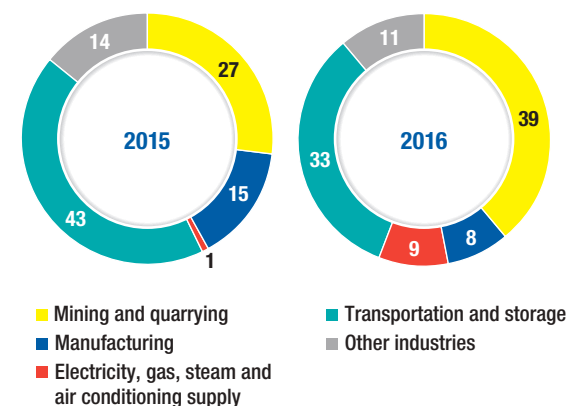
In 2016, De Heus (Netherlands) opened an \$11 million feed plant, mainly for export to other ASEAN Member States, and Japfa Comfeed (Indonesia) invested \$7 million for a poultry breeder farm. Fertiliser producer Thai Central Chemical (Thailand) invested \$12.5 million in 2016, while CPP Fertiliser (Thailand) expanded its operation in Myanmar through a \$10.5 million investment for production and sale of fertilisers. CJ Foods (Republic of Korea) in 2016 opened an \$8.3 million edible-oil manufacturing plant and invested an additional

Figure 1.6. Myanmar: FDI flows, by country, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 1.7. Myanmar: FDI flows, by industry, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

\$16.7 million to expand its animal feed production facilities in 2017. New Hope Liuhe (China) made a \$10 million investment in 2017 for the production of animal feed.

In the automotive industry, Nissan (Japan) and Tan Chong (Malaysia) opened a \$50 million vehicle assembly plant in 2017, and Ford (United States) together with a local partner have started assembling cars in their new assembly facility with an initial investment of \$10 million.

Agrocorp International (Singapore) in 2017 opened a rice production and export facility. LS Cable & System (Republic of Korea), in a JV agreement in 2017 with MJTD (Myanmar), announced an investment of \$27 million to produce aerial cables for buildings. In 2017, Komatsu (Japan), a construction, mining and military equipment manufacturer, opened a plant in Myanmar to support the host country's growing infrastructure industry. BASF (Germany) opened its first plant in 2017 (section 1.3). Other foreign and ASEAN companies established or were building factories in the Thilawa Special Economic Zone in 2016–2017 (table 1.15).

The expansion of manufacturing companies in Myanmar encouraged logistic companies to invest or expand their operations to provide logistical support to other investors. In 2017, DHL

Table 1.15. Investors at Thilawa Special Economic Zone, 2016–2017 (Selected cases)

Company	Country	Type of business	Approval date
CJ Foods Myanmar	Republic of Korea	Manufacturing	15/02/2016
Myanmar Ajinomoto Foods	Japan through Thailand investment	Services/trading	15/02/2016
S.P. Petpack Inter Group	Thailand	Manufacturing	15/02/2016
Konoike	Japan	Logistics services	26/02/2016
Yanmar	Japan through Singapore investment	Services/trading	26/02/2016
Nippon Kouatsu Electric	Japan	Manufacturing	10/03/2016
Yakult	Japan	Manufacturing	10/03/2016
Agri First	Singapore and Myanmar	Manufacturing	10/03/2016
Alidac Pharmaceuticals	India and Dubai	Manufacturing	31/03/2016
Yusen Logistics	Japan and Singapore	Services/logistics	31/03/2016
Ryobi Myanmar Distribution Services	Japan	Services/logistics	31/03/2016
NMD	Japan and Hong Kong (China)	Manufacturing	31/03/2016
Mizuno	Japan/Viet Nam	100% export	20/05/2016
Yojin	Singapore	Manufacturing	01/06/2016
Yangon Can Manufactuirng	Japan and Myanmar	Manufacturing	23/06/2016
Burst Myanmar	Singapore	Services	23/06/2016
Kim Pai Printing and Packaging	Thailand	Manufacturing	23/06/2016
Fujifilm	Japan through Singapore investment	Services	22/07/2016
SCI Metal Tech	Thailand and Myanmar	Manufacturing	22/07/2016
NS Bluescope Lysaght	Singapore	Manufacturing and services	18/08/2016
Taiyo Nippon Sanso	Japan through Singapore investment	Manufacturing	08/09/2016
TOA Paint	Thailand	Manufacturing	26/09/2016
TCCC Myanmar	Thailand	Services/trading	26/09/2016
Buhler	Singapore	Services/trading	27/10/2016
Aktio	Japan	Manufacturing	25/11/2016
Aju Myanmar	Republic of Korea	Manufacturing	23/12/2016
Koryo Cable	Republic of Korea	Manufacturing	02/01/2017
Metro Wholesale	Germany	Services/trading	23/01/2017
Sahadharawat Can	Thailand	Manufacturing	23/02/2017
Super Hotel	Japan	Services/hotel	23/02/2017
Soilbuild	Singapore	Manufacturing	23/02/2017

Source: Thilawa SEZ.

(Germany) invested a further \$113.9 million to expand its supply chain business, and Nittsu Logistics (Japan) completed the construction of a logistics centre. In 2016, Yusen Logistics (Japan) invested \$6.5 million to offer air, sea and land logistical services, while in the same year, Konoike (Japan) set up a \$5 million subsidiary to provide logistics services.

Infrastructure

A consortium of Chinese companies led by China International Trust and Investment Corporation (CITIC) won the contract to develop a deep-water port and build the Kyaukpyu Special Economic Zone. The construction of the latter is expected to start in 2018.⁸ The other Chinese companies in the consortium include China Harbor Engineering Company, China Merchants Holdings (International), TEDA Investment Holding and Yunnan Construction Engineering Group; a Thai company (Chai Tai Group) is also involved. Surbana Jurong (Singapore), an infrastructure consultancy company, in partnership with CITIC Group is providing infrastructure and port services to the project. In 2017, TTCL, a JV between ITD (Thailand) and Toyo Engineering Corporation (Japan), announced plans to invest over \$6 billion in the next few years to establish two coal-fired power plants in Myanmar. In 2016, a consortium of APR Energy (United States), Ace Resources Group (United States) and local companies won a contract to build a 300 MW power plant in Yangon. Punj Llyod (India) and Varaha Infrastructure Ltd (India) won a \$184 million contract to construct 120 km of improved road links and a number of bridges in Myanmar in 2017. Sino Great Wall (China) in 2016 won two construction contracts worth \$200 million from the Maha Land Development (Myanmar), to develop two real estate projects.

A \$4.7 million biomass gasification power plant was opened in 2017, which was built with the support of the Ministry of Environment of Japan and Yanmar (Japan). A \$16 million waste energy plant was constructed in Yangon by JFE Engineering Corporation (Japan). In 2017, Viettel Global (Viet Nam) and local Myanmar companies received a license to provide telecommunication services across the country.

In 2017, the Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development announced plans to invest \$49.4 million and provide a debt guarantee of \$41.8 million for an urban development project in Myanmar. The project will be developed with Fujita Corporation (Japan) and Tokyo Tatemono (Japan). Siemens (Germany), in partnership with Myanmar Mahar Htun, in 2017 provided technology solutions for 10 ports in the Member State. SCI Metal Tech (Thailand) invested \$20.5 million in a JV to manufacture transmission and telecommunication lines in 2016, and Taiyo Nippon Sanso (Japan) invested \$11.3 million for manufacturing and supplying gases, which will commence operation in 2018.

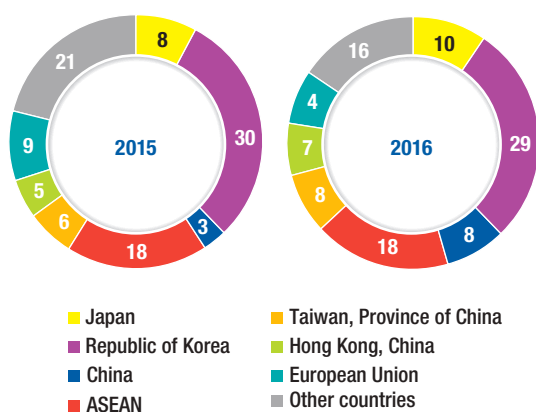
Extractive industries

Both the mining and the oil and gas industries in Myanmar continued to attract MNEs. In 2016, the Guangdong Zhenrong Energy (China) consortium announced a \$2.6 billion investment to build an oil refinery. Swiber Holdings (Singapore), an offshore oilfield service provider, won an EPC contract the same year for pipelines and tie-ins. China's Wanbao Mining Copper consortium started copper production in the Member State, and SIMCO Song Da Joint Stock Company (Viet

Nam) established a plant for marble extraction and manufacturing in the Nayputaung quarry in 2016. Titeline Valentis (Australia) in 2016 expanded its operation with an additional \$26.7 million to support exploration and drilling activities.

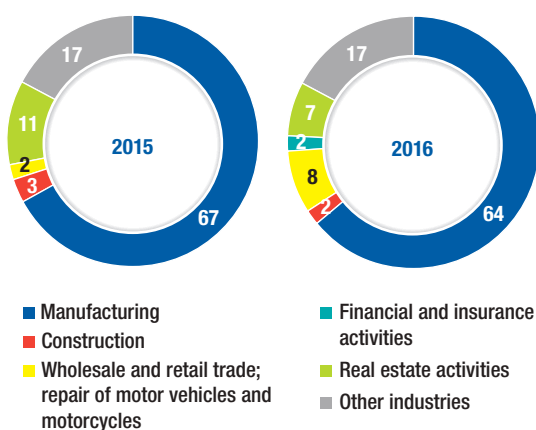
In 2017, a consortium led by Total (France) started the Badamyar gas production project with partners that include Chevron-Unocal (United States), PTTEP (Thailand) and MOGE (Myanmar). In addition, Woodside (Australia) is expanding its offshore activities, while EthosEnergy (United States) was awarded an \$8 million contract to upgrade the Ywama power plant. In 2017, Sahakol Equipment (Thailand) won a seven-year contract to operate a \$100 million tin mine operation.

Figure 1.8. Viet Nam: FDI flows, by country, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 1.9. Viet Nam: FDI flows, by industry, 2015–2016 (Per cent)



Source: ASEAN Secretariat, ASEAN FDI database.

Viet Nam: Manufacturing and Korean investments dominate

FDI flows in Viet Nam were dominated by manufacturing activities, which accounted for 64 per cent of inflows in 2016 (figure 1.8). The Republic of Korea remained the largest investor (29 per cent), followed by ASEAN with an 18 per cent share (figure 1.9). More than 80 per cent of FDI in 2016 came from developing Asian economies and from Japan.

Manufacturing

FDI in manufacturing in Viet Nam rose from \$7.9 billion in 2015 to \$8.0 billion in 2016, and manufacturing remained the dominant recipient. Foreign and ASEAN companies invested in and expanded operations in a wide range of industries. In *food and beverages*, Cargill (United States) opened an \$8.5 million animal feed plant in 2016, and De Heus (Netherlands) opened its seventh animal feed plant. In 2017, De Heus opened a research facility in partnership with Fresh Studio (Viet Nam). Procter & Gamble (United States) in 2016 opened a \$100 million razor factory to produce branded razors for export. Olmix Group (France) opened a feed additives production plant in its first year of operation in Viet Nam in 2016.

In 2017, Nestle (Switzerland) opened its sixth factory to produce milk beverage cartons, Bel Group (France) started a factory to produce “The Laughing Cow” cheese for the local market and export to the

other ASEAN Member States, and Skretting (Netherlands) opened a shrimp feed plant. In addition, CBH Group (Australia), a grain company, started a \$70 million malt processing factory – the biggest specialized plant in ASEAN. Suntory PepsiCo (Japan-United States) opened its fifth beverage plant with a \$56 million investment. Ve Wong (Taiwan Province of China), in partnership with Kinh Do (Viet Nam), opened a \$30 million factory to produce instant noodles and plans to build three other factories in the next few years.

In *electronics*, LG Display (Republic of Korea) started construction of its first organic light-emitting diode screen plant in Viet Nam with a \$1.5 billion investment in 2016. In the same year Foxconn (Taiwan Province of China) expanded its presence with the acquisition of Microsoft Mobile Vietnam Limited for \$22 million, to produce smartphones. In 2016, Grupo Premo (Spain) – a manufacturer and supplier of antennas – opened a manufacturing plant for export, and Bühler (Switzerland) opened a factory for production of rice processing machines for the local market and for export to neighbouring countries. The plant also housed R&D activities. Panasonic (Japan) expanded its presence in 2016 by opening a solution and innovation centre. In 2017, 3M (United States) opened a plant to produce consumer and industrial products to serve the domestic market and for exports. Seoul Semiconductor (Republic of Korea) opened a \$300 million plant to manufacture electronic products such as semiconductors, LED systems and electronics parts for the lighting and telecommunication industries. Also in 2017, NMS (Japan) expanded its operation with a \$5 million factory to produce telecommunication devices and equipment for the automobile industry, and Nidec (Japan) was constructing a factory to produce parts for air conditioners and household appliances for export. Nidec planned to invest \$500 million over the next few years in that Member State. TPR (Japan) started a \$42 million factory to produce electric mattress pads, gaskets, and plastic products, mainly for export.

Some companies in *other industries* expanded in Viet Nam. In 2016, Johnson Hardwood (United States) opened a manufacturing plant to produce wood flooring and Knauf (Germany) opened a plant that manufactures gypsum board. In the same year, Hanwha Techwin (Republic of Korea), a subsidiary of Samsung, opened an aviation engine production facility, BASF (Germany) opened a production plant for concrete admixtures and Avery Dennison (United States) expanded through a new garment and textile factory for export. Rubber companies such as Camso (Canada) opened a tire plant in 2016. Guizhou Tyre (China) was building a truck tire factory in 2017. Toyoda Gosei (Japan) is expanding, with construction of a \$24.6 million plant for airbag parts and steering wheels, with production to commence in 2019. GCL System Integration Technology (China) opened a 600 MW solar cell plant in 2017, and Seldat (Canada) is establishing a \$1.2 million factory with a design facility and five garment lines for export to the United States.

Infrastructure

Foreign companies are active in the development of infrastructure, including in real estates and industrial parks. Many foreign companies participated in infrastructure projects development in 2016–2017 through contractual arrangements or through non-equity modalities. For instance, in 2016, Doosan Heavy Industries & Construction (Republic of Korea) won a \$562.5 million

contract to lead the construction of a 600 MW coal-fired power plant to be completed in 2019; General Electric (United States) was awarded a contract to modernize and undertake equipment design, manufacturing, installation, commissioning and testing services of the 400 MW Tri An plant; and a consortium of Mitsubishi Corporation (Japan), Doosan Heavy Industries & Construction (Republic of Korea) and Vietnamese partners won the EPC contract in 2016 for the construction of the Vinh Tan 4 coal-fired thermal power plant with Toshiba (Japan) to supply turbines and generators to that plant. In the same year, Vinci (France) secured a contract from the Vietnam Expressway Corporation for the construction of a national expressway network; Huvis Water (Republic of Korea) was awarded the \$20 million water treatment project at the Vietnamese Dyeing Industrial Park; and Korea Industrial Complex Corporation won a consulting services contract for a resource efficiency project at the Hoa Khanh Industrial Complex. In addition, Koastal Eco Industries, a subsidiary of EMS Energy (Singapore), completed the construction of the wastewater treatment facility at Yen Phong I Industrial Zone.

In 2017, Hyosung Corporation (Republic of Korea) signed an agreement to start construction of \$1.2 billion in infrastructure for natural gas-fueled polypropylene and liquefied petroleum gas storage. Vinci (France) was awarded a \$69 million contract to design and build a water pipeline in Viet Nam, while Hyundai Engineering (Republic of Korea) was awarded a \$320 million contract to build facilities (such as water treatment) at a petrochemical complex. Bosch Rexroth (Germany) won a contract for the production of 94 hydraulic cylinders and components for 36 hydraulic power units for flood protection, and Keppel (Singapore) won a \$40 million engineering, technology and construction contract for a port development project in the Member State. A consortium led by Alstom (France) with Colas Rail (United Kingdom) and Thales (France) secured a metro system contract in 2017, to be completed by 2021. Alstom's share of the contract is about \$203 million.

Services

FDI in financial services rose in 2016. Some financial MNEs invested or expanded in Viet Nam in 2016–2017. However, some of these investment activities were made through M&A. For instance, in 2016, the insurance company FWD Group (Hong Kong, China) acquired Great Eastern Life's (Singapore) Viet Nam subsidiary for \$35.6 million. In 2017, Samsung Fire & Marine Insurance (Republic of Korea) acquired a 20 per cent stake in PJICO (Viet Nam) for \$23.4 million, Sun Life Financial (Canada) acquired a 25 per cent stake in Crescent Asia's (Hong Kong, China) Viet Nam subsidiary and insurance company Aviva (United Kingdom) acquired the 50 per cent stake of its JV partner (VietinBank (Viet Nam)) (chapter 2).

In the financial sector, Shinhan (Republic of Korea) acquired ANZ Viet Nam's retail arm in 2017. Woori Bank (Republic of Korea) set up a wholly foreign-owned bank and announced plans to expand its services in the Member State. United Overseas Bank (Singapore) revived a license to establish a foreign-owned subsidiary bank. Hanwha Life (Republic of Korea) expanded its presence in Viet Nam in 2017 by opening more customer service centres.

1.7. CONCLUSION

Although overall FDI flows in ASEAN in 2016 fell to \$96.7 billion, reflecting the global economic situation, there were some bright spots. Flows from most of ASEAN's major Dialogue Partner countries and intra-ASEAN investment rose. The decline in 2016 was due to one-off factors. Mauritius divested some -\$13.6 billion in one Member State, which involved round-tripping investment. ASEAN companies in some Member States acquired foreign-owned assets in their home countries and significant repayments of intracompany loans in one Member State also contributed to the overall decline.

The growth of intra-ASEAN investment derived in part from a spate of greenfield investments and intraregional M&A activities. A selection of 100 major ASEAN companies with a regional presence held significant cash holdings and assets. These factors played an important role in encouraging them and others not on the list to invest and expand in the region. The growing regional opportunities and the AEC factor contributed to the rise of intra-ASEAN investment, which for the first time accounted for a quarter of total FDI in the region.

MNE activities in the region in 2016–2017 remained vibrant, with many opening plants, some starting production from their newly built factories and others starting construction of factories. Many MNEs and ASEAN companies expanded their operations in the region in a wide range of industries, including in R&D activities and regional headquarters functions. A number of recent studies by chambers of commerce and consultancy companies suggest that MNEs plan to increase their operations, with investments in new and expanded facilities in the region over the next few years. The outlook for a higher FDI flows in 2017 is promising given the active corporate activities in the region.

Despite the atypical 2016 FDI performance, the region continued to attract a high level of FDI, reflecting ASEAN's resilience and the region's attractiveness and competitiveness in attracting investment. Twenty years on from the 1997–1998 Asian financial crisis, FDI flows in ASEAN have rebounded significantly to levels surpassing the precrisis peak by more than 2.8 times. The region will continue to attract strong FDI flows with greater regional value chain and supply chain activities in years ahead.

NOTES

- ¹ See *Indonesia Investment*, “Tax Amnesty Program Indonesia” (<https://www.indonesia-investments.com/finance/tax-system/tax-amnesty-program/item7124?>) and “Indonesia commences new tax amnesty program”, 18 July 2016, Reuters (www.reuters.com/article/us-indonesia-tax/indonesia-commences-new-tax-amnesty-program-idUSKCN0ZY098).
- ² Sumitomo, “Establishment of Electronics Manufacturing Services Site in Cambodia”, 2 February 2016 (www.sumitomocorp.co.jp/english/news/detail/id=29147).
- ³ *ASEAN Investment Report 2017* research, based on information on companies’ sources.
- ⁴ *ASEAN Investment Report 2017* research, based on information on companies’ sources.
- ⁵ Vasagar, J., “Bank of China opens branch in Brunei”, 20 April 2016, Financial Times (<https://www.ft.com/content/3d716398-06da-11e6-96e5-f85cb08b0730>).
- ⁶ Lin, W.E., “China Construction Bank Malaysia first foreign commercial bank to get licence in M’sia in 6 yrs”, 2 June 2017, The Edge Markets (www.theedgemarkets.com/article/china-construction-bank-malaysia-first-foreign-commercial-bank-get-licence-malaysia-6-yrs) and Bermingham, Finbarr, “China Construction Bank enters Malaysia with deals”, 14 June 2017, Global Trade Review (www.gtreview.com/news/asia/china-construction-bank-opens-Malaysia-branch)
- ⁷ Azhar, S., and Zahar, M. (2016) “Deutsche says to expand into high net worth private banking in Asia”, Reuters (www.reuters.com/article/us-wealth-summit-deutsche-bank-idUSKCN0Z012O).
- ⁸ “Exclusive: China seeks up to 85 percent stake in strategic port in Myanmar”, 5 May 2017, Reuters (<https://uk.reuters.com/article/us-china-silkroad-myanmar-port-exclusive/exclusive-china-seeks-up-to-85-percent-stake-in-strategic-port-in-myanmar-idUKKBN1811DF>).

PART TWO

Special Issue: FDI and MNEs from Selected Countries

(The Case of the European Union
and India)



CHAPTER 2

European Union FDI and MNEs in ASEAN

2.1. INTRODUCTION

The European Union (EU) is the largest source of investment in the region. Some EU MNEs, such as Shell (Netherlands) and HSBC (United Kingdom), have been operating in the region since the 1800s.

Many EU companies, such as Total (France), British American Tobacco (United Kingdom), Siemens (Germany), BP (United Kingdom) and Unilever (Netherlands and United Kingdom), operate in multiple ASEAN Member States and are involved in different types of activities. The operations of some EU MNEs have also evolved over time. In some cases, the operations have extended to cover a broader spectrum of value chains or to cover from upstream to more downstream activities. Traditionally, EU FDI in ASEAN has been driven by resource- and efficiency-seeking motives. Increasingly, it is also driven by market-seeking motives and strategic asset-seeking motives, reflecting the opportunities associated with the region's growing market, rapid economic growth and regional integration. FDI in services now accounts for the major share.

EU FDI in ASEAN has been historically uneven – concentrating primarily in just a few ASEAN Member States and with sources of such investment originating primarily from the EU-15 countries. However, recent years have witnessed growing EU FDI to the least developed ASEAN Member States (e.g. Cambodia, the Lao People's Democratic Republic and Myanmar), contributing to a broader geographical spread of EU investment in the region. There are more than 9,000 EU companies, large ones and small and medium-size enterprises (SMEs), in ASEAN.

2.2. EU FDI IN ASEAN

The EU is the largest investor group in ASEAN in value terms. EU FDI flows in ASEAN have been volatile, particularly since 2007 because of global economic factors and EU-specific events that have affected MNEs' investment patterns.

EU FDI flows have more than doubled in the past decade, registering in 2014 an all-time high inflow of \$37.9 billion. After a decline in 2015, flows in 2016 rose by 45 per cent, to \$30.2 billion.

2.2.1. Historical context

Early EU investment in the region were connected with colonial links and served as channels to boost trade, mainly for monetary reasons but also in part because of the global influence of European countries (Walter 2012). Early FDI in the region was driven by resource-seeking reasons, primarily in the extractive industry. Royal Dutch Shell (Netherlands) started its operations in Malaysia in 1891 by setting up oil storage depots. The company subsequently expanded its operations in the host country with its discovery of oil in 1910. In 1892 Royal Dutch Shell set up its first refinery in Indonesia; it started exporting to Thailand the same year and to Viet Nam in 1894. Shell has been present in Brunei Darussalam since 1929 and has an even longer history in the Philippines, with an operation that started in 1914.¹ Companies such as BP (United Kingdom) and Total (France) also have investments in the region that date back many decades.

Early FDI into the region was also heavily driven by plantation activities, such as in rubber. Michelin (France) set up rubber plantations in Viet Nam in the 1920s; Malaysia also saw high levels of FDI in rubber plantations, with the dominant investment at that time coming from the United Kingdom. These early British companies in Malaysia include Guthrie & Co., which first started investment in rubber plantations in 1896; Harrisons and Crosfield² made its first investment through an acquisition of Pataling Company in 1903, the Rubber Estate Agency with plantation facilities in 1910³ and Sime, Darby & Co in 1916 were the agent and secretary of five rubber plantations.⁴ There was also early FDI in tin mining with the involvement of companies such as Osborne & Chappell (United Kingdom) in Malaysia in the early 1900s (Palmer and Joll 2011).

It was not just resource-seeking FDI that was present in ASEAN in the late 1800s and early 1900s. Some commercial banks also started to operate in the region during that early period. For instance, HSBC (United Kingdom) has a long history in ASEAN with its presence as the first commercial bank in Thailand in 1888. It also has an operation in Viet Nam that dates back to 1870, in Singapore in 1877, in the Philippines in 1875, Indonesia and Malaysia in 1884, and in Brunei Darussalam in 1947.⁵

The increase in manufacturing FDI since the 1970s coincided with the globalization of production over the preceding few decades, which led manufacturing FDI to rise rapidly owing to efficiency-seeking reasons. In the 1970s and 1980s, EU chemical companies such as BASF (Germany), LyondellBasell (Netherlands) and AkzoNobel (Netherlands) started manufacturing activities in ASEAN. The late 1990s and early 2000s saw an increase in manufacturing FDI by EU automobile companies in the region, involving companies such as Volkswagen (Germany), Daimler (Germany), Exor (Netherlands) and BMW (Germany).

FDI into ASEAN continues to evolve. The past decade witnessed a further shift toward more market-seeking FDI, with services-related FDI now the biggest contributor to inflows in ASEAN. This trend also reflects EU investments and contribution to the evolution of FDI inflows in the region.

2.2.2. EU FDI trends and development

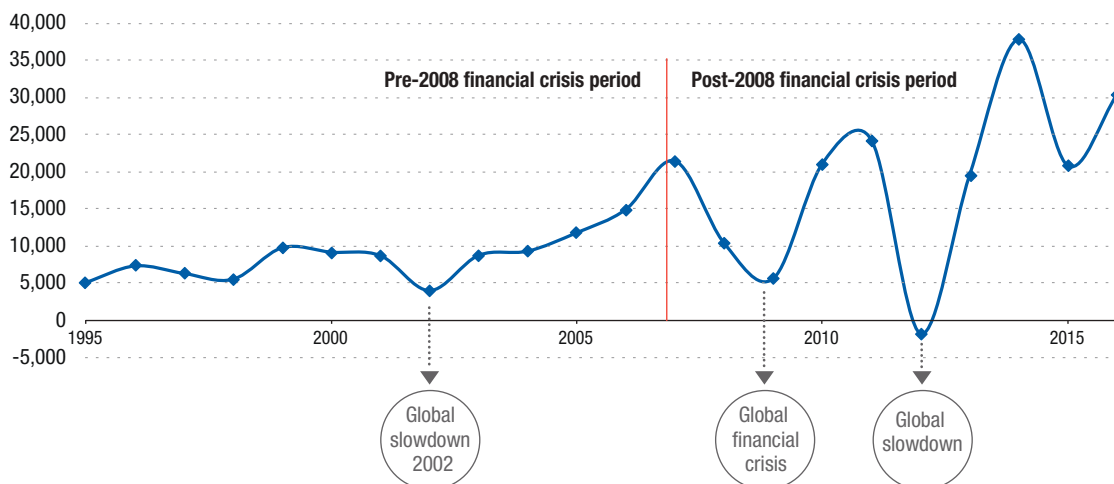
Between 2000 and 2016, ASEAN attracted \$257 billion in FDI flows from the EU. This cumulative amount accounted for more than 22 per cent of all FDI inflows in ASEAN during this period – the largest share in the region, – which exceeds the share of Japanese FDI inflows (13 per cent) and that of the United States (12 per cent) (table 2.1). Despite this significant number, less than 2 per cent of EU global OFDI stock is in ASEAN in 2016 as compared with 13 per cent for Japan.

The vast majority of EU FDI flows in ASEAN came from the EU-15 group of developed countries.⁶ In particular, more than 90 per cent of EU FDI flows came from the Netherlands, the United Kingdom, Luxembourg, France, Denmark, Ireland and Germany; in that order.

Similar to FDI from other countries, the distribution of EU FDI in the region is uneven. Five ASEAN Member States accounted for more than 93 per cent of EU cumulative FDI flows in the region between 2000 and 2016. Singapore received the lion's share, followed by Malaysia, Viet Nam, Indonesia and Brunei Darussalam. However, in more recent years, the Philippines and Viet Nam have received an increasing level of EU FDI. Viet Nam received \$5.6 billion from 2010 to 2016 and the Philippines in 2015 and 2016 attracted \$2.6 billion, which is more than all the EU FDI these two Member States received from 1995 to 2009 combined. Other ASEAN Member States, such as Cambodia and Myanmar, are also receiving increasing EU FDI, albeit at a low level.

EU FDI flows in ASEAN can be divided into two periods: before and after the 2008 global financial crisis (figure 2.1). Flows between 1995 and 2007 were on a generally upward trend despite minor fluctuations and dips in 1998 and 2002, effects of the 1997–1998 Asian financial crisis and the 2002 downturn in the stock markets in many countries. The fall in EU FDI flows in

Figure 2.1. EU FDI flows in ASEAN, 1995–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

Table 2.1. EU FDI flows in ASEAN, 2000–2016 (Millions of dollars)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2000-2016
Total EU-28	9,210	8,739	4,034	8,778	9,346	11,837	14,979	21,485	10,409	5,660	21,145	24,289	-1,770	19,656	37,861	20,834	30,465	256,955
Total EU-15	9,310	8,633	4,067	8,763	9,339	11,806	14,744	21,167	10,233	5,066	18,453	23,582	-3,042	19,372	36,571	20,209	28,812	247,085
Austria	37	17	76	7	1	2	296	87	139	44	196	14	401	395	39	-152	75	1,675
Belgium	183	533	-155	568	-435	697	-455	1,070	-1,393	1,562	-385	4,696	-1,963	280	234	710	141	5,888
Denmark	359	50	308	270	307	372	407	480	325	616	1,679	550	1,036	-440	-116	985	3,101	10,290
Finland	276	-5	136	15	51	-8	377	78	-21	-136	525	-871	386	316	-145	175	39	1,188
France	695	505	217	958	453	1,233	522	1,529	1,428	238	1,576	4,404	549	986	1,173	263	961	17,690
Germany	1,197	1,024	341	-469	1,344	805	2,118	1,450	374	-196	797	-253	-64	-836	49	-271	-81	7,328
Greece	1	-0	0	-0	0	42	-26	1	2	1	2	4	2	2	0	3	7	42
Ireland	-2	275	5	771	-324	330	-239	626	28	-4,505	248	-2,985	-2,138	174	2,825	4,806	8,118	8,013
Italy	6	49	-19	-19	30	230	-29	29	21	89	10	-18	-598	213	63	14	-20	53
Luxembourg	48	297	-114	278	274	106	-69	850	1,382	1,907	6,748	3,521	529	2,836	12,196	2,300	4,468	37,556
Netherlands	4,385	2,833	797	1,810	3,495	2,294	7,700	5,829	5,404	6,246	1,139	5,240	8,958	10,580	8,945	7,872	8,921	92,449
Portugal	2	0	2	0	3	133	112	819	1	10	-3	8	-2	-11	7	17	3	1,101
Spain	10	9	22	7	6	-28	63	153	265	235	259	-55	-412	281	250	-13	1,246	2,298
Sweden	-30	-94	120	-103	102	267	107	193	-262	-115	178	-464	546	-43	283	-26	122	781
United Kingdom	2,142	3,140	2,329	4,669	4,032	5,331	3,860	7,973	2,540	-929	5,483	9,792	-10,273	4,639	10,767	3,527	1,711	60,733
Other EU	-100	106	-34	15	7	31	235	318	175	594	2,692	707	1,272	285	1,290	624	1,652	9,870

Source: ASEAN Secretariat, ASEAN FDI database.

ASEAN mirrored the decline in global FDI in 2002 (*WIR 2005*). However, these flows increased more than fivefold between 2002 and 2007, from just \$4 billion to \$21 billion.

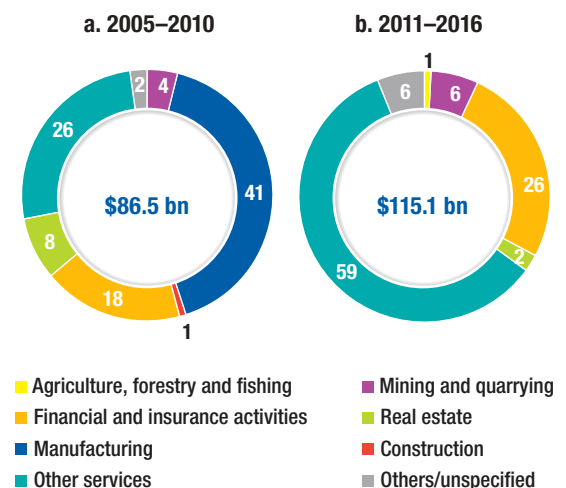
In the period after the financial crisis, EU FDI flows in ASEAN were more volatile, with steeper increases and declines over shorter periods. Inflows in 2009 fell by 70 per cent from the level witnessed in 2007, to \$5.7 billion, in response to the global recession. They rebounded robustly in 2010–2011, exceeding the pre-crisis peak. Then they dropped significantly in 2012, with the global economic slowdown. Divestment by EU countries in Singapore that year led to a -\$1.8 billion change in flows. Weak global demand also pushed down EU FDI in manufacturing, in particular in electronics and semiconductors in Singapore (Ministry of Trade and Industry, Singapore 2012). In 2014, flows rose again, to an all-time high of \$37.9 billion, before declining in 2015 to \$20.8 billion. They rebounded again in 2016, by 45 per cent (to \$30.2 billion), led by a significant rise in EU FDI in finance and insurance services (\$18.8 billion, as compared with a divestment of -\$163 million in 2015). Thus, the trend of EU FDI in ASEAN closely follows the global economic situation and that in the EU.

Sectoral distribution

The sectoral distribution of EU FDI in ASEAN in 2005–2010 and 2011–2016 differs significantly (figure 2.2a and b). In the earlier period, manufacturing investment dominated. In the more recent period, EU FDI in manufacturing has declined, while investment into finance and other services (in particular in wholesale and retail trade) increased substantially, along with renewed interest in mining activities. Over time, the industry pattern has changed. EU FDI has become more concentrated in finance and other services, which contributed to at least 85 per cent of all EU FDI in ASEAN in 2011–2016.

EU FDI in manufacturing fluctuated significantly between 2000 and 2016, particularly since 2011 (figure 2.3), when it plummeted from \$5 billion to a divested level of -\$15.7 billion in 2012. It rose sharply in 2013 and 2014, when manufacturing accounted for 38 per cent of all EU FDI flows (\$37.9 billion), contributing to the highest-ever EU FDI flows in the region. However, in 2015 and 2016 these flows fell again, to a divestment level of -\$11.1 billion. The sharp decline in EU manufacturing FDI in 2012 and 2016 derived from large-scale divestments in Singapore, which were associated with a shrinkage in the electronics and semiconductor industry in 2012 in that Member State (Ministry of Trade and Industry 2013), and the drop in global demand in 2016 (SEDB 2017).

Figure 2.2. EU FDI flows in ASEAN, by sector, 2005–2010 and 2011–2016 (Per cent)

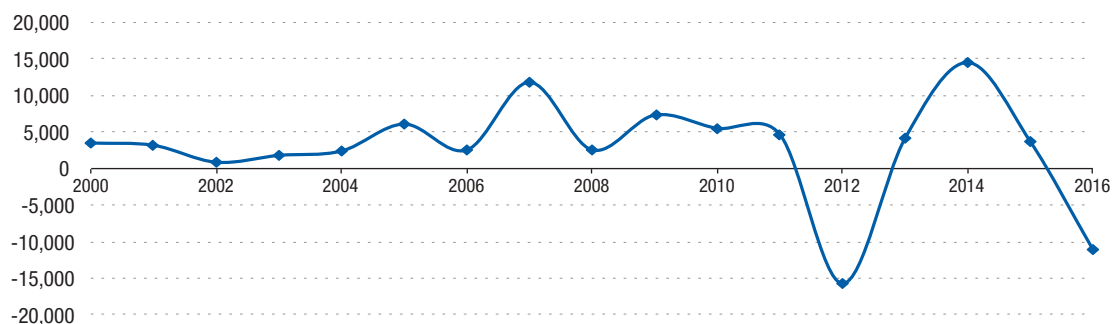


Source: ASEAN Secretariat, ASEAN FDI database.

Despite this downward trend, many EU manufacturing firms remain committed to operating in ASEAN (chapter 1). Many have been in the region for a long time and are spread across a wide range of industries from automotive to pharmaceutical (section 2.3.2).

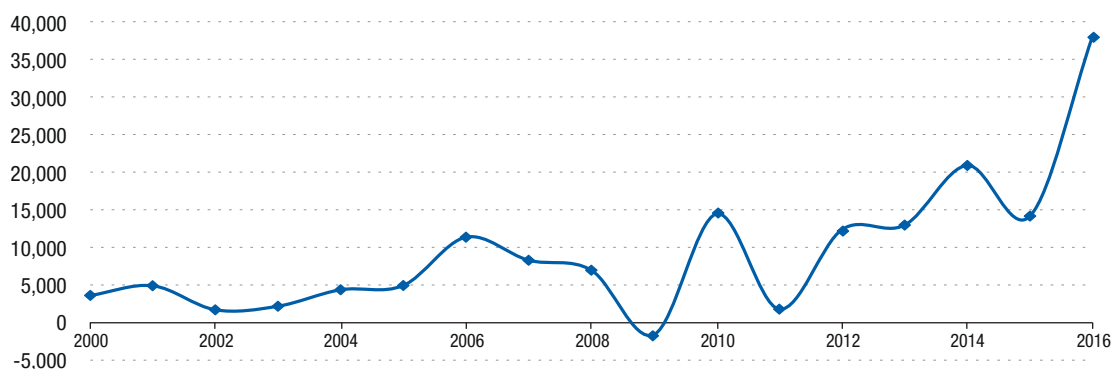
EU FDI in services in ASEAN has, in general, been on the rise since 2011 (figure 2.4). Unlike in manufacturing, the share of EU FDI in services more than doubled between the two periods, from 26 per cent in 2005–2010 to 59 per cent in 2011–2016, a 204 per cent rise. Flows to finance and insurance activities rose 93 per cent despite annual fluctuations in this period. For example, inflows in finance amounted to \$11.8 billion in 2014, saw a divestment of -\$163 million in 2015, and rose to \$18.8 billion in 2016. The financial sector contributed about 62 per cent of all EU FDI flows into ASEAN in 2016, whereas in 2015 its contribution was negligible. In the primary sector, investment in mining and quarrying rose by 71 per cent, while real estate experienced a drop.

Figure 2.3. EU manufacturing FDI flows in ASEAN, 2000–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

Figure 2.4. EU services FDI flows in ASEAN, 2000–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

2.3. EU MNEs IN ASEAN

More than 9,000 EU companies operate in ASEAN, many of them MNEs. EU SMEs are also present but are small in number. Geographic and cultural distance limits their investment in ASEAN.

The association of EU MNEs, primarily from just a few EU countries, with ASEAN has a long historical context. These MNEs are involved in a wide range of industries in the region. Although the services sector dominates, there are also significant numbers of EU manufacturing MNEs in the region. Many EU MNEs have expanded their operations to multiple ASEAN Member States with increasing capacities and business functions.

EU companies are playing an important role in infrastructure development in ASEAN, including in other services industries and in expansion of banking activities. Some have a significant presence in or impact on ASEAN Member States (box 2.1).

Box 2.1. The significance of EU MNEs' operations in ASEAN (Selected cases)

Similar to American and Japanese MNEs, EU MNEs have significant interests or operations in ASEAN in terms of facilities, presence and impacts on host countries (*AIR 2016*). Examples include the following cases:

- GlaxoSmithKline (United Kingdom) has one of the world's largest amoxicillin facilities in Singapore.
- HeidelbergCement (Germany) is the only cement producer in Brunei Darussalam and supplies 65 per cent of cement in that Member State.
- BNP Paribas (France), HSBC (United Kingdom) and Siemens (Germany) are among the 75 largest employers in Singapore.
- Unilever (Netherlands and United Kingdom) in 2015 was the fourth largest company on the Indonesia Stock Exchange.
- EDF (France) is head of the Phu My 2-2 power plant in Viet Nam in a consortium with Sumitomo and Tokyo Electric Power (both Japan). This is part of the larger Phu My project, which supplies approximately 40 per cent of that Member State's energy needs. EDF also holds a 40 per cent stake in the Nam Theun 2 project in the Lao People's Democratic Republic, which is one of the biggest hydropower dams in Southeast Asia.
- L'Oreal's (France) largest factory is in Indonesia.
- LyondellBasell (Netherlands) has a significant stake in a Thai chemical facility, which is one of the largest in Asia.
- The second largest international business location for Tesco (United Kingdom) is Thailand, where it is involved with more than 1,700 stores and 50,000 full-time employees.
- GlaxoSmithKline (United Kingdom) is the largest health-care company in Viet Nam.
- AXA (France), in a joint venture with a local partner, is one of the biggest medical and health insurance company in Malaysia.

Sources: *ASEAN Investment Report 2017* research, based on company's accounts, section 2.4 and <https://www.randstad.com.sg/workforce360/articles/media-release-singapores-top-75-companies-revealed-randstad-employer-brand-research-2017>.

2.3.1. Extractive industries

2.3.1.1. Oil and gas

EU oil and gas MNEs have been in ASEAN for a long time. A majority of their activities are concentrated in ASEAN Member States that are rich in natural resources such as Indonesia, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam. Total (France) has exploration and production activities in Brunei Darussalam since 1986, Indonesia since 1968 and the Philippines since 1998. It has also established an Asia-Pacific regional headquarters in Singapore. Similarly, BP (United Kingdom) and Shell (Netherlands) have operations in multiple ASEAN Member States (see section 2.4). A majority of the EU MNEs' oil and gas activities are undertaken in conjunction with other foreign companies and local authorities, including with major local firms in the industry.

EU oil and gas MNEs continue to expand in ASEAN by winning new concessions for exploration and production in Member States such as Myanmar, which has recently further liberalized investment in this industry. In 2015, in partnership with Mitsui Oil Exploration (Japan), Shell signed exploration and production-sharing contracts with Myanma Oil and Gas Enterprise. Eni (Italy) and Petro-Vietnam entered into a similar production-sharing contract in exploration and development of offshore blocks in the same year. BG (United Kingdom) started exploration of deepwater blocks in 2015 while Total (France) signed a production-sharing contract on oil and gas blocks with the Myanmar authority. In 2017 in Myanmar, Total started a gas production project, in which it owns a 31.2 per cent stake. The other partners include Chevron-Unocal (United States) (28.3 per cent), PTTEP (Thailand) (25.5 per cent) and MOGE (Myanmar) (15 per cent stake).

2.3.1.2. Minerals

The largest EU mining companies in ASEAN include BHP Billiton, Rio Tinto and Glencore, all headquartered in the United Kingdom and concurrently in other EU and non-EU countries. Other EU mining companies in the region are Aurubis (Germany) and Umicore (Belgium), which is involved in refining and recycling of metals. These large companies are vertically integrated; they are involved in downstream and upstream activities in the host country, from extraction (e.g. BHP Billiton in Indonesia) to marketing. Aurubis has sales subsidiaries in Singapore, Thailand and Viet Nam, while Anglo America (United Kingdom and South Africa) does not undertake any extractive activities in ASEAN but has a sales subsidiary in Singapore.

2.3.2. Manufacturing industries

EU companies are involved in a wide range of manufacturing operations in ASEAN from automotive, electronics, chemicals, food and beverages to pharmaceuticals. These manufacturing MNEs adopt different entry strategies, from organic expansion to joint ventures and M&As in the region. The motivation also varies between companies, with the majority driven by market- and efficiency-seeking motives. Strategic-asset-seeking is motivating more companies, in association with research and development (R&D) activities and the acquisition of strategic manufacturing companies in target host countries, but they are small in number.

Some EU manufacturing companies carry out different functions in the same host country, where it is not uncommon to be involved in market-seeking and efficiency-seeking activities at the same time. Some EU companies are expanding in the region by increasing their factory capacities, with new investments in other ASEAN member States and expansion of product lines or business functions in the region.

2.3.2.1. Automotive

Major EU automotive companies in ASEAN include Volkswagen (Germany), Daimler (Germany), Exor (Netherlands), BMW (Germany), PSA Group (France) and Renault (France). EU FDI in the automotive industry in ASEAN is concentrated in a few Member States. Thailand has attracted a significant proportion (Das 2017). For instance, Volkswagen has two production plants there: the first was established in 2000 to produce buses and trucks, and the second was set up in 2011. The company also has a production plant in Malaysia and other subsidiaries in Malaysia and Singapore.

Daimler has subsidiaries in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. Its largest production facility is in Thailand, where the company has operated since 1998. Daimler, through its Mercedes-Benz brand, has been in Malaysia since the beginning of the 20th century. In 2003, Daimler AG and Cycle & Carriage Bintang Berhad formed a joint venture (Mercedes-Benz Malaysia). In 2000, BMW opened a manufacturing operation in Thailand and has invested significantly in that Member State. Scania (owned by Volkswagen-Germany) and Renault (France) are constructing new plants, to be completed by 2018. In particular, Scania is building a \$23 million assembly plant in Thailand.

EU automotive makers lag behind Japanese and American automakers, but there has been continuing EU automotive investment in ASEAN in the past few years. Daimler Commercial Vehicles in June 2017 announced plans to invest in a truck assembly plant in Thailand to produce 3,000 units annually. AkzoNobel (Netherlands) opened a \$36 million performance coatings facility in Thailand in May 2017, partly encouraged by the host country's strong automotive industry. The facility is the company's ninth production site in ASEAN.

Delphi (United Kingdom), an advanced electrical and electronic automotive supplier, has been in Singapore since 1978 and chose that Member State to pilot autonomous (driverless) cars in 2016. In 2017, German manufacturer Schaeffler Group and Nanyang Technological University (Singapore) partnered in a joint research project on intelligent transportation systems, with a combined funding of about \$5 million over three years.

PSA Group (France), the parent firm of Citroën and Peugeot, announced in 2017 its plans to build a plant either in Indonesia or Thailand. Some EU automotive companies are using their factories in ASEAN to manufacture their latest models (e.g. the BMW 740Li is assembled in Indonesia).

In addition, major EU automotive component manufactures are also present across ASEAN (table 2.2). Operating close to supply chains and major customers – including for cost reasons – are key factors influencing their investment in the region.

Table 2.2. Major EU automotive component manufacturers in ASEAN, 2016

Company	Country	In selected ASEAN Member States
Robert Bosch	Germany	Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Continental	Germany	Indonesia, Malaysia, Philippines, Singapore, Thailand
ZF Friedrichshafen	Germany	Indonesia, Malaysia, Philippines, Singapore, Thailand
Faurecia	France	Malaysia, Thailand
Valeo	France	Indonesia, Malaysia, Thailand
Thyssenkrupp	Germany	Cambodia, Indonesia, Malaysia, Singapore, Thailand, Viet Nam
Mahle	Germany	Indonesia, Malaysia, Philippines, Singapore, Thailand
BASF	Germany	Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
Schaeffler	Germany	Philippines
Autoliv	Sweden	Indonesia, Malaysia, Philippines, Thailand
Gestamp	Spain	Thailand
Magneti Marelli	Italy	Malaysia
HELLA KGaA Hueck	Germany	Philippines
GKN	United Kingdom	Malaysia, Singapore, Thailand
Plastic Omnium	France	Singapore, Thailand
IAC Group	Luxembourg	Thailand
Eberspaecher Gruppe	Germany	Singapore
Draexlmaier Group	Germany	Malaysia, Thailand
Grupo Antolin	Spain	Thailand
Leoni	Germany	Malaysia, Thailand, Singapore
Infineon Technologies	Germany	Indonesia, Malaysia, Philippines, Singapore
Vibracoustic	Germany	Thailand
Sensata Technologies Holding	Netherlands	Malaysia, Singapore
AB SKF, Automotive & Aerospace	Sweden	Malaysia, Indonesia, Singapore, Thailand
Michelin Group	France	Indonesia, Malaysia, Singapore, Thailand, Viet Nam

Sources: Orbis and company reports.

2.3.2.2. Building materials

With the high number of infrastructure projects taking place in ASEAN, it is no surprise that some major EU building material companies operate in the region. Saint-Gobain (France) has a significant presence in Indonesia, Malaysia, Singapore, Thailand and Viet Nam. Saint-Gobain has been operating in Thailand since 1997, with six business units and eight industrial sites involving 1,300 workers. The company has been present in Indonesia since 1992 and employs over 400 people. Saint-Gobain has been in Malaysia since 2000 and has expanded its presence in the country.

HeidelbergCement (Germany) entered Brunei Darussalam in 2000 through an initial 50 per cent acquisition of a local cement grinding plant and subsequently increased its stake to 70 per cent.⁷ It is the only cement producer in Brunei Darussalam and supplies 65 per cent of cement in that Member State.⁸ It has a large presence in Indonesia, where it also owns five subsidiaries and has indirect ownership of nine affiliates. Through the acquisition of Hanson (United Kingdom) in August 2007, HeidelbergCement became active in both Malaysia and

Singapore. It has established an Asia-Pacific headquarters in Singapore, while in Malaysia the company employs 1,800 workers in 18 locations. It strengthened its presence in Thailand in late 2016 with the acquisition of a 45 per cent stake in Italcementi Group (Italy), which it plans to use as a springboard to enter Myanmar.

2.3.2.3. Chemicals

European chemical companies are present in a number of ASEAN Member States. They have a significant presence in Thailand, particularly in the production of coatings, because of the large customer base associated with the production of automobiles. AkzoNobel (Netherlands) is present in Indonesia, Malaysia, Singapore, Thailand and Viet Nam. In Indonesia, it employs over 1,000 people. It expanded its operation there in 2016 with a \$2.8 million petrochemical production plant, after having opened a new plant and doubled the size of an existing powder coatings facility in Viet Nam in late 2015.

BASF (Germany) is present in the region. It offers a wide range of chemical products, such as automotive catalysts, care chemicals, construction chemicals, crop protection coatings and nutrition products. It has three wholly owned subsidiaries and one joint venture in Thailand. In Indonesia it has four production sites owned through two subsidiaries, one wholly owned – PT BASF Indonesia – and the other a joint venture entity – PT BASF Care Chemicals Indonesia. BASF also has a significant presence in Malaysia, where it operates three manufacturing plants and a global shared services facility in Kuala Lumpur to support the BASF group across 16 countries in business functions such as finance, human resources, information services, and health and safety. In Viet Nam, BASF has been active since 1994 with a representative office. It has two production sites there for manufacturing construction chemicals. BASF in Singapore operates with three wholly owned subsidiaries and four production facilities, including a regional headquarters. BASF has been present in the Philippines since 1963. In 2016, it opened a new chemicals plant to serve the local market. As was the initial case in the Philippines, BASF is selling chemical products only through a sales and marketing subsidiary in Myanmar. In 2017, it announced plans to open a production plant in Myanmar to meet demand from the domestic construction industry.

LyondellBasell (Netherlands) formed a joint venture in Thailand and has one of the biggest chemical facilities in Asia. The company has two plants in Thailand and sales offices in Indonesia, Malaysia, the Philippines, Singapore and Viet Nam.

Solvay (France) has been in Singapore for three decades. In 2014 it established a research and innovation centre there to support its global projects for home and personal care, chemical coatings and oil and gas activities. It has established a laboratory for food application and expanded its operations in Singapore by establishing the first large-scale alkoxylation manufacturing facility in 2015. In Thailand, Solvay has a number of manufacturing operations. The company has representative offices in Indonesia and Viet Nam. In May 2016, Solvay Group established a multi-business unit office in Viet Nam to broaden the number of products it targets to sell in that host country.

2.3.2.4. Consumer goods

With a large population base and a growing middle class, ASEAN is an attractive market for many EU consumer goods companies. Although many of the largest EU consumer companies have been present in the region for a very long time, some have expanded their presence in recent years. Unilever (Netherlands and United Kingdom) established a subsidiary in Indonesia in 1933. It is the fourth largest company on the Indonesian Stock Exchange and employed more than 6,000 people there in 2015. It has nine factories in that Member State. In 2016, it secured a \$500 million loan from Unilever Finance International for expansion or increased production capacity of its Indonesian factories over 2016–2020. Unilever recently started operation in Myanmar again (after exiting in 1965) with two factories. In 2017, Unilever formed a joint venture with Europe & Asia Commercial Company (EAC) Ltd (Myanmar). Combining their personal care and home care businesses, the joint venture entity will focus on R&D, manufacturing and market development. In the Philippines, Unilever manufactures a wide range of products including laundry detergents, soaps, toothpastes, deodorants and household cleaners. The company is building a distribution megacentre to increase delivery capacity for its products. It is also upgrading or expanding its capacity to produce halal products for export to other ASEAN Member States and Australia. It set up a regional headquarters in Singapore where global functions are undertaken, including finance, IT, human resources, brand development, supply chain management and customer development.

Henkel (Germany) is present in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. It has sales subsidiaries in all of these ASEAN Member States and manufacturing facilities in Indonesia and Thailand. Henkel has been present in Indonesia since 1974 and has two industrial adhesive plants there. It started operating in Thailand in 1972 and now has three plants there, including an Asia-Pacific beauty care centre.

2.3.2.5. Pharmaceuticals

Some major EU pharmaceutical companies have established marketing entities and have also undertaken manufacturing and R&D activities in the region. For instance, AstraZeneca (United Kingdom), one of the five largest multinational pharmaceutical companies in the Philippines, is part of a global research team conducting 16 clinical trials.⁹ It has commercial offices in Malaysia, Singapore and Thailand.

Bayer (Germany) has two factories in Indonesia. Most of the products produced there are exported around the world. In Thailand, the company currently operates in four locations. Bayer started to operate in Viet Nam in 1994 and has at least two factory facilities, including two branch offices in that Member State.

GlaxoSmithKline (GSK) (United Kingdom) operates in Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam. In the Philippines, GSK has a corporate office and a manufacturing facility that produces ointments, creams and other liquid- and solid-based products. These products are manufactured for both the domestic market and exports. GSK entered Cambodia in 1997 through local distributors. It subsequently set

up a sales subsidiary in 2013 and plans to expand its operations in the Member State. GSK was one of the first pharmaceutical companies in Viet Nam and is now the biggest health-care company in that Member State. In Indonesia, GSK has four sites – two global manufacturing sites, one corporate office and one commercial office. GSK has a long history in Singapore. It built the first pharmaceuticals manufacturing plant and GSK's largest facility for producing amoxicillin – in that Member State in 1972. The company established a regional headquarters for emerging markets and Asia-Pacific pharmaceutical, consumer health care and ViiV¹⁰ businesses in Singapore in 2015. GSK has continued to expand its manufacturing operations in that Member State.

2.3.2.6. Electronics

ASEAN has been a popular destination for many electronics MNEs, particularly Japanese, Korean and American companies. However, EU electronic companies are relatively rarer in the region. This is not because of the ASEAN market but rather the dearth of large EU electronics companies operating in this sector. Relatively few EU companies are listed among the world largest electronic companies. Some of the largest EU electronics companies such as Robert Bosch (Germany) and Siemens AG (Germany), although present in ASEAN, have focused their activities in engineering services. Ericsson (Sweden) is predominantly involved with the telecommunications industry. Philips (Netherlands) concentrates its activities in ASEAN on its health-care business. It has established a regional headquarters in Singapore.

2.3.3. Service industries

2.3.3.1. Insurance

The largest EU insurance companies have a significant presence in ASEAN, and a majority of them have been present in the region for over 50 years. They are mainly driven by market-seeking motives, with a majority offering a wide range of products or services in the region. Allianz (Germany) established a subsidiary in Thailand in 1951 and in Singapore in 1981. It first entered Indonesia through an affiliate in 1981 before setting up a subsidiary there in 1989.¹¹ In 2001, Allianz started operating in Malaysia. It entered the Philippines market in 2015 through a 51 per cent acquisition of PNB Life Insurance (Philippines).¹²

Aviva (United Kingdom) has a presence in Singapore, including a regional headquarters. It has had a 50 per cent joint venture operation with Astra International (Indonesia) since 2014 and a 50 per cent joint venture with VietinBank (Viet Nam) since 2011. In April 2017, Aviva acquired VietinBank's entire 50 per cent shareholding of the joint venture. In 2016, Aviva Singapore expanded its operations further with new programme or services (e.g. it launched Aviva Financial Advisers).

AXA (France) is present in Indonesia, Malaysia, the Philippines, Singapore and Thailand. AXA Insurance Singapore and AXA Life Insurance Singapore were founded in 1969 and 1999, respectively. By 2016, AXA Insurance Pte Ltd (merger of the two companies in Singapore) employs more than 800 people. It has been present in Thailand since 1998 and in Indonesia

since 2006. Today, AXA has four insurance subsidiaries in Indonesia (PT AXA Life Indonesia, PT AXA Financial Indonesia, PT AXA Mandiri Financial Services and PT Mandiri AXA General Insurance). In 2016, AXA announced plans to expand its farm insurance program in Indonesia. It employs more than 1,000 workers and over 12,000 sales force professionals in Indonesia.¹³ AXA Philippines is a joint venture between AXA and Metrobank (a major Philippines financial conglomerate). In 2016, AXA further expanded in the Philippines with the acquisition of Charter Ping-An for \$45.6 million. In Malaysia, AXA has two subsidiaries (AXA Affin General Insurance Berhad and AXA Affin Life Insurance) – both are joint ventures with Affin Holdings Berhad. It is the biggest medical and health insurance company in Malaysia, employing over 900 employees and involving more than 4,700 agents.¹⁴

2.3.3.2. Banking

The largest European banks in ASEAN have a long historical association with the region, with some dating over a century. As noted earlier, HSBC (United Kingdom) has been present in Viet Nam since 1870. It was the first commercial bank in Thailand in 1888, entered Singapore in 1877, the Philippines in 1875, Indonesia in 1884, Malaysia in 1884 and Brunei Darussalam in 1947.¹⁵

In recent years, European banks have been shifting their back-office processes or business process operations to ASEAN, with the Philippines being the main beneficiary. In 2005, Deutsche Bank (Germany) invested in the Philippines to establish Deutsche Knowledge Services Pte. Ltd. This subsidiary carries out back-office services including accountancy, IT and human resources. It employs more than 2,000 people. Deutsche Bank established its presence in the Philippines in 1975 through a representative office. It was not until the government liberalized the entry of foreign banks in 1995, which led the company to set up a full operation in the Philippines. Deutsche Bank also has had a presence in Indonesia (since 1969), Malaysia (1967), Thailand (1978), and Viet Nam (1992). It entered Singapore in 1971 or 1972 and subsequently established its Asia-Pacific headquarters there in 1988. It employs more than 2,100 workers. In 2016, Deutsche Bank announced plans to further increase activities in ASEAN for wealth management in response to the growing number of high-net-worth individuals.¹⁶

Société Générale (France) has a more recent history in ASEAN, first entering Singapore in 1979. It offers a wide range of services to public, institutional and corporate clients. Singapore is also the Asian hub for the bank's commodities finance operations. Société Générale set up representative offices in Indonesia in 2013, in Malaysia in 2011 and in Thailand in 2017. The bank has been in Viet Nam since 1993, focusing on project and export finance.

2.3.3.3. Engineering

As with building material companies, the rise in infrastructure investments in ASEAN has attracted growing attention from EU engineering firms. Siemens (Germany) in particular has a large presence and continues to expand in the region. Siemens Viet Nam, established in 1979, has been involved in diverse infrastructure projects in that Member State. It is one of the largest German companies in Malaysia. The company has been present in Indonesia since 1855 and recently won new orders for infrastructure projects in that Member State. The company

plans to invest at least \$500 million in some renewable energy projects in Indonesia over the next two years.¹⁷ Siemens is also present in other ASEAN Member States in engineering and infrastructure projects, in particular as an engineering, procurement and construction (EPC) contractor and equipment supplier.

Alstom (France) has recently won several infrastructure projects in ASEAN. In the Philippines, working with Bouygues Travaux Publics (France), Alstom won a contract worth approximately \$500 million in 2016 to upgrade and extend the light-rail transit system in the Manila metropolitan area.¹⁸ In Viet Nam, Alstom and its consortium partners won a metro system contract in 2017. The project is due to be completed in 2021 and Alstom's share of the contract is worth about \$203 million.¹⁹ Alstom in 2015 was awarded a \$68 million contract to supply and install a 30 MW geothermal plant in Indonesia, which it completed in 2016. In Singapore, Alstom has five offices and is undertaking 11 projects. In Thailand, Alstom has two offices and is involved in two long-term rail-line projects.

2.3.3.4. Retail

Carrefour (France) set up its first hypermarket in Indonesia in 1998. It expanded its operations in 2008 through the acquisition of Alfa Retail Indo (Indonesia), and in 2010 it formed a partnership with CT Corp (Indonesia) to expand its operations in that host country. In 2012, Carrefour sold its stake to CT Corp, which now is the exclusive franchise for Indonesia. Since then, CT Corp has expanded the presence of Carrefour.²⁰ Tesco (United Kingdom) has a significant presence in Malaysia and Thailand. Tesco first entered Thailand in 1998, with the Tesco Lotus brand. It later expanded through the acquisition of a controlling stake in Lotus from the Thai CP Group, which at the time had 13 leading hypermarket chains in the Member State. Tesco Lotus is now the second largest international business in Tesco's portfolio and has over 1,700 stores across Thailand, employing over 50,000 full-time employees.²¹ In 2002, Tesco entered Malaysia through a partnership with Sime Darby (Malaysia), a conglomerate that has a 30 per cent stake in Tesco Malaysia. Since then, Tesco's presence has grown to over 50 hypermarkets.²²

2.4. TOP 75 EU MNEs IN ASEAN

Two thirds of the 100 largest EU MNEs, ranked by assets, have subsidiaries in ASEAN. They are involved in a wide range of industries, from extractive and manufacturing to services activities. However, banking operations dominate the list. This significant number attests to the importance of ASEAN as an investment destination for EU MNEs. The remaining 33 that do not have a presence in ASEAN tend to be more regionally or domestically based or to invest in countries with close historical ties or geographical proximity. For example, National Grid (United Kingdom) has overseas investments concentrated mainly in Europe and a presence in the United States, and Piraeus Bank (Greece) has a presence in North Africa. In addition, more than 55 per cent of the 75 largest MNEs in ASEAN have a presence in four or more ASEAN Member States (table 2.3).

Table 2.3. The 75 largest EU MNEs in ASEAN, 2017 (Billions of dollars)

Company	Industry	Headquarters	Total global assets, 2016	In selected ASEAN Member States
HSBC Holdings	Banks	United Kingdom	2,375.0	Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
BNP Paribas	Banks	France	2,190.6	Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Deutsche Bank	Banks and capital markets	Germany	1,677.5	Singapore
Credit Agricole	Banks	France	1,607.6	Malaysia, Viet Nam
Barclays	Banks	United Kingdom	1,497.6	Indonesia, Malaysia, Singapore, Thailand
Société Générale	Banks	France	1,457.8	Singapore, Viet Nam
Banco Santander	Banks	Spain	1,412.4	Singapore
Lloyds Banking Group	Banks	United Kingdom	1,009.6	Singapore
Royal Bank Of Scotland Group	Banks	United Kingdom	985.9	Indonesia, Malaysia, Singapore, Thailand
AXA	Insurance	France	941.6	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Allianz	Insurance	Germany	932.2	Brunei Darussalam, Indonesia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Unicredit	Banks	Italy	906.5	Singapore, Viet Nam
ING Groep	Banks	Netherlands	891.3	Indonesia
Intesa Sanpaolo	Banks	Italy	764.8	Indonesia, Malaysia, Philippines, Thailand, Singapore
London Stock Exchange Group	Capital markets	United Kingdom	697.2	Malaysia
Nordea Bank	Banks	Sweden	649.3	Indonesia, Malaysia, Philippines, Singapore, Thailand
Standard Chartered	Banks	United Kingdom	646.7	Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Prudential	Insurance	United Kingdom	580.8	Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Legal & General Group	Insurance	United Kingdom	577.6	Malaysia, Singapore, Thailand
Natixis	Banks	France	556.7	Singapore
Assicurazioni Generali	Insurance	Italy	549.7	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Aviva	Insurance	United Kingdom	543.7	Indonesia, Malaysia, Philippines, Singapore, Thailand
Commerzbank	Banks	Germany	506.7	Malaysia, Singapore
Danske Bank	Banks	Denmark	494.2	Indonesia, Philippines, Singapore, Thailand, Viet Nam
Aegon	Insurance	Netherlands	449.2	Malaysia, Singapore
Volkswagen	Automobiles	Germany	432.1	Malaysia, Philippines, Singapore, Thailand
Royal Dutch Shell	Oil, gas and consumable fuels	Netherlands	411.3	Brunei Darussalam, Cambodia, Indonesia, Malaysia, Philippines, Singapore
BNP Paribas Fortis	Banks	Belgium	298.0	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
EDF	Electric utilities	France	297.0	Lao People's Democratic Republic, Viet Nam
KBC Groep	Banks	Belgium	290.3	Malaysia, Philippines, Singapore, Viet Nam
Svenska Handelsbanken	Banks	Sweden	289.2	Indonesia, Malaysia, Philippines, Thailand
Skandinaviska Enskilda	Banks	Sweden	288.4	Indonesia, Malaysia, Philippines, Singapore, Thailand
Muenchener Rueckver	Insurance	Germany	282.5	Malaysia, Singapore, Thailand, Viet Nam
BP	Oil, gas and consumable fuels	United Kingdom	263.3	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Anheuser-Busch Inbev	Beverages	Belgium	258.4	Malaysia, Philippines, Singapore, Viet Nam
Daimler	Automobiles	Germany	256.3	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Vodafone Group	Wireless telecommunication services	United Kingdom	243.6	Malaysia, Singapore
Swedbank	Banks	Sweden	237.1	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam

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Table 2.3. The 75 largest EU MNEs in ASEAN, 2017 (Billions of dollars) (Concluded)

Company	Industry	Headquarters	Total global assets, 2016	In selected ASEAN Member States
Standard Life	Insurance	United Kingdom	235.2	Indonesia, Malaysia, Philippines, Singapore, Thailand
Total	Oil, gas and consumable fuels	France	231.0	Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
Old Mutual	Insurance	United Kingdom	211.8	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Bayerische Motoren Werke	Automobiles	Germany	198.8	Indonesia, Malaysia, Philippines, Singapore, Thailand
NN Group	Insurance	Netherlands	177.7	Malaysia, Philippines, Singapore
Engie	Multi-utilities	France	167.2	Indonesia, Malaysia, Philippines, Singapore, Thailand
Talanx	Insurance	Germany	165.1	Malaysia, Viet Nam
Enel	Electric utilities	Italy	164.1	Indonesia, Philippines
Deutsche Telekom	Diversified telecommunication services	Germany	156.6	Singapore
Siemens	Industrial conglomerates	Germany	141.2	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Banque Nationale de Belgique	Diversified financial services	Belgium	138.4	Malaysia
Eni	Oil, gas and consumable fuels	Italy	131.4	Indonesia, Malaysia, Singapore
NEX Group	Capital markets	United Kingdom	118.2	Indonesia, Singapore
Raiffeisen Bank International	Banks	Austria	118.0	Indonesia, Malaysia, Singapore
Sanofi	Pharmaceuticals	France	110.4	Indonesia, Singapore, Thailand, Viet Nam
Fiat Chrysler Automobiles	Automobiles	Italian	110.1	Malaysia
Ageas	Insurance	Belgium	110.0	Malaysia, Thailand, Viet Nam
Orange	Diversified telecommunication services	France	99.8	Singapore, Viet Nam
Medtronic	Health care equipment and supplies	Ireland	99.8	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
St James's Place	Insurance	United Kingdom	92.6	Singapore
Rio Tinto	Metals and mining	United Kingdom	89.3	Indonesia, Malaysia, Lao People's Democratic Republic, Philippines, Singapore, Thailand
Bayer	Pharmaceuticals	Germany	86.7	Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
Jyske Bank	Banks	Denmark	83.2	Malaysia, Singapore, Viet Nam
BASF	Chemicals	Germany	80.7	Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam
RWE	Multi-utilities	Germany	80.6	Indonesia, Singapore, Thailand
ArcelorMittal	Metals and mining	Luxembourg	75.1	Indonesia, Malaysia, Singapore, Thailand
Telecom Italia	Diversified telecommunication services	Italy	74.3	Singapore
GlaxoSmithKline	Pharmaceuticals	United Kingdom	72.9	Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Vinci	Construction and engineering	France	71.6	Cambodia, Indonesia, Singapore
Liberty Global	Media	United Kingdom	68.7	Indonesia, Malaysia, Singapore
Christian Dior	Textiles, apparel and luxury goods	France	68.2	Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Hannover Rueck	Insurance	Germany	67.0	Malaysia
Audi	Automobiles	Germany	64.4	Singapore, Thailand
LVMH Moët Hennessy Louis Vuitton	Textiles, apparel and luxury goods	France	62.9	Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
Astrazeneca	Pharmaceuticals	United Kingdom	62.5	Indonesia, Malaysia, Philippines, Singapore, Thailand
AP Moller-Maersk	Marine	Denmark	61.1	Indonesia, Malaysia, Singapore, Thailand, Viet Nam
Unilever	Personal products	United Kingdom and Netherlands	59.5	Cambodia, Indonesia, Myanmar, Philippines, Singapore, Thailand, Viet Nam

Sources: ASEAN Investment Report 2017 research, based on Bloomberg and Orbis.

Despite their long-established presence in the region, many EU MNEs continue to be involved with development in ASEAN through expansion of operations and incorporation of more business functions, such as regional headquarters and R&D operations.

The 75 largest EU companies in ASEAN are mainly in the services industry, which reflects the increasing trend in the shift of EU FDI toward services over the past decade. Of these, 27 are in finance, 15 in insurance and 4 each in pharmaceuticals and in oil and gas operations. Furthermore, 42 of the 75 companies have a presence in at least four ASEAN Member States. For example, Total (France) and Allianz (Germany) have a presence in eight ASEAN Member States; Standard Chartered (United Kingdom) in seven; and Daimler (Germany) and Shell (Netherlands) in six.

Many of the operations of these MNEs vary by host country, whether in different value chain segments or a wider spectrum of value chain activities in the industry they serve. They also vary by motives of investment. For example, Deutsche Bank (Germany) in the Philippines involves back-office operations, whereas in Indonesia its operations mainly serve the local market. Some of these MNEs' operations have also evolved. Unilever (Netherlands and United Kingdom) has been in Indonesia since 1933, when it started with a soap factory. Over time, its operations in that Member State have expanded to include more factories and other business functions (e.g. it recently established an R&D operation). Similarly, GlaxoSmithKline (United Kingdom) started its operations in Singapore in 1959 with a small sales office. By 1972 it had started manufacturing, and in 2008 it had established an R&D operation in that Member State. By 2015, Singapore became its regional headquarters for its emerging markets and Asia-Pacific pharmaceutical, consumer health care and ViiV businesses. Hannover RE (Germany) started in Malaysia with a representative office in 1990 before upgrading to a full branch in 1995. The branch now covers 17 economies, which include the other 9 ASEAN Member States. Many EU companies operating in different industries have also set up regional headquarters in ASEAN, most of them in Singapore (e.g. BASF (Germany), Unilever and Aviva (United Kingdom)) (see section 2.3).

These 75 largest companies predominantly come from a few EU countries. A majority are from the United Kingdom (20), Germany (15), France (13) and Italy (7). EU MNEs in finance are more widespread. Of the 27 largest financial MNEs in the region, 7 are from the United Kingdom, 4 each are from Sweden and France, 3 are from Belgium and 2 each are from Denmark, Germany and Italy. By contrast, 4 of the 5 largest EU automobile MNEs in ASEAN are from Germany, and the other is from Italy.

Some EU MNEs are involved in different business activities in ASEAN, which cover contractual relationships with suppliers or distributors, or different forms of equity and non-equity partnerships. Vodafone (United Kingdom) has a presence in mobile telecommunications in ASEAN through partnerships with local operators, whereas the Spanish clothing retailer Inditex runs stores and has a network of supplier clusters based in Viet Nam. Alstom (France) has been involved in power projects in Myanmar and other ASEAN Member States on a contractual basis. It has designed, engineered, supplied equipment and commissioned a

power transmission project in that host country. Vestas (Denmark) in 2016 was selected to be the technology partner for a 600 MW wind power project in the Lao People's Democratic Republic, the biggest wind power project in ASEAN and the host country's first wind farm.²³

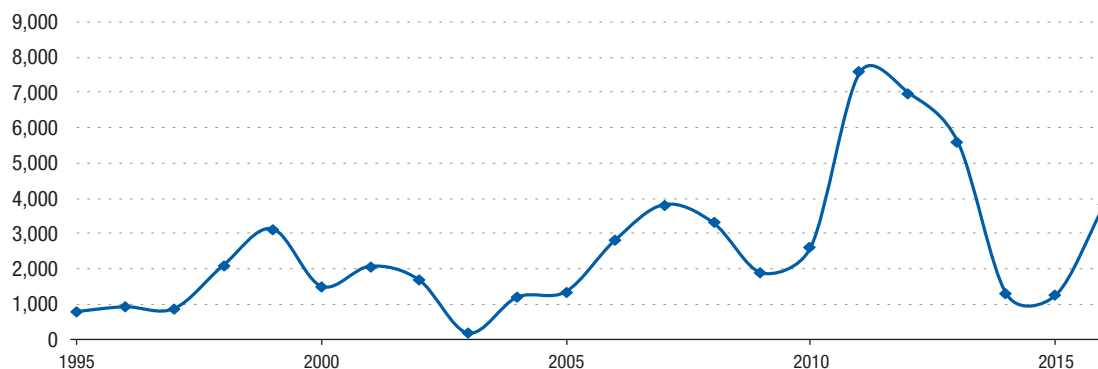
2.5. MERGERS AND ACQUISITIONS

EU M&A activities in ASEAN are closely related to global economic conditions and the business environment in the EU, which has affected these MNEs' investment plans in the region in some years. EU M&A purchases in ASEAN are mainly concentrated in the major economies, primarily because of the relatively more mature M&A environment in these Member States.

EU M&A activities in ASEAN fluctuated considerably between 1995 and 2016, mirroring the EU FDI trend in the region, with the exception of 2012 (section 2.2). EU M&A purchases in ASEAN peaked in 2011 and remained high in 2012, despite the global economic slowdown and a significant decline in EU FDI flows to the region (figure 2.5). The conclusion of a few megadeals led to a surge in EU M&A activities in ASEAN in those two years. For instance, Heineken International (Netherlands) acquired Asia-Pacific Breweries in Singapore for more than \$4.3 billion in 2012, which represented 57 per cent of the \$7.6 billion in M&A purchases made by EU firms in ASEAN. This underscores the lumpiness of M&A data, which can distort analysis.

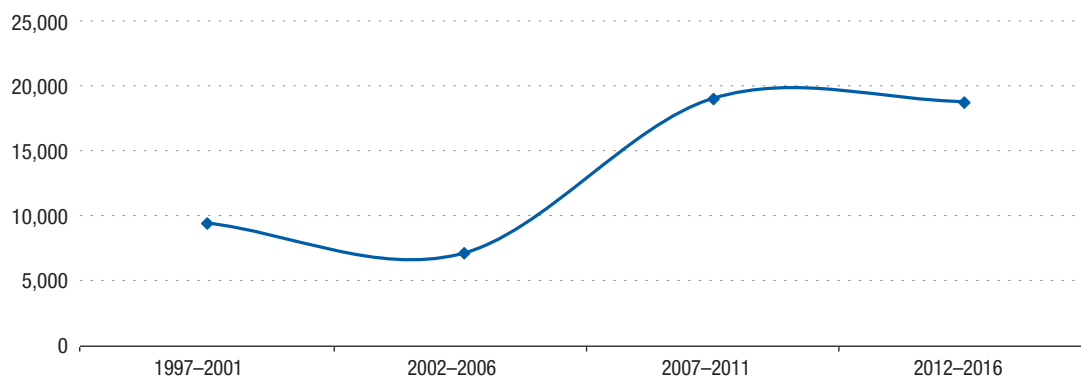
ASEAN represents a small proportion of the total investment by EU firms in M&As in the region. Less than 10 per cent of M&A sales in ASEAN between 2011 and 2016 involved EU companies. The average spending by EU MNEs on M&As in ASEAN from 1995 to 2016 was \$2.58 billion a year. Taking into account the lumpiness of the data and annual fluctuations, EU M&A purchases in ASEAN analysed on a five-year cycle between 1997 and 2016 are in general on the rise (figure 2.6). Aside from the improving maturity of the ASEAN M&A environment, this reflects the increasing appetite of EU companies to use M&As as a channel to establish a

Figure 2.5. EU M&A purchases in ASEAN, 1995–2016 (Millions of dollars)



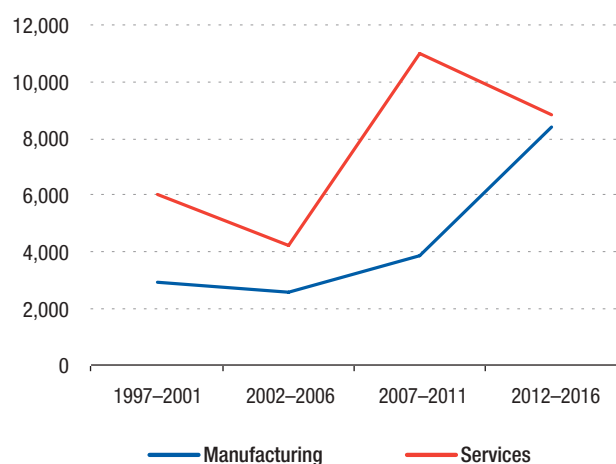
Source: UNCTAD M&A database.

Figure 2.6. EU M&A purchases in ASEAN, in five-year periods, 1997–2001, 2002–2006, 2007–2011 and 2012–2016 (Millions of dollars)



Source: UNCTAD M&A database.

Figure 2.7. EU M&A purchases in ASEAN by industry, in five-year periods, 1997–2001, 2002–2006, 2007–2011 and 2012–2016 (Millions of dollars)



Source: UNCTAD M&A database.

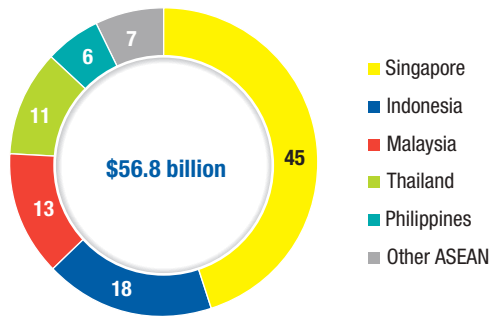
presence or strengthen their foothold in the region. Other contributing factors include the increase in value of domestic firms in ASEAN and the resulting inflated amount spent on M&As.

EU companies are acquiring assets in ASEAN in a wide range of industries, which involved some megadeals exceeding \$1 billion (annex table 2.1). The majority of EU M&As in ASEAN is in the services sector. However, EU M&A purchases of manufacturing assets in the region are on the rise, aided by a few megadeals (figure 2.7). About 45 per cent of all EU M&As between 1995 and 2016 in ASEAN was directed toward Singapore, with Indonesia, Malaysia and Thailand as other major target destinations (figure 2.8).

MNEs from the United Kingdom are major EU acquirers of ASEAN firms, representing some 43 per cent of EU M&A purchases in

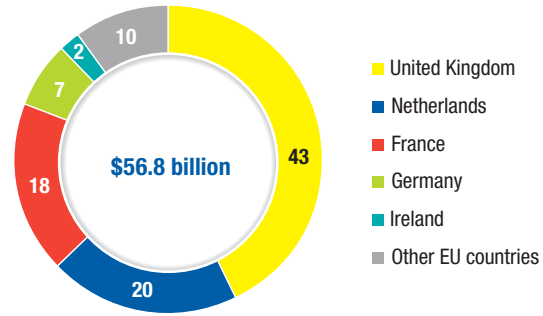
the region (figure 2.9). Of 303 M&A deals²⁴ from 2012 to early 2017, 126 originated from the United Kingdom, 52 from France, 37 from Germany and 26 from the Netherlands.

Figure 2.8. EU M&A purchases in ASEAN by target country, 1995–2016 (Per cent)



Source: UNCTAD M&A database.

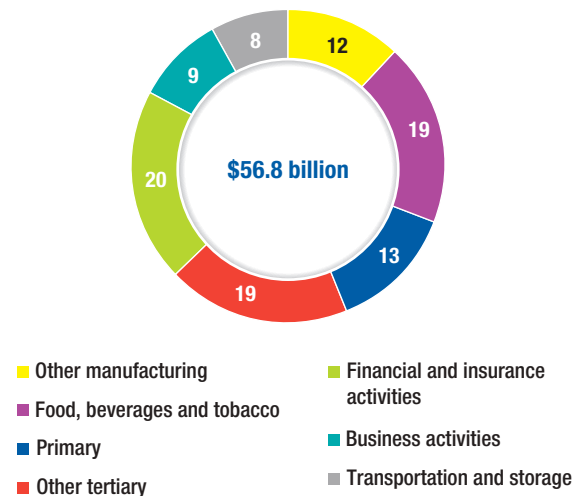
Figure 2.9. EU M&A purchases in ASEAN, by top five EU acquirers in ASEAN, 1995–2016 (Per cent)



Source: UNCTAD M&A database.

The M&A route provides quick access to markets. Given the strategic nature of the industry, most assets acquired by EU firms in ASEAN were in finance. Between 1995 and 2016, about 20 per cent were in finance, followed by food and beverages (19 per cent) (figure 2.10). Contributing to the latter was the \$4.3 billion acquisition of Asia-Pacific Breweries in Singapore by Heineken International (Netherlands). M&A purchases in the primary and other manufacturing industries were also significant.

Figure 2.10. EU M&A purchases in ASEAN, by industry, 1995–2016 (Per cent)



Source: UNCTAD M&A database.

2.6. DRIVERS, MOTIVATIONS AND STRATEGIES OF EU MNEs IN ASEAN

In general, EU FDI in ASEAN can be grouped into four types: resource-seeking, market-seeking, efficiency-seeking and strategic-asset-seeking (table 2.4). Many British investments in Malaysia in the 1900s were driven by a desire for access to natural resources, plantations and mining opportunities. Conducive agro-climatic conditions and access to land led to high levels of FDI in the plantation industry. The abundance of natural resources and high levels of oil reserves attracted FDI from EU oil and gas and extractive MNEs.

Table 2.4. Motivations of EU FDI in ASEAN

Type of FDI	Determinants	Selected industries and examples
Market-seeking	<ul style="list-style-type: none"> • Large market size and regional integration • Rapid economic growth and prospects • Growing middle-income consumers • Increased spending on infrastructure 	<p>EU companies seeking engineering, construction and infrastructure contracts and concessions. Increasingly more EU engineering companies are giving attention to ASEAN because of the region's rapid infrastructure development and spending. The region needs at least \$110 billion in investment in infrastructure annually until 2025 (<i>AIR 2015</i>).</p> <p>EU MNEs such as Siemens (Germany) and Alstom (France) are involved in various infrastructure projects in ASEAN, from rail upgrading to installing geothermal plants. Siemens undertakes market-seeking activities in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam in infrastructure-related projects and in supply of equipment to EPC contractors.</p> <p>Given the attractiveness of the region's market, EU automotive manufacturers have established a presence in ASEAN. BMW (Germany) has sales subsidiaries in Indonesia, Malaysia, the Philippines and Thailand, and its operations are coordinated through its Asia headquarters based in Singapore. Scania AB (owned by Volkswagen Group) has announced plans to establish a regional headquarters in Thailand to support distributors in Asia and Oceania.</p> <p>EU retail chains such as Tesco (United Kingdom) and IKEA (Sweden) operate in ASEAN to tap the region's growing market. The German consumer goods company Henkel has sales subsidiaries in Singapore, the Philippines, Thailand, Malaysia, Indonesia and Viet Nam.</p> <p>Aviva (United Kingdom), operating in the insurance business, has market-seeking activities in Indonesia, Malaysia, the Philippines, Singapore and Thailand.</p>
Resource-seeking	<ul style="list-style-type: none"> • Favourable agro-climatic condition • Access to land • Access to oil reserves • Access to other natural resource endowments 	<p>Oil and gas companies such as BG Group (United Kingdom), BP (United Kingdom), Shell (Netherlands) and Total (France) have a significant presence in ASEAN in order to access to natural resources. Other mining companies such as Rio Tinto (United Kingdom and Australia) and BP Billiton (United Kingdom and Australia) are involved in extractive activities in ASEAN.</p>
Efficiency-seeking	<ul style="list-style-type: none"> • Supply of low-cost and skilled labour • Supply of low-cost production inputs • Strong industrial cluster 	<p>Strong clusters in the automotive sector have seen European car makers both enter and expand their manufacturing base in ASEAN, particularly in Indonesia, Thailand and Malaysia. Some EU automotive MNEs and component manufacturers operate in ASEAN partly to maintain cost competitiveness and to tap the region's growing automotive market. German companies such as Audi, BMW, Volkswagen and Robert Bosch operate there for a combination of motives, including efficiency-seeking considerations.</p> <p>Mainetti (Italy) has a factory in Viet Nam producing a wide range of hangers and other related products, which are exported to retailers throughout Europe and the United States.</p>
Strategic asset-seeking	<ul style="list-style-type: none"> • Advanced infrastructure • Strong knowledge economy 	<p>Delphi (United Kingdom) is developing autonomous cars in Singapore. Other EU companies are also establishing R&D activities in Singapore and other ASEAN Member States.</p> <p>Pharmaceutical MNE GlaxoSmithKline is currently performing high-level R&D projects in Singapore, and Dyson (United Kingdom) opened a \$561 million technology centre in Singapore to carry out advanced R&D.</p>

Source: ASEAN Investment Report 2017 research.

Rapid economic growth and large populations have also driven EU MNEs to ASEAN for access to the growing domestic and regional markets. Increased regional economic integration is becoming an important location factor (EU-ASEAN Business Council 2017). EU MNE investments are also driven by the motive of producing goods or services more competitively. For example, low labour costs in Cambodia and Myanmar have drawn EU MNEs to set up manufacturing plants in these Member States. Unilever (Netherlands and United Kingdom) manufactures products in Myanmar, and Robert Bosch (Germany) has recently opened a factory in Cambodia. Some EU companies have also established companies in the Philippines to perform IT-BPO functions for the group or for third-party clients (chapters 1 and 5). EU MNEs are also investing in ASEAN to acquire strategic assets (e.g. human capital, R&D and strategic operation facilities). This type of FDI is usually done through M&As; however, one type of strategic-asset-seeking FDI includes setting up R&D plants in a host country to take advantage of a strong knowledge economy or good infrastructure support.

These FDI motives are not mutually exclusive. An EU MNE can be involved with different motives depending on the industry, FDI orientation and extent of involvement in different segments of an industry's value chains. For instance, GlaxoSmithKline (United Kingdom) in Singapore is involved with manufacturing, which targets the region's market, R&D facilities to strengthen its strategic foothold and a regional headquarters to oversee and coordinate its regional operations and investment.

2.6.1. Resource-seeking FDI

Resource-seeking FDI by EU MNEs is concentrated in resource-rich Member States such as Indonesia, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam. Some of the oldest EU companies in ASEAN are in resource-seeking operations in extractive industries and plantation businesses. Most of the projects undertaken by EU oil and gas companies occur in conjunction with other MNEs and local firms. For instance, Shell (Netherlands) has interests, along with ConocoPhillips (United States of America) and Petronas Carigali (Malaysia), in a deepwater project in Malaysia. EU extractive MNEs continue to expand their operations in the region to access natural resources. Recently, companies such as BG Group, Royal Dutch Shell, Eni SPA and Total have been investing in Myanmar in the exploration and production of oil and gas.

2.6.2. Market-seeking FDI

EU MNEs from a wide range of industries such as retail, finance and insurance, automotive, food and beverages, and engineering are involved with market-seeking FDI in ASEAN. Broadly, market-seeking FDI comprises two groups. The first offers various kinds of advanced services, from financial services to logistics, transportation and business services, including regional headquarters. It also includes acquisitions that combine market-seeking and strategic motivations, such as the acquisition of Asia-Pacific Breweries by Heineken in Singapore. The second group aims to serve the growing regional markets. European companies are expanding in the region by acquiring local players as well as establishing their own stores through greenfield investment. The latter include the Swedish clothing firm H&M in the Philippines as well as the

Swedish furniture retailer IKEA in Indonesia and other ASEAN Member States. In food and beverages, including personal and luxury goods, European companies are motivated to serve not only the urbanized middle class in ASEAN, but also the growing luxury segment in the higher-income market segments.

2.6.3. Efficiency-seeking FDI

The industrial and chemical sectors as well as the automotive industry have set up production facilities for efficiency-seeking reasons related to sales in the region. They include, for instance, the German tire maker Continental and engineering firm Robert Bosch, which are first-tier suppliers to the automotive industry. In this group are also companies that provide goods and services in a wide range of industrial and infrastructure-related sectors, such as BASF and Siemens (both Germany), which have an extensive range of activities within ASEAN. Although most of the investments are aimed at supporting these firms' other activities in the region, some of them are targeted at the global level. An example is the Lufthansa Technik facility in the Philippines, one of the few locations in the world that performs Airbus A380 maintenance. Another is Italian company Mainetti, which opened its Viet Nam factory to produce hangers and related products that are exported to retailers throughout Europe and the United States.

2.6.4. Strategic-asset-seeking FDI

Strategic-asset-seeking FDI by EU MNEs is relatively less common in ASEAN; however, there are examples in the automotive, chemical and pharmaceutical industries. This type of FDI searches for advanced technology, skilled workers and assets that can improve an MNE's ownership advantages. Although a small proportion of FDI is due to strategic-asset-seeking, there is evidence to suggest that it has been increasing. From 2012 to 2016, these firms invested \$766.8 million into professional, scientific and technical activities in ASEAN. Recent examples of strategic-asset-seeking FDI include vacuum manufacturer Dyson (United Kingdom) opening a technology centre in Singapore in 2017, through a \$561 million investment where it carries out advanced R&D. Delphi (United Kingdom) has conducted advanced development of autonomous (driverless) cars in Singapore since 2016. Schaeffler Group (Germany) and Nanyang Technological University (Singapore) are undertaking a joint research project on intelligent transportation systems in that host country. Scania AB (owned by Volkswagen Group) announced plans to open a new industrial plant in Thailand by 2018, to carry out R&D activities. In January 2017, BASF established a technical application laboratory to conduct nutrition research in conjunction with Singapore Polytechnic.

2.7. CONCLUSION

Despite fluctuations of EU FDI flows into ASEAN in recent years, EU MNEs remain a major source of investment in the region. Their interests in ASEAN are increasing and participating in a wider range of activities, with many of them recently expanding in different business functions and

in more ASEAN Member States. ASEAN's regional integration, market size, economic growth and growing number of middle-income consumers are key sources of location attraction for EU MNEs, given that the lion's share of their FDI in ASEAN is in services and is predominantly market-seeking. The prospects for EU FDI into the region are promising, which will contribute to further strengthening the bilateral relationship between ASEAN and the EU through greater production, services and corporate connectivity. This outlook assessment is also corroborated by major studies (table 2.5).

EU MNEs are some of the earliest major investors in ASEAN. EU FDI in ASEAN has evolved to cover more industries and reflect different motives. Many major EU MNEs are present in ASEAN. More than three quarters of the 100 largest EU MNEs are present, and many of them operate in multiple ASEAN Member States. Their favourable operating experience and long historical association with ASEAN provide a strong foundation for EU MNEs to continue to engage with the region. Given that less than 2 per cent of EU global outward FDI stock is in ASEAN, there are room to increase EU investment to the region.

EU FDI flows to the region have been highly concentrated in a few ASEAN Member States. However, recent years have witnessed growth in EU FDI to ASEAN Member States such as Cambodia, Myanmar and the Philippines. Although this trend is encouraging, efforts need to be made to facilitate more EU FDI flows into the region, including from new EU investors, further expansion of existing EU MNE operations and a greater level of FDI by EU SMEs.

Table 2.5. Prospects of EU FDI in ASEAN

Study	Findings
2016 EU-ASEAN Business Sentiment Survey	<ul style="list-style-type: none"> • 60 per cent of EU businesses operating in ASEAN plan to increase capital and resources in the region. • 74 per cent of EU businesses in ASEAN expect an increase in profits. • ASEAN is seen as an important region for EU MNEs. About 56 per cent of the responding companies agreed that relative to other regions ASEAN has had a larger impact on their global revenues over the past two years and 43 per cent said the impact had held steady.
EY (2017), Rediscover ASEAN: A growth story of 10 countries	<ul style="list-style-type: none"> • 85 per cent of European companies with presence in ASEAN expect to increase trade and investment in the region in the next five years.
PWC (2016), PwC's 2016 APEC CEO Survey: ASEAN Report	<ul style="list-style-type: none"> • A survey on confidence in revenue growth in the next 12 months in ASEAN found that 48 per cent were somewhat confident and 40 per cent were very confident. • About 66 per cent of the respondents planned to increase investment in ASEAN over the next 12 months.
EY (2015), ASEAN 2015 and beyond: Are German investors missing out?	<ul style="list-style-type: none"> • Two in three German companies in ASEAN regarded the implementation of the ASEAN Economic Community as a factor that would influence their willingness to invest in the region. • Three quarters of the companies surveyed planned to increase their investment in ASEAN.

NOTES

¹ www.shell.com/about-us/who-we-are.html.

² See Harrisons & Crosfield 1800, www.simedarby.com/upload/Timeline_HC.pdf.

³ www.rea.co.uk/business/history.

⁴ www.simedarby.com/about-us/timeline.

⁵ www.gbm.hsbc.com/about-us/regional-capabilities/asia-pacific.

⁶ This includes the United Kingdom, which is scheduled to leave the European Union.

⁷ <https://www.oxfordbusinessgroup.com/overview/turning-tides-new-strategies-should-lead-expanded-opportunities>.

⁸ <http://www.heidelbergcement.com/en/brunei>.

⁹ <https://www.astrazeneca.com/country-sites/the-philippines.html>.

¹⁰ ViiV is a subsidiary of GSK, which is a joint venture of American and Japanese pharmaceutical companies.

¹¹ www.allianz.com/en/press/news/company/appointments/170615_Allianz-announces-new-leadership-in-Indonesia.

¹² www.allianzpnblife.ph/news-allianz-completes-51percent-acquisition.html.

¹³ <https://axa.co.id>.

¹⁴ www.axa.com.my.

¹⁵ www.gbm.hsbc.com/about-us/regional-capabilities/asia-pacific.

¹⁶ Azhar, S., and Zahar, M. (2016) Deutsche says to expand into high net worth private banking in Asia, Reuters, 14 June (<https://www.reuters.com/article/us-wealth-summit-deutsche-bank/deutsche-says-to-expand-into-high-net-worth-private-banking-in-asia-idUSKCN0Z012O>).

¹⁷ reNews, "Siemens scores in Indonesia", 3 March 2017 (<http://renews.biz/106126/siemens-scores-in-indonesia/>).

¹⁸ www.alstom.com/press-centre/2016/2/alstom-to-supply-an-integrated-metro-solution-to-manila.

¹⁹ *Metro-Magazine*, "Alstom wins its first metro system contract in Vietnam", 17 January 2017 (<http://www.metro-magazine.com/rail/news/719593/alstom-wins-its-first-metro-system-contract-in-vietnam>).

²⁰ www.carrefour.com/news/indonesia.

²¹ <https://www.tescopl.com/about-us/our-businesses/tesco-lotus/tesco-in-thailand>.

²² <https://www.tescopl.com/about-us/our-businesses/tesco-malaysia/tesco-in-malaysia>.

²³ <http://af.reuters.com/article/africaTech/idAFL5N18M3MC>.

²⁴ Thomson Reuters M&As database.

CHAPTER 3

Indian FDI and Companies in ASEAN

3.1. INTRODUCTION

ASEAN is a major investment destination for Indian companies. A significant proportion of Indian global outward FDI (OFDI) stock is in ASEAN. A majority of these flows go to services, primarily in banking and finance, information technologies (IT) and IT-enabled services (ITeS). Indian manufacturing OFDI in ASEAN is significant in metal and transport equipment industries. Some 1,950 Indian companies – large and small, private and public entities – operate in ASEAN. The list is growing as more Indian companies and new start-ups in technologies and other services establish headquarters in the region. Many large Indian MNEs and business groups are present in ASEAN. Some operate in multiple ASEAN Member States. The bilateral investment relationship between ASEAN and India is growing stronger, with ASEAN becoming a major source of investment in India.

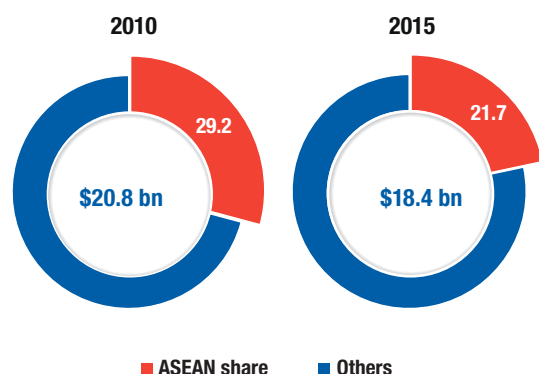
Accessing a growing regional market is an increasingly important motivation for Indian manufacturing and services companies to locate in ASEAN. Low-tax regimes, relatively more developed ecosystems for raising funds, facilitative business environments and supportive infrastructure are important factors – albeit in only a few ASEAN Member States. Indian firms also use the M&A mode of market entry in ASEAN for reasons such as pursuing a rapid expansion strategy, supporting business synergies and acquiring natural resources or strategic assets. However, cross-border M&As remain few.

With increasing bilateral investment, Indian and ASEAN industries are expected to be more interconnected, especially in information technologies (IT), IT-enabled services (ITeS), transport equipment, pharmaceuticals and finance.

3.2. INDIAN FDI IN ASEAN

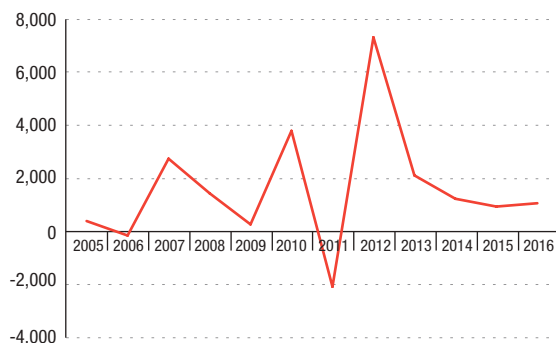
ASEAN is both a significant investment destination for Indian OFDI and a major source of FDI to India. Some 22 per cent of Indian OFDI stock in the world in 2015 is held in ASEAN (figure 3.1). This proportion is much larger than the shares of global OFDI stocks of Japan, the United States, China and the European Union in the region (i.e. 13 per cent, 5 per cent, 6 per cent and 2 per cent, respectively).

Figure 3.1. ASEAN share of Indian global OFDI stock, 2010 and 2015 (Per cent)



Source: UNCTAD, based on national sources and data from the International Monetary Fund.

Figure 3.2. Indian FDI flows in ASEAN, 2005–2016 (Millions of dollars)



Source: ASEAN Secretariat, ASEAN FDI database.

ASEAN held more than \$18.4 billion of Indian OFDI stock in 2015 – making the region the largest destination for Indian investment in developing and transition economies. This number suggests that Indian enterprises have been placing special focus to ASEAN as an important destination for overseas investments. About 1,950 Indian firms have established a presence in ASEAN, with most of them in Singapore.

Indian FDI flows in ASEAN fluctuated widely between 2005 and 2016, with 2012 recording the highest inflows (figure 3.2). These inflows plummeted to an all-time low in 2011, which registered a divestment of -\$2 billion, primarily driven by a -\$2.8 billion divestment from the finance and insurance industry. From 2013, Indian FDI inflows declined until 2016, when investment rose to exceed \$1 billion – which was about 1 per cent of total ASEAN inflows. Such fluctuations in the trend of Indian FDI in ASEAN over recent years have affected the level of Indian OFDI stock held in the region, which declined from \$20.8 billion in 2010 to \$18.4 billion in 2015. ASEAN nonetheless has remained an important destination for Indian OFDI.

India was the 11th largest non-ASEAN investor in ASEAN between 2010 and 2016 (table 3.1). Although Indian FDI flows to ASEAN are relatively small compared with those of Japan, the United States and China, many Indian firms continue to expand their presence with small OFDI projects, particularly in services activities (section 3.3). This partly explains the relatively lower level of Indian FDI flows in ASEAN.

Indian FDI in ASEAN is dominated by services, primarily in finance and insurance, repair of motor vehicles and motorcycles, and real estate activities (table 3.2). These three groups of services industries received the bulk of cumulative Indian FDI in ASEAN during 2012–2016. About 60 per cent of Indian FDI flows in ASEAN went to finance and insurance, with another 9 per cent in wholesale and retail trade (repair of motor vehicles), and 8 per cent in real estate activities.

The bilateral investment relationship between ASEAN and India is growing stronger. ASEAN is a major source of FDI to India. ASEAN companies invested \$45 billion in cumulative FDI

Table 3.1. ASEAN: Top 15 non-ASEAN investors, cumulative FDI flows, 2010–2016 (Billions of dollars and per cent)

Source country	Cumulative FDI inflows	Share of total FDI inflows
Japan	101.4	12.9
United states	100.6	12.8
Netherlands	51.6	6.6
China	47.0	6.0
Hong Kong (China)	40.6	5.2
Luxembourg	32.6	4.2
Korea, Republic of	27.9	3.6
United Kingdom	25.6	3.3
Australia	21.7	2.8
Taiwan Province of China	14.7	1.9
India	14.4	1.8
Ireland	11.0	1.4
France	9.9	1.3
Canada	9.7	1.2
Seychelles	7.5	1.0
Top 15 non-ASEAN investors	516.2	66.0
Total ASEAN	784.8	100

Source: ASEAN Secretariat, ASEAN FDI database.

Table 3.2. Indian FDI flows in ASEAN, by industry, 2012–2016 (Millions of dollars)

Industry	2012	2013	2014	2015	2016	2012–2016
Agriculture, forestry and fishing	8.7	4.6	4.7	3.5	4.4	25.8
Mining and quarrying	(0.7)	0.4	(0.1)	0.2	2.9	2.7
Manufacturing	109.4	66.2	34.2	(131.4)	20.2	98.6
Services	7,193.7	2,036.9	1,177.4	1,089.3	1,021.1	12,518.4
Of which:						
Wholesale and retail trade; repair of motor vehicles and motorcycles	633.9	192.1	25.1	131.5	199.0	1,181.6
Transportation and storage	(451.5)	(17.0)	36.6	0.4	41.0	(390.5)
Finance and insurance	5,619.6	1,067.6	771.5	525.7	(578.4)	7,405.9
Real estate	9.1	1.3	428.7	296.0	276.2	1,011.4
Total	7,311.1	2,108.1	1,216.2	961.6	1,048.6	12,645.5

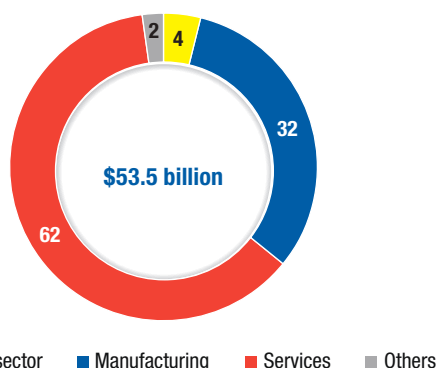
Source: ASEAN Secretariat, ASEAN FDI database.

equity capital in India during 2010–2015, which represented 16 per cent of FDI flows in India. Singapore accounted for the lion's share. ASEAN companies are also involved in India's infrastructure development and other services industries. The familiar business environment, spatial proximity, diaspora linkages and expanding business opportunities all play positive roles in the growing bilateral FDI flows between ASEAN and India.

3.3. CHARACTERISTICS OF INDIAN INVESTMENT ACTIVITIES

Indian investment activities and projects in ASEAN during 2005–2015 grew at a much faster average annual rate (67 per cent) than Indian global investment activities (40 per cent) (table 3.3; box 3.1).¹ About 22 per cent of Indian overseas investment activities during 2005–2015 were focused on ASEAN markets.

Figure 3.3. Indian overseas investment activities to ASEAN, by industry, 2005–2015 (Per cent)



Source: Reserve Bank of India.

3.3.1. Sectoral composition

Recent Indian overseas investment activities in ASEAN took place predominately in services industries (62 per cent) during 2005–2015. Manufacturing accounted for 32 per cent and the primary sector (agriculture, forestry, mining and quarrying) just 3.7 per cent (figure 3.3). ASEAN absorbed 28 per cent of all Indian overseas investment in services in this period. The rise of Indian services outward FDI to ASEAN reflects the growing complementarity between the services-dominated Indian economy and the majority of ASEAN economies, where services has become the most important sector (ASEAN Secretariat 2013). About 18 per cent of India's global manufacturing investment went to ASEAN. This implies that manufacturing is also a major investment interest in the region for Indian companies.

Table 3.3. Indian investment activities to the world and ASEAN, 2005–2015

Year	Indian overseas investment activities			No. of outward-investing Indian firms		
	World (\$ millions)	ASEAN (\$ millions)	ASEAN share (%)	Total	ASEAN	ASEAN share (%)
2005	3,076	389	12.6	571	80	14.0
2006	9,226	843	9.1	697	118	16.9
2007	13,071	1,362	10.4	762	147	19.3
2008	17,515	4,935	28.2	1,279	258	20.2
2009	17,454	4,854	27.8	1,266	256	20.2
2010	40,512	12,521	30.9	1,428	327	22.9
2011	33,938	7,825	23.1	1,668	400	24.0
2012	25,601	4,489	17.5	1,815	493	27.2
2013	29,589	4,993	16.9	1,850	475	25.7
2014	38,247	6,759	17.7	1,795	476	26.5
2015	15,656	4,348	27.8	1,504	390	25.9
Cumulative, 2005–2015	243,884	53,319	21.9	6,553	1,629	24.9
Average Annual Growth Rate (%)						
2005–2015	39.7	67.2	22.4	10.9	19.1	7.0

Source: Reserve Bank of India, based on data on Indian overseas investments.

Note: Data for 2007 are from January to March and July to December while those for 2015 are from January to August. The number of outward-investing firms is obtained by single counting names of firms undertaking investment during the respective year or period. The number of investing firms for the period 2005–2015 is not the sum of the numbers of investing firms with investments made in different years. A firm with overseas investments in different years during 2005–2015 is counted only once.

Box 3.1. Data challenges

The numbers presented in Indian overseas investment projects or activities by the Reserve Bank of India (RBI) are greater than the numbers reflected in Indian OFDI statistics. Indian OFDI stock in the ASEAN region was about \$18 billion in 2015, whereas the RBI reported Indian overseas investment activities in ASEAN as a cumulative \$53 billion between 2005 and 2015. The proportion of ASEAN's share in the total of the two accounting basis was approximated at about 22–25 per cent.

The information presented on Indian overseas investment activities is based on activities on an approved basis. It includes remittances by Indian firms for overseas investments under the Automatic Route as well as those permitted under the Approval Route. Actual OFDI data reflect lower values than the approval data because Indian firms may not be fully using the overseas investment project values permitted by RBI. Approval projects data also do not take into account divestment of Indian equity shares in overseas affiliates.

Source: ASEAN Investment Report 2017 research.

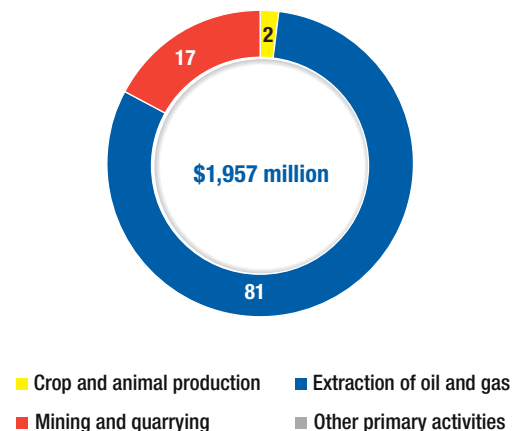
3.3.1.1. Primary industries

Indian FDI in the primary sector in ASEAN is driven mainly by natural resource-seeking motives, especially in extraction of crude petroleum, natural gas and coal. About 4 per cent of Indian overseas investment activities in ASEAN are in the primary sector, mainly in extraction of crude petroleum and natural gas (figure 3.4). However, in terms of the number of investing firms, coal mining dominates. Since 2008, the share of mining and quarrying in these activities has been increasing. The region received 26 per cent of Indian global overseas mining and quarrying investment during 2005–2015. Aside from the major mining MNEs, other Indian companies such as Agarwal Coal Corporation, RK Marble, Wolkem India, Dharni Sampda, Archean Granites and Sunlet Systems & Ventures have investments in mining in ASEAN.

3.3.1.2. Manufacturing industries

Increasingly, more Indian manufacturing investment activities in ASEAN are concentrated in technology-intensive industries. During 2005–2015, the medium-technology industry (namely basic metals and fabricated metal products) accounted for the largest share (37.6 per cent), followed by the high-technology industry (e.g. motor vehicles and other transport equipment) with a 34.3 per cent share (table 3.4). These two industries

Figure 3.4. Indian overseas investment activities to ASEAN, by primary industries, 2005–2015 (Per cent)



Source: Reserve Bank of India.

received about 72 per cent of Indian manufacturing OFDI flows to the region. In addition, Indian investment in pharmaceuticals has grown rapidly in recent years, particularly in 2015. ASEAN offers a rapidly growing pharmaceutical market with large populations, rapidly growing economies and increasing numbers of middle-class consumers.

During this period, the lion's share (71.6 per cent) of Indian investment activities in overseas production of motor vehicles and other transport equipment went to ASEAN. In pharmaceuticals and chemicals, ASEAN attracted more than 7 per cent of Indian overseas investment. Indian automotive and pharmaceutical companies are engaged in technologically competitive and cost-efficient manufacturing for domestic markets and exports. Some Indian companies such as Tata and TVS groups have entered the automotive industry in ASEAN by establishing production facilities in the region (Agustin and Schröder 2015).

Table 3.4. Indian overseas manufacturing investment to ASEAN, by firms, 2005–2015

Industry (selected cases)	Cumulative overseas investment by industry (\$ millions)			Memorandum items for 2005–2015	
	2005–2009	2010–2015	2005–2015	No. of investing firms	ASEAN share (%)
Basic metals and fabricated metal products	315	6,159	6,474	63	39.0
Motor vehicles, trailers and other transport equipment	4,647	1,261	5,908	24	71.6
Pharmaceuticals, medicinal, chemical and botanical products	3	1118	11,21	34	7.3
Total	5,349	11,881	17,229	427	17.8

Source: Reserve Bank of India.

Note: The number of investing firms for a source sector is obtained by single-counting names of firm' undertaking investment in the sector during the period. The number of investing firms for all the sectors is not the sum of the numbers of outward-investing firms from different sectors, as the same firm could have invested abroad in more than one sector. Similarly, the number of investing firms for the period 2005–2015 is not the sum of the information for the subperiods as the same firm could have invested abroad in more than one subperiod.

3.3.1.3. Services industries

Indian investment activities in services in ASEAN expanded rapidly during 2005–2015. The bulk of these investments went to communication services, followed by construction, and transportation and storage (table 3.5). Professional services, scientific and technical activities, and IT and ITeS services are also significant and growing.

Leading telecommunication companies such as Bharti Airtel, Tata Communications, Reliance Communications, Infotel Telecom, Spice Digital and Reliance Jio Infocomm, are present in ASEAN. Some of these companies have expanded their operations in the region. In construction and real estate, 64 Indian companies have operations in the region. The top five investing firms are Lanco Infratech, Punj Lloyd, IL&FS Transportation Networks, GMR Infrastructure, and Madhucon. These Indian companies, having accumulated expertise in building industrial and urban infrastructure projects cost-effectively at home, are increasingly participating in the development of infrastructure abroad. Investment opportunities and economic growth in ASEAN also have attracted the attention of Indian construction-related investments.

Table 3.5. Indian overseas services investment to ASEAN, by firms, 2005–2015

Industry (selected cases)	Investment by industry (\$ millions)		Memorandum items for 2005–2015	
	2005–2009	2010–2015	No. of investing firms	ASEAN share (%)
Communication services	1,795	12,791	42	36.2
Construction	425	3,917	64	31.8
Financial and insurance activities	666	612	99	12.6
IT and ITeS, including software publishing	783	846	223	12.0
Professional, scientific and technical activities	76	1,561	38	69.8
Transportation and storage	542	3,194	54	41.6
Total	5,366	27,887	983	28.2

Source: Reserve Bank of India.

Note: The number of investing firms for a source sector is obtained by single-counting names of firms undertaking investment in the sector during the period. The number of investing firms for all sectors is not the sum of the numbers of outward-investing firms for different sectors as the same firm could have invested abroad in more than one sector. Similarly, the number of investing firms for the period is not the sum of the information pertaining to subperiods as the same firm could have invested abroad during more than one subperiod.

Among all Indian services industries, the largest number investing in ASEAN (223) were in IT and ITeS. Many Indian firms have chosen to establish service delivery centres across ASEAN, offering a wide range of enterprise solutions from niche business process outsourcing (BPO) to custom software implementation, hardware optimization and data centre maintenance. Major Indian companies in this industry in ASEAN include Tata Consulting, Infosys, Wipro and HCL Technologies (section 3.5).

3.3.2. Locational composition

Indian investment in ASEAN is geographically concentrated, with most of the activity directed to Singapore between 2005 and 2015. Indonesia, Malaysia and Thailand received a combined share of about 10 per cent. Factors such as strong air connectivity with India, a business-enabling environment, more stable taxation system, logistics and financial infrastructure, and the presence of a large Indian diaspora community have been the major drivers of Indian investment in Singapore. The signing of the India-Singapore Comprehensive Economic Cooperation Agreement (CECA) in 2005 has further provided momentum to trade and investment relationship between Singapore and India. More than 1295 Indian firms operate in Singapore.

Malaysia, with about \$1.3 billion of Indian investment activities, has been the second largest ASEAN host country, followed by Indonesia, Thailand and Viet Nam. A strong and growing trade relationship, significantly improved connectivity with air links, an Indian diaspora and frequent bilateral visits of policymakers have contributed to making Malaysia increasingly attractive to Indian firms (MEA 2015). Two-way investment flows are also being facilitated by the operationalization in 2011 of the CECA between India and Malaysia, which provides for national treatment and protection of investments. Similarly, Indian investment flows to Thailand and Indonesia are strongly encouraged by close sociocultural interactions, extensive people-to-people contact, regular exchange visits of policymakers and entrepreneurs, and the presence of people of Indian origin.

3.3.3. Ownership structure

Wholly owned subsidiaries (WOSs) are a dominant feature of recent Indian investment activities in ASEAN. Some 73 per cent of Indian investment activities to ASEAN occur through WOSs (table 3.6). Over three quarters of 1,250 Indian firms with projects in ASEAN preferred wholly owned operations. This overwhelming preference of Indian firms for WOSs is influenced by corporate strategic reasons and the fact that host economies allow full foreign equity ownership.

During the 1980s and 1990s, Indian companies gave more emphasis to joint venture (JV) strategies when investing in ASEAN and the developing region, in large part because of home-country policy encouraging JV operation in overseas investment activities (Pradhan 2008a). Even after the removal of this restrictive ownership policy in the late 1990s, JVs continued to be preferred by one quarter of Indian firms with overseas investment activities in ASEAN. During 2005–2015, some 461 Indian firms chose JVs in ASEAN as compared with 1,250 that chose WOSs. Indian firms that have internationalized recently or have less experience in foreign ventures choose JVs to minimize the potential risks and liabilities associated with cross-border investments. Local partners in JVs are seen as providing important sources of additional finance, marketing intelligence, information on local laws and institutional knowledge that are crucial for newly internationalizing Indian firms.

Young Indian companies tend to be most active, as ASEAN is deemed to offer expanding opportunities in different areas of services and new technologies. Relatively younger Indian firms are the leading source of Indian investment activities in the region. The “born global” phenomenon in India’s knowledge-based services such as the ICT and ITeS industry partly explains the greater involvement of young firms (AIR 2016).

Table 3.6. Ownership structure of Indian overseas investment activities to ASEAN, 2005–2015

Host region	Value by ownership structure (\$ millions)			No. of investing firms		
	JV	WOS	Total	JV	WOS	Total
World	69,140	174,737	243,877	2,394	4,889	6,553
ASEAN	14,161	39,158	53,319	461	1,250	1,629
Memorandum: ASEAN share in Indian global overseas investment activities						
ASEAN share (%)	20.5	22.4	21.9	19.3	25.6	24.9

Source: Reserve Bank of India.

Note: Estimated only for those projects for which the status of ownership was available. For number of Indian investing firms, the sum of the JVs and WOS is not equal to the total because a given firm may undertake a JV and a WOS simultaneously.

3.4. INDIAN MERGERS AND ACQUISITIONS

Indian companies are not active acquirers of assets in ASEAN. Their entry strategy is mainly through greenfield activities. Despite the low level of cross-border M&As by Indian companies, they acquired the most assets in mining activities in the region.

Indian cross-border M&A activity in ASEAN remains low, compared with its share of cross-border M&A transactions in developing economies and greenfield investments in ASEAN

(table 3.7). This suggests that Indian companies are less active in using M&As as a channel for market entry into ASEAN. Indian companies acquired a cumulative \$5.9 billion value of assets in the region during 2000–2016, which is only 4.1 per cent of all cross-border M&A purchases by Indian firms. Most of these M&As took place in Singapore and Indonesia in different business activities. Indian M&As in Indonesia are mainly in extractive industries whereas deals in Singapore cover a wide range of services industries, including in health care and IT.

Indian M&As at the global level are motivated to access international markets, achieve operational synergies and acquire natural resources as well as intangible assets (Pradhan and Abraham 2005). Similar and related motivations are witnessed for Indian M&A purchases in ASEAN (section 3.6). For instance, Tata Power acquired a 30 per cent stake in PT Kaltim Prima Coal (Indonesia) and PT Arutmin (Indonesia) for \$1.1 billion in 2007. This strategic M&A stake enables the Indian company to purchase from the acquired coal companies about 10 million tonnes of coal per year for an initial period up to 2021. Other Indian companies have also acquired assets in the region to access natural resources (annex table 3.1). They include Essar Global's acquisition of Aries Coal Mines (Indonesia) in 2010, Monnet Ispat and Energy's acquisition of Sarwa Sembada Karya Bumi (Indonesia) in 2011 and Tata's acquisition of a 26 per cent stake in Baramulti Sukses Sarana (Indonesia) in 2012. Other Indian companies such as Indian Metals and Ferro Alloy, India Cements and Mercator Lines have also acquired coal mines in Indonesia.

Strategic reasons such as strengthening their business model and boosting synergies have also led Indian companies to make acquisitions in the region. These include One97 Communications' acquisition of a 25 per cent stake in tenCube (a Singapore-based developer of mobile software) in 2010; Aanjaneya Lifecare's acquisition of a 90 per cent stake of Eros Pharmachem in 2012; Micro Labs' acquisition of a pharmaceutical manufacturing facility in Indonesia in 2013. Fortis Healthcare Holding made a number of majority stake acquisitions in companies with medical and

Table 3.7. Indian M&A purchases, by geographical distribution, cumulative 2000–2005, 2006–2011 and 2012–2016

Grouping, region or country	2000–2005	2006–2011	2012–2016	2000–2016	
				Value (\$ millions)	Share (%)
World	11,019	95,294	36,704	143,016	100.0
Developed economies	3,444	61,075	11,777	76,296	53.3
Developing economies	5,848	34,075	19,321	59,244	41.4
Asia	4,826	15,287	12,344	32,457	22.7
ASEAN	483	4,484	898	5,865	4.1
Indonesia	32	1,647	..	1,679	1.2
Malaysia	1	417	45	463	0.3
Philippines	1	2	..	3	0.0
Singapore	313	2,161	810	3,285	2.3
Thailand	136	184	40	360	0.3
Viet Nam	..	73	3	76	0.1

Source: UNCTAD M&A database.

Note: On gross basis.

hospital facilities between 2011 and 2016 (e.g. Hoan My Medical Corporation (Viet Nam), Adam Road Hospital (Singapore), RadLink-Asia (Singapore) and Religare Health Trust (Singapore)). Teledata Informatics' acquisition of a majority stake in eSys Technologies (Singapore) aims to capitalize on the synergy between Teledata and eSys (Business Standard 2007). Indian IT companies such as Blue Star, R Systems International, Altruist Technologies and Essar Global have in recent years acquired IT-based services in the region.

3.5. INDIAN MNEs AND SMEs IN ASEAN

Some 1,950 Indian companies, large and small, operate in ASEAN. The universe of Indian firms operating in ASEAN is diverse, involving privately owned entities (business groups and standalone firms), State-owned enterprises, large corporations, and small and medium-size enterprises (SMEs). Some have been in the region for a long time, which dates as far back as the 1940s. In recent years, many Indian start-ups have also set up operations in Singapore, adding to the number of Indian entities in the region.

3.5.1. Indian MNEs

By company size, large Indian MNEs have the highest level of investments in ASEAN. They dominate in terms of the value of Indian OFDI but not in terms of the numbers of companies, following the recent surge in Indian start-ups. Although Indian State-owned enterprises (SOEs) also invest in the region, privately owned MNEs dominate the landscape. Large Indian business groups have a larger regional footprint, with multiple locations in ASEAN. Indian MNEs in IT services have operations in multiple ASEAN Member States, while those in manufacturing and finance are concentrated in just a few. Indian investments in the extractive industry are located in fewer ASEAN Member States, especially in those rich in natural resource endowments (e.g. Indonesia and Myanmar).

3.5.1.1. Top 50 Indian MNEs

The 50 largest Indian companies are present in ASEAN in diverse industrial activities (table 3.8). Many of them have operations in multiple ASEAN Member States.

3.5.1.2. Indian financial corporations

Indian banks are among the earliest Indian investors in ASEAN and some expanded their presence in the region. For instance, the Indian Overseas Bank established its presence in Myanmar in 1937 and the Indian Bank in Singapore in 1941. Many major Indian banks operate in ASEAN, albeit with a strong concentration in Singapore (table 3.9). Some Indian banks, such as Baroda Bank, Indian Overseas Bank and EXIM Bank of India, continue to expand their presence in the region by opening more branches or representative offices. United Bank of India set up a representative office in Myanmar in 2012, and EXIM Bank of India did so in 2013. In addition, the Bank of India and the State Bank of India have each received licenses – in 2013 and 2014, respectively – to establish representative offices in that Member States.

Table 3.8. Top 50 Indian companies in ASEAN, 2016

Rank	Name of company	Industry	Presence in selected ASEAN Member States
1	Tata Consulting	Consulting	Indonesia, Malaysia, Philippines, Singapore, Thailand
2	Reliance Industries	Oil and gas refinery	Malaysia, Singapore
3	Infosys	Consulting	Philippines, Singapore
4	SUN Pharmaceutical Industries	Pharmaceutical	Philippines
5	Housing Development Finance Corporation	Banking activities	Singapore
6	Bharti Airtel	Telecommunication	Singapore
7	State Bank of India	Banks	Indonesia, Singapore
8	Wipro	Information and communication	Indonesia, Malaysia, Philippines, Singapore, Thailand
9	Kotak Mahindra Bank	Banks	Singapore
10	Larsen & Toubro	Industrial	Indonesia, Malaysia, Singapore
11	Tata Motors	Automobile	Indonesia, Singapore, Thailand
12	HCL Technologies	Information and communication	Indonesia, Malaysia, Philippines, Singapore, Thailand
13	Ultratech Cement	Industrial	Indonesia
14	Asian Paints	Paints	Singapore
15	Mahindra & Mahindra	Automobile	Malaysia, Singapore, Thailand
16	Lupin	Industrial	Malaysia, Philippines
17	Bajaj Auto	Auto manufacture	Indonesia
18	Bharat Petroleum Corporation	Industrial	Singapore
19	Dr. Reddy's Laboratories	Pharmaceutical	Malaysia, Singapore
20	Aurobindo Pharma	Pharmaceutical	Singapore, Thailand
21	Tech Mahindra	Technology	Indonesia, Malaysia, Philippines, Singapore, Thailand
22	Gail	Natural gas processing and distribution	Singapore
23	Godrej Consumer Products	Consumer products	Indonesia
24	CIPLA	Pharmaceutical	Malaysia
25	Shree Cements	Cement	Singapore
26	Zee Entertainment Enterprises	Media and entertainment	Singapore, Thailand
27	Grasim Industries	Building materials	Indonesia, Lao People's Democratic Republic, Thailand
28	Bank of Baroda	Banks	Malaysia
29	Motherson Sumi Systems	Automobiles	Singapore
30	Cadila Healthcare	Pharmaceutical	Philippines
31	Tata Steel	Steel	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
32	JSW Steel	Steel	Singapore
33	Marico	Consumer products	Malaysia, Singapore, Viet Nam
34	Pidilite Industries	Adhesive manufacturer	Indonesia, Singapore, Thailand
35	UPL	Chemicals	Indonesia, Philippines, Viet Nam
36	Torrent Pharmaceuticals	Pharmaceutical	Malaysia, Philippines, Thailand
37	DLF	Real Estate	Indonesia, Singapore
38	Piramal Enterprises	Pharmaceutical	Singapore
39	Tata Power Company	Electric utility	Indonesia, Singapore
40	Hindalco Industries	Aluminum manufacturing	Malaysia, Singapore, Viet Nam
41	Rajesh Exports	Wholesale and retail	Singapore
42	TVS Motor Company	Automobiles	Indonesia, Singapore
43	Reliance Communications	Telecommunication	Indonesia, Singapore
44	Ajanta Pharma	Pharmaceutical	Philippines
45	Biocon	Biopharmaceutical	Malaysia
46	Tata Communications	Telecommunication	Malaysia, Singapore, Thailand
47	Exide Industries	Industrial	Singapore
48	Godrej Industries	Chemicals	Malaysia, Singapore
49	Aditya Birla Nuvo	Conglomerate	Philippines, Singapore
50	Axis Bank	Bank	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam

Sources: ASEAN Investment Report 2017 research, based on Orbis and company reports.

Note: Ranked by 2015 market capitalization.

Table 3.9. Selected Indian banks in ASEAN, 2016

Bank	Location in ASEAN	Year of entry	Status	Remarks
Indian Overseas Bank	Singapore	1941	Foreign full bank	Two branches in Thailand and a representative office in Viet Nam
Indian Bank	Singapore	1941	Foreign full bank	Representative office in Indonesia
Bank of India	Singapore	1951	Foreign full bank	Two branches in Singapore, a subsidiary in Indonesia, a representative office in Myanmar and Viet Nam
Uco Bank	Singapore	1951	Foreign full bank	Two branches in Singapore
State Bank of India	Indonesia	2006	Foreign exchange bank	Acquired 76 per cent of PT Bank Indomonek in 2006 and a further 23 per cent stake in 2009 Six branches in four major cities in Indonesia
	Singapore	1977	Foreign full bank	Seven retail branches in Singapore
ICICI	Singapore	2003	Foreign full bank	Three branches in Singapore, one representative office each in Indonesia, Malaysia and Thailand
Bank of Baroda	Malaysia	..	Branch	One branch in Kuala Lumpur
	Singapore	2006	Branch	One branch in Singapore
	Thailand	2006	Representative office	One office in Thailand
Axis Bank	Singapore	2006	Branch	One branch in Singapore and partner with local banks in Malaysia and Thailand
India International Bank	Malaysia	2012	Commercial bank	Incorporated in Malaysia through JVs between Baroda Bank (40 per cent), Indian Overseas Bank (35 per cent) and Andhra Bank (25 per cent)
United Bank of India	Myanmar	2012	Representative office	Has one office in Myanmar
EXIM Bank of India	Myanmar	2013	Representative office	..
	Singapore	..	Representative office	..

Sources: Central Bank of Myanmar, Monetary Authority of Singapore, RBI <https://rbidocs.rbi.org.in/rdocs/Content/pdfs/71206.pdf> and companies websites.

Note: Foreign full banks may operate in 25 locations in Singapore and provide a range of banking business, as permitted under the Banking Act.

3.5.1.3. Indian companies in non-finance industries

In non-finance activities, Indian MNEs are more prominent in IT, pharmaceutical, telecommunication services and manufacturing. Early Indian manufacturing MNEs in the region can be found in Malaysia. They include Godrej Sdn Bhd, a majority-owned affiliate of Godrej & Boyce Mfg. Co. Ltd., acquired for \$2.6 million in 1965 (Indian Investment Centre 1998). The company manufactures steel office furniture, shelving systems, security equipment and steel fabrications. It supplies the Malaysian market and exports abroad. Another early Indian manufacturing company, Ballarpur Industries Ltd., established a JV about the same time, to manufacture glass containers in Malaysia. An Indian MNE, the Aditya Birla Group, established the Indo Thai Synthetics Company in Thailand in 1969. In recent years, many Indian companies in the ICT, pharmaceutical and manufacturing industries have been actively investing in ASEAN. Indian FDI in ASEAN has expanded to cover more industries and involve more firms.

Given their competitive advantage in laboratory science, process development and generic drugs, five Indian pharmaceutical companies – Sun Pharmaceutical Industries, Dr. Reddy's Lab, Aurobindo Pharma, Cipla and Cadila Healthcare – have set up operations in ASEAN. Similarly, technologically more advanced Indian automotive players such as Tata Motors, Mahindra & Mahindra, Bajaj Auto and Motherson Sumi Systems have a presence in the region. Many Indian ICT companies have also set up multiple operations in ASEAN (table 3.10). They include top Indian ICT companies such as Tata Consultancy, Wipro, HCL Technologies and Mphasis.

Table 3.10. Indian IT services companies and their subsidiaries in ASEAN 2016 (Selected cases)

Company	Host country	Name of subsidiary
HCL Technologies	Indonesia	PT HCL Technologies Indonesia
	Malaysia	HCL (Malaysia)
	Philippines	HCL Axon Malaysia
	Singapore	HCL Technologies Philippines
	Singapore	Axon Solutions Singapore
	Thailand	HCL Singapore
Hexaware Technologies	Singapore	HCL Technologies (Thailand)
Hexaware Technologies	Singapore	Hexaware Technologies Asia Pacific
Infosys Technologies	Singapore	Infosys Consulting
Mphasis	Indonesia	PT Mphasis Indonesia
	Philippines	Mphasis Philippines
	Singapore	Mphasis (Singapore)
Wipro	Indonesia	PT WT Indonesia
	Malaysia	Wipro BPO Philippines
	Philippines	Wipro Technologies (Malaysia)
	Singapore	Wipro Networks (Singapore)
	Thailand	Wipro (Thailand)
Polaris Software Lab	Malaysia	Polaris Software Consulting & Services (Malaysia)
	Philippines	Polaris Software Lab (Philippines)
	Singapore	Polaris Consulting & Services (Singapore)
	Singapore	FT Grid (Singapore)
	Viet Nam	Intellect Design Arena Co. Ltd (Viet Nam)
Tata Consultancy Services	Indonesia	PT Tata Consultancy Services Indonesia
	Malaysia	PT Financial Network Services (Indonesia)
	Philippines	Tata Consultancy Services Malaysia
	Singapore	Tata Consultancy Services (Philippines)
	Singapore	Tata Consultancy Services Asia Pacific (Singapore)
	Thailand	Tata Consultancy Services (Thailand)
Zensar Technologies	Singapore	Zensar Technologies (Singapore)
Nucleus Software Solutions	Singapore	Nucleus Software Solutions (Singapore)
NIIT Technologies	Philippines	NIIT Technologies Philippines
	Singapore	NIIT Technologies Limited (Thailand)
	Thailand	NIIT Technologies Pte Ltd (Singapore)
Satyam Computer Service	Singapore	Knowledge Dynamics
G T L	Myanmar	iGTL Myanmar
	Singapore	GTL (Singapore)
R Systems International	Indonesia	PT IBIZCS Indonesia
	Malaysia	ECnet (M) Sdn Bhd (Malaysia)
	Philippines	Computaris Malaysia
	Singapore	IBIZ Consulting Services (Malaysia)
	Singapore	Computaris Philippines
	Singapore	R Systems (Singapore)
	Thailand	ECnet Limited (Singapore)
	Thailand	IBIZ Consulting Services (Singapore)
Cambridge Solutions	Malaysia	ECnet Systems (Thailand)
	Singapore	Cambridge Solutions (Malaysia)
Tech Mahindra		Cambridge Solutions (Xchanging) (Singapore)
		PT Tech Mahindra Indonesia
		Tech Mahindra (Malaysia)
	Indonesia	Tech Mahindra ICT Services (Malaysia)
	Malaysia	Sofgen (Malaysia)
	Myanmar	Leadcom Integrated Solutions Myanmar
	Philippines	vCustomer Philippines (Cebu)
	Singapore	Sofgen Services (Singapore)
	Singapore	Tech Mahindra (Singapore)
	Thailand	Comviva Technologies Singapore
	Thailand	Tech Mahindra (Thailand)
3i Infotech	Malaysia	3i Infotech (Malaysia)
	Singapore	3i Infotech Services (Malaysia)
	Singapore	3i Infotech Asia Pacific (Singapore)
	Thailand	3i Infotech (Thailand)
Teledata Informatics	Singapore	Insoft Systems Singapore
	Thailand	Net Eng Tel (Thailand)

Sources: ASEAN Investment Report 2017 research, based on Orbis and company annual reports.

Some Indian MNEs and SOEs have invested in extractive industries in ASEAN, primarily in oil and gas exploration and production, as well as in coal mining. These companies include Essar, Century Ply, Jubilant Oil and Gas, ONGC Videsh, Reliance Industries and Oil India, which have operations in Myanmar. Punj Lloyd is involved in a gas and oil pipeline in Myanmar. Tata Power is involved in coal mining and power generation activities in Indonesia and Myanmar, while Essar Global and Monnet Ispat are involved with coal mining in Indonesia. Table 3.11 presents a list of recent investment activities of Indian MNEs and SOEs approved in 2016–2017.

Table 3.11. Indian companies investment activities to ASEAN, 2016–2017 (Selected cases)

Indian company	Name of JV or WOS	Host country	Industry	Investment value (\$ millions)
Oil India	Oil India International Pte Ltd	Singapore	Mining	824
Bharat Petroresources	BPRL International Singapore Pte Ltd	Singapore	Mining	772
Indian Oil Corporation	IOCL Singapore Pte Ltd	Singapore	Mining	662
Indian Oil Corporation	IOCL Singapore Pte Ltd	Singapore	Mining	303
Tata International	Tata International Singapore Pte Ltd	Singapore	Wholesale, retail trade, restaurants and hotels	179
Tata Communications	Vsnl Sno Spv Pte Ltd	Singapore	Transport, storage and communication services	166
Greatship	Greatship Global Energy Services Pte Ltd	Singapore	Financial, insurance and business services	134
Strides Arcolab	Strides Pharma Asia Pte Ltd	Singapore	Manufacturing	130
State Bank of India	Bank SBI Indonesia	Indonesia	Financial, insurance and business services	85
Bombay Burma Trading Corporation	Leila Lands Sdn. Berhad	Malaysia	Financial, insurance and business services	66
Tata Communications	Tata Communications International Pte Ltd	Singapore	Transport, storage and communication services	65
Haldia Petrochemicals	Hpl Global Pte Ltd	Singapore	Wholesale, retail trade, restaurants and hotels	60
Maharashtra Seamless	Dev Drilling Pte Ltd	Singapore	Agriculture and mining	60
Iquest Enterprises Private	Globex Holding Pte Ltd	Singapore	Community, social and personal services	52
Reliance Industries	Reliance Global Energy Services	Singapore	Power	40
Crompton Greaves	Cg International Holdings Singapore	Singapore	Wholesale, retail trade, restaurants and hotels	36
Gail	Petroleum Production Sharing Contract	Myanmar	Mining	7.7
Century Plyboard	Century Ply	Singapore	Manufacturing	5.0
ONGC Videsh	Petroleum Production Sharing Contract	Viet Nam	Mining	4.7
Dee Development Engineers	Dee Piping Systems (Thailand) Co Ltd	Thailand	Manufacturing	1
ONGC Videsh	Petroleum Production Sharing Contract	Myanmar	Mining	0.8
SMS	SMS Mines Indonesia	Indonesia	Mining	0.6
ONGC Videsh	Petroleum Production Sharing Contract	Myanmar	Manufacturing	0.48
Ramesh Kumar	Victorius Infra Phils Inc	Philippines	Financial, insurance and business services	0.029

Source: Reserve Bank of India.

Note: JV = joint venture, WOS = wholly owned subsidiary.

3.5.1.4. Indian business groups

Large business groups or conglomerates are the most dominant Indian investors in ASEAN. Their operations involve multiple ASEAN Member States. These business groups accounted for 77 per cent of all Indian investment in the region during 2005–2015 (table 3.12). They include

Table 3.12. Indian overseas investment activities in ASEAN, by types of enterprises, 2005–2015
(Millions of dollars and per cent)

Enterprise category	Investment activities		Investing firms	
	Value (\$ millions)	Share (%)	Number	Share (%)
Standalone	5,020	9.4	236	14.5
Business groups	40,856	76.6	239	14.7
State-owned enterprises ^a	999	1.9	10	0.6
Foreign affiliates	571	1.1	28	1.7
Unclassified	5,873	11.0	1,116	68.5
All enterprises	53,319	100	1,629	100

Source: Reserve Bank of India.

^a Including cooperatives and enterprises run in public–private partnership mode.

Tata, Reliance, Aditya Birla, Adani, Bharti and Mahindra (box 3.2). These business groups and their subsidiaries are better equipped to internationalize because of their advantages in terms of bundles of competitive assets, business networks and access to internal resources as compared with those of stand-alone firms (i.e. those not affiliated with any domestic business groups). These inherent ownership advantages explain their more dominant investment presence in ASEAN, in terms of investment value and geographical spread.

Domestic stand-alone enterprises contributed only a 9 per cent share in Indian overseas investment activities to ASEAN. Indian state-owned enterprises also invest in the region but

Box 3.2. Regional footprints of large Indian business groups in ASEAN, 2016

Recent investment activities of large Indian business groups in ASEAN are more regionally spread than in the past, when they were often concentrated in one or two ASEAN Member States. For instance, the Tata Group, with significant operations in various business activities in Singapore, is expanding its footprint to other ASEAN Member States.^a Tata Consultancy Services has established a presence in four ASEAN Member States and Tata Motors in three (Indonesia, Thailand and Viet Nam); Tata Power has significant investments in coal resources in Indonesia and is developing power plants in Indonesia, Myanmar and Viet Nam; and Tata International has set up representative offices in Indonesia and Myanmar.

Aditya Birla Group has invested in as many as six ASEAN Member States (Indonesia, the Philippines, Malaysia, Singapore, Thailand and Viet Nam). It has played a leading role among Indian businesses making forays into the ASEAN region by setting up the Indo Thai Synthetics Company in Thailand in 1969. Since then, the group has significantly intensified its regional footprint, with interests in different businesses in the region. For instance, the group has established two subsidiaries (i.e. Aditya Birla Minacs Worldwide and Transworks Information Services) in the Philippines to serve the IT and ITeS industries, and Birla Sun Life Asset Management in Singapore to target clients operating in financial and insurance activities.

/...

Box 3.2. Regional footprints of large Indian business groups in ASEAN, 2016 (Concluded)

Adani Group is another major Indian business group having established its business in ASEAN. It has been operating in power generation, transmission and distribution in Singapore through its subsidiary Adani Power. Adani Welspun Exploration has invested in extraction of crude petroleum and natural gas in Thailand.

Mahindra & Mahindra Group also operates in IT and ITeS and in the hospitality industry in the region. In Singapore, its subsidiary Bristlecone India serves the IT and ITeS industry, Mahindra Holidays & Resorts operates hotels and Satyam Computer Services works in IT services. Its subsidiaries in Thailand and Indonesia are engaged in diversified business activities including in IT and ITeS. Tech Mahindra in Malaysia provides IT and ITeS services.

Other large Indian business groups include HCL Technologies (a major Indian IT, BPO and consultancy MNE), which has a presence in Indonesia, Malaysia, the Philippines, Singapore and Thailand. The Reliance Group has operations in multiple ASEAN Member States (e.g. Indonesia, Malaysia and Singapore) in different business activities.

Source: ASEAN Investment Report 2017 research.

^a Tata Group, "Foothold in ASEAN", January 2016 (<http://www.tata.com/article/inside/foothold-in-asean>) and Tata Group, About Us-South-East Asia, undated (www.tata.com/tataworldwide/index/South-East-Asia).

account for only a 2 per cent share. These state-owned firms are visible in the banking and energy sector in ASEAN. They include the State Bank of India, Andhra Bank, ONGC Videsh Limited, Gujarat State Petroleum Corporation Limited, Bharat Petroleum Corporation, Gail Limited, Prize Petroleum Co Limited, Bank of Baroda, and IOT Infrastructure & Energy Services Limited. Foreign affiliates based in India also make investment in ASEAN but the number is small. These foreign affiliates belong to the Hitachi Group (Hitachi Consulting Software Services India Limited), ITC Group (ITC Limited and Wimco Limited), Peirce Leslie Group (PL Shipping & Logistics Limited), Unilever (Kissan Products Limited) and UTV Group (UTV Software Communications Limited).

For some Indian companies, ASEAN is an important location for operations abroad. For instance, more than 50 per cent of revenues for Aban Offshore Ltd. and 25 per cent of revenues for Tata Communications for fiscal year 2014–2015 are generated in ASEAN.

3.5.2. Indian SMEs and start-ups in ASEAN

Indian SMEs' investment activities in ASEAN are small in value but relatively significant in terms of number of investing firms, when start-ups are included. Historically, Indian SMEs have been involved in international production, at a relatively slow pace and small scale. In the developing countries, Indian SME investors were most active in South-East and East Asian economies during the 1975–2001 period. In the more recent period of 2005–2015, Indian SMEs invested \$931 million (1.7 per cent of all Indian overseas investment) and accounted for 4 per cent of all Indian firms in ASEAN (table 3.13). However, the region attracted 15.7 per cent of global investment by Indian SMEs and 24.2 per cent of all Indian SME investors abroad in the same period.

Table 3.13 Indian overseas investment activities to ASEAN, by firm size, 2005–2015

Host region	Value (\$ millions)				Number			
	SMEs	Large firms	Unclassified	Total	SMEs	Large firms	Unclassified	Total
World	5,924	200,022	37,938	243,884	269	1,164	5,123	6,556
ASEAN	931	45,873	6,515	53,319	65	363	1,201	1,629
ASEAN share (%)	15.7	22.9	17.2	21.9	24.2	31.2	23.4	24.8

Source: Reserve Bank of India.

Note: SME classification for manufacturing and services sector according to the ceilings prescribed in the Micro, Small and Medium Enterprises Development Act 2006 and based on the value of plant, machinery, computer and electrical equipment available for the latest year for a firm in the Prowess Database of the Centre for Monitoring Indian Economy. Firms affiliated with large business groups and foreign firms are treated as large firms, not considering the value of their investments in plants and machinery.

Indian SMEs invariably undertake investment in small quantity given their small size, limited resources and lower ability to withstand uncertainty and risk associated with cross-border investment activities (UNCTAD 2007). Indian SMEs overseas investments are primarily in services activities (91 per cent of their investment in ASEAN in 2005–2015). Given that knowledge-intensive Indian SMEs in the pharmaceutical and IT industries have been internationalizing faster in recent years, the ASEAN region is receiving their increasing attention.

Indian SMEs in IT and ITeS, including software development, accounted for 70 per cent of investment by Indian SMEs in the region. In contrast to manufacturing, Indian SMEs in services are more oriented to global production because of services' relatively low capital requirements. Geographically closer and culturally familiar ASEAN markets are attractive to Indian services SMEs owing to the increasing concentration of large numbers of global service providers in the region, creating synergies and externalities. Moreover, Indian SMEs focus on the ASEAN region not only to cater to the emerging regional demand but also to global demand. WOSs remain the dominant ownership choice by Indian SME investors in ASEAN. They were on the receiving end of more than 88 per cent of Indian SME investment in ASEAN during 2005–2015.

A few SMEs account for the largest share of total Indian SME investments in ASEAN. A significant SME investor in ASEAN is Info-Drive Software, which has a presence in Malaysia and Singapore. This SME entered the region by establishing service delivery and business development centres with the purpose of serving high-growth and telecommunication segments in ASEAN. Other Indian SMEs include Cranes Software International (CSI) and Frost International. CSI's entry into Singapore was made initially to support its relationship with Texas Instruments in ASEAN. Its Singapore subsidiary later became a springboard to strengthening its presence in the region. Frost International invested in ASEAN with the purpose of accessing international markets, supplementing its export activities and expanding its product portfolio. Other Indian SMEs in the IT industry with a presence in two or more ASEAN Member States include Teledata Informatic and Aurionpro Solutions.

Since 2010, many Indian SMEs, particularly start-ups, have been setting up headquarters in ASEAN, especially in Singapore (table 3.14). Although headquartered in ASEAN, these start-ups have their main business operations back in India. It is estimated that some 55 per cent of Indian

Table 3.14. Indian start-ups established in Singapore, 2016 (Selected cases)

Company	Year	Industry
Crayon	2012	Computer software
Zebpay	2014	Computer software
Wigzo	2015	Computer software
AxleRate	2011	Software
EywaMedia	2013	Marketing and advertising
Nearx	2012	IT and services
CloudCherry	2013	Computer software
Commeasure	2014	Internet – hospitality
KyePot	2015	Internet – financial services
Shereit	2015	IT and services
Lets Corp	2010	IT and services
Freshmonk	2014	Internet – retail
Tookitaki	2013	Marketing and advertising
Aureus Analytics	2013	IT and services
Rabblar	2014	Internet
UXArmy	2012	Marketing and advertising
ShopYourWorld.com	2010	E-commerce

Source: Company websites.

start-ups moved their headquarters to Singapore in 2014 and about 75 per cent in 2015 (Deal Street Asia 2015). The influx of Indian start-ups in Singapore is changing the landscape of Indian SMEs' involvement in the region, significantly boosting the numbers of Indian SMEs in ASEAN.³

Most of these start-ups are SMEs; they operate in e-commerce, technology and digital business activities. Some of them have grown quickly into big entities involving more than 250 employees, a key step for start-ups. Some earlier start-ups that have grown rapidly and have established a presence in ASEAN include Grofers (online grocery delivery), Flipkart (e-commerce), Knowlarity (cloud telephony), Capillary Technologies (customer engagement management service), AdNear (mobile advertising network), Mobikon (customer engagement and marketing platform for restaurant), U2opia (mobile technology), TonBo Imaging (designer and manufacturer of advanced imaging and sensor systems), and Appointy (IT software).

3.6. DRIVERS AND MOTIVATIONS OF INDIAN FDI IN ASEAN

Indian FDI in ASEAN is influenced by a set of “push” and “pull” factors. The push factors relate to both home-country policies supporting or encouraging FDI abroad and corporate strategy to internationalize (*AIR 2014*, *AIR 2015*). Pull factors are ASEAN locational advantages such as markets and access to natural resources, as well as the development of ASEAN–India economic and bilateral relationships.

Literature on the locational determinants of Indian OFDI suggests that Indian MNEs are attracted to host countries that import more from India and that possess relatively large markets, liberal inward FDI policies, bilateral investment treaties with India and the characteristics of offshore

financial centres (Pradhan 2011). In addition, Indian MNEs tend to invest in countries with large markets, similar market patterns, better regulatory environments and available natural resources (i.e. oil and minerals) (De Beule and Van den Bulcke 2012).

Different types of Indian FDI in ASEAN are motivated by different reasons (table 3.15). For instance, the Tata Power investment in coal mining in Indonesia was motivated by access to natural resources to support integration into the value chain for power generation activities in India and elsewhere. Other Indian companies such as Reliance and GMR Energy have invested in Indonesia's coal mining industry through cross-border M&As, which provide faster access to natural resources.

Many Indian IT and consultancy companies have set up operations in ASEAN Member States to gain access to local markets (including the presence of potential MNE customers), to tap specific skills set of the host countries (e.g. language skills) and to carry out part of their IT-BPO services offshoring strategy. Rapid growth in the region's or host country's markets and development of IT-BPO clusters play a role. The business-friendly environment, lower transaction costs and easier access to finance are also key factors. The rapid development in outsourcing of certain business service functions by other MNEs operating outside and

Table 3.15. Drivers and motivations of Indian FDI to ASEAN

Type of FDI	Drivers/motivations	Examples
Resource-seeking	<ul style="list-style-type: none"> • Access to natural resources • Oil and gas exploration and production • Mining of coals 	<ul style="list-style-type: none"> • Tata Power, Essar Global, Indian Cements, and Monnet Ispat and Energy investment in coal mining in Indonesia • ONGC Videsh in Viet Nam and Myanmar for extraction of crude petroleum and natural gas • Adani Welspun in Thailand for oil and gas exploration and production
Market-seeking	<ul style="list-style-type: none"> • Access to local and regional markets • Operate close to customers • Growing markets and potential 	<ul style="list-style-type: none"> • Indian pharmaceutical companies' investment in pharmaceutical businesses • Indian banks in ASEAN (e.g. Axis Bank, ICICI, Bank of Baroda) • Indian companies operation in health care businesses (e.g. Fortis Healthcare in various ASEAN Member States) • Indian steel companies' investment in ASEAN (e.g. Tata Steel, Essar Steel) • Tata Power's investment in power plants in Indonesia, Myanmar and Viet Nam • IT-BPO, other IT and consultancy services (HCL Technologies, Wipro, Tata Consultancy, Mphasis) • Indian oil services companies operating close to markets, such as Jindal Drilling & Industries in Malaysia and Singapore
Efficiency-seeking	<ul style="list-style-type: none"> • Keep costs low • Access to skilled labour 	<ul style="list-style-type: none"> • IT-BPO, other IT and consultancy services
Strategic asset and business synergies-seeking	<ul style="list-style-type: none"> • Access to strategic assets, facilities and infrastructure 	<ul style="list-style-type: none"> • Indian start-ups' headquarters or presence in Singapore to access finance and the host country's financial infrastructure facilities (e.g. ActiveAI, MyFitnessWallet, LetsVenture, KyePot, Wigzo) • Aanjanya Lifecare and Micro Labs' acquisition of pharmaceutical production facilities in the region

Source: ASEAN Investment Report 2017 research.

within ASEAN has also motivated Indian IT companies to set up operations. Some Indian IT companies, such as Wipro Ltd. and Teledata Informatics, are motivated by access to new markets, including new vertical areas of services.

Emerging investment opportunities in finance and the growing number of Indian companies in the region have encouraged Indian banks to establish a presence in ASEAN or expand their regional footprints to better serve clients. Oil and gas explorations in the region have encouraged investments from both private and state-owned companies from India. They include Indian oil and gas companies that recently won contracts in Myanmar. Indian companies such as Punj Lloyd and Quest Global have set up regional operations in Singapore to tap the growth potential in the region in infrastructure and in engineering, procurement and construction projects.

The reasons that Indian SMEs internationalize to ASEAN include to boost their image, to raise finance and to follow large counterparts in investing in ASEAN. Indian start-ups established a presence in ASEAN to gain access to a more developed ecosystem for fundraising, for tax planning reasons, for access to a more attractive business environment and for a better opportunity to get higher IPO valuations (Deal Street Asia 2015). Some of these start-ups chose to establish in ASEAN Member States because of the potential to strengthen their corporate image and gain access to the institutional support of the host countries. Other reasons motivating Indian start-ups to move their headquarters from India to Singapore include the advantage of being in an international business/financial hub, the ease of doing business, the tax benefits and the availability of funding through growing angel investor and venture capital networks (Business Today 2013).

Home-country policy support

During the 1960s–1980s, India was committed to fostering and enhancing economic cooperation among developing countries, with a special emphasis on strengthening trade and investment links. Its OFDI policy then was inspired by the spirit of South–South cooperation, and a majority of OFDI projects by Indian MNEs were concentrated in the developing region (Pradhan 2008a, 2008b; Ranganathan 1988). The policy focus was to promote Indian investments in the form of exports of machinery and equipment from India, largely through JV operation.

This policy has undergone significant transformation since the 1990s. The Indian government started recognizing the pivotal role of overseas investments in promoting global business by Indian entrepreneurs, apart from strengthening economic and business cooperation between India and other countries. Policy today aims at “transfer of technology and skill, sharing of results of R&D, access to wider global market, promotion of brand image, generation of employment and utilization of raw materials available in India and in the host country” (RBI 2013, pp. 3).

In addition to raising the permitted investment cap, the liberalized OFDI policy provided for an automatic approval route and relaxed ownership structure, and entry and establishment conditions. The existing policy allows outward-investing Indian firms to freely choose between WOSs and JVs. They may use equity contributions from the capitalization of dues from exports of India-made capital goods or invest in any bonafide business activity except real

estate and banking. Indian banks operating in India could set up overseas JVs and WOSs in banking business provided they obtain clearance under the Banking Regulation Act, 1949. An Automatic Route was provided where prior approval from the Reserve Bank of India (RBI) for undertaking overseas direct investments is not required and the Indian party simply effects the remittances towards such investments through the designated authorized dealer. An Indian party is permitted to make investment in overseas entities, not exceeding 400 per cent of the net worth as on the date of last audited balance sheet of the Indian party (RBI 2016). However, investment exceeding \$1 billion in any financial year would require prior approval of the Reserve Bank with effect from 3 July 2014.

This liberalized policy regime has contributed to the rise of Indian global OFDI flows. Indian investments in ASEAN have been positively influenced by the Indian policy of “Look East” since the early 1990s, now referred to as “Act East”. This policy aims to encourage accelerated engagement of India with ASEAN, as well as with other countries in Asia, on issues of trade, investment, connectivity and related areas. The frequent bilateral visits of leaders and policymakers in India and ASEAN have also strengthened economic cooperation, through the establishment of new agreements and memoranda of understanding. Home-country measures such as support provided by the Indian EXIM bank and the Export Credit Guarantee Corporation have also played a role in facilitating Indian OFDI (box 3.3).

Box 3.3. Support of State-owned and commercial Indian banks

Home-country institutional support and measures have facilitated Indian overseas investments. For instance, the EXIM Bank provides financing support to outward-investing Indian companies for setting up production facilities and acquiring companies abroad.

The Overseas Investment Guarantee of the Export Credit Guarantee Corporation of India Ltd. provides protection for Indian investments in other countries, preferably ones having bilateral investment protection agreements. The period of investment insurance is normally for 15 years, and it covers 90 per cent of any investment made by way of equity capital or untied loans for setting up or expanding overseas projects. The risks covered are war, civil war, revolutions, expropriation and restrictions on remittances.

In April 2003, Indian commercial banks were permitted to extend credit/non-credit facilities to Indian JVs and WOSs abroad up to the extent of 10 per cent of their unimpaired capital funds of the bank. The limit on credit/non-credit facilities to overseas JVs/WOSs got enhanced to 20 per cent of their unimpaired capital funds of the bank in November 2006 (RBI 2006). In June 2007, Indian commercial banks were permitted to extend term loans to Indian promoters for acquisition of equity in overseas JVs and WOSs, provided the term loans have been approved by the EXIM Bank for refinance (RBI 2007).

Sources: EXIM Bank, Export Credit Guarantee Corporation of India, and Reserve Bank of India.

Bilateral agreements and ASEAN–India free trade agreements

Policy initiatives have further improved policy integration between India and ASEAN. They include functional economic agreements,⁴ covering free trade agreements (FTAs), comprehensive economic cooperation agreements (CECAs) and framework agreements with ASEAN Member States individually or as a group, and bilateral investment treaties (BITs) between India and ASEAN Member States.⁵ In 2009, the ASEAN–India Free Trade Agreement (AIFTA) on trade in goods was signed; and came into effect on 1 January 2010. It mainly covers trade in goods. India also signed an FTA on services and investment with ASEAN in 2014. These different agreements help intensify economic, trade and investment cooperation between India and ASEAN.

3.7. CONCLUSION

Indian firms have been investing in ASEAN since at least as far back as the 1940s. Today, about 1,950 Indian companies, MNEs and SMEs, SOEs and private companies, operate in the region. ASEAN is a major destination for Indian investment abroad and is a significant investor in India, which underscores the strong bilateral investment relationship. Most of the OFDI is concentrated in Singapore, but there is growing attention by Indian companies in investing in other ASEAN Member States.

Indian OFDI in ASEAN is dominated by large Indian companies involved in different industries; many of these companies have operations or a presence in multiple ASEAN Member States. Depending on the types of FDI projects and corporate strategy, Indian OFDI to ASEAN is motivated by different factors. The reasons cover accessing natural resources, the host country and the regional market; raising finance; and building a brand image (start-ups), as well as strategic factors. Regional integration in ASEAN and stronger ASEAN–India cooperation, with the signing of the AIFTA, are emerging considerations. Home-country measures such as the “Look East” policy, liberalization of policy on Indian OFDI and institutional support (e.g. Exim Bank) play a role.

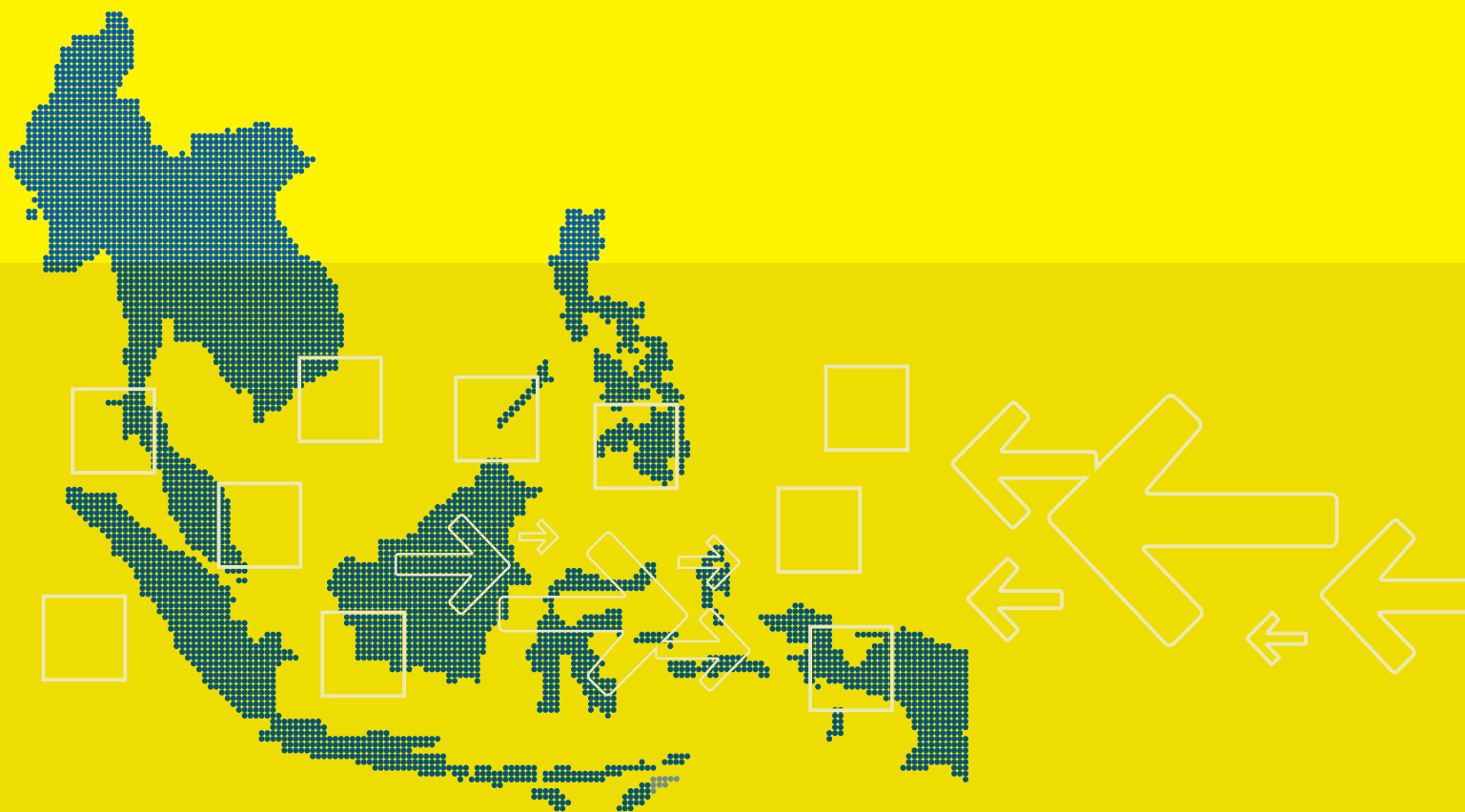
The prospects for Indian FDI to ASEAN are promising. ASEAN will continue to be a major destination for such FDI and the share of Indian FDI (as a source) in ASEAN can be expected to grow after the AIFTA is signed. In certain industries, Indian companies – including Indian SMEs and start-ups – will continue to become more visible across the region such as in pharmaceutical, fintech and other services.

NOTES

- ¹ Analysis in this section is based on Indian overseas investment activities approved or reported by the Reserve Bank of India.
- ² It is reported that the number of start-ups migrating from India to Singapore has gone up to about 150–200 a year (Ghosh 2015). About 75 per cent of Indian start-ups move their headquarters to Singapore in 2015 (Deal Street Asia 2015).
- ³ Many of the Indian start-ups in Singapore are not reflected in the statistics of the Reserve Bank of India.
- ⁴ Agreements in force include the FTA between India and Malaysia (since 2011), the CECA between India and Singapore (since 2005), and the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and India (since 2003). Agreements that have been signed for implementation are the Agreement on Investment under the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and India (signed in 2014) and the Framework Agreement for Establishing a Free Trade Area between India and Thailand (signed in 2003).
- ⁵ India has BITs with Malaysia (1995), Viet Nam (1997), the Philippines (2000), Thailand (2000), the Lao People's Democratic Republic (2000), Brunei Darussalam (2008), and Myanmar (2008).

PART THREE

Economic Zones in ASEAN: Development, Players and Contribution



CHAPTER 4

Economic Zone Development in ASEAN

4.1. INTRODUCTION

There are many types of economic zones in ASEAN. Their definitions vary by country, feature and purpose. A typology of them highlights their complexity as tools for facilitating industrial development and attracting FDI.

This report refers economic zones to mean all types of industrial and non-industrial zones, estates or parks that facilitate investments, especially FDI. In this report, the terms “industrial estates”, “industrial parks” and “industrial zones” are interchangeable.

The purpose and usefulness of economic zones in attracting FDI, testing policy and supporting the realization of socioeconomic development goals have been well documented (e.g. the Shannon Free Zone in Ireland (1959), the Kaohsiung Export Processing Zone in Taiwan Province of China (1966), Shenzhen in China (1980)). They may be used to achieve the following: (i) unlock agglomeration economies by concentrating economic infrastructure and public goods in one geographical area, (ii) pilot the application of experimental new policies and approaches, (iii) support a broader economic reform strategy, and (iv) serve as “pressure values” to alleviate large-scale unemployment (Farole et al. 2013). The experiences of ASEAN Member States also demonstrate the contributions that economic zones have made and their potential in supporting socioeconomic development, including as FDI tools and as catalysts for the development of industrial clusters. Economic zones have been actively developed across ASEAN. The proliferation in the number and types of economic zones in the region highlights the significance that countries in the region attach to them. It also reflects the planning of countries and their responses to demand by industries and companies for industrial infrastructure.

Although Member States in ASEAN have developed economic zones to attract investments, not all zones have been successful. For various reasons, some struggle to attract a critical mass of companies or tenants despite huge infrastructure investment expenditures. Some are successful, as is evident from growing numbers of tenants, expansion of zones adjacent to the original site, number of jobs generated, agglomeration of related firms and development of new industrial townships. In some cases, growing demand and economic growth have encouraged more zones to be developed at strategic locations in different parts of a country. Specialized economic zones have also been developed in ASEAN Member States aiming to attract specific industries, technology and knowledge-based activities aligned with the locational strengths of the zone or country.

There are differences between ASEAN Member States in how economic zones are developed. Some adopt a centralized approach to economic zone development (e.g. Brunei Darussalam, Singapore and Thailand), while others use decentralized systems (e.g. Malaysia, Viet Nam). In some Member States, the government (including public authorities, statutory boards or municipalities) is the main developer and owner (e.g. Brunei Darussalam and Malaysia). In some cases, the State developed economic zones in joint ventures (JVs) with the private sector (e.g. the Lao People's Republic, Myanmar, Viet Nam and Thailand). Dedicated institutions have been established in some ASEAN Member States to oversee, administer and regulate economic zone development (e.g. the Philippines and Thailand). In some Member States, the private sector is the main developer or owner of economic zones.

Notwithstanding their potential benefits, there are challenges in the development of economic zones. These challenges include social, environmental and economic implications, all of which need to be carefully addressed.

This chapter examines the types and features of economic zones in ASEAN. It discusses selected key issues, contextual aspects, the evolution and significance of economic zones in the region with respect to attracting investments. Case studies of some economic zones are also presented. The chapter also offers analyses of why some economic zones are more successful than others at attracting FDI and other types of business activities.

4.2. DEFINITION AND TYPOLOGY

In general, there are different types of economic zones (box 4.1). In ASEAN, they can be divided into two types. The first covers a demarcated special area where policies are different and usually more preferential than in other parts of the country. The second relates to general industrial zones where policies applied are the same as in other parts of the country except in special demarcated areas covered by the first type. However, in some Member States the second type could also include the authority granting incentives to qualified tenants operating in general industrial parks as well as in special demarcated export processing zones (EPZs) (e.g. Thailand and Viet Nam). The two types of economic zones facilitate FDI and offer tenants a wider choice of site location.

The different types of economic zones in the region differ in objectives, aspects and contexts (table 4.1), which include (i) application of rules or laws to demarcated versus other industrial areas, (ii) nature and characteristics of economic zones (simple traditional industrial estate, SEZ, horizontal or vertical structure), (iii) purposes, (iv) sizes (small versus industrial mega-estate), and (v) ownership.

Economic zones in ASEAN can be regarded as investments in industrial infrastructure to attract or facilitate further investments. In this report, economic zones refer to all the types of industrial infrastructure facilities in table 4.1 that facilitate FDI, whether they are privately or publicly owned. In some ASEAN Member States, the term “economic zones” refers to general industrial infrastructure facilities with similar purposes but different names – industrial parks, industrial estates or industrial zones. These terms are used interchangeably.

Box 4.1. Forms of economic zones

There are various types of economic zones, which range from simple industrial parks to large-scale economic zones including special economic zones (SEZs) (box table 4.1.1). They have different features and objectives.

Box table 4.1.1. Forms of economic zones

Type of zone	Colocation of firms in same sector	Colocation of related and supporting industries and institutions	Clearly demarcated spatial area	Typical size	Activities	Special customs regime	Special government-defined incentives
Industrial park	Maybe, but not necessarily	Not usually	Yes	<100 ha	Manufacturing, processing	Not usually (unless it is an EPZ or in an SEZ)	Not usually (unless it is an EPZ or in an SEZ)
Free zone or commercial free zone	Maybe, but not necessarily	Maybe, but not necessarily	Yes	<50 ha	Trade-related processing and services	..	..
Export processing zone	Maybe, but not necessarily	Not usually	Yes	<200 ha	Manufacturing, processing	Yes	Yes
Large-scale special economic zone	Maybe, but not necessarily	Maybe, but not necessarily	Yes	Varies from <50 ha to >100 km ²	Multi-use	Yes	Yes
Single factory zone or in-bond system	Maybe, but not necessarily	Maybe, but not necessarily	The factory is a clearly defined space; may be located in an industrial park or not	As little as 1 ha (1 factory)	Manufacturing, processing	Yes	Yes

Source: Farole et al. (2013).

Special economic zones are demarcated geographical areas within a country's national boundaries where in some cases the rules of business are different – generally more liberal – than those that prevail in the national territory. Most economic zones create a special regime that confers four main advantages to investors relative to what they would normally receive in the domestic environment:

- (i) *Infrastructure* (including serviced land, factory shells and utilities) that is easier to access and more reliable than is normally available domestically
- (ii) A *special customs regime* including efficient customs administration and (usually) access to imported inputs free of tariffs and duties
- (iii) An *improved regulatory and administrative regime*, including streamlined procedures for company set-up, licensing and operations
- (iv) An *attractive fiscal regime*, usually, such as reduction or elimination of corporate taxes, duties or other taxes and provision of other investment incentives

Economic zones are designed as instruments of trade, investment and ultimately spatial industrial policy. They are generally established with at least four specific policy goals (FIAS 2008). First and foremost, they are designed to facilitate trade and attract FDI – virtually all SEZ programmes from traditional EPZs to China's large-scale SEZs have as one of their main objectives to promote trade, usually exports, and most aim to do this primarily by attracting FDI. Beyond this common theme, the objectives of economic zone programmes depend very much on how the government views economic reform in the context of broader development and structural transformation of the country's overall economy.

Source: Farole et al. (2013).

Table 4.1 Types of economic zones in ASEAN

Selected economic zones	Description	Example countries
Free zones	A designated and secured area in which commercial and industrial activities are carried out and gazetted. Investment projects often benefit from incentives and are usually for export purposes. Customs checkpoints control the movement of goods at the entry and exit points of the zone.	Indonesia, Malaysia, Philippines, Singapore, Thailand
Free industrial zones (FIZs) or free trade zones (FTZs)	A type of free zone focused on industrial activities, where most manufacturing activities are carried out for export purposes.	Indonesia, Malaysia, Singapore
Free commercial zones (FCZs)	A type of free zone focused on commercial activities, which facilitates trading, relabeling, repacking and other value added activities. FCZs usually cover commercial, trading and entrepôt trade activities. Most are located near a port.	Malaysia
Export processing zones (EPZs)	A specialized industrial estate located outside the customs territory and predominantly oriented to export production. Enterprises located in EPZs are allowed to import capital equipment and raw materials free from duties, taxes and other import restrictions.	Indonesia, Philippines, Thailand, Viet Nam
Industrial zones or industrial estates	There are two types: general and specialized. The latter can have free zone status (e.g. industrial estates in EPZs or FTZs). They are also referred to interchangeably as industrial parks or industrial estates.	All ASEAN Member States
Special economic zones (SEZs)	An SEZ may consist of one or more industrial estates, EPZs, FTZs, tourism centres, economic zones and other industrial structures (e.g. a port) in a defined or demarcated area.	Indonesia, Cambodia, Lao People's Democratic Republic, Myanmar, Philippines, Thailand
Border special economic zones	SEZs located in contiguous areas bordering another ASEAN Member State, to facilitate investment, trade, services and production linkages.	Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam
Licensed manufacturing warehouse	These are also bonded warehouses for manufacturing, with customs control. These can be a manufacturing unit (factory) granted to an investor for manufacturing and warehousing of approved products in the same premises. It caters to export-oriented industries.	Malaysia
Technology park	Facilities or areas that support and promote technological development including through research and attracting technology based companies. It aims to facilitate innovation and knowledge-based economy. Such parks provide an environment and ecosystem (e.g. proximity to research institutes, universities) conducive for technological activities.	Most ASEAN Member States
Science park	Facilities or areas that support and promote science and research activities. Such parks provide an environment and ecosystem (e.g. proximity to research institutes, universities) conducive for innovation, knowledge-based work, and research and development.	Most ASEAN Member States
Regional economic corridors	Large economic areas involving a number of contiguous States or provinces. Their development draws on the sectoral and geographical strengths of the constituent areas to support economic clusters and benefit from economies of scale.	Malaysia

Source: ASEAN Investment Report 2017 research, based on the definitions used by ASEAN Member States and countries' presentations at the ASEAN–UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok.

Note: Terms are those used in ASEAN Member States.

In ASEAN, there are more than 1,600 registered economic zones consisting of various types (table 4.2). Some have evolved organically, and some take new forms or are part of a new generation of economic zones (more holistic or integrated structures encompassing the concept of urban-industrial townships or mega-zones).

Table 4.2. Economic zones in ASEAN, as of December 2016

Country	Type of economic zone											
	FIZ	FCZ	EPZ	IE	EZ	SEZ	BEZ	CEZ	TP	REC	ITC	Other
Brunei Darussalam	..	..	..	>25	..	..	..	..	..	..	..	..
Cambodia	..	.	..	<10	..	16	..	..	..	..	..	..
Indonesia	3 ^a	..	..	75	..	11	..	..	..	..	..	14 ^b
Lao People's Democratic Republic	..	..	..	..	..	12	..	..	..	..	.	..
Malaysia	22	18	..	>500	..	..	..	..	..	5	..	..
Myanmar	..	..	..	<20	..	3	..	..	..	..	..	..
Philippines ^c	..	..	..	74	21 ^d	19 ^e	..	..	49 ^f	..	200	2
Singapore	10	..	..	>75 ^g	..	..	..	..	..	..	..	..
Thailand	..	..	10	58	..	10	..	..	..	..	..	.
Viet Nam ^h	..	..	3	325	..	..	28	16	3	..	..	..

Source: ASEAN Investment Report 2017 research.

Notes: BEZ = border economic zone and border-gate economic zone; CEZ = coastal economic zone; EPZ = export processing zone; EZ = economic zone; FCZ = free commercial zone; FIZ = free industrial zone; IE = industrial estate or park; ITC = information technology centre; LMW = licensed manufacturing warehouse or bonded warehouse; REC = regional economic corridor; SEZ = special economic zone; TP = technology park.

^a FTZs in Bintan, Batam and Karimun in Riau Province.

^b 14 KAPETs, a type of integrated economic development zone introduced in 1998.

^c Refers to economic zones registered with the Philippine Economic Zone Authority only.

^d Refers to agro-industrial economic zones.

^e Refers to tourism SEZs.

^f IT parks.

^g An estimate that covers industrial parks and business hubs developed by JTC, the Housing Development Board and Ascendas-Singbridge, as well as a few privately owned business parks that house light manufacturing activities.

^h BEZs and CEZs are considered economic zones in Viet Nam.

4.3. FEATURES, CHARACTERISTICS AND KEY ISSUES OF ECONOMIC ZONES IN ASEAN

Economic zones have been at the core of export-oriented economic growth in ASEAN for the past few decades. The region hosts some of the oldest, largest and most successful zones. Singapore established the first industrial estate or economic zone in the late 1960s followed by Malaysia (1971), the Philippines (1972), Indonesia (1973) and Thailand (1978). In the more recent period (i.e. since the 1990s), the CLMV countries initiated their own SEZ programs, with varying degrees of success (ADB 2015).

Developers and owners of economic zones in ASEAN vary, depending on national policy, regulatory regime and institutional arrangements (chapter 5). In some ASEAN Member States, economic zone development falls under the responsibility of the State or provincial government or municipalities. In most Member States, the private sector is the dominant player

(e.g. Cambodia, Indonesia, Philippines). Private investment in economic zone development is strongly promoted in the region.

The development of economic zones in ASEAN differs by country because of the way in which such zones are regulated, which involves different institutional set-ups (table 4.3). In some cases, economic zone development is regulated or coordinated through a government institution (e.g. the Industrial Estate Authority of Thailand (IEAT) and the Philippine Economic Zone Authority (PEZA)). The roles of these institutions can also differ. The IEAT develops and owns industrial estates, whereas the PEZA does not invest in the development of any economic zones. Economic zone development in Indonesia is evolving, and a new institutional set-up is emerging – a central body governing SEZ development). In Singapore, statutory bodies such as JTC (formerly the Jurong Town Corporation) and the Housing Development Board are significant developers of economic zones (specifically industrial estates and business parks).

Economic zones in ASEAN are getting bigger, becoming more sophisticated and involving larger integrated structures (e.g. SEZs). They have moved from simple, traditional industrial estates with the provision of basic site facilities to new-generation economic zones (mega-SEZs exceeding 1,000 ha). In most ASEAN Member States, economic zones are evolving from free industrial zones and EPZs to SEZs, science and technology parks, other specialized

Table 4.3. Economic zones in ASEAN: regulatory framework, governance and institutions, 2016 (Selected countries)

Country	Selected laws and regulations	Key institutions
Brunei Darussalam	..	Brunei Economic Development Board and Brunei Industrial Development Authority
Cambodia	Sub-decree No. 148 on the Establishment and Management of the Special Economic Zone, 2005	Cambodian Special Economic Zone Board
Lao People's Democratic Republic	Decree No. 443 on Special and Specific Economic Zone, 2010	Ministry of Planning and Investment, responsible for SEZ supervision and management since April 2016
Myanmar	SEZ Law 2011 superseded by SEZ Law 2014	SEZ Central Authority
Philippines	Special Economic Zone Act, 1995	The PEZA oversees and regulates economic zone development, grants incentives and approves investment projects in PEZA-registered economic zones. It does not invest in development of economic zones.
Singapore	Jurong Town Corporation Act 1968	The JTC is a statutory body responsible for regulating, developing and operating industrial infrastructure. Other Government institutions such as the Housing Development Board and FTZ authorities also develop industrial or business parks or FTZs. FTZ authorities include PSA International, Jurong Port and Changi Airport Group.
Thailand	Industrial Estate Authority of Thailand Act 1979	The IEAT monitors, invests in and supervises development of economic zones or industrial estates.
Viet Nam	<ul style="list-style-type: none"> Decree No. 29/2008/ND-CP (14 March 2008), governing industrial parks, export processing zones and economic zone development Decree 164/2013/ND-CP (12 November 2013) 	Provincial governments, municipalities and government agencies invest and develop economic zones.

Sources: ASEAN Investment Report 2017 research, based on countries' presentations at the ASEAN-UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok, and on official websites.

industrial structures and more environmentally friendly zones (see section 4.4). In some cases, FTZs or EPZs are the major early forms because of industrialization policies that focus on the development of foreign trade and manufacturing export industries.

Industrial estates can be small or large, and they can range from simple provision of basic facilities to more complex site arrangements. Some industrial estates continue to expand horizontally to adjacent land while others are concentrated in a relatively small plot but in several multiple-storey buildings to maximize land use (as in Singapore and in information technology (IT) economic zones in the Philippines).

An SEZ can contain one or more industrial estates established to attract a mix of industries or for specific type of industry. An SEZ can also house industrial activities and a mix of business operations such as tourism and commercial activities. Some SEZs in the region are built as an integrated township with the concept of work-live-play. Some ASEAN Member States such as Cambodia, Indonesia, the Lao People's Democratic Republic, Myanmar and Thailand are developing more SEZs that contain a number of industrial zones or estates.

In general, economic zones have contributed to the growth and industrialization in ASEAN Member States. They have been the critical factor in driving GVC-linked trade in the region. Some FDI attracted by the region is also GVC-linked, which is facilitated by SEZs and other economic zones. These investments in turn have had a catalytic effect not only on trade and employment but also on industrial diversification.

Economic zones can serve as a useful policy tool for promoting intraregional trade and boosting the competitiveness of the regional manufacturing sector by enabling greater involvement in GVCs. But, there are challenges, which arise from a variation of definitions, taxonomy, institutional capacity and the lack of statistics on economic zones to support regional policy development. Economic zones can also be viewed as a tool to enter into GVCs; they do not generate spillover effects automatically (Aggarwal 2010, 2011). The concerted efforts of the government to promote linkages, skills, upgrading of local producers and building technological capabilities are important. The government interventions in domestic capacity building, network platforms development, skill development, technology and marketing development are critical in turning them into successful economic geographies.

Other contextual issues in relation to economic zone development in ASEAN include the relation between economic zones and subregional growth areas (e.g. the Indonesia–Malaysia–Thailand Growth Triangle and the Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area), regional production networks, sustainable development issues, the evolution of economic zones and cooperation between countries on border zone development, which can affect cross-border trade and investment.

A significant shift in SEZ development in the CLMV countries and Thailand is the growing attention to border SEZs. Many SEZs have been established in recent years and more are being planned. MNEs are taking advantage of such facilities to maximize the complementary locational advantages between contiguous areas involving two or more neighbouring countries. Their operations, involving locations with low labour cost and end products that are transported

to neighbouring countries are strengthening regional connectivity and facilitating the increasing trend of regional production networks. For instance, Toyota Boshoku Corporation is producing car seats in an SEZ in the Lao People's Democratic Republic, which are then transported to a Toyota plant in Thailand as intermediate products in the manufacturing of automotive by the latter. Similarly, Essilor (France) is producing eyeglasses in the Lao People's Democratic Republic which are then transported to its operation based in Thailand. Other companies are also involved in regional production networks, tapping the complementary locational advantages and linking SEZs between two countries, contributing to cross-border trade and production activities (chapter 5).

Some ASEAN Member States are encouraging the greening of economic zones. For instance, the IEAT (Thailand) has identified a number of criteria for qualification as an eco-industrial park, including allocating 10 per cent of total land as green areas and having zero complaints about illegal water use and waste disposal in the preceding two years.¹ New industrial estates and SEZs must adhere to new green rules, and existing industrial estates will move towards meeting these criteria by 2019.

The success of an economic zone is not automatic. Many have not been successful. They have struggled to attract investment and generate employment (box 4.2). Some of the major reasons include a lack of proper planning, a lack of efficient infrastructure inside the zones, and the facts that they are small – to benefit from possible agglomeration effects, are not strategically located or do not provide easy access to major ports, airports, national infrastructure networks or workers. The lack of an efficient site management company with a strong marketing network is also another factor (chapter 5). There are also other reasons, some of which are simply the opposite of factors that contribute to successful zones (explained below).

Box 4.2. Some economic zones struggle to attract investments

Various reasons explain unsuccessful zones. The reasons may vary between zones and countries. Table 4.2.1 presents a list of selected economic zones that have attracted fewer than 20 investors or have not contributed to generating significant numbers of jobs.

Table 4.2.1. Unsuccessful economic zones (Selected cases)

Country	Name of zones
Brunei Darussalam	Batu Api Industrial Site ; Anggerek Desa Technology Park ; Kuala Lurah Industrial Site
Cambodia	Hi-Park SEZ (Svay Rieng Province) ; Qi Lu SEZ (Svay Rieng Province) ; Sihanoukville Port SEZ ; Suvannaphum SEZ (Kandal Province)
Indonesia	Arun Lhokseumawe (Aceh Province) ; Tuban Industrial Park (Tuban) ; Padang Industrial Park (Padang) ; Taiwan International Industrial Estate (Batam)
Lao People's Democratic Republic	Champasak SEZ ; Saysetha Specific Economic Zone
Malaysia	Port Klang Free Zone (Port Klang) ; Tanjung Kling FTZ (Melaka) ; Pulau Jerejak Industrial Estate (Penang)
Thailand	Phichit Industrial Estate (Phichit Province) ; Kaeng Khoi Industrial Estate (Saraburi Province) ; Hi-Tech Kabin Industrial Estate (Prachinburi Province)

Source: Based on country cases (section 4.7).

Some zones in the region have attracted many investors and have also contributed to the development of industrial clusters (e.g. the Penang, Malaysia FIZs; the industrial estates in Karawang and Bekasi in Java, Indonesia; as well as some of Hemaraj's and IEAT's industrial estates in Thailand; and the various economic zones in Singapore). Certain primary conditions are necessary to attract FDI in economic zones. The determinants include the provision of an enabling investment environment: political and economic stability, strong macroeconomic fundamentals, government commitment through a supportive regulatory and policy framework, and prospects for economic growth and industrialization policy.

Factors that differentiate economic zones that are successful and those that are not include demand, strategic location, a critical mass of tenants, the influence of anchor companies, the provision of incentives, and proximity to market and supply chains (chapter 5). They require the preparation of a comprehensive industrial estate development plan, including consideration of sustainability aspects and the provision of good infrastructure facilities and good services. As economic zones become considerably larger and more complex, a public–private investor consortium is increasingly seen as offering an important vehicle for sharing risks, capital, roles and responsibilities to make projects successful. Public–private sector participation or JV arrangements are highly visible in economic zone development in most ASEAN Member States.

Major challenges in economic zone development include whether demand exists to justify more such zones, as well as financing aspects and sustainability issues. There are also risks to consider. They include concern about the footloose industries that some of these economic zones were established to attract, and possible “enclave” consequences that can limit spillover effects to the local economy. Countries need to develop or upgrade economic zones to be competitive or build next-generation zones to attract targeted industries, to support the stage of the country's economic development. The experiences of some economic zones suggest that achieving a critical mass of tenants remains a major challenge.

4.4. EVOLUTION OF ECONOMIC ZONES IN ASEAN

Economic zones in ASEAN are evolving and the experiences of ASEAN Member States differ (section 4.7). Much depends on country-specific factors (e.g. national objectives), stages of economic and industrial development, land-use considerations, external challenges and policy direction, including the role of different institutions. Economic zone development is also influenced by the historical and industrial development context, including the extent of private sector participation and the variety of zones.

Economic zones in the region have evolved from simple industrial estates to take different forms, complexities, sizes and development arrangements. Some encompass integrated industrial-commercial-residential townships involving significantly large land areas and a mix of industries (e.g. manufacturing, tourism, agribusiness and other services). Some are an interconnected group of buildings that house light industries, business parks and IT activities

in a vertical orientation to maximize land use, while others take up large plots of land (through horizontal expansion) and are supported by seaports and dry ports.

The roles of different players in the development of economic zones have also evolved. In some Member States, there is a greater emphasis on public–private partnerships in the joint development of economic zones. In some, the private sector has emerged as the lead developer or owner. In most countries in ASEAN, the role of the private sector, including foreign MNEs, in the development of economic zones has become more prominent (chapter 5).

Some Member States developed specific type of economic zones earlier in their industrialization (e.g. FTZs in Malaysia or EPZs in Indonesia and Thailand), whereas others (such as the CLMV countries) are relatively new to economic zone development. Some ASEAN Member States are developing a new generation of economic zones with strongly integrated elements and township features (e.g. Indonesia, Malaysia, Myanmar and Singapore). Some recent economic zones have been developed on the basis of the economic strengths of the location surrounding the zone (e.g. tourism-oriented SEZs in Indonesia and the Lao People’s Democratic Republic, and regional economic corridors in Malaysia).

In some ASEAN Member States, economic zone development has evolved to SEZs or industrial mega-infrastructure (e.g. economic corridors). Malaysia is developing regional economic corridors involving a few States. This evolution also reflects the stages of economic and industrial development. There are differences between Member States in this regard. For instance, Malaysia established its first FTZ in the early 1970s, whereas the CLMV countries’ experience with formal economic zones is more recent (the 2000s). Some of these Member States are now developing mega-SEZs such as in Myanmar. Indonesia is also developing a number of huge SEZs in different parts of the country drawing on the locational strengths in which the SEZs are being developed (section 4.7). Some ASEAN Member States are developing different types of economic zones because of their strengths in certain industries (e.g. the Philippines with IT zones).

CLMV countries

Economic zone development in the CLMV countries are also going through an evolution process from industrial parks to SEZs and border SEZs. These Member States are giving strong focus on SEZ development as tools to support social and economic development in the country. Their experience with economic zone development, especially SEZs, is relatively recent. There are variations and similarities in the SEZs model of development between the CLMV countries. The Lao People’s Democratic Republic has both special and specific economic zones. The number of SEZs in the CLMV Member States is small but growing. There are plans to develop more SEZs and industrial parks in these Member States, reflecting the ongoing effort of these countries to facilitate investments through the development of competitive economic zones.

As with the other ASEAN Member States, the private sector is a major player in the development of SEZs and industrial parks within the established regulatory framework. The involvement of foreign companies (MNEs) in this development is highly visible in these

Member States, reflecting the budgetary constraints, the limited local private sector capacity and the need to develop large-scale industrial infrastructure to attract investments. Some of the ASEAN companies involved are Jababeka (Indonesia), Pacifica Streams Development (Malaysia), Sembcorp (Singapore), Ascendas-Singbridge (Singapore), Amata (Thailand) and Hemaraj (Thailand). Chinese, Korean and Japanese companies are also involved. They include Shanghai Wanfeng Real Estate (China), Marubeni (Japan), Sumitomo (Japan) and Samsung (Republic of Korea).

Indonesia

Economic zones in Indonesia have evolved from the initial concept, introduced in 1998, of an “integrated economic development zone”. Called KAPETs, these are geographical areas with specific boundaries that offer the potential of a fast-growing region and local resources that can be leveraged to improve the economy of the region. There are 14 KAPETs, most in the eastern part of Indonesia. Industrial estates started to be developed in the 1970s, and free trade zones (FTZs) were introduced in Batam, Bintan and Karimum in Riau Province in 2007. Industrial estates were involved in different phases of development (table 4.4). By 2009, the concept of more integrated zones within SEZs had been introduced, with the first SEZ (Sei Mangkei in North Sumatra) starting operation in 2012.

Table 4.4. Three generations of industrial estate development

Aspect	First generation (1970–1989)	Second generation (1989–2010)	Third generation (present)
Product	Diverse, not focused	Not specific	Core competency-based
Infrastructure	Not integrated with the support of other facilities	Leads to the integration of facilities and infrastructure	Integrated with all the support facilities
Development context	Growth encouraged, built and managed by public sector	Private investors encouraged to build with supervision by the Government	Leads to development of new areas or cities and modern industrial estates focused on specific criteria
Historical context	First developments (e.g. Jakarta, Surabaya, Medan) in cooperation with local and provincial governments	Opened development to private companies by Presidential Decree 53/1989; legal and technical requirements for development and operation established	Began operation of first SEZ in 2012, based on the Law on SEZ of 2009

Source: Based on Brulez (2013).

Malaysia

In Malaysia, the earliest forms of economic zone were FTZs or FIZs. A majority of the FIZs were approved and developed in the 1970s–1980s. Many industrial estates have been developed since the early 1970s and more are still being built. Free commercial zones (FCZs) were established primarily in the 1990s–2000s. In the period 2006–2010, five regional economic corridors (RECs) were created and their development is ongoing. RECs offer a new form of integrated development involving more than one state and specialization of zones within the corridors, drawing on the locational strengths of contiguous states. RECs can consist of a number of industrial estates. In the late 1990s and 2000s, the Government also developed

other specialized industrial infrastructure such as cybercities, cybercentres and facilities for information and communication technology (ICT) and knowledge-based non-manufacturing activities. Examples include the Cyberjaya, KL Sentral, and science and technology parks.

The first economic zone was established in Bayan Lepas, Penang. Penang FIZs have evolved from targeting primarily electronics MNEs in the 1970s–1980s to attracting ICT companies today. The Penang Cybercity was developed to host companies focused on ICT industry, inclusive of multimedia, communication, global business/shared services, and research and development (R&D) activities.

Philippines

Economic zone development in the Philippines has also evolved with different types of zones – and, since 1995, 100 per cent private sector ownership. The evolution started with FTZs that promote foreign trade and subsequently moved to EPZs and later to economic zones or SEZs, with a stronger focus on attracting investments in a wide range of industries (section 4.7). IT zones, science parks and agro-industrial zones have also been established more recently.

Singapore

Since the development of the first industrial estate (i.e. Jurong Industrial Estate), industrial infrastructure in Singapore has continued to evolve to meet the demand of industries and companies (table 4.5). Singapore has developed specialized industrial estates and business parks based on certain government strategies (e.g. to optimize land use) and economic planning requirements (e.g. industrial clusters).

Table 4.5. Singapore: evolution of industrial infrastructure

Date	1960s	1970s	1980s	1990s	2000s	2010s
Driver	Employment generation strategy and consequent focus on labour-intensive activities	Development of petroleum refineries and petrochemical industry Continued emphasis on labour-intensive activities	Greater attention to science and technology skills and the knowledge economy	Influence of the rise of IT More emphasis on moving up the value chain	Focus on knowledge-based economy More focus on R&D and other innovation activities	Continued focus on high-knowledge activities and service industries
Type	First industrial estate developed (i.e. Jurong Industrial Estate) Ready-built standard factories, to facilitate quick set-up of operations by tenants Two types of industrial estates: (i) Large, well-planned ones in rural/suburban locations (e.g. Jurong Industrial Estate) (ii) Light industrial ones near high-density housing estates	Petroleum refineries and petrochemical companies start to locate in offshore islands Jurong Island built to support petroleum refineries and petrochemical tenants Continued industrial structure strategies of the 1960s	Efforts to upgrade industrial parks and improve infrastructure to meet demands of companies Introduction of science and business parks (e.g. Singapore Science Park, developed in 1980)	Focus on land space Innovative strategies for land preservation and land-use optimization JTC splits industrial estates into business and specialized industrial parks designed to help develop clusters (e.g. Changi Business Park, developed in 1997)	Focus on designing high-knowledge clusters through business parks and specialized industrial parks, with strong research facilities built in Development of the 200 ha One-north industrial structure, containing many smaller businesses and of specialized parks designed for strategic clustering (e.g. Fusionopolis, designed for ICT, media, physical sciences and engineering companies; Biopolis at One-north, designed for biomedical companies)	Continued focus on strategic clustering and further upgrading of industrial parks Focus on land intensification innovation (e.g. Jurong Rock Caverns in Jurong Island, a deep underground development to create more space within the industrial estate More use of multistorey buildings to house companies in the same value chain (e.g. medtech hub designed to create a medical technology ecosystem)

Source: JTC and Kaushik (2012).

Note: R&D = research and development.

Thailand

Economic zones in Thailand have evolved from a single industrial estate, developed in 1972, to EPZs, built in the late 1970s and 1980s. Today, industrial estates continue to be developed, but the Government is giving greater attention to development of specialized SEZs and border SEZs. Over the years, Thailand has also developed science and technology parks to attract knowledge-based, science, technology-oriented and R&D activities.

Viet Nam

In the initial period of economic zone development in Viet Nam, EPZs were established. The Tan Thuan EPZ established in 1991 in Ho Chi Minh city was the first. In 1994–1997, industrial zones or estates started to be built. During this period, some EPZs were transformed to industrial zones in response to demand from foreign investors and the need to diversify the industries being developed in economic zones, including targeting light industries with export potential.

The number of industrial zones rose rapidly from 1996 to 2003. During this period, two models – technology parks and border-gate economic zones – were initiated. Examples are the Mong Cai border-gate economic zone established in 1996 and the Hoa Lac high-tech park established in 1998. Since 2003, several models and mega zones have been experimented with (e.g. coastal economic zones to create economic development hubs and facilitate the development of heavy industries in coastal areas). Other models initiated in more recent times include IT zones and high-tech agricultural zones, which aim to support manufacturing activities, upgrade industrial development and facilitate linkages of stakeholders in the agriculture value chains. The Government announced at the end of 2016 the launch of three SEZs with new economic and administrative policies. It will experiment with these policies with a view to subsequently introducing a new model to other parts of the country. These SEZs will be located in Van Don (Quang Ninh Province), Van Phong (Khanha Hoa Province) and Phu Quoc Island (Kien Giang Province).

4.5. SIGNIFICANCE OF ECONOMIC ZONES IN ASEAN

Available evidence suggests that economic zones have contributed to ASEAN Member States' efforts to attract FDI, develop export industries, generate employment, uplift the standard of living of rural workers, increase opportunities for moving towards gender equality, and encourage infrastructure development within and around the zones. Economic zones have also played an important role in contributing to ASEAN Member States' GDP through industrial development and other business activities they support. Economic zones, alone or in combination, have acted as catalysts for the agglomeration of firms and the formation of industrial clusters in ASEAN Member States (chapter 5).

Border economic zones are playing an important role in cross-border supply chains and the interconnection of industrial activities. To the extent that economic zones are interconnected across countries through the operations of tenants and regional value chain activities, they help integrate the region through production, industrial and business connectivity (*AIR 2015*).

Efficient economic zones with good infrastructure support make investment easier. Given these benefits, they help attract FDI, improve the investment environment and generate government revenues as well as spill-over effects to the local economy, including linking the host country into global value chains. All of these occur through the MNEs that operate in economic zones.

Although the development of economic zones can generate positive impacts for an economy, they can also have negative consequences. Some concerns include displacement of inhabitants, land grabs, land price hikes, land ownership issues, pollution and other environmental considerations. These issues need to be addressed in the development of competitive and environmentally friendly zones. There is also a need for zones to address sustainability issues (box 4.3).

In assessing the contribution of economic zones, it is important to consider not just the direct impacts but also the indirect aspects, which include the infrastructure and rural development associated with the zones. They contribute to the country's infrastructure stock. Some economic zones are increasingly attracting FDI activities with cross-border supply chains or interfirm transactions, which help the host country link into regional value chains or production networks.

The relationship between economic zones and gender equality needs to be carefully assessed. In some cases, economic zones have contributed to generating employment opportunities for women (box 4.4).

Box 4.3. Enhancing the contribution of export processing zones to the Sustainable Development Goals

A study of 100 EPZs by UNCTAD in 2015 examined how and whether such zones contribute to the sustainable development goals. It suggests that EPZs can become “centres of excellence” for sustainable development, which would incentivize MNEs to invest in them. The study argues that EPZs can help shift business practices to be more sustainably friendly by providing support for good social and environmental practices for tenants.

Despite commercial incentives for sustainable business practices (e.g. operational efficiency gains, enhanced employee relations and improved reputation), very few EPZs promote social and environmental features. Although some EPZs provide health and safety facilities such as medical and firefighting services, more than half of the EPZs surveyed did not.

The study proposed a framework which addressed policies and infrastructural and administrative assistance for EPZs to facilitate sustainable business practices. They include a labour advisory to promote gender equality, fair pay and good working conditions; environmental facilities such as waste disposal, health and safety services; and assistance with local sourcing to promote economic linkages. The study also suggests that EPZs can offer more shared services to promote and become frontiers for sustainable development.

Source: UNCTAD (2015).

Box 4.4. SEZs and gender equality

In some cases, economic zones not only generate employment but provide significant opportunities for women and contribute to progress towards gender equality. The situation in some ASEAN Member States highlighted here underscores this point:

Cambodia

In many of the 16 SEZs, a majority of jobs are held by women. For instance, some 77 per cent of workers in the Phnom Penh SEZ and 56 per cent in Sanco Poi Pet SEZ are women.

Lao People's Democratic Republic

Women account for a majority of the workers in the 12 SEZs.

Myanmar

In Thilawa SEZ, nearly 80 per cent of workers are women.

Philippines

PEZA-registered economic zones had generated 1.4 million jobs as of December 2016. A majority of these jobs are done by women, particularly in industries such as electronics and call centres. Women accounted for more than 50 per cent of employment in the information technology and business process outsourcing industries (Errighi et al. 2016). About 75 per cent of the 45,500 workers in the First Philippines Industrial Park are women.

Thailand

Hemaraj and Amata are two major industrial estate developers and owners in Thailand (chapter 5). A majority of the workers in the industrial estates of these two developers are women. For instance, the two industrial estates of Amata in Thailand generated 300,000 jobs and more than 50 per cent are held by women.

Source: ASEAN Investment Report 2017 research.

Cambodia

Cambodia's 16 SEZs have generated more than 300 investment projects, involving \$2.4 billion in registered investment capital as of 2016. These projects employ over 90,000 people (mainly women). Most of these projects are related to FDI. Investment activities in SEZs contributed more than 13 per cent of the country's total exports in 2015–2016 (table 4.6). Economic zones (including industrial parks) have helped Cambodia develop its garment industry, which is dominated by FDI (section 4.7.2). The zones have contributed significantly to the development of the country's export industries.

However, the spill-over effect has been limited. SEZ activities have very little contact with the local economy as nearly all inputs are imported and nearly all products exported. As a result, the value of SEZs to the overall economy has not yet been maximized (Warr and Menon 2015).

The operations of some MNEs in Cambodia's SEZs are increasingly connecting the host country in regional production networks and value chains. For example, foreign MNEs are producing electronics and automotive parts and components in Cambodia's SEZs, which are supplied to factories in Thailand (chapter 5). NHK Spring (Japan) produces car seat covers in Sanco Poi Pet SEZ, which are transported to Toyota's plant in Eastern Seaboard in Thailand.

Table 4.6. Cambodia: export value of investment project in selected SEZs, 2015–2016 (Millions of dollars)

SEZ	2015	2016	2015–2016
Manhattan SEZ	315.2	409.8	725.0
Tai Seng Bavet SEZ	321.5	338.3	659.8
Shandong Sunshell SEZ	28.4	40.1	68.5
Dragon King SEZ	4.8	8.6	13.4
Hi-Park SEZ	..	0.5	0.5
Phnom Penh SEZ	245.5	213.6	459.1
Sihanoukville SEZ	91.7	209.2	300.9
Sihanoukville Port SEZ	8.4	4.6	13.0
Neang Kok Koh Kong SEZ	99.2	127.4	226.6
Poi Pet Oneang SEZ	1.9	2.3	4.2
Sanco Poi Pet SEZ	..	0.3	0.3
Total exports from SEZs	1,117	1,354	2,471
Total country exports	8,542	10,073	18,615

Source: Cambodian Special Economic Zone Board.

Lao People's Democratic Republic

The 12 SEZs in the country occupy a total land area of nearly 20,000 ha. There are 300 companies registered in these 12 SEZs. Most of them are foreign companies. These economic zones attracted over \$1.6 billion investments and generated some \$16.5 million revenues for the Government in 2016. The contribution of SEZs to the economy, however, remains low at about 1 per cent of the country's GDP in 2014. This number is expected to rise with more SEZs in full operation and as more factories start operations.

The developments of SEZs have also contributed directly to improvement of the infrastructure surrounding the zones. In some cases, SEZ development has led to the development of new towns in rural areas and improved connectivity between these remote areas and urban centres. MNEs have increased their manufacturing investment into economic zones on the borders with neighbouring countries. This development is boosting cross-border trade and facilitating production networks, as components or intermediate products manufactured in SEZs in the Lao People's Democratic Republic are transported to factories operating in other ASEAN Member States. Increasingly more foreign-owned factories located in SEZs in the country are producing and supplying inputs for their groups' operations in Thailand or other neighbouring countries. Some foreign MNEs based in Thailand have been relocating or expanding their more labour-intensive processes to the Lao People's Democratic Republic, facilitated by SEZs. Mascot (Denmark) transports raw materials from Viet Nam to its factory in VITA Park in the Lao People's Democratic Republic, and sends the finished materials back to Viet Nam. Nikon (Japan) manufactures lenses in the Savan-Seno SEZ, which are then transported to its factory based in Thailand. Other MNEs such as MMC Electronics (Japan) and Dai-Ichi Denshi (Japan) are also connecting the country to regional production networks.

A number of other MNEs with operations in the Savan-Seno SEZ are also linking the Lao People's Democratic Republic in the regional value chain. For instance, in 2014 Toyota Boshoku (Japan) started operations to produce vehicle seat covers at a satellite factory in Thailand. The factory sources raw materials from Thailand, transports them to its plant in

the Savan-Seno SEZ to produce car seat covers and then exports them back to Toyota Boshoku Thailand. Celestica (Canada) provides manufacturing solutions to customers in the communication market segment. The Lao operation is an extension of Celestica's Thailand facility, providing customers with an alternative manufacturing solution beyond Thailand.² Aeroworks (Netherlands) is pursuing a similar network operation strategy, linking the Savan-Seno SEZ with an EPZ in Thailand (box 4.5).

Box 4.5. Aeroworks: connecting economic zones in ASEAN

Aeroworks (Netherlands) manufactures innovative aerospace products and aircraft components. It has five production facilities worldwide, of which three are in ASEAN. Aeroworks (Asia) produces machined hardware products in an EPZ in Laem Chabang, Thailand. Aeroworks Composites (Asia) produces composite products. Aeroworks (Lao People's Democratic Republic) produces machined hardware products in a factory in the Savan-Seno SEZ (about 700 km north of Bangkok) that supports its Thai operations.

Aeroworks (Asia) chose the Laem Chabang site for its proximity to the country's main airport and seaport, about 100 km south of Bangkok. In addition, operating in an EPZ avoids customs considerations on importing and exporting goods.

Source: Aeroworks' website.

Philippines

The 365 PEZA-registered economic zones in operation have generated about 1.4 million jobs. As of December 2016, these zones hosted more than 3,250 firms, mostly foreign-owned companies. Some PhP 3.38 trillion of investments in these zones were approved between 1995 and 2016, and they generated \$655 billion in export revenues during this period (figures 4.1 and 4.2). The benefits of economic zones and English language skills in the labour force have contributed to transforming the country into a major global call centre.³ There are more than 930 call centres and 200 IT centres in various PEZA ecozones. Some PEZA-registered economic zones are successful at attracting foreign companies and contribute to developing supporting industries (box 4.6).

Box 4.6. Economics and employment contribution of the FPIP

The First Philippine Industrial Park (FPIP) has made significant contributions to the Philippines economy. It hosts more than 80 companies that employed over 45,500 people, provided PhP 7.3 billion in wages and salaries and generated \$2 billion export revenues in 2016. Some 75 per cent of all employees in the FPIP are women. About 60 tenants in the park are from Japan, with 4 each from the United States, the Republic of Korea and Taiwan Province of China, as well as 3 from the Philippines and 2 from China. The rest of the tenants are from other developed countries. The largest occupants of the FPIP, in terms of land area, are mostly from Japan. The park is fully occupied, and the owners are undertaking expansion.

/...

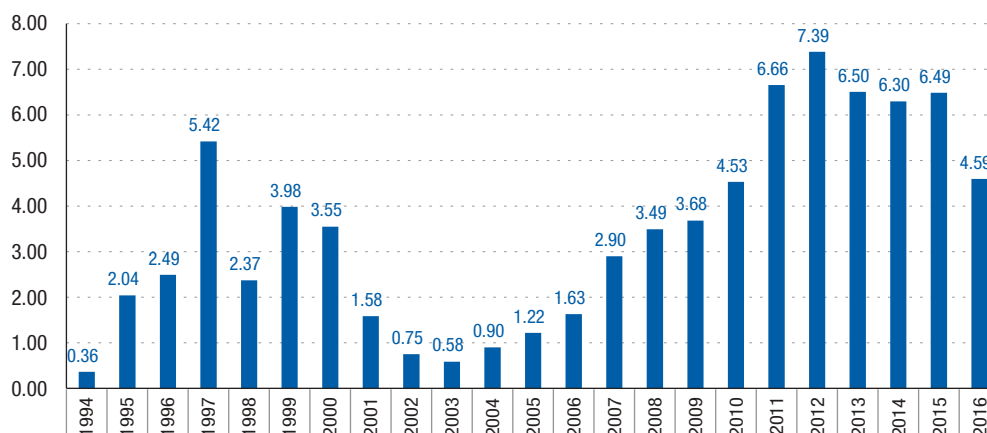
Box 4.6. Economics and employment contribution of the FPIP (Concluded)

The FPIP has played a steadily increasing role in the development of supporting industries within and outside the park, facilitating the movement of goods from the park to other ecozones and creating opportunities for business linkages involving local domestic suppliers with foreign MNEs based in the park (chapter 5).

The FPIP president, Edwin CoSeteng, said, “The multiplier effect, or the down-the-line economic impact of a foreign company locating in an ecozone are at various levels: employment, consumer spending, development of industries and its supporting network, as well as creating industrial linkages among different ecozones within and outside the country. For example, a single hectare of industrial land can generate 100 jobs, and the working conditions in companies inside the park are better than outside the ecozone.”

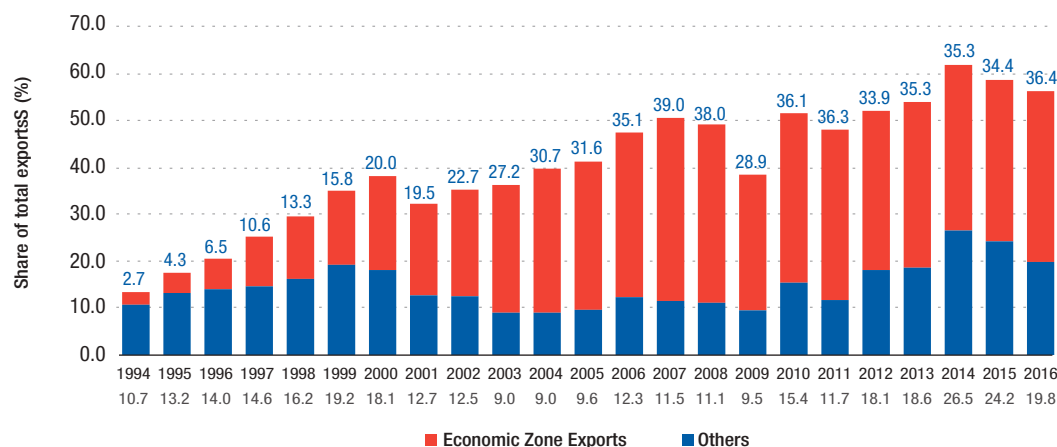
Source: FPIP.

Figure 4.1. Investments in PEZA-registered zones, 1994–2016 (Billions of dollars and per cent)



Source: PEZA.

Figure 4.2. Philippines: commodity exports, 1994–2016 (Billions of dollars and per cent)



Source: PEZA.

Malaysia

FIZs and registered industrial estates had brought to Malaysia RM 146 billion of foreign investment capital as of 2016. These two types of economic zones host more than 7,000 tenants and have created nearly 1 million jobs. About 88 per cent of investment capital in all FIZs and 59 per cent of investment in industrial estates are associated with foreign companies. These economic zones have also contributed to the development of export industries and industrial clusters. For instance, Penang FIZs have played a significant role not only in attracting FDI but also in generating exports and employment and building an electronics cluster (section 4.7). Penang FIZs have facilitated strong business linkages between global MNEs and local companies, many of which have grown from local contract manufacturers to be MNEs themselves (box 4.7).

Box 4.7. Penang FIZs: foreign MNEs and local linkages

In the 1970s, local supporting industries for the electronics companies in Penang were almost non-existent. Some MNEs in Penang have helped to develop local supporting industries. For example, Intel has contracted simple jobs of making tools, jigs and fixtures to local companies.

A few backyard machine shops such as Engtek, LKT and Wong Engineering grew by supporting Intel and other MNEs (box table 4.7.1). Some of them later internationalized and emerged as MNEs in their own right. In 1993, Motorola help spawned BCM Electronics as their surface mount technology subcontractor in a small factory in the Prai Industrial Park. Motorola sent some of its experienced staff to help build BCM. Between 1991 and 2000, a number of new start-ups, particularly by former employees of electronics MNEs, also started operation in Penang. The more successful ones were those in the automation and inspection systems, as their products help reduce the cost to MNEs of bringing in imported systems.

Box table 4.7.1. Spill-over effects: MNE–local supplier linkages

Name	Industry segment	Client or champion	Remarks
Eng Tek	Machining	Intel	Started as a backyard machine shop in 1974; internationalized with operations in the Philippines, Thailand and China
LKT	Machining	Intel	Started operation as backyard workshop in the early 1970s; acquired by Singapore Aerospace Manufacturing in 2008
Wong Engineering	Machining	Intel	Started as a backyard machine shop in 1982
Unico Technology	Original equipment manufacturing for customers in computer, server, communication industries	Started with Intel	Incorporated in 1989
BCM Electronics	PCBA and test development	Started with Motorola	Incorporated in 1993
Pentamaster	Semiconductor automation equipment	Started with Intel	Started in 1997
Vitrox	Automated machine, vision inspection system	Customers from semiconductor companies	Former employee of Agilent; started in 2000
AT Engineering	Design and manufacture of industrial automation systems and machinery		Former employee of Intel; started in 1991
Globetronics	Semiconductor EMS; expanded to provide computer hardware and software, system solutions and consultation for medical	Started with Intel	Started in 1991
Inari Ametron	Semiconductor wafer sort, assembly, RF testing, opto-electronics and fibre-optics manufacturing	Started with Agilent (HP)	Incorporated first company (Inari Technology) in 2006 and holding company (Inari Ametron) in 2010; subsidiaries in the Philippines and China
Greatech	Contract equipment manufacturing		Founded in 1993

Sources: Based on company websites, www.engtek.com, www.wec.com.my, www.bcmcorp.info, www.pentamaster.com.my, <https://www.mysbusiness.com/company/Unico-Technology-Sdn-Bhd>, www.vitrox.com, www.sam-malaysia.com/wp-content/uploads/2015/02/LKT-AnnualReport2010.pdf, www.globetronics.com.my, <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=25181451>, <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=209127634>, www.inariberhad.com, www.thestar.com.my.

Source: Ong (2017).

Penang FIZs attracted 66 per cent of all investors, 60 per cent of all jobs and 56 per cent of all foreign investments associated with FIZs in the country (table 4.7). More than 88 per cent of investments in Penang FIZs are related to FDI.

The electronics cluster, dominated by foreign companies, has contributed significantly to employment in Penang's manufacturing sector. In addition, the influx of foreign investments in the electronics industry in the early 1970s created significant employment, which helped addressed socioeconomic challenges in Penang at that time (table 4.8).

Table 4.7. Penang FIZs: Significance as of 2016 (Millions of Malaysian ringgit)

FIZ	Number of tenants	Employment	Domestic investment (RM)	Foreign investment (RM)	Total capital investment (RM)
Prai FIZ	180	30,513	1,363.5	3,864.0	5,227.5
Prai Wharf FIZ	3	420	..	68.0	68.0
Bayan Lepas I FIZ	130	32,529	523.7	8,733.1	9,256.8
Bayan Lepas III FIZ	93	22,298	542.1	4,364.8	4,906.9
Bayan Lepas II FIZ	19	3,532	15.6	2,316.5	2,332.1
Bayan Lepas IV FIZ	167	29,109	1,107.6	6,944.8	8,052.4
Total in Penang FIZs	592	118,401	3,552.5	26,291.2	29,843.7
Total in all FIZs	900	197,007	6,618.4	47,115.7	53,734.0

Source: Malaysian Investment Development Authority.

Table 4.8. Penang: unemployment rate, selected years (Per cent)

	1970	1980	1990	2000	2014
Unemployment rate	9.3	5.5	4.9	2.0	1.5

Sources: National Higher Education Research Institute (2010), IMHE for 2000 data and Department of Statistics for 2014 data.

Myanmar

In Myanmar, industrial parks and the Thilawa SEZ are attracting and facilitating rising FDI inflows. Although the Thilawa SEZ only started commercial operation in 2015, it has already contributed towards employment creation, industrialization and exports. Currently, only one sixth of the zone is developed. It is receiving a growing number of investments in different industries, including labour-intensive garment activities, footwear, toys and food processing industries as well as other specialized industries (e.g. automobile, auto parts, electrical parts, pharmaceutical, prefabricated steel structures).

As of May 2017, the Thilawa SEZ attracted 81 companies, primarily foreign owned, which generated more than 15,000 jobs, 79 per cent of them occupied by women (table 4.9). More than \$1.1 billion in investment has been registered. About 80 per cent of the tenants are 100 per cent foreign-owned entities, followed by JVs between foreign and local companies (15 per cent) and local companies (5 per cent). A majority of the foreign investors in the zone are Japanese companies. Many permitted factories are still under construction. Of the 81 permitted enterprises, 30 are in operation and 11 have started exporting. With further development of the Thilawa SEZ, more employment and exports can be expected as more factories start to operate.

Aside from the direct effects, the development of the three SEZs (including the Thilawa SEZ) involved significant investments in infrastructure development such as in power generation, liquefied natural gas (LNG) terminals, ports and roads in the vicinity of the SEZs. Such SEZ-led infrastructure development has the potential not only for boosting the socioeconomic development of the entire area around the SEZs but also for the country as a whole. The development of these SEZs contributes to improving the country's overall investment environment and provides investment sites for investors.

Table 4.9. Myanmar: SEZs, 2017 (Millions of dollars)

Name	Location	Year established	Size (ha)	Ownership	No. of tenants	Total FDI ^a	Employment	Gender
Thilawa ^b	Yangon	2012	2,400	PPP	81	1,058	15,256	79% women
Dawei	Taninthayi	2012	19,650	JV		Not yet in operation		
Kyauk Phyu	Rakhine	2013	1,736	JV		Not yet in operation		

Source: Thilawa SEZ Management Committee.

Notes: JV = joint venture, N/O = not yet in commercial operation, PPP = public-private partnership. ^aTotal permitted investment as of 31 March 2017.

^bStarted commercial operation in September 2015.

Thailand

EPZs in Thailand have contributed to the development of export industries and helped the country developed strong industrial clusters (e.g. electronics and automotive). Two Amata industrial parks alone host over 1,000 companies, with a majority of them operating in the automotive cluster (chapter 5). It is estimated that the operations of Amata and its customers together have contributed some \$25 billion to the Thai economy.⁴ Amata's industrial parks have attracted many major MNEs (e.g. Toyota Motor (Japan), Cardinal Health (United States), BMW (Germany), Nestle (Switzerland), BASF (Germany), Hitachi (Japan), PepsiCo (United States), Robert Bosch (Germany), Posco (Republic of Korea), Continental (Germany) and Denso (Japan) (chapter 5). These MNEs in turn involved the country in global value chains, which they control.

Hemaraj (Thailand) also plays an active role in facilitating FDI into Thailand and in particular in facilitating industrial clusters (e.g. electronics and automotive) development through the various economic zones that it owns and operates in the country (section 5.5.1.4). Through its nine established industrial estates, Hemaraj supports nearly 700 tenants with a combined investment of \$29 billion (table 4.10). These companies have created over 120,000 jobs and in 2013 contributed about 1.5 per cent to Thailand's GDP. The majority of these companies are from Japan, Thailand, Europe and the United States.

Table 4.10. Thailand: contribution of Hemaraj's operations to the economy, 2017 (Concluded)

Industrial estate	Size (ha)	Location (province)	No. of industrial estate customers	Customer investment (\$ billions)	Key industries
Hemaraj Eastern Seaboard Industrial Estate 2	584	Chonburi	8	> \$1.0	Automotive, light chemical, electronics
Hemaraj Eastern Seaboard Industrial Estate 3	299	Rayong	1	> \$0.3	Automotive
Hemaraj Chonburi Industrial Estate	625	Chonburi	103	> \$2.5	Automotive, consumer, steel, electronics, power
Hemaraj Chonburi Industrial Estate 2	101	Chonburi	8	> \$0.3	Automotive, consumer, electronics, power
Hemaraj Saraburi Industrial Land	579	Saraburi	87	> \$2.5	Consumer, electronics, building material, power
Hemaraj Eastern Industrial Estate	602	Rayong	42	> \$5.8	Petrochemical, steel, power
Hemaraj Rayong Industrial Land	550	Rayong	37	> \$2.0	Consumer, light chemical, building material, plastic, rubber
Hemaraj Logistics Parks and RBF Hi-Tech Kabin	..	Rayong, Chonburi, Kabinburi	10	> \$0.1	..
Total	6,195	..	698	> \$29.0	..

Source: Hemaraj.

Viet Nam

The different types of economic zones in Viet Nam have facilitated greater FDI flows over the years. Their contributions include employment generation and the development of both exports and industrial clusters. In all, 325 industrial zones have attracted some 40–50 per cent of total FDI inflows in the country and facilitated about \$1.8 billion in annual investment flows (FDI and domestic investments) in 2011–2015. As of year-end 2016, these industrial zones had hosted \$110 billion in cumulative FDI flows, generated \$100 billion in export revenues and created some 2.9 million jobs (table 4.11). In addition, the 16 coastal economic zones further facilitated \$42 billion in cumulative FDI flows, generated \$5 billion in export revenues and created 130,000 jobs. The 26 border-gate economic zones had attracted \$700 million in cumulative FDI flows as of year-end 2016. Some economic zones have been successful in attracting investments. For instance, the first EPZ, established at Tan Thuan in Ho Chi Minh City in 1991, attracted 175 tenants, created more than 60,000 jobs and generated annual export revenue of \$2.8 billion.⁵

Economic zones have helped Viet Nam developed supporting industries and industrial clusters in garments, shoes and electronics. For instance, Samsung and LG have a significant presence in Viet Nam. The former is producing more than half of its world's supply of handphone sets from Vietnamese industrial parks⁶, where it established a number of factories and encouraged many of its suppliers to operate nearby. Honda's (Viet Nam) motorbike manufacturing plant in Vinh Phuc Province is served by more than 32 vendors inside and outside the economic zone in which it operates. These vendors supply components or spare parts such as metal spare parts, contributing to developing the local supporting industry.

The seven Vietnam–Singapore Industrial Parks (VSIPs), developed by Sembcorp (Singapore) and a local partner, facilitated \$9 billion in investments from some 650 MNEs, which generated

over 175,000 jobs in Viet Nam (table 4.12). Some of the major MNE that operate in the VSIPs include Foster (Japan), Nokia (Sweden), Unigen (United States), Siemens (Germany), Midea (China), Thermtrol (United States), Phonak (Switzerland), ESTec Corporation (Republic of Korea), Kimberly Clark (United States), Procter and Gamble (United States), Oishi (Philippines), Yakult (Japan), Nissin Foods (Japan), Kyocera (Japan), Fuji Xerox (Japan), Universal Robina Corporation (Philippines) and Phil Inter Pharma (Republic of Korea). Through the VSIPs, Sembcorp is also contributing to the development of industrial clusters (e.g. electronics) and generating benefits in terms of the agglomeration of firms both in the VSIPs and in connection with other industrial parks in the country (section 5.5.1.3).

Table 4.11. Viet Nam: economic contributions of economic zones, year-end 2016 (Selected indicators)

Economic zones	FDI (\$)	Domestic investment (VND)	Turnover of enterprises (\$)	Export value (\$)	Employment
Industrial zones	110 billion	705 trillion	146 billion	100 billion	2.9 million
Coastal economic zones	42 billion	805 trillion	8 billion	5 billion	130,000
Border-gate economic zones	700 million	50 trillion	..	..	..

Source: MPI.

Table 4.12. Viet Nam: contribution of the VSIPs

Park	Location	Total investment capital	No. of tenants	Key industries	Direct employment
VSIP	Thuan An District, Binh Duong Province (Park I)	\$2.6 billion (Park I)	239 (Park I)	Electronics and electrical, precision engineering and pharmaceutical, consumer goods (food, apparel)	130,000
Binh Duong	New Binh Duong Township (Park II)	\$1.5 billion (Park 2)	290 (Park II)		
VSIP Bac Ninh	Bac Ninh Province	\$904 million	79	Automobile components, electronics, electrical and precision engineering industries	21,500
VSIP Hai Phong	Hai Phong City	..	36	Logistics and warehousing	5,000
VSIP Quang Ngai	Quang Ngai Province	..	14	Food and beverage, fast-moving consumer goods and light assembly industries	..
VSIP Hai Duong	Hai Duong Province	..	3	Supports industries of higher value added manufacturing companies between Bac Ninh and Hai Phong, as Hai Duong sits between them	..
VSIP Nghe An	Nghe An Province	\$76.4 million	5	Labour-intensive manufacturing industries (garment, agribusiness and fast-moving consumer goods)	..

Source: Sembcorp.

4.6. ECONOMIC ZONES AS INVESTMENT FACILITATION TOOLS IN ASEAN

ASEAN Member States have had encouraging experiences in attracting investment, which was facilitated by economic zones. However, not all economic zones are successful. Economic zones can and do help attract FDI for various reasons. They include the ability to help foreign investors set up operations quickly, to lower their transaction costs of investing and operating

in the host country, to ensure factories are more secure, to encourage the agglomeration of firms and to generate cluster benefits.

Economic zones offer investors (tenants) the choice of convenient sites where facilities and infrastructure are readily available. Operating in these zones also helps address complex aspects of land issue regarding the right to use land as a foreign investor. To the extent that economic zones are able to help reduce transaction costs, they improve their effectiveness in attracting investments, and in improving the competitiveness and attractiveness of the country.

Why do investors choose to operate in economic zones? Some of the reasons are explained by *how* and *why* they decide on a specific location site in a host country (chapter 5). Other reasons centre on issues of efficiency, security, transaction cost, supply chain proximity, quick start-up and hassle reduction. The choice to operate in an economic zone can be influenced by other factors such as ready-built factories or customized facilities in a secure area where complex land issues and the risks associated with development are absorbed by the industrial estate developer. Firms may prefer to operate in an industrial estate where efficient in-site infrastructure facilities are provided (clean water, waste water treatment, electricity, investment service centre) and there are agglomerations of related firms where synergistic benefits could be enjoyed.

Economic zones add value to a country's economic infrastructure stock and facilities. Although they are useful tools for facilitating FDI, a key issue remains how to make them more competitive and effective, including in addressing economic objectives and environmental challenges. Key determinants of location choice for economic zones rest on the provision of good infrastructure (both inside the zone and in connection to major national infrastructure networks), access to a low-cost labour force, and proximity to clusters, supply chains (including customers), security, an effective zone management company that can support tenants' requests or act as a one-stop service centre, and the provision of competitive rates for rental, utilities and other services.

Some economic zones in ASEAN have acted as catalysts for the development of industrial clusters (chapter 5). Examples include automotive clusters in Indonesia and Thailand, and electronics clusters in Malaysia, the Philippines, Singapore and Viet Nam. Although economic zone development in the CLMV countries is relatively recent, these zones (SEZs) are beginning to attract a wider range of foreign firms operating in different industries.

The role of the private sector, including foreign companies as investors and as management companies of economic zones, needs to be better appreciated. Not only do they invest in the development of zones, but in some cases they also have helped bring in tenants or investors through their networks and customers from their home countries with which they have close relationships.

The cost of developing economic zones is huge. Given public budgetary constraints, the private sector has been actively encouraged to invest, own and operate economic zones. In a majority of ASEAN Member States they have played an important role as investors and operators of economic zones. If done correctly, economic zone investors or developers can also help facilitate cluster development and supporting regional production networks.

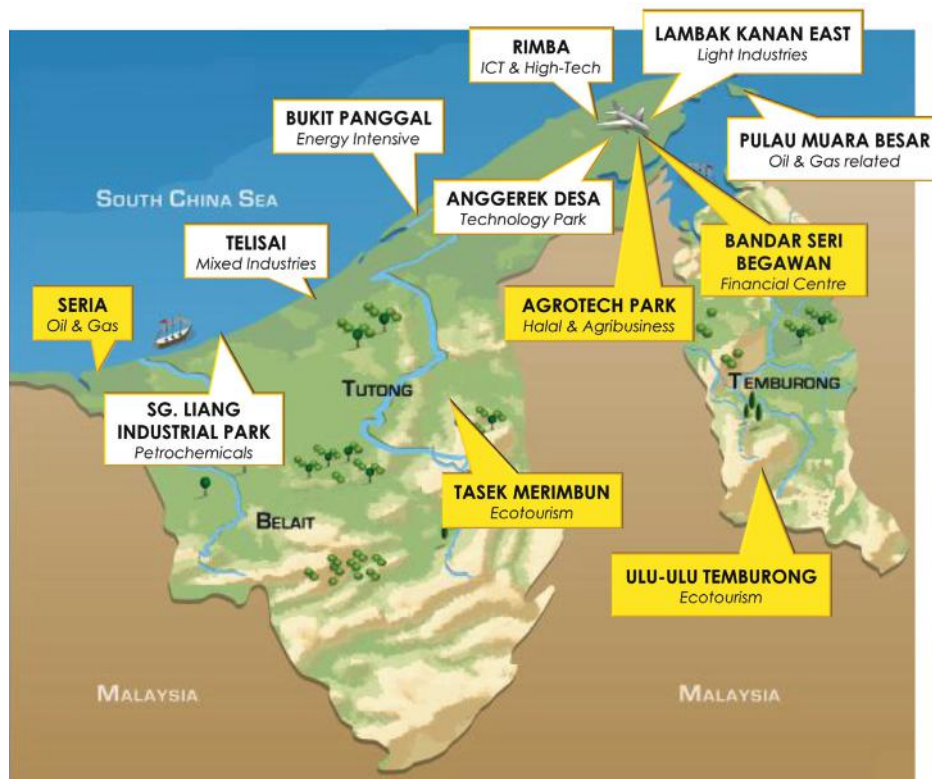
4.7. COUNTRY CASES

This section examines the development of economic zones in specific ASEAN Member States. It examines the features, characteristics, purposes and experiences of ASEAN Member States in developing economic zones and attracting investors (tenants).

4.7.1. Brunei Darussalam: industrial estates development

Of the more than 25 industrial estates in Brunei Darussalam, the majority are located along the coastline. Most were developed and are controlled by the Government through institutions such as the Brunei Economic Development Board (BEDB) and Brunei Industrial Development Authority (BINA). The industrial estates have been developed to support economic development, attract investments into specific industries and develop clusters (e.g. in oil and gas). Some were also designed specifically to attract small and medium-size enterprises (SMEs) (e.g. Lambak Kanan Barat, Sg Bera, Salar and Pekan Belait industrial estates) and specialized industries (figure 4.3).⁷ Not all industrial estates are successful in attracting tenants. Many still have a high degree of availability for tenancy as of year-end 2016.

Figure 4.3. Brunei Darussalam: Location of selected specialized industrial estates



The BEDB and the BINA are the main institutions overseeing, supervising and developing most of the country's industrial estates. However, some local Government authorities are also involved in the development of industrial estates (e.g. the Sungai Liang Authority, which manages the Sungai Liang Industrial Park). The BEDB has had the responsibility for developing and managing large-scale industrial estates (e.g. industrial parks for downstream petrochemicals plants) since 2001. The BINA, under the Ministry of Industry and Primary Resources, is responsible for manufacturing development in the country and for the development of smaller industrial estates which target SMEs, including domestic businesses.⁸

Aside from providing favourable investment conditions, Brunei Darussalam also offers investment incentives for projects that meet certain criteria regardless of whether they are located in industrial estates. These incentives include a corporate tax holiday of up to 20 years. A key feature of a significant number of the industrial estates in the country is that they are located near the airport, the port or the capital city.

Industrial estates in Brunei Darussalam have evolved in response to the country's efforts to diversify the economy away from oil and gas industry. For instance, the BEDB established its two first industrial estates (Sungai Liang Industrial Park, designed for petrochemical industries, and one in Palau Muara Besar Island, a deepwater port facility) in 2003.⁹ Since then, the number has increased to over 25. More recently, industrial estates targeted at attracting specific industries have been developed. These facilities include halal activities (e.g. pharmaceutical, agriculture, food processing and cosmetics), technology and creative (including biotechnology), business services (e.g. transportation and logistics, and financial services) and downstream oil and gas and petrochemical industries (table 4.13). These industrial estates have moved away from concentrating solely on the oil and gas industries to giving attention to knowledge-intensive industries.

Table 4.13. Brunei Darussalam: industrial estates, year-end 2016

Industrial estate	Targeted industries	Size (ha)	Availability (%)
Agrotech Park	Halal and agribusiness	500	..
Anggerek Desa Technology Park	High-tech industries	16	86
Bandar Seri Begawan	Financial and service sector	..	..
Batu Apoi Industrial Site	Manufacturing, green industry and services	13	96
Beribi Industrial Site	Light industry and service	45	2
Bio-Innovation Corridor	Food and pharmaceutical and high-tech industries	194	98
Bukit Panggal Industrial Park	Energy-intensive manufacturing	50	100
Digital Junction	Data centre and disaster recovery centre, and ICT and high-tech industries	15	76
Kuala Lurah Industrial Site	Medium and heavy industrial, and logistics	22	84
Lambak Kanan – East	Food and pharmaceutical R&D, and production and light manufacturing industries	70	..
Lambak Kanan – West	Light industry, food processing and services	44	36
Meragang Aquaculture Site	Aquaculture	47	56
Pekan Belait North Industrial Site	Petrochemicals, light manufacturing and services	27	40
Pulau Muara Besar	Petrochemicals and supporting activities (integrated marine supply base, ship building)	955	26
Rimba Digital Junction	High-tech industries and data centre services

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Table 4.13. Brunei Darussalam: industrial estates, year-end 2016 (Concluded)

Industrial estate	Targeted industries	Size (ha)	Availability (%)
Salambigar Industrial Park	Light manufacturing, food, pharmaceuticals and cosmetics	121	58
Salar Industrial Site	Furniture, warehouse and cold storage, manufacturing and services industries	40	6
Serembangun B Industrial Site	Light manufacturing and services	19	42
Serasa Industrial Site	Light manufacturing and export-oriented industry	66	10
Sungai Bera Industrial Site	Light manufacturing and services	72	55
Sungai Duhon West Industrial Site - Belait District	Oil and gas support facilities	45	60
Sungai Liang Industrial Park	Oil and gas downstream, and petrochemicals	271	..
Telisai Industrial Site	Light and medium industries, and food-related industries	2,808	100
Seria Industrial Area, Belait District	Oil and gas industry	..	..

Source: Brunei Economic Development Board, Darussalam Enterprise.

The Brunei Bio-innovation Corridor, which is managed by the Ministry of Industry and Primary Resources, is designed to promote the development of halal industries, particularly encouraging knowledge-intensive activities. It offers tenants access to high-level infrastructure, including an R&D facility where the Halal Industry Innovation Centre is located.¹⁰

Specialized industrial estate and cluster formation

The existence of a major anchor company and a critical mass of interrelated firms operating in close proximity provide an important environment for cluster development. This is the case of the operation of Brunei Shell Petroleum (Brunei Darussalam– Netherlands) in the oil and gas industry in the country, which has attracted many other MNEs to operate as contractors close to it (box 4.8). Brunei Shell Petroleum has been involved in the exploration and production of

Box 4.8. Brunei Shell Petroleum

Brunei Shell Petroleum is a JV between Royal Dutch Shell (Netherlands) and the Brunei Darussalam Government. It operates as an anchor company in the Seria industrial area, running a vertically integrated operation and exporting oil and gas to various countries (e.g. Australia, Japan and the Republic of Korea). The JV company contributes about 90 per cent of Brunei Darussalam's oil revenues, which accounts for over half of the country's GDP.

The company has over 8,000 contract staff, most of them working for local and foreign companies based in Brunei Darussalam. The local companies include Joffren Omar Company (material supplier and service contractor), Mahkota Maju (contractor and supplier), SC Oilfields & Logistics (logistical services) and local engineering companies. Many foreign MNEs also serve Brunei Shell Petroleum, and some of them also operate at Seria. These MNEs include Halliburton (United States), Aker Solutions (Norway), Ethos Energy (United Kingdom), Keppel Singmarine Pte. Ltd. (Singapore), Trelleborg AB (Sweden), Technip (France), KOTUG (Netherlands) and Maersk Drilling (Denmark).

The Lambak Kanan East industrial estate is also home to companies that are part of the value chain of Brunei Shell Petroleum, even though these companies are not located in Seria industrial estate. For instance, Nippon Steel (Japan), Sumitomo Metal Corporation (Japan) and Vallourec Tubes S.A.S. (France) have formed a JV to provide threading of oil-country tubular goods specifically for Brunei Shell Petroleum through a contractual arrangement.

Sources: Brunei Shell Petroleum and websites of respective companies.

crude oil and natural gas in the country since 1929. It has been operating at the Seria industrial area since before that industrial facility was developed. This industrial estate was developed to draw on the benefit of an existing ecosystem.

Aside from Brunei Shell Petroleum, other major companies are operating in the oil and gas value chain (table 4.14) at the Sungai Liang Industrial Park. Their operations contributed to the development of the oil and gas industrial cluster. These companies include Brunei Methanol (Brunei Darussalam–Japan) and Brunei LNG Sendirian Bhd (Brunei Darussalam–Japan–Netherlands). Several local and foreign service providers are contracted to more than one anchor company in the oil and gas sector. Many of the service providers are located in Seria to serve Brunei Shell Petroleum and other major oil and gas companies (table 4.15).

In addition to oil and gas related companies, other foreign MNEs have been associated with the development of the various industrial estates in the country. While they do not own industrial estates, they contributed to their development. For instance, the \$2.8 billion integrated gas-based petrochemical complex, which covers 90 ha of the 271 ha Sungai Liang Industrial Park, was developed in 2009 by a consortium led by Mitsui Corporation (Japan).¹¹

Table 4.14. Brunei Darussalam: anchor or major companies in oil and gas

Name	Nationality	Industrial estate
Brunei National Petroleum Company Sdn Bhd	Brunei Darussalam	Bandar Seri Begawan
Brunei Shell Petroleum Company Sdn Bhd	Brunei Darussalam–Netherlands	Seria
Brunei Methanol Company	Brunei Darussalam–Japan	Sungai Liang Industrial Park
Brunei Gas Carriers Sdn Bhd	Brunei Darussalam–Japan–Netherlands	..
Brunei LNG Sdn Bhd	Brunei Darussalam–Japan–Netherlands	Sungai Liang Industrial Park
TOTAL E&P Borneo	France	Sungai Liang Industrial Park
Petronas Carigali Brunei Ltd	Malaysia	Bandar Seri Begawan
Hengyi Industries Sdn Bhd	China	..

Source: Brunei Darussalam Energy and Industry Department, "Oil and gas operators", www.energy.gov.bn/SitePages/Energy%20Related%20Companies.aspx.

Table 4.15. Selected foreign suppliers of major companies

Name	Nationality	Activity
Aban Singapore Pte Ltd	India	Engineering
Aker Solutions	Norway	Engineering
Amarco Services Sdn Bhd	Singapore	Support contractor
American International Industries	United States	Services
B S Syscom (B) Sdn Bhd	Singapore	Services
Dowell Schlumberger Eastern Inc	United States	Engineering
Frank's International	United States	Diverse
Germanischer Lloyd	Germany	Diverse
KCA Deutag	United Kingdom	Drilling and engineering
Kotug (B) Sdn Bhd	Netherlands	Diverse
Kp Mineral & Chemical Sdn Bhd	Ukraine	Exploration
Maersk Drilling	Denmark	Drilling
McDermott International	United States	Engineering
Noryanismayus	Singapore	Services
NPS (B) Sdn Bhd	Qatar	Oil well services
Offshore Industries Sdn Bhd	Malaysia	Contractor and supply vendor
Renoir Consulting	Switzerland	Diverse

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Table 4.15. Selected foreign suppliers of major companies (Concluded)

Name	Nationality	Activity
Rk Offshore Management Pte Ltd	Singapore	Diverse
Robert Ding & Co Sdn Bhd	Malaysia	Contractor in oil and gas engineering
SDV International Logistics	France	Logistics
Siemens Pte Ltd	Germany	Engineering
Technip Engineering (B) Sdn Bhd	United Kingdom	Diverse including engineering
Toyo Kanetsu K.K.	Japan	Manufacturing
TubeTek Sdn Bhd	United States	Engineering
Weatherford (B) Sdn Bhd	United States	Diverse including engineering
WesternGeco	United Kingdom	Seismic research
Wintermar Offshore Marine	Indonesia	Offshore marine services

Source: Energy and Industry Department, "Oil and gas operators" www.energy.gov.bn/SitePages/Energy%20Related%20Companies.aspx.

4.7.2. Cambodia: Economic zone development

Cambodia has less than 10 industrial estates and 16 SEZs in operation at year-end 2016. The first SEZ was developed in 2005. All but one of the SEZs are owned by the private sector, and many were developed with the involvement of foreign companies. All the SEZs and industrial estates have contributed to attracting increasing FDI. During 2010–2016, Cambodia received an annual average of \$1,459 million in FDI compared with only \$472 million during 2003–2009. Some 85 per cent of the factories in SEZs are owned by foreign companies. Many foreign companies operate outside the SEZs, in other industrial estates established before the Government's SEZs initiative, which started in 2005. The garment industry has been the largest recipient of manufacturing FDI, mainly dominated by factories owned by Asian companies in industrial estates. A high concentration of industrial estates hosting garment factories is located in Phnom Penh.

Cambodia launched its SEZ programme in 2005, through Sub-decree No. 148 on the Establishment and Management of the Special Economic Zone. The legislation aims to facilitate investments and enhance productivity, competitiveness, economic growth, export promotion and employment generation in the country. It defines and addresses governance issues including institutional matters for the development of SEZs (box 4.9). A key objective of the country's SEZ programme is to promote diversification of industrial base beyond electronics and automobile parts, establish economic linkages between urban and rural areas, and promote industrial clusters.

Box 4.9. Cambodia: SEZs governance and institutional framework

The Cambodian Government encourages private sector involvement in SEZ development and has put in place a regulatory framework on SEZ investment and governance matters. The country's regulations require that an SEZ must be larger than 50 ha and lie within precise locational and geographic boundaries. EPZs, free trade areas and the investor's premises must be surrounded by fences. No one other than security guards and those with specific permissions can enter the SEZ outside of normal working hours. There must be a management office and a zone administration office, together with all appropriate forms of infrastructure, including water, sewage, wastewater treatment and a location for storage and management of solid waste, as well as relevant environmental protections.

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Box 4.9. Cambodia: SEZs governance and institutional framework (Concluded)

SEZs are governed by the Cambodian Special Economic Zone Board through Sub-decree No. 147 on the Organization and Functioning of the Council for the Development of Cambodia (CDC), issued on 29 December 2005, and Sub-decree No. 148 on the Establishment and Management of the Special Economic Zone, of the same date. The Board is responsible for approval of the establishment, development, management and supervision of SEZs in the country. The Special Economic Zone Administration (SEZA) is the “one-stop service” mechanism set up by the Board to be permanently stationed in each SEZ. The SEZA consists of representatives from various related government ministries and authorities.

SEZs may be administered by the State, a private sector corporation or a joint venture between the two. Incentives are provided for investment in SEZ development and also to investment projects located inside or outside SEZs on the basis of certain criteria for qualified investment projects (e.g. export condition).

Source: Cambodian Special Economic Zone Board.

More SEZs are being planned and constructed. Since the issuance of Sub-decree No. 148, the Government has approved the development of 27 SEZs, most located at the Cambodia–Viet Nam border (south-east), at the Cambodia–Thai border (north-west), and along the national economic corridor (National Road No. 4) to the coastal area of the country. The Government actively promotes and encourages the participation of the private sector in the development of SEZs. Public budget constraints have been a key factor in the Government’s push for active private sector participation, including FDI in economic zone development.

A majority of the SEZ development was approved in 2006–2009 and 2012–2017 (table 4.16). The Sihanoukville SEZ and the Phnom Penh SEZ are the two largest zones in terms of area and number of tenants. They were developed in partnership by Cambodian and foreign investors. Other SEZs, such as the Manhattan Svay Rieng SEZ, the Hi-Park SEZ and the Suvannaphum SEZ also involved foreign developers. The Sihanoukville Port SEZ was developed with an ODA loan from Japan.

Table 4.16. Cambodia: SEZs, 2017

SEZ	Approved sub-decree	Size (ha)	No. of tenants	Total investment in SEZ (\$ millions)	Number of workers
Svay Rieng Province					
Manhattan Svay Rieng SEZ	No. 135, dated 29 Nov 2006	157	31	128.4	27,071
Tai Seng Bavet SEZ	No. 29, dated 4 Apr 2007	99	27	153.6	9,238
Shandong Sunshell SEZ	No. 462, dated 1 Jul 2013	96	5	15.5	5,571
Dragon King Bavet SEZ	No. 190, dated 25 Oct 2012	106.5	4	18.7	1,175
Hi-Park SEZ	No. 285, dated 30 May 2013	263.1	1	3	159
Qi Lu (Jian Pu Zhai) SEZ	No. 49, dated 28 Mar 2017	179.7	1	1	16
Phnom Penh					
Phnom Penh SEZ	No. 133, dated 19 Apr 2006	350	89	555.6	16,945
Kerry Worldbridge SEZ	No. 87, dated 8 July 2015	63	1	21	25
Sihanoukville SEZ					
Sihanoukville SEZ	No. 24, dated 17 Mar 2008	1113	109	312.7	14,874
Sihanoukville Port SEZ	No. 147, dated 2 Sep 2009	70	3	22.9	857
Sihanoukville 1st SEZ	No. 113, dated 25 Oct 2006	178	3	998.3	652

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Table 4.16. Cambodia: SEZs, 2017 (Concluded)

SEZ	Approved sub-decree	Size (ha)	No. of tenants	Total investment in SEZ (\$ millions)	Number of workers
Koh Kong Province					
Neang Kok Koh Kong SEZ	No. 159, dated 26 Oct 2007	335	7	66.9	7,899
Kandal Province					
Goldfame Paksun SEZ	No. 30, dated 4 Apr 2007	80	2	25.6	4,606
Suvannaphum SEZ	No. 60, dated 11 Feb 2014	200	1	1.5	39
Banteay Meanchey Province					
Poi Pet O Neang SEZ	No. 57, dated 1 Jun 2006	467	5	7.7	1,612
Sanco Poi Pet SEZ	No. 481, dated 11 Sep 2013	66.5	10	69.1	1,298
Total		..	299	2,401.6	93,138

Source: Cambodian Special Economic Zone Board and selected SEZs' websites.

Because SEZ facilities are a relatively recent development, a majority of investment activities in Cambodia are outside SEZs, in industrial estates (table 4.17). For example, many garment factories – built before the SEZ programme began – are located in industrial estates. In 2015–2016, 283 investment projects were established outside SEZs; the 69 established in SEZs had a total approved investment capital of \$398 million and created more than 10,000 jobs. Many approved SEZs are still being constructed, and investment projects in SEZs are increasing. Improvements in infrastructure provision in SEZs, institutional support and fiscal incentives all play roles in this increase.

Table 4.17. Cambodia: Investment projects inside and outside SEZs, 2015–2016 (Number; millions of dollars)

Projects		2015		2016		2015–2016	
		No. projects	Investment capital	No. projects	Investment capital	No. projects	Investment capital
Outside SEZs	New	124	3,920.0	116	3,152.6	240	7,072.6
	Expansion	30	608.9	13	173.8	43	782.7
	Total	154	4,528.9	129	3,326.4	283	7,855.3
In SEZs	New	27	114.6	42	283.3	69	397.9
Total		181	4,643.6	171	3,609.6	352	8,253.2

Source: Cambodian Special Economic Zone Board.

4.7.2.1. Phnom Penh SEZ

Most factories in the Phnom Penh SEZ are foreign owned, and concentrated in light, labour-intensive industries, in the manufacturing of garments and footwear, mechanical and electrical products, and food processing and as supplier companies involved in packaging businesses (table 4.18). The latter supports the former. The Phnom Penh SEZ is attracting an increasing number of firms operating in electronic parts, wire harnesses, automobile parts and other manufacturing activities. Significant tenants include Toyota (Japan), Yamaha (Japan) and Coca-Cola (United States).

Table 4.18. Phnom Penh SEZ: investment projects by sector, as of May 2017

Type of industry	No. of projects	Investment capital (\$ millions)
Garments, shoes and bags	22	54.7
Electronics and automobile parts	18	138.0
Food and beverage	9	199.1
Plastic and packaging products	22	40.7
Others	18	123.1
Total	89	555.6

Source: Phnom Penh SEZ.

The Phnom Penh SEZ was established in 2006 and started operation two years later. The 350 ha zone is owned by a joint venture involving Cambodian, Japanese and Thai investors. It is located about 8 km from the Phnom Penh International Airport and has a one-stop service centre comprising various government authorities. As of May 2017, the zone had 89 tenants – 49 of them Japanese – mainly producing automotive and electronic products. Others come from China, Taiwan Province of China and ASEAN Member States (table 4.19). A majority of the tenants are in export-oriented businesses. The owners of the Phnom Penh SEZ are expanding their industrial park business with the development of the 65.7 ha Poipet SEZ, which is located 6 km east of Poipet City with access to National Road No.5.

Table 4.19. Phnom Penh SEZ: selected tenants, 2017

Tenant	Nationality	Products/activities	Investment license year	Investment capital (\$ millions)
Redian Industrial	Republic of Korea	Carton packaging	2008	5.3
Cambox	Singapore	Plastic products	2008	0.7
Tiger Wing	Japan	Shoes	2008	1.9
Yamaha Motor	Japan	Motorcycles	2008	11.5
Ajinomoto	Japan	Food	2009	5.5
Sin CH Hong	Taiwan Province of China	Shoes and accessories	2010	2.3
Sichuan New Hope Agribusiness	China	Animal feed	2010	5.0
Liwayway Food Industry	Philippines	Food processing	2010	5.0
Atlas Ice	Malaysia	Ice production	2010	1.8
O and M	Japan	Leather products	2011	2.1
Sumi Wiring Systems	Japan	Auto wire harnesses	2011	18.0
Marunix	Japan	Auto wire harnesses	2011	4.7
Minebea	Japan	Small-size motors	2011	54.9
Sunshin Thread and String	China	Garments	2011	1.0
Medipro	Japan	Medical equipment	2012	10.6
Japan Rocks S.E.A	Japan	Garments	2012	3.7
Taica	Japan	Plastic products	2012	6.3
GS Electric	Japan	Wire harnesses	2012	0.6
Jia Long Plastic Product	China	Plastic products	2012	1.3
CH Steel Wire Industry	Malaysia	Steel wire	2012	6.0
Phnom Penh Combi	Japan	Toys	2013	9.8
Nikko Kinzoku	Japan	Precision casting	2013	3.1

/...

Table 4.19. Phnom Penh SEZ: selected tenants, 2017 (Concluded)

Tenant	Nationality	Products/activities	Investment license year	Investment capital (\$ millions)
Denso	Japan	Automotive parts	2013	9.4
Stratco	Australia	Construction material	2013	2.6
Laurelton Diamond	United States	Diamond polishing	2013	11.0
Betagro	Thailand	Animal feed	2013	16.5
Kaneju	Japan	Garments	2014	2.5
Heng Yang Cotton and Plastic	China	Plastic products	2014	1.1
Cambodia Beverage Company	United States	Beverages	2015	100.0
Winsun	Viet Nam	Sanitary products	2016	7.0
Masakatsu Kouzai	Japan	Machinery	2016	2.7
Ring	Japan	Electronic parts	2016	0.7
PP Printing and Packaging	Singapore	Printing and packaging	2017	0.7

Source: Phnom Penh SEZ.

Note: List as of May 2017.

4.7.3. Indonesia: economic zone development

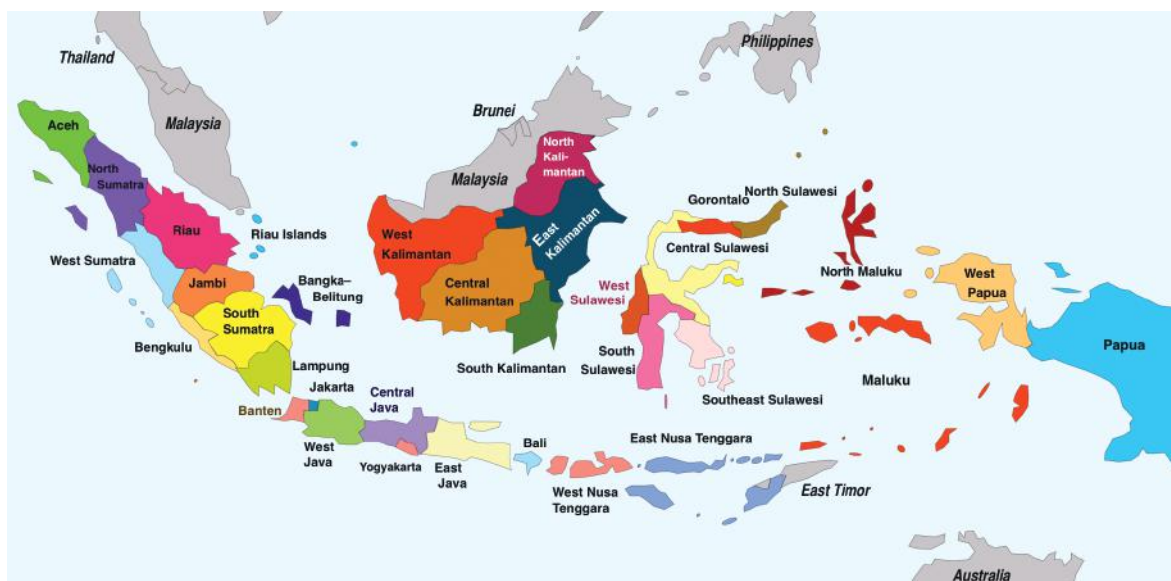
Economic zones play an important role in the Indonesian Government's strategies for attracting FDI, generating employment, increasing exports, and supporting the country's development and industrialization (section 4.5). The concept of economic zones in the country focuses on industrial estates and SEZs. The latter were introduced in 2007, whereas the former have existed since the 1970s. The three main types of economic zones in Indonesia are industrial estates, SEZs (more recently) and FTZs.

Industrial estates

The 75 registered industrial estates cover more than 45,808 ha in 15 provinces (annex table 4.1). They host more than 8,500 tenants, which include the operations of many foreign-owned companies. The private sector plays a significant role in the development of industrial estates: 61 of them were developed and are operated by the private sector.

A majority of the industrial estates are on Java Island, with 23 located in West Java, the province closest to the country's largest and main seaport (Tanjung Priok) and its international airport (Soekarno Hatta International Airport) (figure 4.4). Most of the successful industrial estates, measured by number of tenants (over 3,730 companies) and global MNEs, operate in these 23 industrial estates.

Industrial estates in West Java are more attractive to investors for the following features: (i) availability of land and industrial estates ready for use, (ii) well-developed basic infrastructure, (iii) access to road networks, (iv) supply of industrial water and (v) location near capital city and main ports. In addition, some industrial estates have expanded their facilities and services to further ease doing business in Indonesia. For example, some have a satellite customs office to expedite import and export processes, some provide housing facilities for workers and some have set up dry ports.

Figure 4.4. Indonesia: Distribution of industrial estates

Source: GeoCurrents (www.geocurrents.info/gc-maps/geocurrents-maps-by-country/geocurrents-maps-of-indonesia).

Special economic zones

The concept of SEZs as a conduit for accelerating national development and growth that ensures sustainability, promoting equitable development across the country and improving competitiveness was introduced only about a decade ago. Law No. 39 on Special Economic Zones of 2009 identified eight main activities to be covered (e.g. export processing, logistics, industry, technology development, energy).

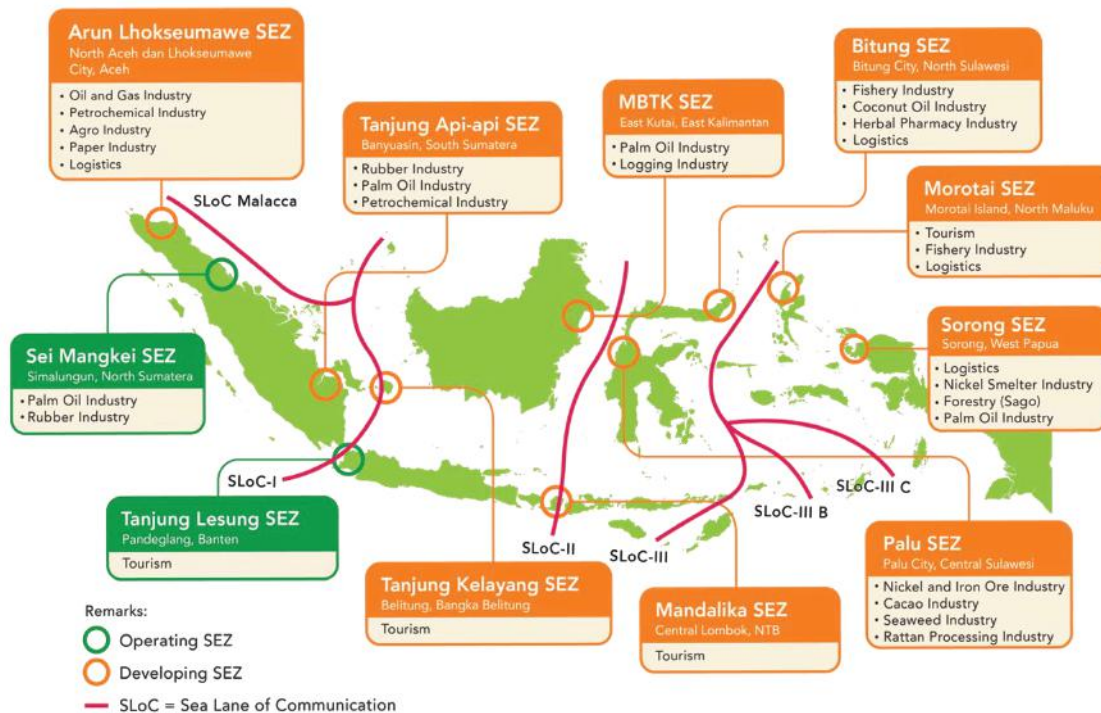
The SEZs in Indonesia are in different regions of the country (figure 4.5), at different stages of development and with different industry focuses. The Tanjung Lesung SEZ and Sei Mangkei SEZ are operational, and nine others are being developed. The two operational ones have a strong industrial focus, as do five of the ones in development. The other four are specified for tourism activities.

Most SEZs are huge, covering the entire locality where they are situated. As such, each could contain several industrial estates. The SEZs have specific industry targets depending on their location and the resource endowment of the locality (table 4.20). For example, Morotai in North Maluku Province is an SEZ-focused on the fishery, logistics and tourism industries. The SEZ in Sorong, West Papua, hosts several industries: shipyard, logistics, industrial processing of agriculture, forestry, fishery and mining.

The estimated costs of developing both the two existing SEZs and the nine others are huge. Although some SEZs are being developed and are owned by provincial governments, six

Figure 4.5. Indonesia: location of SEZs, 2017

11 established SEZ – 7 Industrial SEZ, 4 Tourism SEZ



Source: National Council for Special Economic Zone, Indonesia Special Economic Zone.

involve private sector participation. The Government provides incentives for investment in SEZ development and also for companies operating in SEZs.

The prospects for development of additional industrial estates and SEZs are promising because of industrial growth and supportive government policies. For instance, the regulations that govern industrial estate development, which were updated in 2015, emphasizes that all manufacturing activities must take place within designated industrial estates and the domestic or foreign private sector is allowed to own and develop designated industrial land within the estates, with up to 70 per cent of land made available to be sold or leased to tenants. Development of SEZs also received strong support from the national and provincial governments. Investment incentives are provided to both SEZ developers and economic zone tenants. One-stop service centres in SEZs are instituted to provide investor services and facilitate business operations.

Table 4.20. Indonesia: Development and significance of SEZs, 2016

Name	Location	Developer	Land area (ha), phase 1	Industries	Investment value	Workers (estimate)	No. of tenants
Sei Mangkei	North Sumatra	PT Perkebunan Nusantara III (SOE)	2,003	Palm oil Rubber Logistic Tourism	Area development: \$392 million Estimated: \$9.48 billion	83,304	11
Arun Lhokseumawe	Aceh	Consortium: PT Pertamina, PT Pupuk Iskandar Muda, PT Pelindo 1, Perusan Daerah Pembangunan, Aceh	2,622	Oil and gas Petrochemical Agro-industry Kraft paper Industry Logistics	\$3.8 billion by 2017	40,000	7
Tanjung Api-Api	South Sumatra	Provincial Government of South Sumatra	2,030	Rubber Palm oil Petrochemical	Area development: \$946 million Estimated by 2025: \$9.61 billion	149,000	2
Maloy Batuta Trans Kalimantan	East Kalimantan	PT Maloy Batuta Trans Kalimantan (private sector)	557	Logistics	Area development: \$261 million Estimated by 2025: \$2.63 billion	55,700	5
Bitung	North Sulawesi	North Sulawesi Provincial Government	534	Fishery processing Coconut processing Logistic	Area development: \$176 million Estimated by 2025: \$2.53 billion	34,710	2
Palu	Central Sulawesi	City Government of Palu	1,500	Nickel and iron processing Cocoa processing Seaweed processing Rattan processing Rubber, coconut Heavy machine manufacture Logistics	Area development: \$130.07 million Estimated by 2025: \$7.1 billion	97,500	5
Sorong	West Papua	Regency Government of Sorong	524	Shipyard Logistics Industrial processing of agriculture, forestry, and fishing Mining	Area development by 2020: \$238 million	15,024	5
Tanjung Lesung	Banten	PT Banten West Java Tourism Development Corporation	1,500	Tourism	Area development: \$323.07 million Estimated by 2025: \$7.1 billion	85,000	8
Mandalika	West Nusa Tenggara	PT Indonesia Tourism Development Corporation	1,036	Tourism	Area development: \$169.23 million Estimated by 2025: \$2.2 billion	58,700	8
Tanjung Kelayang	Bangka Belitung	PT Belitung Pantai Intan (private sector)	324	Tourism	Area development: \$115 million Estimated by 2025: \$1.53 billion	23,645 in 2022	4
Morotai	North Maluku	PT Jababeka Morotai (private sector)	1,102	Fishery Tourism Logistics	Area development: \$523.07 million Estimated by 2025: \$2.34 billion	30,000	..

Source: ASEAN Investment Report 2017 research, based on information from the National Council for SEZ (Indonesia) and BKPM.

4.7.3.1. Batam SEZ and FTZ

Batam has been transformed from a small fishing village of 6,000 inhabitants four decades ago into a modern municipality busy with industrial activities. It now has a population of more than 1 million people and 22 industrial parks (table 4.21). Many MNEs have set up operations in Batam, for a number of reasons, which include proximity to Singapore and its FTZ status.

Batam is both an SEZ and an FTZ. It comprises three main islands – Batam, Galang and Rempang – which collectively make up the Bareleng Islands. The total land area covers 715 km², about the size of Singapore. Batam, which is in Riau Province, is the closest point in Indonesia to Singapore (i.e. 20 km). It is on the world's busiest shipping lanes between Singapore and Sumatra.

Development of Batam started in the 1970s, when it was just a logistics and services base for Pertamina, a State-owned oil company. It is now an important industrial and trade base in Indonesia. Companies operating there receive incentives and benefits relating to the zone's FTZ status. About 10,000 local companies and 1,700 foreign companies from 38 economies operate in Batam.¹² Most of the foreign companies operate in Batam's various industrial parks.¹³ Batam's close proximity to Singapore, situated on the international shipping route, offers an alternative low-cost production base for Singapore companies and MNEs based in Singapore. The development of Batam and some of the industrial estates in it benefitted from close economic cooperation between the Governments of Indonesia and Singapore.

Table 4.21. Batam FTZ: industrial estates

No.	Name	Owner	No. of tenants
1	Batamindo Industrial Estate	PT Batamindo Investment Co	66
2	Bintang Industrial Park II	PT Bintang Propertindo	57
3	Cammo Industrial Park	PT Aman Sejati Propertindo	29
4	Citra Buana Centre Park I	PT Citra Buana Prakarsa	41
5	Citra Buana Centre Park II	PT Citra Buana Batam	7
6	Citra Buana Centre Park III	PT Citra Buana Perkasa	23
7	Executive Industrial Park	PT Bumi Abadi Tegar Sakti	40
8	Hijrah Industrial Park	Wang Jong/Sani	21
9	Indah Industrial Park	PT Teluk Pantaian Indah	9
10	Kabil Integrated Industrial Park	PT Kabil Indonusa Estate	34
11	Kara Industrial Park	Chandra Lukito	35
12	Lytech Industrial Park	Chandra Lukito	78
13	Latrade Industrial Park	Latrade Pte Ltd	12
14	Malindo Cipta Perkasa Industrial Park	PT Malindo Cipta Perkasa	37
15	Mega Cipta Industrial Park	PT Mega Cipta Adi Persada	59
16	Panbil Industrial Estate	PT Nusatama Properta Panbil	26
17	Puri Industrial Park 2000	PT Teluk Pantaian Indah	36
18	Sarana Industrial Point	PT Pratama Sarana Unggulan	34
19	Sekupang Makmur Abadi	Bennyman Saus	7
20	Taiwan International Industrial Estate	PT Suar Batam International Development Co	11
21	Tunas Industrial Estate	PT Tritunas Bangun Perkasa	230
22	Union Industrial Park	PT Union Batam Abadi	57

Source: Batam Indonesia Free Zone Authority (2016). Development Progress of Batam 2016. Retrieved from BP Batam database.

A free trade zone and special economic zone

Batam became Indonesia's first SEZ in 2007 and subsequently a free port and FTZ in 2009. By 2014, Batam had attracted \$18 billion in investments, of which half are FDI. Singapore is the top investor, with investments by both Singapore companies and foreign MNEs based in Singapore. The agency responsible for the administration, management and overall industrial development of the Batam FTZ is the Batam Indonesia Free Zone Authority.

Industrial estates and parks

Most of the 22 industrial parks were developed and are owned by the private sector, including foreign companies (table 4.22). Most companies operating in these industrial parks are involved in a wide range of industries such as electronics, garments, shoes, handbags and shipbuilding. Batam serves as a production platform for many Singapore-headquartered companies. Most FDI in Batam is export-oriented and efficiency-seeking, motivated primarily by keeping costs low.

Table 4.22. Batam FTZ: selected major industrial parks

Name	Owner	Year	Size (ha)	Main business/ industry	No. of tenants	Remarks
Batamindo Industrial Park (BIP)	PT Batamindo Investment Cakrawala	1990	320	Electronic and electrical products, pharmaceuticals, plastic moulds, precision parts	66	Owner is a subsidiary of Gallant Venture Ltd., a JV between Indonesian and Singaporean companies.
Latrade Industrial Park	PT Latrade Batam Indonesia	..	..	Textiles, garments, shoes, electric assembly, packaging, material processing, plastic moulding, biosciences, chemical and engineering work	15	Owner is a subsidiary of Latrade Singapore Pte Ltd.
Kabil Integrated Industrial Estate	PT Kabil Indonusa Estate and PT Kabil Citranusa (Indonesian)	1990	520	Oil and gas, energy	38	Owners belong to the Citramas Group (Indonesia).
Panbil Industrial Estate	PT Nustama Properta Panbil (Indonesian)	2001	200	Electronics, bike components, home appliances, plastic injection moulding	26	The industrial estate belongs to the Panbil Group (Indonesia).
Wiraraja Industrial Estate	PT Wiraraja Group	2005	20	Fabrication activities, garments, electronics	..	Indonesian owned.
Sarana Industrial Point / Industrial Point Facility	PT Pertama Sarana Unggulan (Indonesian)	..	12	Manufacturing, packaging, contract manufacturing, heavy equipment	34	..

Source: Company websites.

Batamindo Industrial Park

Batamindo Industrial Park (BIP) is developed and managed by PT. Batamindo Investment Cakrawala – a subsidiary of Gallant Venture Ltd., which also owns Bintan Industrial Estate in Bintan Island. Gallant's main shareholders are Salim Group (Indonesia) and Sembcorp Development Ltd. (Singapore).¹⁴ BIP was conceptualized under an economic cooperation between their respective governments in 1989.¹⁵ The framework focused on the overall

development of the Riau Province, and the promotion and protection of Singaporean-linked investments. The vision was to project Batam as a compliment for business activity; Batamindo was one of the four projects hallmarking Singaporean-Indonesian investment cooperation.

BIP is used by many MNEs and companies based in Singapore for labour-intensive and low-skilled operations (table 4.23). As such BIP plays an important role in cross-border industrial activities linking two ASEAN Member States through the operations of MNEs.

Table 4.23. Batamindo Industrial Park: foreign companies (Selected cases)

Name	Activity	Parent company	Nationality	Remarks
PT Epson Batam	Inkjet cartridge and scanner manufacturing, mounting of semiconductors for export	Seiko Epson Corporation	Japan	Regional headquarters functions, sales and marketing of printers in ASEAN; parent invests in Batam because of proximity and cost considerations
PT Yeakin Plastic Industry	Design and manufacturing of precision moulds, engineering plastics component, subassembly and turnkey products	Yeakin Plastic Industry	Singapore	..
PT Unisem Batam	Assembling, manufacturing and testing service of integrated circuit products	Unisem	Malaysia	Semiconductor assembly; conducts test services for many major electronics companies
PT Infineon Technologies	Manufacture of microelectronic components; assembly and final test facilities – primarily for the automotive industry	Infineon Technologies	Germany	Parent's regional headquarters in Singapore; responsible for R&D, sales and marketing of products in the region; relocated labour-intensive operations to Batam
PT Tec Indonesia	Manufacture of electronic products and printers for export	Toshiba TEC Singapore Pte Ltd (TSE)	Singapore	Parent operates in Singapore; established an operation in Batam to tap low-cost labour supply and for export reasons
PT Siix Electronics Indonesia	Manufacture and sub-assembly of electronic components for export	Siix Corporation	Japan	Parent established a plant in Batam to package and assemble circuit boards for household appliances and information equipment, and to be a manufacturing base to respond to demand in Singapore in a location with low-cost labour and easy access
PT Flex Ltd Batam	Manufacture of electronic products and electronics manufacturing services	Flextronics International	United States	Parent, a major electronic manufacturing services MNE headquartered in Singapore, invested for access to low-cost labour supply
PT Rubycon Indonesia	Manufacture of electronic components	Rubycon Corporation	Japan	..
Dynacast Indonesia	Standard zinc, aluminium and die casting	Dynacast International	United States	Parent invests in Batam for cost reasons, exports and proximity to Singapore
PT Greenlam Asia Pacific	Plastic fabrication	Greenlam Asia Pacific	Singapore	..

Source: Company websites.

Latrade Industrial Park

The Latrade Industrial Park is ultimately owned by Latrade (Singapore). The park has 15 locator companies, 7 of which are Singaporean-owned entities (table 4.24).

Table 4.24. Latrade Industrial Park: companies from Singapore

Company	Activity	Parent company based in Singapore
PT SKP Marine Engineering	Engineering manufacturer, manufacture of pleasure boats, sail boards and accessories	SKP Marine Engineering
PT ZC Industries	Valve manufacturer	ZC Industries
PT Power Foam Batam	Sofa manufacturer	Power Foam
PT Lesco	Manufacturing of wood, cork, straw and plaiting materials	Lesco Technology
PT KSW Batam	Manufacturing of safety shoes	King's Safety Wear Limited
PT Wearsmart Textiles	Garment manufacturing	Latrade
PT Espro	Plastic wood manufacturing	Latrade

Source: Company websites.

Challenges Ahead

Although Batam has generated much economic success since its development in the 1970s, it has nonetheless faced some challenges in recent years. These include increasing demand for higher wages by workers. In 2017, some 300,000 workers were laid off due to rising labour costs.¹⁶ In addition, as the FTZ benefits apply only to exports, goods moving from Batam to other parts of Indonesia are subject to relevant taxes and duties, which may make Batam less competitive for market-seeking operations by MNEs.

4.7.4. Lao People's Democratic Republic: economic zone development

Economic zones in the Lao People's Democratic Republic are dominated by 12 SEZs, which can be classified into three categories:

- i. *Industrial zones*: Savan-Seno SEZ (sites B and C), Vientiane Industrial and Trade Area Park, Saysettha development zone, Phoukhyo and Champasak SEZ (site: Pakse-Japan SME in Champasak)
- ii. *Tourism and new urban centre zones*: Golden Triangle SEZ, Luang Prabang SEZ, That Luang SEZ, Longthanh SEZ
- iii. *Trade and logistics zones*: Boten SEZ, Dongphosy SEZ, Thakhek SEZ

These classifications highlight key business sectors in the SEZs. However, most of them have adopted an integrated development approach by focusing not just on building industrial estates but also on developing a combination of commercial, residential, tourism and recreational townships. Prior to these 12 SEZs, no industrial estate had been developed in the Lao People's Democratic Republic, although attempts had been made in terms of zoning and land designations for industrial development.

The SEZs consist of four SEZs and eight SpEZs. Of these, seven are being developed in partnership by the Government and the private sector and four have private sector entities as developers (two domestic, two foreign) and one is fully owned and being developed by the Government (table 4.25). The role of the private sector in the development of SEZs is important. In a majority of the SEZs (nine), the foreign private sector participated in both development and ownership. The Government encourages FDI in the development of SEZs, through either wholly owned or JV arrangements.

Table 4.25. Lao People's Democratic Republic: SEZs, 2017

SEZ	Year of establishment	Location	Developer (share in per cent)	Size (ha)
Savan-Seno SEZ	2003	Savannakhet		1,012
Site A	2003	Savannakhet	<ul style="list-style-type: none"> • Lao Government (30%) • Thailand (70%, private) 	297
Site B: Savan–Japan Joint Development	2013	Savannakhet	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (50%, private) • Japan (20%, private) 	235
Site C: Savan Park SEZ	2008	Savannakhet	<ul style="list-style-type: none"> • Lao Government (30%) • Pacifica Streams Development (Malaysia) (70%) 	372
Site D	2013	Savannakhet	<ul style="list-style-type: none"> • Lao Government (30%) • Malaysia (70%, private) 	108
Boten Beautiful Land SpEZ	2003 (revised 2012)	Luang Namtha	<ul style="list-style-type: none"> • Yunna Hiseune Group (China) (100%) 	1,640
Golden Triangle SpEZ	2007 (revised 2010)	Bokeo	<ul style="list-style-type: none"> • Lao Government (20%) • Kings Roman International (Hong Kong, China) (80%) 	3,000
Vientiane Industrial and Trade Area	2009 (revised 2011)	Vientiane Capital	<ul style="list-style-type: none"> • Lao Government (30%) • Nam Wei Development (Taiwan Province of China) (70%) 	110
Saysettha Development Zone	2009 (revised 2011)	Vientiane Capital	<ul style="list-style-type: none"> • Lao Government (25%) • China private company (75%) 	1,000
Dongphosy SpEZ	2009 (revised 2012)	Vientiane Capital	<ul style="list-style-type: none"> • Lao Government (15%) • Malaysia (85%, private) 	54
Phoukhyo SpEZ	2010	Khammouan	<ul style="list-style-type: none"> • Lao People's Democratic Republic (100%, private) 	4,850
Thatluang Lake SpEZ	2011	Vientiane Capital	<ul style="list-style-type: none"> • Shanghai WanFeng Real Estate (China) (100%) 	365
Longthanh–Vientiane SpEZ	2008 (revised 2012)	Vientiane Capital	<ul style="list-style-type: none"> • Vientiane Long Thanh Gold and Real Estate (Viet Nam) (100%) 	558
Thakek SpEZ	2012	Khammouan	<ul style="list-style-type: none"> • Lao Government (100%) 	1,035
Champasak SEZ	2015	Champasak	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (70%, private) 	1,305
Pakse–Japan SME SpEZ	2015	Champasak	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic and Japan (70%, private) 	195
Champasak Lao–Service Industrial Park	2015	Champasak	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (70%, private) 	800
Champa City SEZ	2016	Champasak	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (70%, private) 	58

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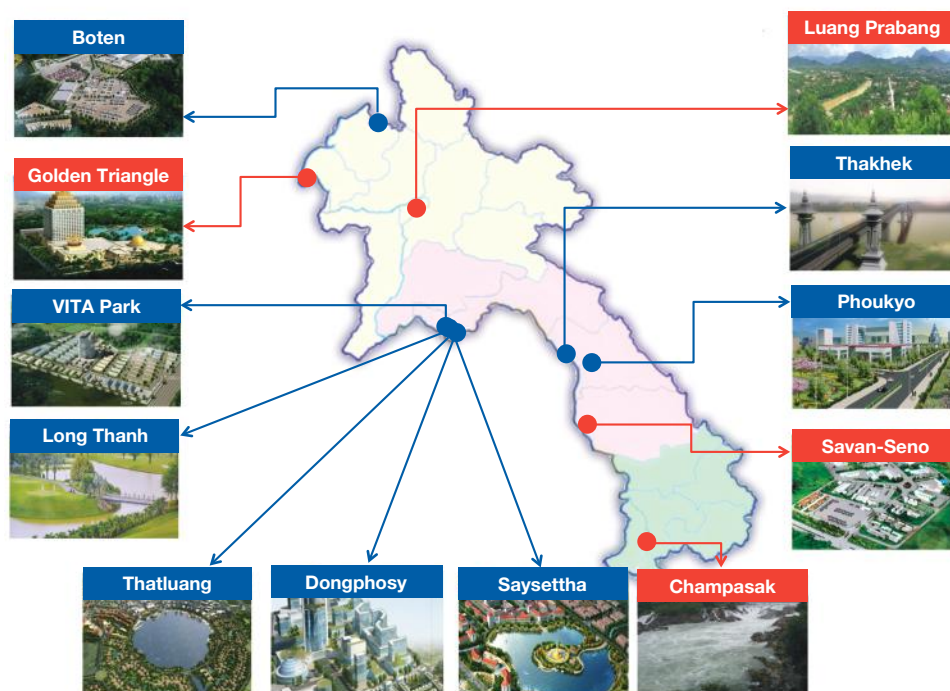
Table 4.25. Lao People's Democratic Republic: SEZs, 2017 (Concluded)

SEZ	Year of establishment	Location	Developer (share in per cent)	Size (ha)
Vangtau–Phonthong SEZ	2016	Champasak	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (70%, private) 	253
Luang Prabang SEZ	2016	Luang Prabang	<ul style="list-style-type: none"> • Lao Government (30%) • Lao People's Democratic Republic (70%, private) 	4,850
Total				19,782

Source: Special Economic Zones Promotion and Management Office, Ministry of Planning and Investment.

Note: SEZ = special economic zone, SME = small and medium-size enterprise.

SEZs are strategically located throughout the country, most of them along the borders with neighbouring countries (figure 4.6), positioned to support the country's participation in regional production networks. Infrastructure such as roads, water, electricity, communication, and other supporting services are built into the zones, provided by zone developers, with special policies and procedures that are more enabling than in other areas.

Figure 4.6. Location of SEZs in the Lao People's Democratic Republic**SEZs in Lao PDR**

Source: Special Economic Zones Promotion and Management Office, (MPI 2016).

Given its budget constraints, the Government encourages private sector (domestic and foreign) and public–private joint ventures to invest in SEZ development. In the case of public–private partnership, the public sector is usually responsible for land allocation – sometimes land compensation – and provision of off-site infrastructure such as utilities and road connections to the zone. Private sector developers usually follow the build-operate-transfer arrangement with regards to on-site infrastructure and facilities. However, in some cases, given the urgency of the need to connect with infrastructure outside the zone, and with the Government's endorsement, developers also invest in creating necessary linkages with off-zone infrastructure to be compensated later by the Government.

The first SEZ was established in 2003. However, SEZ development only began to take off after 2010, when the Government established the National Committee for Special Economic Zones and passed the Decree on Special and Specific Economic Zones in the Lao People's Democratic Republic No. 443/PM in 2010. Since then there has been an increase in investment in all the zones. The Government has been active in the promotion of SEZ development in the country (box 4.10).

Some SEZs have not been as successful as others in attracting investments (table 4.26). Part of the reasons are that some of them have only recently (2015–2016) opened up for commercial operations. Investment in zone development takes a longer time to yield results. In general, investments into SEZs have picked up only starting in 2011, and more time is needed for these zones to attract sufficient tenants to trigger agglomeration effects.

Box 4.10. Government policies and institutional development for SEZs

SEZs in the Lao People's Democratic Republic aim to attract private investments (domestic and foreign) to create the necessary foundation for industrialization while creating jobs for local people, promoting both knowledge and technology transfers, generating revenues for the Government and realizing the Vision 2020 strategy by bringing the country out of least developed country status.

In promoting investment in the development of SEZs, the Government established a regulatory framework, offered incentives (e.g. tax holidays and duty exemption for equipment and raw materials) and instituted a number of measures. They include the following:

Regulatory framework

The legal foundation for development of and investment in SEZs in the country rests on these elements:

- Revised Law on Investment Promotion No. 14/NA, 17 November 2016
- The Resolution of the National Assembly Standing Committee on the Approval of the Decree on Special Economic Zones and Specific Economic Zones in the Lao People's Democratic Republic No. 47/SC, dated 26/10/2010
- Decree on Special and Specific Economic Zones in the Lao People's Democratic Republic No. 443/PM, dated 26/10/2010 (being revised)
- Individual SEZ contracts
- Strategic Plan of SEZ Development 2011–2020

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Box 4.10. Government policies and institutional development for SEZs (Concluded)

The revised Investment Promotion Law No. 14/NA introduced a One-Stop Service Office (OSSO) located at the Ministry of Planning and Investment. The OSSO provides information on all relevant investment rules and regulations to investors, and accepts applications for investment in sectors that are on the controlled list and investment that involves concessions, including applications to develop a new SEZ. For investment in existing SEZs, a One-Stop Service Unit in each zone provides more integrated services to investors.

Supporting measures

In some zones, such as the Savan-Seno SEZ and the Vientiane Industrial and Trade Area Park, customs checkpoints are located at the zones. Goods are checked in customs at the zone before export abroad. Goods transported in sealed containers are not required to undergo physical checks again at border checkpoints. This customs process facilitates import-export activities and the operations of firms in the zone. At present, this customs arrangement exists only in these two zones. Other zones are expected to have similar arrangements, especially in industrial zones that start to export products. Investors in the development of SEZs and investors operating in SEZs enjoy other benefits, such as better zone infrastructure facilities and fiscal incentives.

Institutional support

As of April 2016, the overall supervision and management of SEZs is under the Ministry of Planning and Investment (MPI). Decree No. 443 on SEZs is being revised to reflect the new institutional arrangement and investment policies, to be in line with the revised Investment Promotion Law. The one-stop service mechanism is an important feature of SEZs that is supported by related government ministries and authorities.

Sources: National Committee for Special Economic Zones and MPI.

Table 4.26. Lao People's Democratic Republic: SEZs and SpEZs (Selected cases)

Name	Total investment (\$ millions)	Government investment (\$ millions)	No. of companies	Employment	Imports (\$ millions)
Savan-Seno SEZ	68.1	4.2	66	3,215	45.1
Golden Triangle SEZ	658.3	1.1	59	7,694	3.0
Boten Beautiful Land SpEZ	47.2	..	22	475	..
Vientiane Industrial and Trade Area, Non Thong	91.6	..	33	1,173	47.0
Phoukhyo SpEZ	16.0	..	16	72	..
Saysetha Development SpEZ	83.3	9.9	9	214	65.8
Thatluang Lake SpEZ	134.3	..	11	639	7.8
Dongphosy SpEZ	10.0	..	..	46	0.01
Longthanh SpEZ	125.1	..	4	588	..
Thakhek SpEZ	35.3	1.2	19	64	2.3

Source: MPI (2016, pp. 27–31).

Note: SEZ = special economic zone, SpEZ = specialized economic zone.

Although the country's experience in attracting FDI with SEZs is relatively recent, evidence suggests that investments are rising in these zones. About 300 companies, local and foreign, operate in the SEZs; together, they have a registered capital of \$8 billion as of 2016.¹⁷ Foreign investors are

attracted to SEZs because of fiscal incentives provided by the Government, improvement of infrastructure in these zones and institutional supports provided by the Government.

Increasingly more MNEs are involved in regional production networks through their operations in some of these SEZs. Cross-border trade between the Lao People's Democratic Republic and Thailand has also been increasing, contributed to in part by imports and exports associated with MNEs operating in different economic zones in the two Member States.

4.7.4.1. Savan-Seno SEZ

Savan-Seno SEZ was developed in 2003 – the country's first SEZ. It is located in Savannakhet at the southern part of the country, which borders Thailand. Savannakhet is also linked with neighbouring Myanmar by the Second Friendship Bridge. This SEZ is located strategically along the Greater Mekong Subregion East-West Economic Corridor. Firms located in this SEZ easily access the neighbouring markets and seaports. The Savan-Seno SEZ is located 720 km from Laem Chabang port (Thailand) and 500 km from Danang port (Viet Nam). The former remains the most frequently used port for firms in the Savan-Seno SEZ.

The 1,012 ha SEZ with modern site infrastructure facilities attracts investments in manufacturing and services industries. Development of this SEZ was slow in the initial stage owing to limited experience and limited funding available to the Government (the main developer) to invest in basic infrastructure and land clearance. The development of this zone picked up quickly after a partnership was established between the Government and a Malaysian investor to develop site C of the SEZ (i.e. "Savan Park"). The Savan-Seno SEZ is currently the most successful SEZ in attracting investments. Based on this successful experience, the Government granted other private sector developers rights to develop site B of the Savan-Seno SEZ.

In earlier years, the zone struggled to attract sufficient tenants. It needed to achieve a critical mass of activities to stimulate growth in the zone. The SEZ became active after the 2011 floods in Thailand, which disrupted supply chains in some industries such as the automotive sector. Some companies opened facilities in the Savan-Seno SEZ as part of their diversification strategy, influenced also by proximity to their operations in Thailand and the attraction of low wage costs in the Lao People's Democratic Republic. An example is Nikon, which opened a factory in the Savan-Seno SEZ to produce entry-level and mid-class digital SLR (single-lens reflex) cameras and interchangeable lenses. These camera parts are transported to Nikon's plant in Ayutthaya, Thailand, to be used in final production of camera. In this regard, the management of the company has created and managed its own cross-border value chain, tapping the locational advantages of the two Member States through operations in selected economic zones.¹⁸

A number of other Japanese companies have also established a presence in this SEZ. They include Toyota Boshoku (makes car seat covers to supply to its Thai plant) and Japan Logistics Systems (built a distribution centre to serve its own cross-border logistics services).¹⁹ Aderans makes wigs on an outsourced basis from Japan; Lao Nishimatsu Construction designs, constructs and maintains factories and other buildings, primarily within the zone; and Nippon Koei offers consultancy services for the electricity line that is being installed between the provinces of Savannakhet and Saravan.²⁰

Savan-Seno Special Economic Zone C (Savan Park)

The Government of the Lao People's Democratic Republic and Pacifica Streams Development Co., Ltd. (Malaysia) signed a project development agreement on 24 February 2008 to jointly research and develop a new commercial and industrial hub in Savannakhet Province. Under the agreement, Savan Pacifica Development Co., Ltd. – a joint venture company formed by the Government of the Lao People's Democratic Republic and Pacifica Streams Development (Malaysia) – was to develop “Site C” (Savan Park) of the Savan-Seno SEZ.

There more than 65 tenants in the 234 ha park, with Lao companies leading in number (table 4.27). Companies from Australia, Belgium, France, Hong Kong (China), Japan, Malaysia, the Republic of Korea, the Netherlands and Thailand also operate in this park. Some of the names include Essilor (France), Tan Chong Motorcycles (Malaysia) and Urai Paint (Thailand). A majority of the operations are export-oriented businesses.

Other development in this SEZ includes the establishment of the country's first dry port. This facility helps reduce the time and cost for cross-border transactions and increase the reliability of cargo transportation. Over 25 companies within and outside the zone rely on the services provided by the dry port (Savan Park 2016a, 2016b), contributing to the creation of a cluster of logistical services within and around the zone.

Table 4.27. Savan-Seno SEZ: Selected companies in Site C, Savan Park

Investor	Country of origin	Investment activity
Savan Pacifica Development	Malaysia	Developer of site C-Savan Park
DKLS Properties Development	Malaysia	Property development and water treatment
Laos Tin Smelting & Refining	Japan	Tin smelting and refining
OM (Lao)	Japan	Property development and warehouse rental
PPS	Lao People's Democratic Republic	Property development and warehouse rental
PPS Consulting	Lao People's Democratic Republic	Investment management consulting service
Savan Concrete	France	Sales of ready-mixed concrete and concrete product
Tee Somboun Trading	Lao People's Democratic Republic	Import and export trading and sales of building
Cherry (Laos) Garment MFY	Hong Kong (China)	Fashionwear
OTI Asia	Australia	Mining support product
Deuan Sawanh (Laos)	Lao People's Democratic Republic	Transportation and logistic services
KCP Trading	Lao People's Democratic Republic	Import and export activities
Diri	Netherlands	Property development and warehouse rental
Tan Chong Motorcycles	Malaysia	Motorcycle assembly
Lotushall	Thailand	Leasing
Aeroworks	Netherlands	Airplane accessories manufacturing
TCR Concrete Sole	Lao People's Democratic Republic	Sales of ready-mixed concrete and concrete product
SJK (Lao)	Republic of Korea	Tin smelting and refinery
Savan Innovative Precast	Malaysia	Manufacturing of concrete products
Savan Park Copper Casting	Lao People's Democratic Republic	Produce copper wire/cable
Sokxay Industrial Gas	Lao People's Democratic Republic	Supply gas, liquefied petroleum gas and industrial gas
Urai Paint Lao	Thailand	Paint manufacturing
Denzo International	Thailand	Paint manufacturing
KP-Beau Lao	Japan	Cosmetic and toy manufacturing
Essilor Lao	France	Lens manufacturing

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Table 4.27. Savan-Seno SEZ: Selected companies in Site C, Savan Park (Concluded)

Investor	Country of origin	Investment activity
Toyota Boshoku	Japan	Manufacturing of automotive parts of components
Hong Kham Concrete-ENG	Lao People's Democratic Republic	Sales of ready-mixed concrete and concrete product
JP Investments	France	Property development, build-ready factory for lease
Lao Mining Logistic	Lao People's Democratic Republic	Transportation and logistic services
CEI	France	Consulting investment of Savan-Seno SEZ
Misuzu Lao	Japan	Manufacturing and sales for electric wire and cable assembly
DK Lao Savan Trading	Lao People's Democratic Republic- Australia	Import automotive spare parts, car repair workshop, machinery (equipment handling) heavy equipment, forklifts
6889 Advertising	Thailand	Advertising company
Ironbark	Australia	Citrus nursery construction and management, and citrus horticultural management service
C & T Mental Product	Thailand	Import materials to build factories and warehouses
Celestica Lao	Canada	Assembly of electrical and electronic integrated circuits
Boonsiri Lao Savannakhet	Thailand	Import frozen foods for domestic and export
Universal Trade	Thailand	Import and export steel and construction materials
C & C Lao	Thailand	Import equipment for office, factory, machine
Civilux Technology	Taiwan Province of China	Design, manufacture, test and sell electronic connectors
Kitani Electric	Japan	Design, manufacture and assembly of electrical products
Savan Logistics	Lao People's Democratic Republic	Logistics company
Zebra Fashion Asia	Belgium	Garment manufacturing
Hong Kong Kingcraft Winners Tobacco	China	Tobacco manufacturing
MMK Property Development	Thailand	Warehouse and property development
AEC Super Car and Classic Car	Thailand	Import classic car, auto part
Aeroworks Lao II	Netherlands	Airplane accessories manufacturing
Tiong Nam Logistics Solutions	Malaysia	Container and warehouse, logistics-distribution service

Source: Savan Park.

4.7.5. Malaysia: economic zone development

Malaysia's economic zones comprise FTZs or FIZs primarily, as well as industrial parks, FCZs, licensed manufacturing warehouses and RECs. These economic zones have different features and purposes (box 4.11). There are 22 FIZs, 18 FCZs, more than 500 industrial parks and 5 RECs located in different parts of the country. A majority of the FIZs were approved and developed in the 1970s–1980s (annex table 4.2) whereas the FCZs were established primarily in the 1990s–2000s (annex table 4.3). The RECs are a relatively more recent development.

All FCZs and FIZs are governed by the Free Zone Act 1990, which regulates the establishment, development and implementation of industrial parks and FIZs for export-led industries. State Governments have powers over land matters, which enable them to initiate development of FIZs and industrial parks. Therefore, all FIZs and most industrial parks are developed by State governments. In contrast, RECs are managed by their respective Economic Corridor Authority, formed as a Malaysian Federal Government statutory body.

All FIZs and registered industrial estates in Malaysia together hosted more than 7,000 factories or tenants approved as of 2016 (table 4.28 and 4.29). In terms of investment values, foreign companies are dominant in these economic zones. For instance, 88 per cent of investment capital in all FIZs and 59 per cent of investment capital of approved projects in industrial

Box 4.11. Malaysia: Types of economic zones

A free zone is a designated, secure area in which commercial and industrial activities are carried out and gazetted. There are two types of free zones, namely FIZs (free industrial zones) and FCZs (free commercial zones).

An **FIZ** is a designated, secured area in which industrial activities are carried out and gazetted by the minister of finance as stated under section 3(1) of the Free Zone Act 1990. It is a place where most manufacturing activities are carried out for export purposes. These zones facilitate or ease doing business for export-oriented companies, which can also carry out other activities such as evaluation, testing of goods, research and designing. Customs controls the movement of goods at the entry and exit points of the zone.

An **FCZ** allows commercial activities to be carried out, which include trading (excluding retail trade), bulk breaking, grading, relabeling, repacking of products imported or sourced from companies inside or outside FIZs, and other value added activities. This type of zone accommodates the growth of the services sector, mainly in commercial, trading and entrepôt trade activities. Most of the FCZs are located near the country's port.

An **LMW** (licensed manufacturing warehouse) is a bonded warehouse under the control of the Royal Malaysia Customs, by way of documentation and subject to all customs rules and regulations. An LMW can be a manufacturing unit (factory) granted to an investor for warehousing and manufacturing of approved products in the same premise. It is primarily intended to cater to export-oriented industries. Customs duty exemption is given to all raw materials and components used directly in the manufacturing process, from the initial stage until the finished product is packed and ready for export.

An **REC** targets developing economic clusters based on sectoral and geographical advantages to benefit from economies of scale. Priority sectors include the creative cluster in Iskandar Malaysia in Johor State; manufacturing, agriculture and bio-industries, and services in the Northern Corridor Economic Region. Other clusters and geographical coverage include petrochemical industries in industrial parks in the East Coast Economic Region; tourism and downstream palm-oil processing in the Sabah Development Corridor; and energy-intensive industries such as aluminium processing and smelting in the Sarawak Corridor of Renewable Energy.

Source: Malaysia country paper presented at the ASEAN-UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok.

estates are associated with foreign companies. These FIZs generated about 200,000 jobs, and the registered industrial estates created more than 710,000 jobs. These numbers indicate the importance of such economic zones in facilitating industrial development and attracting FDI. These economic zones are located in different parts of the country, where some are more successful than others at generating employment and attracting investment.

The Penang and Bayan Lepas FIZs, Prai FIZ and Melaka Batu Berendam FTZ attracted the highest numbers of export-oriented companies among FIZs. Although every State developed its own industrial estates, some constructed more. States such as Johor, Selangor, Perak and Melaka (in that order) have among the highest numbers of registered industrial estates in the country.

Table 4.28. Malaysia: Investment projects approved in selected FIZs and in production as of 2016
(Millions of Malaysian ringgit)

Selected FTZ/FIZ	No. of tenants	Employment	Domestic investment (RM)	Foreign investment (RM)	Total capital investment (RM)
Sungai Way (Seri Setia FTZ)	79	29,962	1,024.1	8,256.0	9,280.1
Ampang Hulu Kelang FTZ	20	4,950	33.2	74.4	107.6
Telok Panglima Garang FTZ	13	2,146	197.3	143.2	340.5
Port Klang Free Zone (PKFZ)	2	95	49.7	30.2	79.9
Prai FIZ	180	30,513	1,363.5	3,864.0	5,227.5
Prai Wharf FIZ	3	420	..	68.0	68.0
Bayan Lepas I FIZ	130	32,529	523.7	8,733.1	9,256.8
Bayan Lepas III FIZ	93	22,298	542.1	4,364.8	4,906.9
Bayan Lepas II FIZ	19	3,532	15.6	2,316.5	2,332.1
Bayan Lepas IV FIZ	167	29,109	1,107.6	6,944.8	8,052.4
Jelapang FTZ	17	850	44.2	68.6	112.8
Kinta FTZ	29	7,860	23.2	2,001.1	2,024.3
Johor Port Authority FTZ	4	122	0.1	66.7	66.8
Batu Berendam FTZ	121	24,777	1,006.0	7,051.1	8,057.1
Tanjung Kling FTZ	5	705	4.2	29.8	34.1
Muara Tabuan FTZ	18	7,139	683.8	3,103.4	3,787.3
Total	900	197,007	6,618.4	47,115.7	53,734.0

Source: Malaysian Investment Development Authority.

Table 4.29. Malaysia: manufacturing projects in registered industrial estates in production as of 2016

Location/State	No. of industrial estates	No. of tenants	Total employment	Domestic investment (RM million)	Foreign investment (RM million)	Total capital investment (RM million)
Labuan	2	23	2,146	3,316.4	273.9	3,590.2
Selangor	23	1,316	121,655	9,558.3	9,534.3	19,092.6
Peraka	22	417	52,855	3,462.5	2,918.7	6,381.2
Penang	10	961	126,148	7,398.9	14,993.4	22,392.3
Johor	27	1,587	191,013	13,427.5	30,922.9	44,350.4
Negeri Sembilan	10	417	59,194	2,597.7	12,459.5	15,957.2
Melaka	17	351	36,428	2,344.7	5,096.9	7,441.6
Kedah	12	534	61,333	2,223.1	2,235.9	4,459.0
Pahanga	10	202	16,322	6,895.5	10,295.6	17,191.1
Kelantan	5	70	11,005	316.0	593.8	909.8
Terengganu	12	87	7,785	7,944.9	4,636.5	12,581.4
Perlis	3	20	3,026	50.2	252.0	302.1
Sabah	7	44	6,267	145.7	130.9	276.6
Sarawaka	10	193	18,250	76,18.8	3,570.7	11,189.5
Total	170	6,222	713,427	67,300.1	97,914.8	165,215.0

Source: Malaysian Investment Development Authority.

^a Some industrial estates have a few phases but they are counted as one industrial estate.

Regional economic corridors

To promote a balanced regional development and accelerate growth in designated geographical areas, five RECs have been created. They build on their respective locational strengths to generate economic development. These five RECs are as follows:

- Iskandar Malaysia, comprising an area of 2,217 km² in Johor, was launched in 2006. It aims to achieve balanced growth in urban development by optimizing the use of resources, including protecting and conserving nature. Iskandar Malaysia has attracted major MNEs such as Legoland (Denmark), Hello Kitty Town (Japan) and Johor Premium Outlets. It has also attracted a number of foreign universities and colleges such as the Newcastle University of Medicine, Marlborough College, the University of Southampton and the University of Reading (all United Kingdom).
- The Northern Corridor Economic Region covers an area of 32,315 km², involving the northern states of Perlis, Kedah, Penang and Perak, with an estimated 6.5 million people. The key areas are agriculture, manufacturing, tourism and logistics. This corridor is host to global MNEs such as B. Braun (Germany), Toshiba (Japan) and Osram (Germany). The Region also plays a significant role as a trade hub for the Indonesia–Malaysia–Thailand Growth Triangle, with the Padang Besar Cargo Terminal and the new Perlis Inland Port as an integrated logistics centre and the Penang Port as a regional transshipment centre. Some new growth nodes are being established, including the Chuping Valley Industrial Areas in Perlis, Kedah Rubber City and Kedah Science & Technology Park.
- The East Coast Economic Region covers an area of 66,000 km², which involves the states of Kelantan, Terengganu, Pahang and Mersing district in Johor. It accounts for 51 per cent of the total area of Peninsular Malaysia. Five key economic clusters have been identified (i.e. manufacturing, oil, gas and petrochemical, tourism, agriculture and human capital development) as drivers of development in the Region. Major projects in this economic corridor include the Pekan Automotive Park, Pasir Mas Halal Park, Kertih Biopolymer Park and Malaysia China-Kuantan Industrial Park.
- Sarawak Corridor of Renewable Energy (SCORE) comprises an area of 70,708 km² in Sarawak. It focuses on developing the energy sector and targets priority industries such as aluminium, glass industries, oil-based industry, steel, palm oil, fishing and aquaculture, livestock, timber-based industries, marine and tourism. The availability of inexpensive energy gives SCORE a significant advantage in competing to attract energy-intensive industries. It enables SCORE to offer competitive energy cost and encourages investments in power generation and energy-intensive industries.
- The Sabah Development Corridor, which covers the whole State of Sabah of 73,631 km², was launched on 29 January 2008. It builds on its natural endowment and locational advantage. Key focus areas of development are agriculture, tourism, logistics and manufacturing; oil, gas and energy; higher education; and palm oil. Key projects include the expansion of the Sapangar Bay Container Port, and the development of a palm oil industrial cluster in Sandakan and Lahad Datu.

4.7.5.1. Penang Free Industrial Zones

Malaysia's first FTZ (also known as an FIZ) was established in 1972 in Bayan Lepas, Penang, adjacent to the Penang Airport. The Penang Development Corporation (PDC) was tasked by the Penang State Government to develop the Bayan Lepas FIZ. Another three phases of

the Bayan Lepas FIZ were subsequently constructed at different times because of increased demand for industrial sites by primarily MNEs. The success of Penang FIZs led to the creation of Prai FIZ to support small and medium industries.

All FIZs and large industrial parks in Penang were developed by the Penang Development Corporation²¹ (table 4.30). Private industrial parks are small catering to small and medium enterprises (SMEs). Most of these private industrial parks are near to the main FIZs or large industrial parks to facilitate SMEs operating in supporting industries (table 4.31).²² Industrial parks are still being developed, without being gazetted into FIZs.

Table 4.30. Penang: Major FIZs and industrial parks

Name	Location	Type of Industries
Mak Mandin Industrial Estate (early 1960s by State Government)	Butterworth, near Prai River	Mainly food, various light industries
Bayan Lepas FIZ 1 (early 1970s)	Bayan Lepas, adjacent to the Penang International Airport	Export-oriented industries, mainly electronics.
Bayan Lepas FIZ 2 (early 1970s)	Bayan Lepas, on the other side of the road from phase 1	Export-oriented industries, mainly medical devices and electronics (used to be electronics)
Bayan Lepas FIZ 3 (early 1980s)	Bayan Lepas, north-east of phase 1	Export-oriented industries, mainly electronics
Bayan Lepas FIZ 4 (early 1990s)	Bayan Lepas, south-east of phase 1	Export-oriented industries, mainly electronics
Bayan Lepas Technoplex (1990s)	Bayan Lepas, south of phase 4	Export-oriented industries, mainly electronics
Bayan Lepas Industrial Parks (1980s and 1990s)	Bayan Lepas, adjacent to FIZ phase 3 and FIZ phase 4	Mainly industries supporting the electronics cluster, medical devices and mixed industries; also a zone for logistics companies in Phase 4
Prai FIZs (1980s)	Peraí, adjacent to the Penang Bridge	Electronics, aerospace and mixed industries (used to be textiles and garment, and electronics cluster)
Prai Industrial Parks (from 1970s)	Several locations near Prai FIZ	Electronics and mixed industries
Seberang Jaya Industrial Park (1980s)	Next to Prai Industrial Park	Electronics and mixed industries
Bukit Tengah Industrial Park (1990s)	Near to Prai Industrial Park	Mixed industries, including electronics and plastics
Bukit Minyak Industrial Park (1990s)	Southwards of Prai Industrial Park, next to North-South Highway	Mixed industries, including electronics and food
Penang Science Park (late 2000s)	Opposite side of the highway from Bukit Minyak Industrial Park	Contains Halal Park; mixed high-tech industries, including electronics and biotech
Batu Kawan Industrial Park (2010s)	Island of Batu Kawan, south of Penang Science Park	Mixed high-tech industries, including electronics and automotive

Sources: Ong (2017), www.pdc.gov.my and <https://search.gmdu.net/b/Mak%20Mandin%20Industrial%20Estate.html>, Google Maps, previous discussions within the Penang Development Corporation and InvestPenang, and information gathered during meetings with investors at InvestPenang.

Note: FIZ = free industrial zones.

Table 4.31. Penang: private industrial parks (Selected cases)

Industrial Park	Location
Diamond Valley Industrial Park	Bayan Lepas, not far from Bayan Lepas FIZ phase 4 and Technoplex
Sungai Tiram Industrial Park	Bayan Lepas, next to Bayan Lepas FIZ phase 2
Fortune Park	Along the expressway linking George Town to Bayan Lepas industrial zones
Juru Light Industrial Park	Next to the Prai industrial parks
New Juru Industrial Park	Next to the Juru Light Industrial Park
Sungai Lokan Industrial Park	Located in North Prai District

Source: Ong (2017).

The Penang FIZs have been instrumental in helping the State attract FDI and many major global electronic MNEs. The presence of the latter in turn helped attract other companies operating in related industries such as plastic products and machinery and equipment – forming an important industrial cluster supporting the electronics industry (chapter 5). More than 90 per cent of the registered investments in Penang FIZs are attributable to approved foreign companies, which are major contributors to some 112,000 jobs in the State (table 4.32). The Penang FIZs are significant contributors to investment attraction and employment generation in the country. As of 2016, the four phases of these FIZs accounted for 45 per cent of the country's total number of FIZ-based tenants, 44 per cent of employment and 47 per cent of total FDI in all FIZs in the country (table 4.33).

Table 4.32. Approved projects in Bayan Lepas FIZ (Phases I–IV), 1980–2016 (Millions of Malaysian ringgit)

Industry	Total number	Total employment	Total domestic investment (RM)	Total foreign investment (RM)	Total capital investment (RM)
Food manufacturing	4	237	2.9	..	2.9
Textiles and textile products	9	1,942	4.6	160.7	165.4
Paper, printing and publishing	4	102	1.6	3.6	5.2
Chemical and chemical products	14	1,125	21.2	478.6	499.8
Rubber products	11	1,092	18.0	59.5	77.6
Plastic products	22	1,502	55.8	115.9	171.7
Non-metallic mineral products	1	177	9.8	10.2	20.0
Basic metal products	5	158	31.9	22.1	54.0
Fabricated metal products	34	2,635	203.1	216.9	420.0
Machinery and equipment	77	5,507	631.6	303.0	934.6
Electronics and electrical products	297	91,881	1,475.0	22,683.1	24,158.2
Transport equipment	8	1,438	224.6	195.0	419.6
Scientific and measuring equipment	18	3,170	14.0	2,180.8	2,194.8
Miscellaneous	13	1,514	37.5	69.1	106.6
Total	517	112,480	2,731.8	26,498.6	29,230.4

Source: Malaysian Investment Development Authority.

Note: Based on number of projects approved by the Authority, not by number of companies.

Table 4.33. Penang State: Manufacturing projects approved in industrial estates (1980–2016) and in production as of 2016 (Millions of Malaysian ringgit)

Industrial estates	No. of tenants	Employment	Domestic investment (RM)	Foreign investment (RM)	Total capital investment (RM)
Prai Industrial Estate	626	68,347	5,726.6	5,863	11,590
Mak Mandin Industrial Estate	65	4,243	406.6	294	701
Bayan Lepas I Industrial Estate	138	28,746	446.9	4,672	5,119
Seberang Jaya Complex Industrial Estate (Bagan Serai)	48	5,434	283.0	490	773
Pulau Jerejak Industrial Estate	2	21	3.4	..	3
Bayan Lepas II Industrial Estate	14	5,920	151.0	1,841	1,992
Prai IV Industrial Estate	52	9,770	257.0	1,248	1,505
Bukit Tengah Industrial Estate	6	434	10.0	82	92
Bukit Minyak Industrial Estate	9	923	114.4	209	323
Technoplex Industrial Estate	1	2,310	..	294	294
Total in Penang	961	126,148	7,398.9	14,993	22,392
Total in Malaysia	6,222	713,427	67,300.1	97,915	165,215

Source: Malaysian Investment Development Authority.

With the opening of the Bayan Lepas FIZ, Penang's economy grew as a result of export-oriented, labour-intensive electronics manufacturing activities, with waves of foreign electronic MNEs investing in the State since the 1970s (box 4.12, section 5.5.2.2). Penang was marketed as a low-cost location for foreign electronics companies to set up offshore facilities. Today, many of the pioneer MNEs still operate in Penang. However, many have reorganized or moved from traditional manufacturing to higher value added activities, entailing the employment of high-skilled workers and involvement in domestic outsourcing of non-core activities. For instance, Motorola (United States) and Intel (United States) have set up R&D centres in Penang to move up the value chain by undertaking product development activities in that State.

Box 4.12. Penang FIZs: waves of foreign investment

Since the opening of Penang's Bayan Lepas FIZ in 1972, the State has attracted many major global electronics MNEs (box table 4.12.1). The first wave of electronics investments in the Penang FIZ saw the establishment of semiconductor factories by MNEs such as Hewlett-Packard, Intel and National Semiconductor (all United States), Hitachi (Japan) and Litronix (Germany). With growing demand for factories and land over the years, the Bayan Lepas FIZ was expanded in three more phases. The second phase of the FIZ was established in Prai in the 1980s. No new FIZ was developed after the fourth phase because there was no actual demand for FIZs as companies in the principal customs areas can apply for licensed manufacturing warehouse status (under section 65/65A of the Customs Act 1967), which entitles them to customs duty exemption on all raw materials, components and machinery used directly in the manufacturing process of approved products. The holder of the license can also use the same premises for warehousing purposes, but the warehouse license has to be renewed on an annual basis.

Source: Ong (2017).

Box table 4.12.1. Major MNEs in Penang FIZs and industrial parks

Name of park	Selected major MNEs	Country of origin	Industry segment
Bayan Lepas FIZ 1 (1970s)	Osram (pioneer, formerly known as Siemens/Litronix)	Germany	Semiconductors – light-emitting diodes
	Robert Bosch (pioneer)	Germany	Power tools
Bayan Lepas FIZ 2 (1970s)	B. Braun	Germany	Medical devices
	Renesas (pioneer, formerly known as Hitachi)	Japan	Semiconductors
	AMD (pioneer)	United States	Semiconductors
	Intel (pioneer, acquired Altera – integrated chip design)	United States	Semiconductors
	Broadcom (pioneer, evolved from HP to Agilent to Avago)	United States	Semiconductors
Bayan Lepas FIZ 3 (1980s)	Keysight Technologies (formerly Agilent)	United States	Electronics test and measurement equipment
	Clarion (pioneer)	Japan	Audiovisual products
	Integrated Device Technology	United States	Semiconductors
	Western Digital	United States	Media for hard disk drives; in the process of moving to Thailand
	Dell (also in Bukit Tengah, an industrial park in Prai)	United States	Global business centre
Bayan Lepas FIZ 4 (1990s)	SAM (acquired LKT Industrial Bhd)	Singapore	Precision machining and equipment integration for aerospace and equipment industries
	ASE	Taiwan Province of China	Semiconductors
	Linear Semiconductor	United States	Semiconductors
Bayan Lepas Technoplex (1990s)	Motorola	United States	R&D centre for next-generation “land mobile radio” products, broadband “long-term evolution” devices and system solutions
	Sanmina-SCI (occupying Motorola's old manufacturing plant)	United States	Electronics manufacturing services, mainly for Motorola in this facility; has another facility in Prai
	Intel Microelectronics	United States	From Intel's acquisition of Altera

/...

Box 4.12. Penang FIZs: waves of foreign investment (Concluded)**Box table 4.12.1. Major MNEs in Penang FIZs and industrial parks**

Name of park	Selected major MNEs	Country of origin	Industry segment
Prai FIZ (1980s)	Sony	Japan	Audiovisual hi-fi products
	Honeywell	United States	Flight control system
	Teleplan	Netherlands	Maintenance and repair of computers and computer peripherals
Bayan Lepas industrial parks	Plexus	United States	Electronics manufacturing services
	Jabil	United States	Electronics manufacturing services
	Venture	Singapore	Electronics manufacturing services
	Seagate	United States	Thin-film magnetic recording heads for hard disk drives; in the process of moving to Thailand
	St. Jude Medical	United States	Medical devices
	National Instruments	United States	R&D centre and manufacture of test and control hardware
	Lumileds	United States	Light-emitting diodes
Prai industrial parks (include Prai, Bukit Tengah, Bukit Minyak)	Flextronics	Singapore	Electronics manufacturing services
	Dell	United States	Manufacture of servers
Penang Science Park (late 2000s)	Ibiden	Japan	Printed wire boards for smart phones and tablets
Batu Kawan Industrial Park (2010s)	Hewlett-Packard	United States	Integrated circuit die used in high-speed inkjet printer heads, with imported wafers
	Bose	United States	Entertainment and home audio solutions
	Sandisk (acquired by WD)	United States	Storage

Sources: investPenang, Penang Development Corporation industrial surveys (various years) and Tay, Daniel, "Penang is on its way to becoming the Silicon Valley of the East, and IoT is how", 10 June 2015 (<https://www.techinasia.com/penang-silicon-valley-of-east-iot>) and Google Maps,

The attraction of global MNEs contributed to the development of the semiconductor industry and the growth of the electrical and electronics sector in Penang and Malaysia. Major MNEs such as Intel, AMD, ASE, Motorola, ST Microelectronics, Texas Instruments, Renesas, Seagate as well as major Malaysian home-grown companies such as Globetronics, Eng Technologi, Atlan Industries, LKT Automation, Inari and Vitrox contributed to this growth. Some of these Malaysian electronic companies have evolved to become MNEs in their own right. Their development, from humble beginnings as contract manufacturers to MNEs that operate in Penang, highlights the spill-over effects (business linkages) between the two groups. These local companies also play an important role in the global supply chain and as vendors to MNEs.

Penang FIZs have been successful as catalysts for industrialization, attracting investment and developing export-oriented industry. Facing with an increasing cost environment and growing competition, Penang FIZs are facing challenges that are driving the State to find solutions to remain competitive in attracting investments. The State Government is promoting high value added activities and is giving more emphasis to catering to knowledge- and ICT-based non-manufacturing activities.

4.7.6. Myanmar: economic zone development

There are two major types of economic zones in Myanmar: industrial parks and SEZs. The latter are recent industrial infrastructure developments and large in terms of land area, while

the former are smaller industrial parks or zones. SEZs are being developed in line with national objectives, which include promotion of investment and trade, generation of employment, support for SMEs and industrial development, including FDI attraction.

Currently, there are three approved SEZs (figure 4.7): the Thilawa SEZ in Yangon Region, the Dawei SEZ in Taninthayi Region and the Kyauk Phyu SEZ in Rakhine State. These SEZs are located at maritime access areas and have one or more strong economic advantages. They are at various stages of development, with the Thilawa SEZ being the first of the three to start commercial operation in 2015. The other two are still being developed. All SEZ development is governed by the country's SEZ regulatory framework, the SEZ Law 2014 and institutional structure (box 4.13).

The Government of Myanmar strongly encourages private sector participation in SEZ development in the country. Most industrial parks and all SEZs have involved participation by private investors – in some cases, in joint ventures with the Government.

Figure 4.7. Myanmar: SEZ locations



Source: Myanmar country paper presented at the ASEAN-UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok.

Box 4.13. Myanmar: SEZ law, objectives and institutional issues

The Myanmar Special Economic Zone Law (2014), which supersedes the Myanmar SEZ Law 2011, refers to “special economic zone” as a zone notified and established by the SEZ Central Authority by demarcating the boundary and issuing the notification.

The 2014 SEZ Law stipulates specific objectives, institutional structure, roles and responsibilities of the bodies formed under the law, including incentives extended to developers and investors. The followings institutional bodies oversee the establishment and development of SEZs in Myanmar:

- The Central Body’s activities include stipulating policies for implementation of SEZs, submitting proposed location for SEZ development, forming and overseeing the Central Working Body and Management Committees;
- The Central Working Body’s activities include submitting suggestions to the Central Body after having scrutinized proposals; and
- The management committee for each SEZ is responsible for issuance of investment permits to approved projects in the SEZ, supervising, inspecting, and coordinating with relevant governmental departments and organizations. Each management committee is to establish a one-stop service centre to facilitate investment, including supervising and ensuring compliance with laws, rules and regulations. For instance, the Thilawa SEZ Management Committee and its One-Stop Service Centre team, comprised of designated officers from relevant ministries, provide one-stop service to facilitate investment in the zone.

Various incentives are provided for investments in SEZs. They are summarised in box table 4.13.1.

Box table 4.13.1. Selected benefits under SEZ Law 2014)

Income tax exemptions	Import tax exemptions
> In Free Zone (for export): - 7 years exemption - 50% relief for next 5 years - 50% for next 5 years if profit reinvested within 1 year	> In Free Zone: - Exemption on import of raw materials, machinery and spare parts, construction material and motor vehicles for construction purpose - Exemption on import of trading goods
> In Promotion Zone (for sales within Myanmar) - 5 years exemption - 50% relief for next 5 years - 50% for next 5 years if profit reinvested within 1 year	> In Promotion Zone: - 5 years exemption on import of raw materials, machinery and spare parts, construction material and motor vehicles for construction purpose - 50% relief for next 5 years
Commercial tax/VAT exemptions	One-stop-service-center
> In Free Zone: investor may be given exemption > In Promotion Zone: investor may be given exemption during specific period only	One-stop-service-center to be set up for approval of investments, company registration, issue of entry visa, issue of certificate of origin, collection of taxes, approval of employment permits, permission for factory construction
Dividend pay-out	Asset protection
> Investors may apply for income tax exemption for dividends based on profits accrued locally for which tax has been paid	> Assets, profits and other rights shall be recognized and protected > It is guaranteed that investment shall not be nationalized

Source: Ministry of Commerce and Directorate of Investment and Company Administration.

4.7.6.1. Thilawa SEZ

The Thilawa SEZ came into operation in 2015 with 405 ha developed as zone A. It has 2,400 ha in total, in the Thanlyin and Kyauktan townships in Yangon Region. It is strategically located by the bank of the Yangon River and about 38 km from the Mingaladon International Airport and 23 km from the Yangon commercial district. It thus has easy access to maritime, air and road transport for both domestic and international businesses.

The Thilawa SEZ is a public–private partnership project involving Japanese investors (49 per cent) and Myanmar partners (51 per cent). The former consists of Marubeni, Mitsubishi and Sumitomo, which together hold a 39 per cent share, and the Japan International Cooperation Agency, which holds a 10 per cent share. The Myanmar parties consist of the Government (10 per cent) and a private consortium under the Myanmar Thilawa SEZ Holdings Company (41 per cent).

The Thilawa SEZ is a general-purpose zone that attracts investments from various types of industries, which range from electrical and electronics to automotive and spare parts, plastics, metal products, simple cut-make-pack garments and food processing and services industries. It has been successful in attracting investments in the early phase of its operation. As of 31 March 2017, it hosted 81 companies, mainly foreign investors, led by those from Japan and then Thailand (annex table 4.4.). zone B, with an area of 101 ha, is being developed. One sixth of the SEZ is developed, with zone A fully taken up. Of the 81 tenants, 30 have started operations; many are still constructing their factories. Some of the companies registered from Thailand are foreign companies that operate and are based in Thailand. This corporate investment strategy suggests a growing intrafirm cross-border arrangement involving Thailand and Myanmar.

Similarly, some Japanese companies – such as Koyorad, Fujifilm and Foster Electric – have invested in the zone through subsidiaries or regional headquarters in Singapore. Companies from other countries such as Indorama Ventures (Thailand) and Ball Asia Pacific (United States) have registered their operations in the zone as investment from Singapore.

With less than three years of operation, the Thilawa SEZ has already helped attract investment projects, mainly FDI, to the country (table 4.34). The SEZ attracted about 12 per cent of total registered investment projects in the country in fiscal years 2014–2017. While the share is not huge at this stage of the zone's development, a number of factors need to be borne in mind with respect to its longer-term prospects. First, the SEZ's contribution to national efforts in

Table 4.34. Myanmar and Thilawa SEZ: approved foreign investment, fiscal years 2014–2017 (Millions of dollars)

Fiscal year	Thilawa SEZ		Myanmar Investment Commission		Total for country		Share of Thilawa SEZ investment in the country (%)	
	No. of projects	Amount (\$ millions)	No. of projects	Amount (\$ millions)	No. of projects	Amount (\$ millions)	No. of projects	Amount (\$ millions)
2014/15	24	324.9	211	8,010.5	235	8,335.4	10.2	3.9
2015/16	33	427.4	213	9,481.3	246	9,908.7	13.4	4.3
2016/17	19	252.1	138	6,649.8	157	6,901.9	12.1	3.6
Total	76	1,004.4	562	24,141.6	638	25,146.0	11.9	4.0

Sources: Thilawa SEZ Management Committee and Directorate of Investment and Company Administration, Myanmar.

attracting investment is currently based on just one sixth of the zone being developed. Second, many tenants are still constructing their factories and the full impact of their investments have yet to be realized. Third, the SEZ is not designed to attract large-ticket oil, gas and extractive investments.

In addition to foreign tenants in the zone, foreign infrastructure companies are involved in the development of the SEZ or infrastructure linking to it. For instance, Hutchison Port Holdings (Hong Kong, China) has opened the Myanmar International Terminals Thilawa, with deep-draft vessel facilities, an area of 75 ha, five container berths and 20,000 m² of warehousing adjacent to the Thilawa SEZ.²³ The participation of foreign investment in the development of the SEZ, as both developers and tenants, is crucial for the success of the zone, as well as others in the country.

4.7.7. Philippines: economic zone development

There are at least six types of economic zones in the Philippines, each specifically defined and related to specific objectives (table 4.35). Some 365 economic zones were in operation as of year-end 2016 under the mandate of the PEZA. They consist of economic zones for specific industries: 74 manufacturing zones, 200 in IT centres, 49 IT parks, 1 medical tourism park, 1 medical tourism centre and 21 agro-industrial zones. The country is developing more economic zones, which are at different stages of development. In addition to these PEZA-registered economic zones, there are other types and numbers under the purview of other government institutions.

Regulatory framework and institutions

The Republic Act 7916 of 1995 established the institutional framework for the development and operation of SEZs (ecozones) throughout the country. Section 5 of RA 7916 encourages private sector initiatives in the development of economic zones. Economic zone development is governed by a number of government institutions, comprising ecozones and free port authorities, which grant fiscal incentives and administer operations of investors (tenants) in economic zones under their purview.

These institutions include the Bases Conversion and Development Authority, which administers four ecozones (i.e. Clark Freeport and SEZ, Poro Point Freeport Zone, Camp John Hay SEZ, and Bataan Technology Park). The Subic Bay Metropolitan Authority operates the Subic Bay Freeport Zone. Four other ecozones were created and operated by specific government institutions: the Freeport Area of Bataan, the Cagayan SEZ and Freeport, the Aurora Pacific Economic Zone and Freeport, and the Zamboanga City SEZ.

The PEZA was created under Act 7916 (1995) and is attached to the Department of Trade and Industry. The 1995 Law has multiple objectives aiming to support the country's industrialization process, among them attracting FDI, increasing exports and generating employment. The PEZA oversees, regulates and promotes investment in economic zone development and administers a large number of zones. It administers incentives to ecozone developers and operators and to tenants in PEZA-registered zones.

Table 4.35. Philippines: Types of economic zones

Term	Definition
Ecozone or SEZ	A selected area with highly developed or potentially developable agro-industrial, industrial, tourist, recreational, commercial, banking, investment and financial centres whose metes and bounds are fixed or delimited by presidential proclamations. An ecozone may contain industrial estates, EPZs, FTZs and tourist and recreational centres.
Industrial estate	A tract of land subdivided and developed according to a comprehensive plan under a unified continuous management and with provisions for basic infrastructure and utilities, with or without prebuilt standard factory buildings and community facilities for the use of a community of industries.
EPZ	A specialized industrial estate located physically and/or administratively outside the customs territory and oriented predominantly to export production. Enterprises here are allowed to import capital equipment and raw materials free from duties, taxes and other import restrictions.
FTZ	An isolated, policed area adjacent to a port of entry (such as a seaport or airport) where imported goods may be unloaded for immediate transshipment or stored, repacked, sorted, mixed or otherwise manipulated. Their movement to another area in the country is subject to customs and internal revenue rules and regulations.
Agro-industrial economic zone	A selected area with highly developed or potentially developable agro-industrial estates whose metes and bounds are fixed or delimited by presidential proclamation. The zone has support facilities and services required for processing and agro-based manufacturing activities, utilizing local agricultural and marine products as basic raw materials (e.g., post-harvest treatment, packaging, printing, cold storage, blast freezing, by-product and waste management, and other facilities and services). Similar agricultural products may be brought into the zone to be stored, sold, exhibited, broken up, repacked, distributed, sorted, graded, cleaned, mixed with foreign or domestic merchandise, or otherwise manipulated or manufactured and exported.
IT zone	A selected area that is highly developed or potentially developable into an IT park or centre whose metes and bounds are fixed or delimited by presidential proclamation. They are planned and designed to provide infrastructure and support facilities required by IT enterprises, as well as amenities required by professionals and workers involved in IT enterprises, or easy access to such amenities.
Tourism economic zone	A selected area with highly developed or potentially developable tourism estates whose metes and bounds are fixed or delimited by presidential proclamation. It is an integrated resort complex, with prescribed capacities of tourist facilities and activities, such as sports and recreation centres, accommodations, convention and cultural facilities, food and beverage outlets, commercial establishments and other special interest and attraction activities and establishments, and provided with roads, water supply facilities, power distribution facilities, drainage and sewage systems and other necessary infrastructure and public utilities.
Medical tourism SEZ	A selected area that is highly developed or potentially developable into a medical tourism park or centre whose metes and bounds are fixed or delimited by presidential proclamation. It is planned and designed in accordance with the standards of the Department of Health and the Department of Tourism for support facilities and for services required for health and wellness.

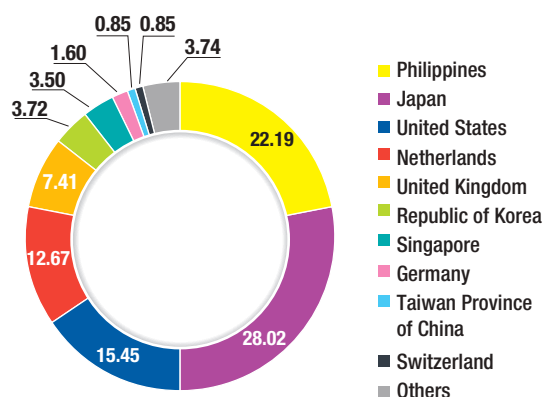
Sources: Rules and Regulations to Implement Republic Act No. 7916, "The Special Economic Zone Act of 1995", and PEZA.

PEZA-registered economic zones

In 1969, the only companies allowed in economic zones were those engaged in foreign trade. In 1972, manufacturing companies that exported 100 per cent of their production became eligible to locate in the EPZs. In 1995, the coverage was expanded from the manufacturing sector to the services sector. It now includes manufacturing, IT-related activities including call centres, tourism-related businesses, agro-industrial activities and services (e.g. medical, real estate, warehousing, storage and logistics). The inclusion of services expanded the range of investments to include companies seeking cost-effective locations for services offshoring operations (i.e. IT and business process offshoring (IT-BPO)).

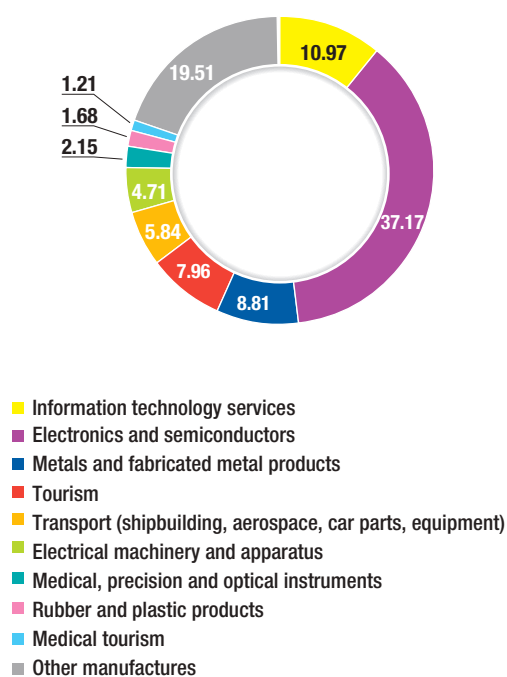
By giving the private sector the opportunity to develop and operate ecozones (industrial estates or parks and IT centres or parks), the number of such zones increased from 16 with 331 tenants in 1995, to 365 with more than 3,250 tenants as at December 2016. As of 1995, the PEZA stopped developing economic zones. All zones subsequently have been developed and owned by the private sector.

Figure 4.8. Philippines: Investments (tenants) in PEZA registered zones, by nationality, 1995–2016 (Per cent)



Source: PEZA.

Figure 4.9. Philippines: Investments (tenants) in PEZA-registered zones, by product sector, 1995–2016 (Per cent)



Source: PEZA.

Evolution of economic zones

Economic zones in the Philippines have evolved from FTZs in 1969, to EPZs in 1972 to ecozones in 1995. The Philippine Congress created the FTZ in June 1969 with Republic Act No. 5490. The purpose was to promote foreign trade. In 1972, Presidential Decree 66 mandated the creation of EPZs in several strategic locations throughout the country to promote exports and social and economic development beneficial to the country. Republic Act 7916 of 1995 further revised the EPZ concept to SEZs or ecozones to attract foreign investment and to promote employment and the use of domestic materials and to boost exports.

Before the creation of the PEZA, the country had four Government-owned EPZs (i.e., Baguio City, Bataan, Cavite and Mactan) and 12 private ones, primarily industrial estates with areas designed as EPZs. Since 1995, IT zones, science parks, medical and agro-industrial zones have been established. The last two decades have witnessed a significant shift in the key actors involved in the development, ownership and operation of economic zones. The private sector is now the lead developer and owner, with the Government taking only the overseeing, regulating and promoting roles.

Significance of economic zones

Some economic zones in the country are more successful in attracting locator companies and generating jobs (chapter 5). These successful zones vary in size, ownership and investment arrangements (e.g. public-private partnership or private sector developed zones) (table 4.36). They share some common features: provision of good infrastructure facilities, easier access to national infrastructure (e.g. road networks, ports, airports) and strategic location. In some cases, they offer competitive management services and have an effective marketing set-up to court investors.

The PEZA-registered zones are dominated by foreign companies, primarily Japanese tenants, followed by Filipinos, American and others (figure 4.8).²⁴

Table 4.36. Philippines: selected successful economic zones

Zone	Land area (ha)	Developer	No. of tenants
Cavite Economic Zone	280.7	PEZA (Government)	851
First Cavite Industrial Estate SEZ	71.8	National Development Company (NDC, a Government agency), Marubeni Corporation (Japan) and Japan International Development Organization Ltd	224
First Philippine Industrial Park	343.8	First Philippines Holdings Corporation (Philippines, private) and Sumitomo Corporation (Japan)	264
Carmelray Industrial Park II SEZ	143.0	JTCI Corporation (Philippines, private)	185
Laguna Technopark	337.2	Ayala Land (Philippines, private) and Mitsubishi Corporation (Japan)	698
Laguna Technopark Annex	29		34
Light Industry and Science Park I SEZ	71.7	LISP-I Locators' Association, Inc (Philippines, private)	196
Light Industry and Science Park II SEZ	70.4	LISP-II Locators' Association, Inc (Philippines, private)	121
Mactan Economic Zone	119.4	Philippine Economic Zone Authority (Government)	397

Source: ASEAN Investment Report 2017 research, based on PEZA.

Manufacturing has traditionally been the dominant industry in the country's economic zones. However, its dominance has shrunk because of the emergence and promotion of other industries in ecozones (i.e. service-related industries) since 1995. Although a majority of tenants in PEZA-registered ecozones operate in the electronics sector, the development of ecozones and companies in IT-BPO and other service industries has become significant since 2000 (figure 4.9).

The number of services-related companies in the ecozones is now greater than those in manufacturing despite having been promoted over a shorter period (table 4.37).

A significant feature in the development of economic zones is the rapid rise of IT-related and BPO activities, which are dominated by foreign companies. For instance, American companies are among the major investors in BPO activities and call centres, while Japanese companies are prominent in software development, and storage and warehousing operations (table 4.38).

Table 4.37. Philippines: Number of companies in PEZA ecozones, 1989 to 2016 (Selected years)

Industry	1989	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	Total
Manufacturing	3	7	85	107	127	183	201	226	246	199	201	182	1,852
Services	0	0	6	34	114	216	279	303	360	291	338	361	2,312
IT-related	0	0	0	3	36	120	153	183	242	170	216	216	1,339

Source: PEZA.

Table 4.38. Philippines: Services companies in economic zones, 1995–2016 (Selected industries)

Industry	Type of activity	No. of domestic companies ^a	No. of foreign companies ^a
BPO	Service-related	40	237 (62 American owned)
Call centres	Service-related	58	220 (92 American owned)
Software development	Service-related	62	222 (57 Japanese owned, 55 American owned)
Real estate	Service provider	293	41
Storage and warehousing	Service provider	93	201 (116 Japanese owned)

Source: ASEAN Investment Report 2017 research compiled from PEZA data.

^a Majority or fully owned entities.

The influx of FDI in these key service areas can be attributed to a number of reasons, which include the following two:

- (1) Low cost of operation, including access to English-language-speaking labour force. Foreign companies set up IT-BPO operations, such as customer contact points (call centres) and back-office processes to provide such services to members of the same group in different locations in the world. In some cases, they also provide IT-BPO services to third-party clients that outsource such business functions to save costs. For example, companies such as JP Morgan and QBE have relocated their support operations to a Philippine ecozone. Other MNEs whose business is offering IT/BPO solutions to other companies – such as Convergys, Teletech, Teleperformance, Ubiquity, Aegis, Transcom, Iqor, Skyes and Sutherland – have established their service delivery centres in the country's IT ecozones.
- (2) Foreign firms operating in logistics services to serve members of the group, encouraged by logistics business opportunities in the country. They include not just transportation services but also in other areas such as warehousing. Japanese companies have been active in logistic investments. For instance, of 201 foreign-owned storage and warehousing companies, 116 are Japanese owned. Several were set up to specifically serve their sister companies operating in economic zones. Some of these companies are Toyota Motor Philippines Logistics, Inc., Toyota Tsusho Philippines Corporation, Fuji Electric Philippines, Inc. Warehousing Division, Nitto Denko Philippines Corporation, Mitsui High-Tec (Philippines), Inc., and Toshiba Logistics (Philippines) Corporation.

4.7.8. Singapore: industrial estates and free trade zones

The first industrial estate in Singapore (i.e. the Jurong Industrial Estate) was developed in 1961. Since the establishment of the Jurong Town Corporation in 1968 (which became the JTC in 2000), more industrial estates and various types of industrial infrastructure have been developed to meet demand from companies and industries.²⁵

Singapore hosts more than 75 industrial estates and business parks (annex table 4.5). The JTC is the main governmental statutory body involved with the development of industrial estates and other forms of industrial infrastructure in the country. Other institutions are also involved in the development and provision of business parks to companies (chapter 5). They include the Housing and Development Board, the subsidiary of JTC (Ascendas-Singbridge) and several other institutions responsible for managing FTZs.

As in other ASEAN member states, the development of industrial estates in Singapore has evolved (section 4.4). For instance, specific industrial facilities were built in Jurong in the 1970s to support the development of the petrochemical industry, and the Singapore Science Park was developed in the 1980s. Industrial facilities to support the IT industry were developed in the 1990s, which integrated commercial, industrial and office use functions (e.g. International Business Park, Changi Business Park). The first wafer fabrication park was also developed during this period. The development of industrial infrastructure has become more integrated with the advent of the work-live-play concept, and in some cases facilities have become more specialized and integrated (e.g. One-north), catering for the demands of industries and firms.

Singapore also has 10 FTZs, areas declared to be FTZs under section 3(1) of the Free Trade Zones Act.²⁶ Three other acts relate to FTZs in Singapore:²⁷ (i) the Regulations for Imports and Exports Act, (ii) the Customs Act and (iii) the Goods and Services Tax Act.

The first FTZ was established in 1966 to boost entrepôt trade. Today, the 10 gazetted FTZs in five geographical areas are privately owned and operated by three FTZ authorities (i.e. PSA International Pte Ltd, Jurong Port Pte Ltd, and Changi Airport Group (Singapore) Pte Ltd) (table 4.39).

Table 4.39. Singapore: FTZs by geographical area, 2016

Area	FTZ	FTZ authority or company
Keppel	Tanjong Pagar Terminal and Keppel Terminal	PSA International
	Brani Terminal	
	Keppel Distripark	
	Keppel Distripark Linkbridge	
Pasir Panjang	Pasir Panjang Terminal Pasir Panjang Terminal (Phases 3 and 4)	PSA International
Sembawang	Sembawang Wharves	PSA International
Jurong	Jurong Port (including Pulau Damar Laut)	Jurong Port
Changi	Changi Airport Cargo Terminal Complex Airport Logistics Park of Singapore	Changi Airport Group

Source: Singapore Customs (<https://www.customs.gov.sg>).

Although SEZs are typically established to attract FDI and used as a test bed for broader reforms, this is not the case for Singapore. This is because whereas most countries specifically designate areas where goods may be landed, handled, manufactured or reconfigured, and re-exported without being subject to customs duties (i.e. FTZs), in Singapore practically all goods can be imported tariff-free. In this context, Singapore's FTZs were established with the primary objective of facilitating trade and transshipment. This is realized through efficient port operations and reduced customs procedures within the FTZs. Each FTZ specializes in a particular type of cargo or activity. The port terminals operated by PSA International specialize in containerized cargo, whereas the multipurpose Jurong Port manages bulk cargo, conventional cargo and regional cargo. The Sembawang Wharves handle motor vehicles primarily, whereas Keppel Distripark, Changi Airport Cargo Terminal Complex, and the Airport Logistics Park of Singapore focus on bulk-breaking activities.

By facilitating transshipment flows and sustaining a level of connectivity higher than domestic cargo alone can attract, Singapore's FTZs help to enhance the competitiveness of traders through three aspects:

- (i) Time-to-market advantages: High sailing frequencies and extensive linkages to points around the world give shippers time-to-market advantages and allow them to maintain lower inventory levels.
- (ii) Reduced compliance costs: Suspension of goods and services taxes while cargo remains in the FTZs helps ease tax compliance costs.

- (iii) Increased reliability for business operations: High sailing frequencies enable shippers to “catch up” with their delivery schedules quickly in times of unforeseen delays.

4.7.9. Thailand: economic zone development

There are three main types of economic zones in Thailand: EPZs, industrial estates, and SEZs. The SEZs are being developed near the borders with neighbouring countries, to promote cross-border trade, investment and industrial development and to capture benefits arising from the ASEAN Economic Community integration. EPZs, in contrast, are areas designated for industrial activities, trading, or services or other activities beneficial to or connected with industrial activities, trading or services for the purpose of exporting. Investment projects approved by the Board of Investment that meet certain criteria receive investment incentives (e.g. tax holidays and duty exemption) from the Government. These approved projects can be located in EPZs or other industrial estates.

Thailand has 58 industrial estates, 12 of them are free zone status. In addition, Thailand is developing 10 SEZs in 10 provinces, with a combined area of 2,932 km². Most of the industrial estates are developed by the IEAT; it owns 11. It has developed another 35 jointly with the private sector. The first industrial estate was established in 1972 at Bangchan. There are 10 EPZs, 6 developed by the IEAT and 4 owned by the private sector, primarily local companies (table 4.40). The majority of the industrial estates were built in the late 1970s and in the 1980s. The first EPZ (Bangpoo Industrial Estate) was established in 1997 and remains the largest in terms of number of tenants. Together, these 10 EPZs have attracted more than 1,350 export-oriented tenants.

Table 4.40. Thailand: export processing zones

Name	Year established	Owner	Size (ha)	No. of factories	Major industries or product category
Gateway City Industrial Estate	1990	M.D.X. PLC	934	63	Rice, plastic, motorcycle parts, vehicle modification, trucking, warehouse
Bang Pa-in Industrial Estate	1989	Bangpa-in Land Development Co.	314	109	Warehouse, electronics, electrical parts for appliances, machinery for electronics industry
Ban Wa (Hi-Tech) Industrial Estate	1989	Thai Industrial Estate Corp.	385	123	Telecommunication services, manufacture and assembly of hard disk drive parts for computers
Hemaraj Chon Buri Industrial Estate	1989	Hemaraj Land and Development	557	84	Large steel, electronics, energy, automotive parts
Northern Region Industrial Estate	1983	IEAT	289	90	Roofing tiles and accessories, electronics, manufacture of carburetors and automotive parts
Bangpoo Industrial Estate	1977	IEAT	..	480	Metal, plastic, textile, micro and subminiature lamps, electronic products, chemical industry
Laem Chabang Industrial Estate	1982	IEAT	568	140	Automotive, computer, electronics, cookware, industrial warehousing, transportation services, textile, air conditioning, metals, steam energy
Southern Region Industrial Estate (Songkhla)	1984	IEAT	364	34	Steel grates, tractors, transportation, warehouse, gypsum and gypsum products, petroleum refinery
Phichit Industrial Estate	1998	IEAT	200	9	Food and beverage, agricultural products, consumer electronics
Latkrabang Industrial Estate (Bangkok)	1978	IEAT	414	224	Jewellery casting, cosmetics, warehouse, motorcycles, motorbikes, computers, industrial tools used in agriculture

Source: IEAT.

EPZs have played a significant role in the development of the country's export industries. The private sector plays an important role in the development of economic zones, including through joint ventures with the public sector. Private sector developers are dominated by local players, and in some cases they own industrial estates completely on their own. Some of the major local players include Hemaraj and Amata (chapter 5).

Industrial estates

The IEAT coordinates and supervises the development of 54 industrial estates under the I-EA-T Act, BE. 2522, involving 15 provinces (annex table 4.6). These industrial estates have attracted more than 4,500 factories²⁸.

Special economic zones

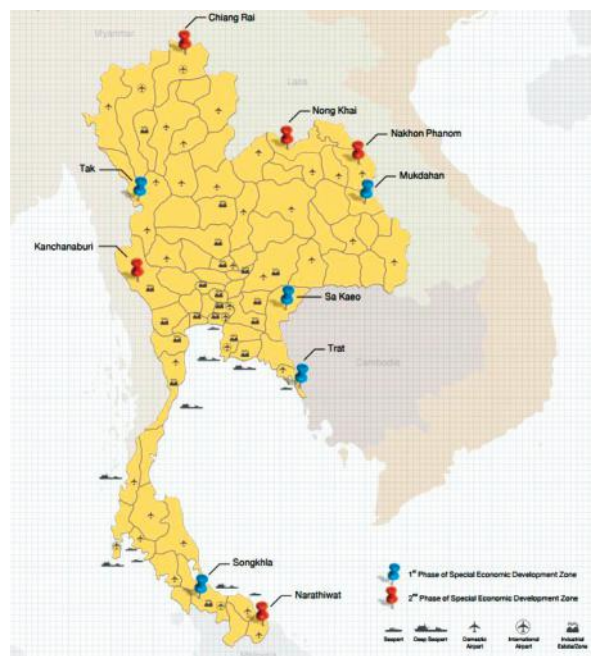
SEZ development is a relatively recent addition to Thailand's industrial infrastructure. Thai SEZs aim to facilitate industrial, commercial and other business activities involving contiguous areas of provinces and with neighbouring countries. Currently, 10 SEZs in 10 provinces are at different stages of development. They are being established at border areas contiguous to Myanmar, at Kanchanaburi; the Lao People's Democratic Republic, at Chiang Rai, Mukdahan Nong Khai and Nakhon Phanom; Cambodia at Sa Kaeo; and Malaysia at Songkhla and Narathiwat. They are to be established in two phases. Phase 1 involves six provinces: Tak, Nong Khai, Mukdahan, Sa Kaeo, Trad, and Nong Khai. Phase 2 covers four provinces: Narathiwat, Chiang Rai, Nakhon Phanom, and Kanchanaburi (figure 4.10).

The development of the first phase, from 2015 to 2016, involved public investment in basic infrastructure (e.g. roads, utilities, and six customs checkpoints) with an estimated budget of ฿10,000 million (table 4.41).

Investment incentives (e.g. tax holidays, duty exemption) and other facilitation measures are granted to investment projects located in SEZs. For instance, each SEZ will have a one-stop service centre to facilitate investment, provide information and coordinate with related agencies for submission and approval of investment applications. Thirteen specific businesses and industries have been identified (table 4.42). Each SEZ will have different targets, depending on location strengths and provincial strategy.

Figure 4.10. Thailand: location of SEZs

Location of the Special Economic Development Zones



Source: IEAT.

Table 4.41. Thailand: Summary of Infrastructure and Customs Checkpoints Development Plan of the Immediate Phase between 2015 and 2016

Border area	Amount of investment (Million baht)				Total
	Transportation (road, bridge, railway, port and airport)	Customs and border checkpoints	Industrial estate/zones	Public utilities (electricity, water supply and irrigation)	
Tak	2,052	368	15	1,260	3,695
Sa Kaeo	616	688	15	793	2,112
Trat	207	147	15	126	495
Mukdahan	806	100	15	968	1,889
Songkhla (Sadao and Padang Besar)	10	1,436	15	791	2,252
Total	3,691	2,739	75	3,938	10,443

Source: IEAT.

Table 4.42. Thailand: targeted activities in SEZs

13 industrial sectors (62 subsectors)	Target activities in the SEZs									
	Tak	Sa Kaeo	Trat	Mukdahan	Songkhla	Nong Kai	Nakhon Phanom	Chiang Rai	Kanchanaburi	Narathiwat
1. Agricultural, fishery and related industries	✓	✓	✓	✓	✓					
2. Ceramic products	✓									
3. Textile, garment and leather industries	✓	✓			✓					
4. Manufacture of furniture	✓	✓			✓					
5. Gems and jewelry	✓	✓								
6. Medical equipment	✓	✓								
7. Automotive, machinery and parts	✓	✓								
8. electrical appliances and electronics	✓	✓		✓						
9. Olastics	✓	✓								
10. Medicine	✓	✓								
11. Logistics	✓	✓	✓	✓	✓					
12. Industrial estates and/or zones	✓	✓	✓	✓	✓					
13. Tourism-related industry	✓	✓	✓	✓	✓					

Source: IEAT.

4.7.10. Viet Nam: economic zone development

The Government of Viet Nam regards economic zones as a tool to help the country achieve economic development goals and to facilitate investments, including FDI. Economic zones are also seen as providing opportunities for policy experimentation.

Viet Nam has several types of economic zones. They include industrial zones or parks, EPZs, economic zones, border-gate economic zones and high-tech parks (box 4.14). Different numbers of each have been established over the past few decades. The first EPZ was established in 1991. Since then, many industrial parks, EPZs and high-tech parks have been established.²⁹

Box 4.14. Viet Nam: Types of economic zones

In Viet Nam, there are different types of economic zones, each with different characteristics and economic emphases. These zones include the following:

Industrial zones refer to zones or parks that specialize in the production of industrial goods and the provision of services for industrial production, within fixed geographical boundaries.

Export processing zones consist of industrial zones that specialize in the production of export goods and the provision of services for production of export goods and export activities, with fixed geographical boundaries. Industrial zones and EPZs are both referred to as industrial zones, unless otherwise specified.

Economic zones are large separate spaces with an investment and business environment favourable for investors, with fixed geographical boundaries and areas of more than 10,000 ha. These zones are organized into functional areas, including non-tariff areas, bonded warehouse areas, EPZs, industrial zones, logistic hubs, entertainment areas, resorts, urban areas, residential areas, administrative areas and other functional areas consistent with the characteristics of each economic zone. Economic zones can be an integrated industrial infrastructure consisting of various types of business activities and more than one industrial parks or EPZs.

Border-gate economic zones are formed in onshore border-gate areas with an international border gate or main border gate. Economic zones and border-gate economic zones are all referred to as economic zones.

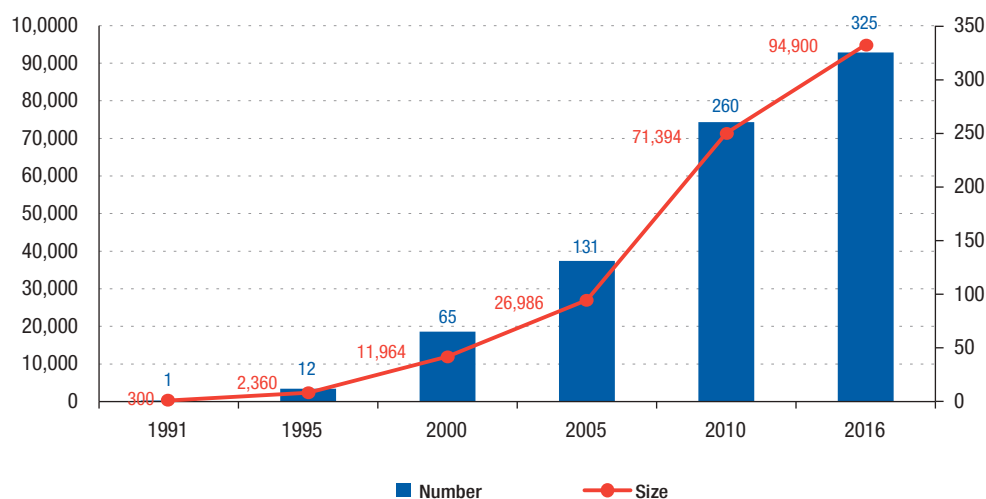
High-tech parks are multifunctional technical parks with delimited boundaries, established by decision of the prime minister, aiming to research, develop and apply high technologies; nurture high-tech enterprises; train high-tech workers; and produce and trade in high-tech products. A high-tech park may contain EPZs, bonded warehouses, tax suspension warehouses and residential quarters.

Sources: Based on Viet Nam country paper presented at the ASEAN-UNCTAD Seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok and Invest in Viet Nam (<http://investinvietnam.vn/Ing/2/detail/521/Industrial-Zones.aspx>).

The Government is planning to develop nine other economic and commercial zones with a total area of 342,766 ha. These zones will be located mainly in central provinces (from Thanh Hoa to Khanh Hoa) to take advantages of their strategic location to foster economic development.

Viet Nam has 325 registered industrial parks, which involve a total area of 95,000 ha. Some 67 per cent of them were in operation as of year-end 2016. The country also has 16 economic zones, 16 coastal economic zones, 28 border-gate economic zones along the frontiers and 3 high-tech parks. The number of industrial zones has risen rapidly, from just 1 in 1991 to 65 in 2000, 260 in 2010 and 325 in 2016 (figure 4.11).

Growing demand for industrial park facilities by local and foreign investors, and a rush by provincial governments to build more industrial parks, contributed to the rapid rise. The increase in FDI flows into the country in the past decade has also added pressure to the demand for development of more parks. Although economic zones are located throughout the country,

Figure 4.11. Viet Nam: Number and size of industrial parks, 1991 to 2016

Source: MPI.

most are concentrated in the vicinities of Hanoi's Red River Basin and Ho Chi Minh City. Not all of the 220 operating industrial parks are fully occupied. It is estimated that the average occupancy is about 73 per cent (Das 2017).

Most of the industrial parks are concentrated in a number of coastal provinces and major cities in the country. More than three fourths of the industrial zones in the country are located in areas listed in annex table 4.7, with the highest concentration in the southern part of the country. These industrial zones attracted about 77 per cent of total FDI flows in Viet Nam as of June 2017, with the southern group of industrial parks responsible for 50 per cent of all inflows.

The development of economic zones in Viet Nam is carried out primarily by local government authorities, municipalities and in some cases government agencies or ministries (chapter 5). The Vietnamese Government gives more autonomy to local government agencies to create and implement their own policies on economic zone development (as long as they remain within the stipulated policy framework of the country) in ways that best meet local conditions. In many cases, the local authorities have established industrial parks in JVs with the private sector, including foreign investors.

Governance and institutional issues

Investment projects in industrial parks, EPZs, high-tech parks and economic zones enjoy incentives in promoted or approved sectors. Given the importance of economic zones, the Government encourages investment in their development by the private sector, which is regulated and receives investment incentives (box 4.15). In facilitating investments, some municipalities such as Hanoi, Ho Chi Minh City, Da Nang and Binh Dinh have established e-Regulations with assistance from UNCTAD.³⁰

Box 4.15. Viet Nam: governance and institutional issues of economic zone development

Economic zones in Viet Nam are specified in a number of legal documents issued by the Government and the National Assembly. They include Decree 29/2008/ND-CP (14 March 2008), Decree 99/2003/ND-CP (28 August 2003) and Decree 154/2013/ND-CP (8 November 2013). Viet Nam Investment Law 2005 also define different types of economic zones. The Government also supports and encourages investments, including FDI, in economic zone development through joint cooperation, joint ventures (with provincial Government and authorities), provision of incentives and institutional support.

Government support to build infrastructure of economic zones

Industrial zones located in areas with difficult socioeconomic conditions are given financial assistance from the Government for land clearance, central wastewater treatment plants and transport road infrastructure. Local authorities take responsibility for building technical and social infrastructure (e.g. roads connecting to outside areas, electricity, telecommunication, fences). Economic zones may be provided financial support from the Government to build important infrastructure and for land clearance and resettlement in large-scale projects.

Investment incentives are provided for the development of various types of economic zones (e.g. industrial zones, EPZs, high-tech parks), depending on whether the area is adjudged to have difficult social and economic development. The Master Plan and establishment of economic zones need to be approved by the Prime Minister.

Special incentives are also provided for social and environmental projects in economic zones. They include, for instance, exemption from land use tax and reduction in income tax for projects to construct houses for workers. Projects to build central wastewater treatment plants in economic zones are exempted from land use tax and VAT and offered income tax reductions.

One-stop, one-service administrative procedures

The management authorities take responsibility for providing one-stop, one-service centres for investors, including receiving application for investment license, obtaining opinions from relevant agencies, issuing certificates of investment, giving instructions to investors to follow all laws and legal documents, responding to all enquiries to investors, and managing and monitoring the operation of enterprises within the economic zone.

Source: MPI.

In addition, the Government supports industrial infrastructure development (e.g. industrial, export processing, high-tech and economic zones) with State investment and with the development of social and technical infrastructure outside these zones.³¹ For some localities with difficult socioeconomic conditions, the Government also provides partial support to develop, together with investors, infrastructure systems inside the industrial and export processing zones.

Border-gate and cross-border economic zones

Viet Nam's border gates are considered to be significant tourist destinations. There are various border gates across the country (table 4.43). The Lao Cai border gate with China will be developed into an economic zone to drive development in the area. Some 15,930 ha of land will be involved, encompassing three precincts, 24 communes and one town with 89 hamlets in Lao Cai City, together with four other districts.³²

Table 4.43. Viet Nam: border-gate economic zones (Selected cases)

Neighbouring country	Gate	Province
China	Lao Cai	Lao Cai
	Mong Cai	Quang Ninh
	Huu Nghi	Lang Son
	Dong Dang	Lang Son
Lao People's Democratic Republic	Na Meo	Thanh Hoa
	Nam Can	Nghe An
	Keo Nua	Ha Tinh
	Lao Bao	Quang Tri
	Cha Lo	Quang Binh
	Po Y	Kon Tum
	Tay Trang	Dien Bien
Cambodia	Le Thanh	Gia Lai
	Moc Bai	Tay Ninh
	Sa Mat	Tay Ninh
	Dinh Ba	Dong Thap
	Tinh Bien	An Giang
	Xa Xia	Kien Giang
	Vinh Xuong	An Giang

Source: MPI.

There is support for the development of cross-border economic zones from China. The Chinese Government has established border economic zones facing a number of neighbours. Five of these are with the CLMV countries (Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam). They include Hekou, Pinxiang and Dongxing, neighbouring Viet Nam; Mohan, neighbouring the Lao People's Democratic Republic; and Ruili, neighbouring Myanmar.

The Guangxi Pinxiang Integrated Free Trade Zone was approved in 2008, and its first phase of construction, involving 1.2 km² of land, started operation in 2011. It focuses on logistics and export processing. It is an international economic cooperative zone comprising the functions of a port, international trade, bonded logistics, bonded processing and international distribution.³³

4.7.10.1. Viet Nam–Singapore industrial parks

The VSIPs are among the successful industrial parks in Viet Nam. To date, seven have been developed in different parts of the country. Their development has been supported by the Governments of Singapore and Viet Nam. The parks were developed in joint ventures between

Becamex IDC Corporation (Viet Nam) and a consortium led by Sembcorp (Singapore), which includes Mitsubishi Corporation (Japan). Becamex IDC Corporation is a State-owned enterprise under the ownership of the Binh Duong Province People's Committee.

The VSIPs have attracted many tenants operating in various industries. They have also help Viet Nam attract significant FDI inflows, including FDI supporting the development of industrial clusters. The contribution and key features of the VSIP parks are examined in detail in section 4.5 and chapter 5.

4.8. CONCLUSION

Economic zone development can be regarded as investment in industrial infrastructure to attract further investments in productive capacity. There are at least 1,600 economic zones across ASEAN of various types. They have varying features, purposes and objectives, which offer investors a wide range of industrial infrastructure.

Not all economic zones are successful. Some struggle to attract investment and generate employment. The main reasons include a lack of efficient infrastructure facilities in the zone, a lack of proper planning, as well as the facts that some are small – to benefit from possible agglomeration effects – and are not strategically located or do not provide easy access to major ports, airports, other infrastructure and workers.

However, some have been successful and they have also contributed to developing industrial clusters, generating jobs, promoting gender equality and developing exports. In general, economic zones have the potential to play and have played an important role in the socioeconomic development of countries in the region. Across ASEAN, economic zones are evolving from simple industrial estates to a more complex generation of zones encompassing an integrated concept of residential-industrial-commercial townships and to mega-SEZs, including forms of cross-border cooperation. Economic zones can be useful tools in facilitating FDI, as the experiences of countries in the region attest. They can contribute to improving the overall investment environment, lowering transaction costs for FDI activities, increasing the ease of doing business and streamlining administrative procedures, including the time required to set up operations.

Economic zones are also seen as offering a protected area for experimenting with policies before rolling them out to other parts of the country. If done correctly, economic zones as investment facilitation tools can improve the competitiveness and efficiency of a country's investment environment. The provision of efficient economic zones can contribute to increasing investors' confidence because of the security, on-site infrastructure provision, one-stop service centres provided by zone management, institutional support and agglomeration effects.

Whether an economic zone will be successful or not depends also on a number of other factors such as a critical mass of tenants, the influence of anchor companies, and proximity to market and supply chains (see chapter 5). The preparation of a comprehensive industrial

estate development plan, including consideration of sustainability aspects and provision of good infrastructure facilities and good services, is important. As economic zones become considerably larger and more complex, public–private investor consortia offer a useful vehicle for sharing risks, capital, roles and responsibilities to make projects successful.

The challenges in economic zone development include whether demand exists to justify more such zones, as well as financing aspects and sustainability issues. There are also risks to consider. They include concern about the footloose industries that some of these economic zones were established to attract, possible “enclave” consequences that can limit spillover effects to the local economy, possible fiscal losses associated with the provision of incentives and social and environment risks. These challenges and risks need to be carefully addressed. In addition, countries need to develop or upgrade economic zones to be competitive or build next-generation zones to attract targeted industries, to support the stage of the country’s economic development. Furthermore, regional cooperation in economic zone development to facilitate RVCs and production networks can be considered or pursued to improve the competitiveness and connectivity of economic zones in ASEAN.

NOTES

- ¹ Wongsamuth, Nanchanok, "Industrial Estates Set to Go Green," *Bangkok Post*, 30 January 2014, Business B3.
- ² Celestica (<https://www.celestica.com/about-us/locations>).
- ³ www.economist.com/news/international/21690041-call-centres-have-created-millions-good-jobs-emerging-world-technology-threatens.
- ⁴ Amata (http://amata.com/site/view_tomorrow.php?id=5).
- ⁵ Hung, Quoc, "Tan Thuan EPZ Focuses More on Hi-Tech Sectors," *The Saigon Times Daily*, 25 October 2016, (<https://m.talkvietnam.com/2016/10/tun-thuan-epz-focuses-more-on-hi-tech-sectors>).
- ⁶ Cho Jin-young, "Samsung Made in Vietnam: 50% of Samsung mobile phones made in Vietnam", Business Korea, 28 January 2015 (www.businesskorea.co.kr/english/news/industry/8785-samsung-made-vietnam-50-samsung-mobile-phones-made-vietnam).
- ⁷ Darussalam Enterprise (www.dare.gov.bn/SitePages/Home.aspx).
- ⁸ WTO (2015), "Trade Policy Review of Brunei Darussalam" (https://www.wto.org/english/tratop_e/tpr_e/s309_e.pdf).
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- ¹⁰ http://sqwchinagroup.com/wp-content/uploads/Factsheet_BIC_2015_web-1.pdf.
- ¹¹ Construction Intelligence Centre (<https://www.construction-ic.com>).
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- ¹⁷ *Vientiane Times*, "Investment grows at SEZs", 19 September 2016.
- ¹⁸ Nikon, "Establishment of a New Factory in Laos" 21 March 2013 (www.nikon.com/news/2013/0321_01.htm).
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- ²⁰ "Japanese Companies Invest in Savan-Seno Zone", *Vientiane Times*, 18 June 2015 (www.lxs.com.la/index.php?option=com_content&view=article&id=389%3Ajapanese-companies-invest-in-savan-seno-zone&catid=64%3Anews-of-economic-en&lang=en).
- ²¹ Industrial parks in Bayan Lepas and Prai, Penang Science Park and Batu Kawan Industrial Park.
- ²² The SMEs that are supporting industries are involved in fabricated metal products, metal stamping, machining, plastics (thermal vacuum forming and plastic injection moulding), machinery and automation. These SMEs provide indirect materials for the electronics cluster. Some SMEs provide services include clean-room cleaning of packaging materials used in the semiconductor and hard disk drive industries. Only a few SMEs provide raw, direct materials for the electronics cluster (e.g. Penchem Technologies designs and manufactures composites and polymer solutions for the electronics and photonics industries). Most local direct suppliers of materials are large conglomerates that acquired foreign companies to supply to the electronics cluster, e.g. lead frames from Dynacraft, which is a member of the Malaysian Hong Leong Group.

²³ Hutchison Ports: MITT (<http://www.mitt.com.mm/about-us.html>).

²⁴ Many Filipino tenants in the various economic zones hold minority shares of companies operating in the zones; most hold equity shares of less than or about 1 per cent.

²⁵ See *National Library Board Singapore*, Jurong Town Corporation (http://eresources.nlb.gov.sg/infopedia/articles/SIP_553_2004-12-31.html).

²⁶ Under section 3(1) of the Free Trade Zones Act, the Minister may, by notification in the Gazette, declare any area in Singapore to be an FTZ, and every such notification must define the limits of that FTZ.

²⁷ These Acts and subsidiary legislation can be found at <https://www.customs.gov.sg/about-us/acts-and-subsidiary-legislation>.

²⁸ Excludes some major industrial estates for which the number of tenant companies is not available.

²⁹ Invest in Vietnam, “Infrastructure/Industrial zones” (<http://investinvietnam.vn/Ing/2/detail/521/Industrial-Zones.aspx>).

³⁰ UNCTAD Business Facilitation Programme (<https://businessfacilitation.org/countries/>).

³¹ Invest in Vietnam, “Infrastructure/Industrial Parks” (<http://investinvietnam.vn/Ing/2/detail/521/Industrial-Zones.aspx>).

³² Vietnam Breaking News, “Lao Cai Border Gate EZ to Be Developed into Key Economic Area”, 5 May 2017 (<https://www.vietnambreakingnews.com/2017/05/lao-cai-border-ez-to-be-developed-into-key-economic-area>).

³³ Guangxi Pinxiang Integrated Free Trade Zone, “Overview” (www.pxftz.gov.cn/EN/overview.html).

CHAPTER 5

Key Players in Economic Zone Development in ASEAN

5.1. INTRODUCTION

For policy design, it is important to understand the roles of different players and how they each contribute to economic zone development, industrial agglomeration and improvement in the competitiveness of the overall FDI environment. For instance, developers build, operate and manage economic zones to make profits and diversify revenue sources. Investors (economic zone tenants) aim to find a competitive site for efficient operations, ensure quick start-up and benefit from supply chain connections in the host country. The public sector aims to achieve industrialization, national economic objectives, balanced development through the provision of a regulatory framework and economic zone facilities that it oversees or that it developed in the country.

Economic zones can be a catalyst facilitating industrial cluster development. However, such zones in and by themselves do not necessarily develop industrial clusters. A combination of factors, a critical mass of firms in related industries and other conditions are crucial to support the development of clusters.

The purpose of this chapter is to examine the roles of different players in economic zone development, the relationship between economic zones and industrial cluster development, including how different zones or industrial estates are connected through intrafirm and interfirm activities. Some examples of economic zones that have facilitated the development of industrial clusters in ASEAN are presented in this chapter.

5.2. DEVELOPERS OF ECONOMIC ZONES

Different players are involved in economic zone development in ASEAN. They contribute differently and their significance varies by the role they play, their objectives and their purposes. These players range from owners or developers to service providers and economic zone tenants. They are interconnected. The interaction of these players determines the success of the economic zones. If an economic zone is developed but few companies take tenancy then the project fails. However, if the demand for economic zones is strong but few are built, then the investment environment is not competitive or efficient. All players need to play their role for economic zones to be successful and for the country to be competitive through providing suitable industrial facilities to facilitate investment and by operating in them.

The different roles and involvement of players in economic zone development could vary between countries and would also depend on factors such as the role of the government, institutional support, investment opportunities in industrial estate, stage of industrial development, external environment and demand for economic zones. Table 5.1 highlights the roles of selected key players in each category.

Table 5.1. Economic zone development: roles and objectives of selected players

Category of player	Role in economic zone development	Objectives
Public sector economic zone developers (national government, State government, provincial government, municipalities)	<ul style="list-style-type: none"> Build, regulate, coordinate and supervise economic zone development 	<ul style="list-style-type: none"> Encourage industrialization and spread economic development across the country using economic zones as tools Create employment, generate exports, attract investment and develop specific industries Test policy framework in enclaves or demarcated areas
Local private economic zone developers (local real estate and infrastructure companies, and State-owned enterprises)	<ul style="list-style-type: none"> Build, manage and operate economic zones in line with corporate objectives and strategies Partner with government in JVs in economic zone development Form a consortium to develop, operate or market economic zones 	<ul style="list-style-type: none"> Expand business, generate revenues and profits Extend an integrated business model and to capture more segments of the business value chains Maximize stakeholders' interest
Foreign MNE economic zone developers (foreign trading companies, conglomerates, infrastructure or real estate companies, State-owned enterprises)	<ul style="list-style-type: none"> Build, manage and operate economic zones in overseas locations 	<ul style="list-style-type: none"> Pursue integrated business strategy by drawing on different business experiences within the group Maximize economic rent through exploitation of economic zone development knowledge Maximize shareholders' interest through expanding business abroad Involve in Government-to-Government cooperation project
Foreign MNE economic zone management companies	<ul style="list-style-type: none"> Tap on the skills, experience, business networks and competitive advantages in marketing and selling economic zones facilities to clients Act as sales and management agents of economic zones 	<ul style="list-style-type: none"> Act as sales and marketing agents for third-party owners of economic zones
Foreign MNE manufacturer-led developer	<ul style="list-style-type: none"> Build and operate economic zones to house its operation and a network of suppliers 	<ul style="list-style-type: none"> Maximize value, logistics management and supply chain Provide an operating environment to benefit from economies of scale through agglomeration of firms
OEM (original equipment manufacturer) MNE tenants	<ul style="list-style-type: none"> Find competitive sites for operation in the host country Demand for more land to support factory expansion 	<ul style="list-style-type: none"> Lower cost of operation Improve efficiency Operate near market and supply chain
Supplier MNE tenants	<ul style="list-style-type: none"> Find competitive sites for operation in the host country 	<ul style="list-style-type: none"> Operate near customers and supply chain Lower cost of operation Improve efficiency

Source: ASEAN Investment Report 2017 research.

5.2.1. Local players

In all ASEAN Member States, local players (public and private sector) are the main contributors to economic zone development. They contributed to shaping the landscape of industrial facilities in ASEAN through the zones they built, owned and managed. The public sector regulates, encourages and develops economic zones, providing investors (tenants) with facilities across the country depending on their needs (e.g. near main customers, ports, airports, neighbouring countries, specialized industrial estates) and types of investment (e.g. energy-intensive operations, export oriented, information technology (IT) service).

Public authority involvement in economic zone development in ASEAN differs between Member States, functions, organizations and objectives (chapter 4). In some ASEAN Member States, the private sector (particularly the local private entities) plays an important role. They are active players in economic zone development, in collaboration with the public sector. In the CLMV Member States (Cambodia, the Lao People's Democratic Republic, Myanmar, Viet Nam), more foreign companies are involved in economic zone development, in particular in special economic zones (SEZs). The differences in country experiences arise from a number of factors, which include land issues relating to economic zone development, national policy, local companies' inherent advantages, public sector budgetary constraints for industrial infrastructure development, the first-mover advantage of local developers, and the different stages and timing of economic development of ASEAN Member States.

In most cases, the private sector is the largest developer and owner of economic zones in the region (table 5.2). They include major industrial estate developers, real estate companies and infrastructure corporations. Governments have actively encouraged the private sector to play a significant role. However, in some cases, the public sector works closely with the private sector through public–private partnerships, concession arrangements and joint ventures (JVs). The public sector includes provincial authorities, State governments, port authorities, municipalities and government agencies.

Table 5.2. Dominance of the private sector in economic zone developments in ASEAN, 2017

Country	Role of private sector participation	Share of private sector participation (%)	Share of foreign company participation (%)	Remarks
Brunei Darussalam	Not significant	<50	Not significant	Brunei Economic Development Board and Brunei Industrial Development Authority are two key developers of industrial infrastructures.
Cambodia	Very significant	>90	Significant (>50) ^a	Cambodia encourages FDI in SEZ development. Some 85 per cent of factories in SEZs are 100 per cent foreign owned. Indonesian companies are dominant economic zone developers. In some cases, they partner with foreign companies.
Indonesia	Significant	>80	Not significant (<50)	The Government actively encourages private companies, including FDI, in the development of SEZs.
Lao People's Democratic Republic	Very significant	>90	Significant (>50) ^a	State governments have power over land issues, and they are active economic zone developers. The Government and state authorities own all FIZs, FTZs, LMWs and RECs.
Malaysia	Not significant	<20	<10	The country is developing three major SEZs, and they all involve foreign investors.
Myanmar	Very significant	>90	Significant (>50) ^a	About 200 IT centres are included in the 365 economic zones.
Philippines	Very significant	>90	Significant	Most major industrial facilities or economic zones are developed by Government-linked companies or Government bodies, such as the JTC Corporation. Some private sector players have developed smaller industrial parks or buildings.
Singapore	Not significant	<20 ^b	..	The Industrial Estate Authority of Thailand is an active developer. The private sector plays a significant role in the development of economic zones and in many cases in cooperation with the Authority.
Thailand	Significant	80	Not significant (<50)	Provincial governments and municipalities are active investors in economic zone development – often as a JV partner with the private sector.
Viet Nam	Very significant	81	Significant	

Source: ASEAN Investment Report 2017 research estimate.

^a On the basis of SEZs.

^b Excluding JTC and its subsidiaries.

5.2.1.1. Public sector

The role of the public sector is important. It regulates, manages, supervises and develops economic zones. For instance, the Industrial Estate Authority of Thailand, established in 1972 and attached to the Ministry of Industry, owns 11 economic zones and has developed 37 more facilities through JVs with private partners. The degree of public sector involvement differs by country and by institutional set-up (table 5.3).

In some ASEAN Member States in which no central body coordinates the development of economic zones, some State-related institutions or State-owned enterprises (SOEs) play a major role. For instance, the Malaysian Industrial Development Finance (MIDF) Property Bhd, owned by Permodalan Nasional Bhd (an investment entity of the Malaysian Government), is a major developer of economic zones with facilities across the country.¹ UEM (Malaysia), owned by Khazanah (an investment arm of the Government of Malaysia), is also developing industrial parks in the country (e.g. Southern Industrial and Logistics Clusters at Iskandar Puteri, Johor). In addition, State economic development corporations, regional development authorities, port authorities and municipalities are also involved. Together they provide a large source of industrial zone facilities for investors (tenants). Penang State in Malaysia, for example, has been active in the development of free trade zones (FTZs) and free investment zones (FIZs) and industrial parks in that State (chapter 4). The Pahang State Government is involved in the development of the Malaysia-China Kuantan Industrial Park. In Singapore, the JTC Corporation, the Housing and Development Board and Sembcorp have also been active in development of the country's industrial and business parks. Singapore port authorities have developed and managed free trade zones.

Table 5.3. Public authorities' involvement in economic zone development in ASEAN (Selected cases)

Authority	Country	Functions	Economic zones developed
State government	Malaysia (e.g. State Economic Development Corporation)	Develop the land and industrial facilities (e.g. free trade zones) to attract investment and promote trade Has dominion on land matters	Developed in all States
Provincial government	Viet Nam (e.g. Binh Duong Province People's Committee)	Stimulate economic development, generate employment and revenue sources for provincial government Established a State-owned enterprise (SOE) – Becamex IDC (Viet Nam) – to undertake investment in business activities, including economic zone development	Partners with foreign investors (e.g. Sembcorp-Singapore) to develop various industrial parks in the country
Specialized public institutions			
Philippine Economic Zone Authority (PEZA)	Philippines	Promote investment and grant incentives, supervise economic zones in the country that are under its mandate	Encourage the private sector to develop, maintain and operate economic zones; has not developed any itself since 1995
JTC Corporation	Singapore	Plan, promote and develop industrial landscape and estates in the country	Has a portfolio of more than 40 industrial estates, which cover over 7,000 ha of industrial land
Industrial Estate Authority of Thailand	Thailand	Regulate, invest, develop and supervise economic zone development in the country	Has developed over 48 economic zones, including with private sector as JV partner

Source: ASEAN Investment Report 2017 research.

In Viet Nam, provincial governments and municipalities have also been active in developing industrial parks (chapter 4). Some parks have been developed and owned by Government ministries in JVs with the private sector. The Ministry of Construction (Viet Nam) is a joint owner of the Thang Long industrial zone, and the Ministry of Defence jointly owns (40 per cent) the Long Binh Industrial Zone in Viet Nam.

Specialized public authorities in Thailand (the Industrial Estate Authority of Thailand) play a key role in planning, promoting, overseeing and developing economic zones. In the Philippines, the Philippine Economic Zone Authority (PEZA) does not develop economic zones but grants investment incentives and supervises economic zone development under its mandate.

5.2.1.2 Private sector

Private developers and management companies of economic zones also play a key role in helping countries in the region facilitate and attract FDI. In some ASEAN Member States, local and foreign developers invest and build zones that would otherwise require public resources. Given the budgetary constraints faced by some ASEAN Member States, the role of the private sector in economic zone development is important. They take the business risk, develop the zones and attract tenants (companies that want to locate there, referred to in hereafter as “tenants”). Like other real estate businesses, it is in the interest of the developers/owners to bring tenants in quickly to the zones. Local private developers dominate but large economic zone development often involves major local private companies or SOEs or JVs with foreign developers (box 5.1).

Some economic zone developers have an extensive network of clients and their reputation also helped them attract tenants. The experience of some foreign companies in managing and marketing economic zones has been important in generating the success of the industrial facilities (e.g. Sumitomo (Japan), Marubeni (Japan), Amata (Thailand), Sembcorp (Singapore)).

Box 5.1. Major local private sector players

Some economic zones are entirely owned by local players. In some cases, major local players developed multiple zones, and some are co-owned with foreign partners. Some of these major local players are large conglomerates and some are large industrial estate developers. They include Argo Manunggal Group (Indonesia), Suryacipta (Indonesia), Jababeka (Indonesia), Sinar Mas (Indonesia), Lippo Group (Indonesia), UEM Sunrise (Malaysia), IJM (Malaysia), MMC Group (Malaysia), Sime Darby (Malaysia), First Philippine Holding Co (Philippine), Ayala Land (Philippines), Aboitiz Land (Philippines), Carmelray Industrial Corporation (Philippines), Ascendas-Singbridge (Singapore), JTC Corporation (Singapore), Hemaraj (Thailand), Amata (Thailand), Vinichbutr Group (Thailand), Pinthong Group (Thailand), Becamex IDC (Viet Nam), Nam Hong (Viet Nam) and N&G Group (Viet Nam).

Source: ASEAN Investment Report 2017 research.

Some developers run more effective economic zones than others because of their early involvement in the country's economic zone development, the strategic locations of their zones, their provision of integrated economic zone services. In some cases their strong networks with potential tenants from home is an added advantage.

Of the foreign companies involved in economic zone development and management, ASEAN and Japanese companies are visible (table 5.4). Some Chinese companies are increasingly active in economic zone development, particularly in the CLMV countries. Some indigenous ASEAN companies have extensive experience developing and managing economic zones in their home countries. Their experiences, skills, maturity and integrated business models have encouraged them to exploit these firm-specific advantages abroad through FDI. These companies include Jababeka (Indonesia), Ascendas-Singbridge (Singapore), Sembcorp (Singapore), Amata (Thailand) and Hemaraj (Thailand). These companies have significant economic zone operations or are in the process of developing economic zones in other ASEAN Member States.

Table 5.4. Foreign companies' involvement in selected economic zone development in ASEAN

SEZ or industrial park	Year	Size (ha)	Country	Companies	Nationality	Remarks
Phnom Penh SEZ	2006	350	Cambodia	Zephyr (17.6%) Finansia Syrus Securities (11.4%)	Japan Thailand	Owned by these two companies, with a local partner; Sumitomo is a sales agent
Sanco Poi Pet SEZ	2013	66	Cambodia	..	Japan and Cambodia	A JV between Japanese and Cambodian companies
Techno Park Poipet	2015	6	Cambodia	Toyota Tsusho	Japan	Cost about \$1.8 million; also developed techno parks in Indonesia and Thailand
Manhattan Svay Rieng SEZ	2006	157	Cambodia	Manhattan International	Taiwan Province of China	..
Sihanoukville SEZ	2008	1,113	Cambodia	Jiangsu Taihu Cambodia International Economic Cooperation Investment Co Ltd	China	One of the largest SEZs in the country, with more than 100 tenants
Sihanoukville Port SEZ	2009	70	Cambodia	Government of Japan	Japan	Official development assistance loan from the Government of Japan
MM2100 Industrial Town (Phase I and II)	1990	805	Indonesia	Marubeni	Japan	Developed by PT Bekasi Fajar Industrial Estate and jointly owned with Argo Manunggal Group (Indonesia) and Marubeni
Green International Industrial Centre	~2008	1,470	Indonesia	Sojitz	Japan	First phase (700 ha, estimated to cost \$1 billion) in a JV with Sinar Mas (Indonesia), which holds a 75 per cent stake
Kendal Industrial Park	2011	2,700	Indonesia	Sembcorp	Singapore	A JV with PT Jababeka (Indonesia)
Pakse Japan SME SEZ	2015	206	Lao People's Democratic Republic	Nishimatsu Construction	Japan	A shareholder in this specific SEZ, which is inside the Champasak SEZ
VITA Park SEZ	2011	110	Lao People's Democratic Republic	Nam Wei Development	Taiwan Province of China	A JV with the Government of the Lao People's Democratic Republic

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Table 5.4. Foreign companies' involvement in selected economic zone development in ASEAN

SEZ or industrial park	Year	Size (ha)	Country	Companies	Nationality	Remarks
Boten–Danekham SEZ	2010	1,640	Lao People's Democratic Republic	Yunnan Hai Cheng	China	A border zone designated for development of tourism, services and trade
Savan–Seno SEZ (Site C)	2003	954	Lao People's Democratic Republic	Pacifica Streams Development	Malaysia	A JV with the Government of the Lao People's Democratic Republic
Golden Triangle SEZ	2010	3,000	Lao People's Democratic Republic	Dok Ngiou Kham Group	China	..
Vientiane–Nonhthong Industry–Trade Zone	2011	100	Lao People's Democratic Republic	Namwei Development	Taiwan Province of China	Targets industrial processing and trade activities
Thilawa SEZ	2015	2,400	Myanmar	Mitsubishi Marubeni Sumitomo Japan International Cooperation Agency	Japan Japan Japan Japan	Major co-owners: these Japanese companies, the Japan International Cooperation Agency and local partners Small stakes: other Japanese companies such as Mizuho Bank, Sumitomo Mitsui Banking Corporation and Bank of Tokyo Mitsubishi UFJ
Dawei SEZ	Ongoing	20,000	Myanmar	ITD consortium	Myanmar and Thailand	ITD (Thailand) consortium won the development contract
First Philippine Industrial Park	1996	450	Philippines	Sumitomo	Japan	30% stake in a JV with a local company, First Philippine Holdings Corp
Carmelray Industrial Park II	1997	140	Philippines	Ascendas–JTC	Singapore	Jointly owned with a local partner
Laguna Technopark	1989	110	Philippines	Mitsubishi Corporation	Japan	Jointly owned with a local partner, Ayala Land
First Cavite Industrial Estate	1991	154	Philippines	Marubeni Japan International Development Organization	Japan Japan	Jointly owned with a local partner
Vietnam–Singapore Industrial Parks (VSIPs)	1996 and various years	Various sizes	Viet Nam	Sembcorp Mitsubishi Corporation	Singapore Japan	JV with SOE as local partner; established 7 VSIPs in the host country.
Amata City Bien Hao	1994	700	Viet Nam	Amata	Thailand	A major Thai industrial estate developer with a few development in Viet Nam
Long Duc Industrial Park	2013	270	Viet Nam	Sojitz Daiwa House Kobelco Eco-Solutions	Japan Japan Japan	Developed by Nishimatsu; owned by Sojitz and other Japanese and local partners
Thang Long Industrial Park I, II, III	Various years	Various sizes	Viet Nam	Sumitomo	Japan	Holds a majority stake in development of parks I and II; wholly owns park III
Long Binh Industrial Zone	1996	100	Viet Nam	Sojitz	Japan	60% share; Thai Son (Viet Nam) holds 40%
Hanoi South Supporting Industrial Park	2014	600	Viet Nam	Shimizu	Japan	Estimated to cost \$1 billion, a JV with N&G Group (Viet Nam)
Tu Son Industrial Zone	2008	300	Viet Nam	Jababeka Group	Indonesia	A JV with Nam Hong Company (Viet Nam)
Dai Kim Industrial Zone	2008	508	Viet Nam	Foxconn Group	Taiwan Province of China	Located in Bac Ninh Province near Hanoi
Thuan Thanh II	2010	250	Viet Nam	Shun-Far Land Development	Taiwan Province of China	Located in Bac Ninh Province, 30 km from Hanoi

Source: ASEAN Investment Report 2017 research.

Note: JV = joint venture, SEZ = special economic zone, SOE = State-owned enterprise.

5.2.2. ASEAN investors as developers

ASEAN infrastructure, real estate and industrial estate developers are active in the development of economic zones in the region. This trend reflects the growing number of investment opportunities resulting from rapid economic growth, industrial development and regional integration (the ASEAN Economic Community, or AEC) (section 5.3).

Other infrastructure-related ASEAN companies are involved in the value chains associated with economic zone development. They build power plants and establish power transmission lines to bring electricity from sources to the economic zones. ITD, a major Thai infrastructure company, is developing and owns a stake in the Dawei SEZ with other partners in Myanmar. B. Grimm Power, a Thai power company, is building a power transmission line from Thailand to Poipet–Phnom Penh SEZ. Companies such as Amata (Thailand) and Hemaraj (Thailand) have investments in the generation and distribution of electricity, including the provision of water supply to factories in their economic zones in Thailand and abroad. They pursue an integrated business model to be competitive through the provision of support services, including ensuring electricity and water supply to tenants.

Other ASEAN companies are also involved in the development of economic zones in other ASEAN Member States (box 5.2). Some of these companies include Jababeka (Indonesia), Pacifica Streams Development (Malaysia) and CP (Thailand). Through the Malaysian South-South Corporation, a group of Malaysian companies have co-owned and operated an industrial park in Viet Nam since 1993.

Box 5.2. Hemaraj: a major Thai industrial estates developer

Hemaraj is a leading developer of industrial estates in Thailand, with assets of \$1.4 billion as of 31 March 2017. In terms of land sales, it accounts for a 34 per cent share of Thailand's industrial estates market. The company has developed and owns nine industrial estates, involving at least 6,200 ha of land, and is developing three more. Hemaraj also has other businesses, such as in power generation and distribution, and provision of water supply to its industrial estates.

Competitiveness of Hemaraj's industrial estates

Security, high-quality facilities and supporting infrastructure, investor care services and strategic locations with connectivity to national road and port networks have been important aspects of Hemaraj's industrial estates. The company's experience, reputation and scale of operation have contributed to its competitiveness as an industrial estates developer and a significant facilitator of private sector investment in Thailand. One third of the contracts of Hemaraj's industrial estates are from repeat customers in relation to expansion activities. This number underscores the strength of Hemaraj in attracting tenants.

Other factors contributing to the competitiveness of Hemaraj's industrial estates in attracting tenants include the following:

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Box 5.2. Hemaraj: a major Thai industrial estates developer (Concluded)

- Flexibility in design, development and construction including land grading, highway subbase and environmental monitoring and community care, which accommodates the needs of tenants and their business structure,
- Well-maintained assets, and
- Cluster development through attracting numerous tier 1 tenants, which in turn provide a magnet to pull in other tenants.

Building industrial estates abroad

Hemaraj is developing industrial estates in Viet Nam. It is also planning to build facilities in other neighbouring ASEAN Member States, driven by opportunities in these host economies and through the AEC. Favourable macroeconomic conditions in the host country, including policy supporting FDI in industrial estates development and the availability of a good local partner, were key factors in the location decision.

With a local partner, the company is developing the first phase (500 ha) of the 3,200 ha WHA Hemaraj Industrial Zone in Nghe An Province in Viet Nam. It is located within the Dong Nam Economic Zone.

Other motivations and location choices for Hemaraj's investment in industrial estates development abroad include the following:

- Complementary ASEAN and CLMV integration with improving connectivity and supplier base
- Priority high-growth market with positive demographics serving existing customer bases
- Availability of key infrastructure and accessibility to key neighbouring trading countries, in addition to favourable macroeconomic conditions and the availability of good local partners

Source: ASEAN Investment Report 2017 research, based on information from Hemaraj.

5.2.2.1. Jababeka (Indonesia)

PT Jababeka is a major Indonesian developer of industrial estate townships. It was established in 1989 and is headquartered in Jakarta. The company has four ongoing projects spread across Central and West Java, and North Maluku. Two are industrial-residential estates, and two are classified as tourism SEZs. Its existing industrial estates were developed using an integrated industry-based township concept. The company also develops industrial estates in Indonesia in partnership with other local and foreign companies.

Jababeka is developing or considering developing industrial estates in other ASEAN Member States as well. In Viet Nam, it is involved in the development of the 300 ha Tu Son industrial estate with a local partner (Nam Hong Company).² The industrial estate is located in Bac Ninh Province near the capital, Hanoi. In July 2017, the CEO of Jababeka led a company delegation to Thua Thien Hue (Viet Nam) to study investment opportunities in that location.³

The most mature of its projects is the Kota Jababeka township, Indonesia's first fully integrated industry-based development project. Through the various industrial development projects and tenants, the company has to date helped generate more than a million jobs.

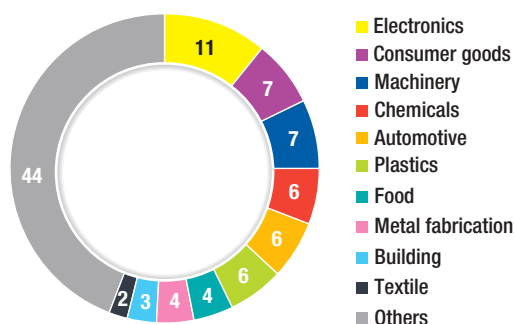
(i) Kota Jababeka

Kota Jababeka covers 5,600 hectares of land, in an integrated industrial, commercial and residential township. It is located in Cikarang, the most established industrial area in Indonesia. Kota Jababeka is 35 km from Jakarta's central business district, 55 km from the Tanjung Priok international seaport and 65 km from the Soekarno Hatta International Airport – all of which are accessible by toll road.

Jababeka Industrial Estate in Kota Jababeka

The construction of Kota Jababeka began in 1989, with the development of the Jababeka Industrial Estate (JIE), the first and largest industrial estate in the country. Its strategic location and provision of competitive infrastructure facilities have helped the industrial estate attract a critical mass of occupants.

Figure 5.1. JIE: industrial distribution of tenants, as of January 2017



Source: PT Jababeka Tbk.

More than 1,650 companies from at least 30 economies (e.g. Australia, France, Japan, the Republic of Korea, Malaysia, the Netherlands and the United Kingdom) are located in the JIE. These local and foreign MNEs operate in a variety of business activities and industries (figure 5.1).

Several strategic aspects support the JIE's success in attracting a large number of tenants. It is strategically located geographically and has good infrastructure facilities in the estate. They include (i) easy access to the Cikarang Dry Port, (ii) installation of the Bekasi Power plant, (iii) clean water provision plants and (iv) wastewater treatment plants.

The Cikarang Dry Port is an international port. It is Indonesia's first and only integrated customs services zone. It is centred in the manufacturing zone that runs along the Bekasi–Cikampek corridor, surrounded by 11 industrial estates,

and hosts more than 3,000 manufacturing companies. The Cikarang Dry Port serves other companies in addition to the tenants of the JIE. It is 50 km away from the country's major seaport (i.e. Tanjung Priok).

The JIE also has its own power plant within the industrial estate. The 130 MW power plant is operated and managed by its subsidiary, PT Bekasi Power. The subsidiary improves Kota Jababeka's electricity and energy supply while strengthening PLN's electricity system. The plant's output is first sold to PLN (the Indonesian electricity SOE), but a buy-back arrangement is in place that allows Bekasi Power to buy power back from PLN and subsequently sell it to Bekasi Power's customers within its concession area.

Clean water for the industrial estate is provided through two plant units with a combined capacity of 80,000 cubic metres per day. The wastewater of the JIE is treated at two other wastewater treatment plants. All four plants are owned and operated by Jababeka's wholly owned subsidiary, Jababeka Infrastruktur.

(ii) Kendal Industrial Park

The Kendal Industrial Park (KIP) is a JV project between PT Jababeka and Sembcorp (Singapore). The former has a 51 per cent stake. A groundbreaking ceremony to develop the 2,700 ha KIP was held in November 2016. The park has so far attracted more than 30 tenants, both foreign and Indonesian companies. The KIP hosts a wide range of industries, similar to those in the JIE (figure 5.2).

Companies operating in the KIP are more labour-intensive and are driven by efficiency-seeking motives to access the relatively lower cost of labour in the area. Most of the companies use relatively lower-technology production processes.

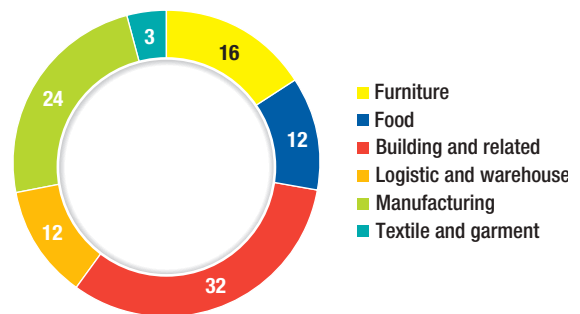
Similar to Kota Jababeka, the KIP is designed to be a combination of industrial (land plots, built factories, utilities infrastructure), residential and commercial areas. However, it has the additional advantage of being able to offer manufacturers relatively low land costs and competitive labour costs compared with West and East Java. The KIP is 21 km from Central Java's capital of Semarang, which provides a large labour pool. It is also accessible to Indonesia's third largest seaport (Tanjung Emas International Seaport) and Ahmad Yani International Airport.

(iii) Tanjung Lesung and Morotai SEZs

Industry-based townships are not the only business of Jababeka. It has won concessions to develop two SEZs with a strong focus on the tourism and hospitality industry. These two SEZs, Tanjung Lesung and Morotai, will also involve the development of industrial estates but with a different focus than Kota Jababeka and the KIP.

The Tanjung Lesung SEZ covers 1,500 ha of seaside land on Western Java, facing the Indian Ocean. Currently, it is a 3.5-hour drive from Jakarta. However, an additional toll road has been planned and when completed will shorten the journey significantly in terms of both time and distance. Major attractions in close proximity include the Krakatau volcanic island and Ujong Kulon National Park. The concept for Tanjung Lesung is a tourism-based integrated township centred on hospitality and recreation, envisioned to one day parallel the first-class resort destinations of Bali. Development has already started, and there are now two resort facilities. Tanjung Lesung is being promoted as one of the 10 new tourism destinations in Indonesia.

Figure 5.2. KIP: Industrial distribution of tenants, as of March 2017



Source: PT Jababeka Tbk.

The Morotai SEZ in North Maluku Province is the latest project of Jababeka. Aside from the airport infrastructure that remains intact from World War II, there is much potential in and progress to be made on this island. The main difference from Tanjung Lesung is that although Morotai will cater to tourism, it is also envisioned as an industrial hub of the Asia-Pacific region, with fiscal and non-fiscal incentives for companies setting up operations in the economic zone. Its geographic position on the northern boundary of Indonesia makes it an ideal entry and exit point for import and export businesses. The overall master plan sees Morotai's development into (i) a tourism hub, (ii) a business hub, (iii) a fisheries hub; and (iv) an agriculture, arts and crafts hub.

5.2.2.2. MASSCORP (Malaysia)

The Malaysian South–South Corporation (MASSCORP), established in 1991, is a consortium of 86 Malaysian companies which co-own the Danang Industrial Park in Viet Nam. Corporate members of MASSCORP include Axiata Group (telecommunication), Tan Chong Motor (automotive), Puncak Niaga (construction and engineering), Muhibbah Engineering (construction and engineering), IJM (conglomerate), AMMB (banking) and Deleum (oil and gas). The mission of MASSCORP is to promote bilateral trade and investment between Malaysia and South–South countries.

Danang Industrial Park

The Danang Industrial Park was established in 1993 by Massda Land (Malaysia) through MASSCORP-Vietnam, which is 80 per cent owned by MASSCORP and 20 per cent by IJM Properties (Malaysia).⁴ Massda Land is a JV entity with a Vietnamese State financial organization (Danang Investment and Development Fund) in which MASSCORP holds a 65 per cent stake. IJM Land is one of the biggest property developers in Malaysia and has real estate projects in various countries including China, India, Singapore and Viet Nam. It is a member of the IJM group, a leading construction company in Malaysia.

The industrial park covers over 50 ha and is fully occupied by tenants from several countries, which collectively employ more than 12,000 people.⁵ The park, zoned for light industrial businesses, has attracted investment from a wide range of industries (e.g. garments, shoes, candle manufacturing, ICT and logistics).⁶ It is situated in a prime location in Viet Nam, 6 km from the Tien Sa seaport, 4 km from the Danang International Airport and 2 km from the Danang central business district.

The strategic location and proximity of the park to the seaport and other transport infrastructure have been beneficial to efficiency-seeking and export-oriented tenants. For instance, Sinaran Manufacturing (a major Malaysian candle and incense manufacturer) produced a large part of its products in the park to export globally.⁷ Another Malaysian company, White Horse Ceramic, was established in the park in 1997 to produce granite and ceramic tiles for export to countries such as Australia, the Republic of Korea, Saudi Arabia and the United Arab Emirates. Valley View Vietnam Industrial, a garment producer with its parent company headquartered in Taiwan Province of China, conducts most of its manufacturing in this park. It supplied garments to

large MNEs such as Adidas (Germany) and Aramark (United States). The company is part of the bigger global value chains in garments, coordinated by major buyers and retailers.

5.2.2.3. Sembcorp (Singapore)

Sembcorp is a major conglomerate headquartered in Singapore with business interests spanning many industries and countries. It is a Government-linked company, with 49.5 per cent owned by Temasek (the Singapore Government's investment holding company). It is active in the utilities, marine and urban development businesses. It is a significant investor in economic zone development in ASEAN and in China.

A regional player

Sembcorp is a major regional player in economic zone development. It has been involved in the development and operation of economic zones in ASEAN, primarily in Indonesia and Viet Nam, since 1990 (table 5.5). All its industrial estate operations in other ASEAN Member States are through JV arrangements, involving local partners. Mitsubishi Corporation is involved in its consortium in the various Vietnam–Singapore Industrial Parks (VSIPs) as a development and marketing partner.

Sembcorp has 3 industrial parks in Indonesia, 7 in Viet Nam and 3 in China. These 13 parks helped these host countries attract many major MNEs and leading local companies.

Table 5.5. Sembcorp: Industrial park development in ASEAN through JVs, 2017

Industrial estate	Country	Year established	Ownership/partner (share in %)	Size (ha)	Remarks
Batamindo Industrial Park	Indonesia	1990	Gallant Venture Ltd (Singapore)	320	Gallant Venture is a JV between Salim Group (Indonesia) and Sembcorp.
Bintan Industrial Park	Indonesia	1994		270	
Kendal Industrial Park	Indonesia	2011	PT Jababeka Tbk (Indonesia) and Sembcorp	2,700	Phase 1 is 860 ha.
Vietnam–Singapore Industrial Parks (VSIPs)	Viet Nam	1996 (Park 1)	Becamex IDC Corporation (Viet Nam) (49)	2,545	
Bing Duong (Parks 1 and 2)		2006 (Park 2)	Sembcorp consortium (51)		
Bac Ninh VSIP	Viet Nam	2007	Becamex IDC Corporation (Viet Nam) (49) Sembcorp consortium (51)	21,500	Becamex is a Vietnamese SOE. Sembcorp holds 79.3 per cent of the consortium's 51 per cent share.
Hai Phong VSIP	Viet Nam	2010	Becamex IDC Corporation (Viet Nam) (49) Sembcorp consortium (51)	5,000	
Quang Ngai VSIP	Viet Nam	2013	Becamex IDC Corporation (Viet Nam) (49) Sembcorp consortium (51)	915 (660 for industrial use)	
Hai Duong VSIP	Viet Nam	2015	Becamex IDC Corporation (Viet Nam) (49) Sembcorp consortium (51)	150	Mitsubishi Corporation (Japan) is in the Sembcorp consortium. It is involved in developing the park and promoting it to Japanese investors.
Nghe An VSIP	Viet Nam	2015	Becamex IDC Corporation (Viet Nam) (49) Sembcorp consortium (51)	750	

Source: Sembcorp.

Investing abroad

Sembcorp invests abroad for a number of reasons. Exploiting its experience, knowledge and ownership advantage as an industrial park developer is a key factor. Others include the need to advance stakeholders' interests by expanding revenue sources to locations that offer investment opportunities and prospects. Strategic reasons such as invitations by host countries to help develop industrial parks and the availability of significant local partners were important consideration. Sembcorp's other ownership advantages include its strong brand name and reputation in delivering large, complex projects in Singapore and overseas.

5.2.2.4. JTC (Singapore)

JTC Corporation (formerly Jurong Town Corporation) is Singapore's principal industrial developer and a statutory board established in 1968. It is a lead agency responsible for planning, promotion and development of industrial landscape and various types of industrial facilities. JTC has a wide portfolio of industrial estates involving at least 7,000 ha of industrial land and 4 million square metres of ready-built facilities that support the development of industries and operations of firms.

The industrial facilities developed range from the first industrial township (i.e. Jurong Industrial Estate) to specialized business and industrial parks (table 5.6 and box 5.3). It established One-north, which aims to generate a cluster of knowledge-based industries; that involves the development of specialized facilities such as the Biopolis, Fusionopolis and Mediapolis (box 5.4).⁸ JTC has also built oil refineries that attracted many oil-related companies to the country, and it constructed the Jurong Port.

The two most significant types of industrial estates in Singapore are the specialized industrial parks and business parks. Specialized industrial parks facilitate manufacturing clusters by providing supporting infrastructure to develop potential synergies among firms in related industries. Business parks are tailored to companies engaged in knowledge-intensive and high value added activities such as research and development (R&D) and companies operating in high-tech industries.⁹ Within these business parks and specialized industrial parks, other facilities are also created to encourage the development of niche clusters. JTC is also actively involved in the development of these parks.

The Jurong Industrial Estate is the oldest and one of the largest industrial estates in Singapore, with many prominent MNEs located in the facility. The estate hosts a wide range of industries and tenants from different countries.

JTC has over the past decades built many industrial facilities to support the development of industries and respond to demand. The concept of industrial development has moved away from solely industrial estates to include more integrated and holistic types of facilities (i.e. the industrial estate is one part of a larger urban plan) and specialized industrial parks. For example, in Jurong Island, JTC has embarked upon developing new or more competitive types of industrial facilities to optimize land use and meet the changing needs of industries. This includes Jurong Rock Caverns; the Tukang Innovation Park, which supports the growth

Table 5.6. Selected industrial parks developed by JTC

Project	Date established	Size (ha)	Type	Remarks
Airport Logistics Park	2003	26	Specialized industrial park	Major companies: DHL (Germany); FedEx (United States); Nippon Express (Japan); Sandvik (Sweden); UPS (United States)
Jurong Island	1995	3,000	Specialized industrial park	A cornerstone facility for Singapore's energy and chemicals industry, home to more than 100 leading global petroleum, petrochemical and specialty chemical companies Major companies: BASF (Germany); Celanese (United States); ExxonMobil (United States); DuPont (United States); Mitsui Chemicals (Japan); Chevron Texaco (United States); Shell (Netherlands); Sumitomo Chemical (Japan); CIBA (Switzerland); Huntsman (United States); Natural Fuel (United States) Nexsol (Malaysia); Tate & Lyle (United Kingdom)
Logis Parks: Changi International Banyan Tampines Toh Tuck Toh Guan Clementi West	Various dates (e.g. Banyan in 2003)	Various sizes Banyan – 80 ha Toh Guan – 30 ha Toh Tuck – 8 ha Clementi – 13.5 ha Changi – 57 ha	Specialized industrial park	Caters to the needs of logistics companies with sites around Singapore Selected tenants in Tampines: YCH (Singapore); DHL (Germany) Changi International: Panalpina World Transport (Switzerland) Banyan: Horizon Singapore Terminals Pte Ltd
MedTech Park	2010	7.4	Specialized industrial park	Dedicated to attracting medical technology (medtech) activities from medtech manufacturers, from product owners to service providers
Tuas BioMedical Park	1997	280	Specialized industrial park	A manufacturing hub hosting process development and manufacturing operations of major pharmaceutical, biotechnology and medical technology companies Companies: Alcon (Switzerland); Merck Sharp & Dohme (United States); Kimberly-Clark (United States); Novartis (Switzerland); Pfizer (United States); Roche (Switzerland)
Wafer Fab and Advanced Display Parks	1999	220 ha involving four specialized parks at Woodlands, Tampines, Pasir Ris, and North Coast	Specialized industrial park	Caters to the stringent requirements of wafer fabrication and advanced display companies Companies: AU Optronics (Taiwan Province of China)
Changi Business Park (owned by JTC through its subsidiary Ascendas-Singbridge)	1997	71.07	Business park	Targeted to forward-looking businesses, with a strategic location and energy-saving district cooling system: high-tech businesses, data and software enterprises, R&D divisions of multinational companies, and knowledge-intensive enterprises Companies in IT and financial services: IBM (United States); Honeywell (United States); Xilinx (United States); Huawei (China); Ericsson (Sweden); Citi Group (United States); DBS Bank (Singapore); UBS (Switzerland); Credit Suisse (Switzerland); JP Morgan (United States); Standard Chartered Bank (United Kingdom); Bank of Tokyo Mitsubishi UFJ (Japan); EMC2 (United States); Johnson Controls (Ireland); Cisco Systems (United States); Infosys (India); Wipro (India); Cognizant (United States); Tata Consultancy Services (India); Akzo Nobel (Netherlands); Rohde & Schwarz (Germany)
Clean Tech Park	2013	50	Business park	An R&D and test-bed site for early adoption of technology and solutions, adjacent to Nanyang Technological University, which enables knowledge sharing and partnership promoting between businesses and academia Companies: DHI Water and Environment (Denmark); Sinomem Technology (China); Advantec (Taiwan Province of China); Diamond Energy (Australia); Toray Industries (Japan)

Sources: JTC, EDB, MTI, Ascendas-Singbridge, Brightnews and company websites.

Box 5.3. Specialized Park: Seletar Aerospace Park

The Seletar Aerospace Park covers 320 ha in the north-east part of Singapore and was developed in 2007 to facilitate the development of the aerospace industry. It offers advanced infrastructure facilities including a strong ecosystem of MNEs and SMEs operating in the aerospace value chain. The park hosts a dedicated cluster of activities, including maintenance, repair and overhaul of aircraft and components; manufacturing and assembly of aircraft engines and components; business and general aviation; training and R&D. MNEs in the park include Execujet (Switzerland), Fokker (Netherlands), Hawker Pacific (United States), Jet Aviation (Switzerland), and Pratt & Whitney (United States).

Since 2012, Rolls-Royce (United Kingdom) has made a significant investment in the park, with a \$700 million, 65,000 square metre facility. In 2016, Airbus (France) opened a \$100 million facility, and in 2014 Bombardier (Canada) opened a facility to support its Asia-Pacific operation at the park.

The ecosystem in the park is further enhanced by three additional developments, JTC Aviation One, JTC Aviation Two and JTC Aerospace. JTC Aviation One is designed for light industrial space activities and targets companies that provide support services. JTC Aviation Two, in an 11-storey-building, is dedicated to companies seeking small to medium spaces for heavy loading. JTC Aerospace acts as an Asia-Pacific hub for maintenance, repair and overhaul of aircraft components.

Sources: JTC, Airbus, Bombardier and Rolls-Royce websites.

Box 5.4. One-north: various business parks

One-north is a 200 ha business park developed by JTC in 2001. It hosts several facilities to support industrial clusters (e.g. biomedical sciences, information communication technology, media, physical sciences and engineering). One-North is also home to educational institutions and research facilities. It comprises several other developments such as Biopolis, Fusionopolis, Mediapolis, Wessex, One-North Park, Nepal Hill, Vista and JTC LaunchPad.

Biopolis

Biopolis, developed in 2001, was the first development in One-north. It was designed to support the biomedical industry in fostering research by hosting leading public and private biomedical research institutions and organizations. Key activities targeted include drug discovery, clinical development and medical technology research. The subsequent development of Biopolis involved private developers such as Ascendas and Procter & Gamble, which invested in expanding the facility. Biopolis hosts MNEs such as GlaxoSmithKline (United Kingdom), Novartis (Switzerland) and Genome (United States). Given its strategic purpose, Biopolis is located near the National University of Singapore, the Institute of Technical Education, Singapore Polytechnic, Singapore Science Park and Fusionopolis (another facility at One-North).

/...

Box 5.4. One-north: various business parks (Concluded)**Fusionopolis**

Fusionopolis was the second development in One-north. It covers 30 ha and was designed to attract clusters in ICT, media, physical sciences and engineering. It provides facilities and environment for scientific and technological research. In 2015, the facility expanded with three more buildings to create more space. By 2018, JTC is expected to finish upgrading and expanding Fusionopolis. MNEs located in Fusionopolis include Japanese companies such as Nitto Denko Corporation, Panasonic Electric Works and Seiko Instruments Inc.

Mediapolis

Mediapolis was developed in 2009 to support the development of creative industries. The 19 ha hub plays a vital role in Singapore's ICE and media ecosystem. Located here are companies such as Fujitsu (Japan), Lucasfilm United States), Fox International Channels (United States), Discovery Networks (United States), Infinite Studios (Singapore), Globecast (France), Bandai (Japan), Namco (Japan), Garena (Singapore), Canon (Japan), Oracle (United States), Novartis (Switzerland), MSD (United States), GlaxoSmithKline (United Kingdom), Takeda (Japan), Electrolux (Sweden), Lloyd's Register (United Kingdom) and National Healthcare Group (Singapore).

JTC LaunchPad

The JTC LaunchPad was established in 2014 to encourage the development of a start-up cluster. It was designed to encourage start-ups to locate near successful companies, to help start-ups develop, grow and produce results similar to those of Silicon Valley.

Source: JTC.

of new industry clusters in innovation activities; and Jurong Island Version 2.0, an initiative that aims to increase the competitiveness of the chemicals hub.¹⁰

Expansion abroad

JTC's expansion outside Singapore occurred through its subsidiary (Ascendas-Singbridge).¹¹ Projects abroad are carried out mainly through JVs with leading local industrial estate developers in host countries. A majority of the subsidiary's industrial estate projects are in China and India. The company has also developed industrial estates in three ASEAN Member States (table 5.7). It has a JV in the development of the 140 ha Carmelray Industrial Park 2 in Calamba, Laguna (Philippines).

JTC and its subsidiary have established themselves as reputable urban developers (with an industrialization emphasis). The experience gained in the domestic economy enabled the group to replicate its expertise abroad, including supporting bilateral cooperation arrangements between other countries and Singapore, and adding value to the net worth of both JTC and the subsidiary.

Table 5.7. Ascendas-Singbridge investment in ASEAN

Date/Groundbreaking		Selected industrial parks		
		Name of park	Location/type	Effective stake (%)
Malaysia	2014	Nusajaya Tech Park	Johor/Light Industrial	60
Viet Nam	2015	Ascendas-Protrade Singapore Tech Park	Binh Duong/Light Industrial	14
		OneHub Saigon	Ho Chi Minh City/Business Park	60
Indonesia	2017	OneHub Puri	Jakarta/Business Park	49.9

Sources: JTC and Ascendas-Singbridge.

5.2.2.5. Amata Corporation (Thailand)

Amata Corporation is a major leading industrial estates developer headquartered in Thailand. It was established in 1989. It specializes in planning, developing, managing, and marketing integrated industrial estates. Amata also provides a range of services designed to support tenants in its various industrial estates in Thailand and abroad.

The company currently owns two major industrial estates in Thailand, Amata Nakorn in Chonburi and Amata City in Rayong. These two industrial estates host close to 1,050 companies, with a majority of them operating in the automotive, steel and metal clusters (table 5.8). They have generated more than 250,000 jobs; over 50 per cent are female workers. It is estimated that the operations of Amata and its customers together contributed some \$25 billion to the Thai economy.¹² Among its major customers are large MNEs such as Toyota Motors (Japan), Toyota Boshoku (Japan), Cardinal Health (United States), BMW (Germany), Nestle (Switzerland), BASF (Germany), Hitachi (Japan), Sony (Japan), PepsiCo (United States), Robert Bosch (Germany), Posco (Republic of Korea), Idemitsu Kosan (Japan), Continental (Germany), Denso (Japan) and Bridgestone (Japan).

Table 5.8. Significance of Amata's operations, 2017

Industrial estate (Selected cases)	Year established	Size (ha)	Location	No. of industrial estate customers	Key industries	Employment
Amata Nakorn Industrial Estate	1989	4,330	Chonburi Province, Thailand	746	Automotive, steel and metal, plastic and polymer, consumer electronics, logistics, services	~200,000
Amata City Industrial Estate	1995	2,703	Rayong Province, Thailand	313	Automotive, steel and metal, plastic and polymer, consumer electronics, logistics, services	~50,000
Amata City Long Thanh	2015	410	Long Thanh Province, Viet Nam	..	..	..
Amata Township Long Thanh	2016	753	Long Thanh Province, Viet Nam	..	..	..
Amata City Bien Hao	1994	700	Dong Nai Province, Viet Nam	154	Machinery, steel, metal, plastic, rubber, textile, garment, chemical, paint, electronics, consumer, others	~44,000

Source: ASEAN Investment Report 2017 research, based on information provided by Amata.

Success factors

Various factors have contributed to the success of Amata's industrial estates. They include security, strategic location and provision of reliable infrastructure, utilities and waste disposal facilities. The connectivity of its industrial estates to major national road networks, ports, and airports also plays an important role. Other factors include its well-maintained green areas in the industrial estates, ready-built factories and after-sales service.

The location of many major original equipment manufacturer (OEM) MNEs in these industrial estates has also helped to attract supplier MNEs to Amata's facilities (table 5.9). The provision of a one-stop investor service to support smooth operations for customers in Amata's facilities has been an important site location consideration. The services include helping customers with various operational matters such as with the Land Department (Ministry of Interior), the Industrial Estate Authority of Thailand, the Board of Investment, Immigration, the Ministry of Commerce and the Ministry of Finance (Revenue Office). In addition to supply by public utilities companies, Amata also invests in the generation and distribution of electricity and provision of water supply to its customers. For instance, Amata generated more revenues from the sales of utilities than the combined revenues from sales of industrial land and rental of factories in Thailand in fiscal year 2016–2017. Investment in power is made through a JV with B. Grimm Power (Thailand) and Sumitomo (Japan).

Maintaining good relationships with its customers and business partners and providing a one-stop service facility are other factors contributing to Amata's success in operating industrial estates.

Table 5.9. OEM-MNE and supplier companies in Amata's industrial estates, 2017 (Selected cases)

Industrial estate	OEM-MNEs	Nationality	Supplier companies
Amata Nakorn Industrial Estate	Siam Kubota Corporation	JV between Japanese and Thai companies	Thai Nok Co Ltd (Japan) Fukui Kasei Co Ltd (Japan) Tenma (Japan) Siam Pin Hui International (China) Sadoshima (Japan)
Amata City Industrial Estate	Ricoh Manufacturing	Japan	Marunix (Japan) K-Tech Industrial (Japan) Topping Hudson Precision Industrial (China) Fancy Industry (China)

Source: ASEAN Investment Report 2017 research, based on information from Amata.

Going abroad

Amata has developed and owned a major industrial estate in Viet Nam since 1994 (Amata City Bien Hoa) and is developing new sites in that host country (i.e. Amata City Long Thanh and Amata City Halong). The Amata City Bien Hoa Industrial Park is located on the main north–south highway close to Ho Chi Minh City, Son Nhat International Airport, and Saigon Port. Its

700 ha house more than 144 factories, mainly owned by Japanese and other Asian MNEs. The customers of Amata at this industrial park have invested a combined \$1.9 billion, which created employment for about 45,000 people.

Amata City Long Thanh and Amata Township Long Thanh enjoy strategic locations next to the Dong Nai River and proximity to the future Long Thanh International Airport. The development will cover some 1,270 ha and consist of a high-tech park, a mixed-use development and a service zone. The company has received investment approval for phase 1, the construction of the high-tech industrial park. Outside Viet Nam, the company has announced plans to invest in and develop an industrial estate near Yangon, Myanmar. It is also considering investment in other ASEAN Member States, such as the Lao People's Democratic Republic, to capture growing business opportunities in that prospective host country.

Amata invests abroad for various reasons. Connectivity among the CLMVT Member States (CLMV and Thailand) and new drivers of ASEAN and Asian economic growth motivates Amata to expand abroad.¹³ Other major reasons include the need to expand markets and diversify revenue sources, including to better exploit its many years of business experience in developing industrial estates abroad. The investment opportunities and existence of a reliable local partner in Viet Nam and the other ASEAN Member States have also influenced the location choice.

Many of Amata's customers (foreign and local Thai companies) are investing or planning to invest in neighbouring countries to pursue a regional division of labour strategy. In the process, they have encouraged Amata to develop facilities in these countries to support their expansion. The AEC process is also accentuating regional integration, which in turn encourages foreign firms based in Thailand and Thai firms to invest in neighbouring countries. The AEC process provides another key reason for Amata's present and future regionalization drive. Amata's strong marketing and management team also play a role in encouraging it to go abroad.

5.2.3. Foreign MNEs

Asian companies (in Japan, ASEAN and China) are the dominant foreign developers of economic zones in the region. Japanese companies in particular have been involved in the development of economic zones in ASEAN for the past few decades (table 5.10). In some ASEAN Member States, Japanese companies are the major foreign developers of economic zones (box 5.5).

The current wave of Japanese FDI flows to ASEAN is encouraging Japanese industrial developers to invest, expand and further develop economic zones in various ASEAN Member States to meet rising demand for industrial lands and factories. Major Japanese trading companies such as Sumitomo, Mitsubishi and Marubeni have been active investors and owners of many economic zones in ASEAN. They operate in multiple countries across the region, contributing to regional production networks through tenants that they bring to their zones (section 5.5). Other Japanese companies such as Toyota Tsusho have developed dedicated parks in Cambodia, Indonesia and Thailand. Nippon Steel and Sumikin Bussan Corporation partnered with a local company in owning four industrial estates in Thailand under the Rojana Industrial Park Public

Table 5.10. Early Japanese participation in economic zone development in ASEAN (Selected cases)

Economic zone	Main developer	Location	Size (ha)	Year commence
Indonesia				
East Jalaeta Industrial Park (I and II)	11 Japanese companies Sumitomo (Japan) Bank of Tokyo (Japan) Lippo Group (Indonesia)	<ul style="list-style-type: none"> • 40 km east of central Jakarta • 70 km east of Jakarta airport • 45 km from Tanjung Priok port 	320	1991
MM2100 EPZ (I and II)	BFIE (local private) (55%) Marubeni (Japan, 45%)	<ul style="list-style-type: none"> • 30 km east of central Jakarta • 60 km east of Jakarta airport 	320	1991
MM2100 EPZ (III)	BFIE (local private) (40%) Marubeni (Japan, 60%)	<ul style="list-style-type: none"> • 35 km from Tanjung Priok port 	400	1995
Bukit Indah Industrial Park	Salim Group (Indonesia, 51%) Taisei (Japan, 46%) Mitsui (Japan, 3%)	<ul style="list-style-type: none"> • In Purwakarta Regency, on the outskirts of Jakarta 	200	1996
Karawan Industrial Park	Sinar Mas Group (Indonesia, 50%) Itochu (Japan, 50%)	<ul style="list-style-type: none"> • 50 km east of central Jakarta 	1,120	1993
Philippines				
Laguna Technopark	Ayala Land (Philippines) Mitsubishi (Japan) Kawasaki Steel (Japan)	<ul style="list-style-type: none"> • 40 km from Manila Airport • 50 km from port of Manila 	334	1991
Light Industry and Science Park	ICCP Group (FEBTC) (22%) ICCP (35%) NDC (3%) Mitsui (Japan, 10%) Bechtel (United States, 9%)	<ul style="list-style-type: none"> • 40 km from Manila Airport • 50 km from port of Manila 	143	1991
First Cavite Industrial Zone	NDC (60%) Marubeni (Japan, 32%) JAIDO (Japan, 8%)	<ul style="list-style-type: none"> • 35 km south of central Manila 	155	1991
Lima Industrial Zone	Alsons Land (60%) Marubeni (Japan, 40%)	<ul style="list-style-type: none"> • 70 km south of Central Manila 	400	After 1997
Ruicita Industrial Zone	Itochu (Japan) Cojuangco (Philippines) Local Banks (Philippines)	<ul style="list-style-type: none"> • 120 km north of central Manila 	..	After 1997
Thailand				
Ladkrabang EPZ	Thai companies (Thailand, 60%) Marubeni (Japan, 40%)	<ul style="list-style-type: none"> • 30 km east of central Bangkok 	200	1988
Bangpakong Industrial Zone	Itochu (Japan, 22%)	<ul style="list-style-type: none"> • 60 km southeast of Central Bangkok 	950	1989
Bangkadi Industrial Zone	Mitsui (Japan, 49%) Toshiba (Japan) Thai Companies	<ul style="list-style-type: none"> • 40 km north of Central Bangkok 	190	1989
Amata Rayong Industrial Zone	Itochu (Japan)	<ul style="list-style-type: none"> • 108 km southeast of Central Bangkok 	442	1995
Viet Nam				
Thang Long Industrial Zone	Sumitomo (Japan, 58%) Ministry of Construction, Viet Nam (42%)	<ul style="list-style-type: none"> • In Dong Anh District 	302	1997
Nomura Haiphong Industrial Zone	Nomura Group (Japan, 70%) Haiphong City Authority (Viet Nam, 30%)	<ul style="list-style-type: none"> • 15 km west of central Haiphong • 85 km east of central Hanoi 	153	1995
Amata Industrial Zone	Amata (Thailand) Itochu (Japan) Dong Nai Provincial Government (Viet Nam)	<ul style="list-style-type: none"> • Bien Hoa City • 30 km northeast of Ho Chi Minh City 	93	1995
Long Binh Industrial Park	Sojitz (Japan, 60%) Ministry of Defence, Viet Nam (Viet Nam, 40%)	<ul style="list-style-type: none"> • Bien Hoa City • 30 km northeast of Chi Minh City 	100	1996

Source: Kuchiki (2003).

Box 5.5. Philippines: Japanese companies are major foreign players in industrial park development

Economic zone development in the Philippines is dominated by local players. However, among foreign investors in the development of economic zones for manufacturing, Japanese companies are the most prominent. A majority of the JV manufacturing zones have involved Japanese companies, with a few involving American corporations. Most Japanese JV manufacturing zones are with local partners (box table 5.5.1).

Box table 5.5.1. Manufacturing economic zone development involving foreign companies, as of 2016 (Selected cases)

Economic zone	Developer/operator	Investment (Million PHP)	Area (ha)	Owner nationality
Plastic Processing Center SEZ	Diversified Ecozone Corporation	366	26	65% Filipino, 35% Japanese
Central Technopark	Luisita Industrial Park Corporation	1,959	300	60% Filipino, 40% Japanese
Subic Shipyard Special Economic Zone	Consort Land, Inc	101	76.6	45.1% Singaporean, 42.3% Filipino, 12.5% Japanese
First Philippine Industrial Park	First Philippine Industrial Park, Inc	1,058	331.9	70% Filipino, 30% Japanese
First Philippine Industrial Park II	First Philippine Industrial Park Inc	1,291	91.8	70% Filipino, 30% Japanese
Light Industry & Science Park IV	Science Park of the Philippines, Inc	..	64.6	88.4% Filipino, 11.6% American
Lima Technology Center	Lima Land, Inc	5,723	280.2	60% Filipino, 40% Japanese
Cavite Economic Zone II	Majestic Technical Skills Development and Landscape Corporation	..	53.7	60% Filipino, 38% Singaporean, 2% Japanese
EMI Special Economic Zone	EMI-Jolou Realty, Inc	64	12.2	60% Filipino, 40% Japanese
First Cavite Industrial Estate	First Cavite Industrial Estate, Inc	650	71.8	60% Filipino, 40% Japanese
Gateway Business Park	Gateway Property Holdings, Inc	1,060	110.1	80% Filipino, 20% Indonesian
Golden Mile Business Park	Golden Mile Resources Development Corporation	510	45.1	64% Filipino, 36% Chinese
Calamba Premiere International Park	Starworld Corporation	1,463	65.6	60% Filipino, 40% Korean
Laguna International Industrial Park	Laguna International Industrial Park, Inc	117	34.9	60% Filipino, 40% Korean
Laguna Technopark SEZ	Laguna Technopark, Inc	..	314.9	61% Filipino, 39% Japanese
Laguna Technopark Annex	Laguna Technopark, Inc	493	29	61% Filipino, 39% Japanese
Light Industry & Science Park I	LISP-I Locators' Association, Inc	337	71.7	65.6% Filipino, 24.4% American 10% Japanese
Light Industry & Science Park II	LISP-II Locators' Association, Inc	793	68	65.6% Filipino, 24.4% American 10% Japanese
SMPIC Special Economic Zone	Taurus First Properties, Inc	..	3.3	60% Filipino, 40% Japanese
Toyota Santa Rosa (Laguna) SEZ	Toyota Motors Philippines Corporation	55	81.7	60% Filipino, 40% Japanese
YTMI Realty Special Economic Zone	YTMI Realty Corporation	20	20.7	60% Filipino, 40% Japanese
Rio Tuba Export Processing Zone	Rio Tuba Nickel Mining Corporation	7,500	424	60% Filipino, 40% Japanese
West Cebu Industrial Park	Cebu Industrial Park Developers, Inc	1,175	169.9	60% Filipino, 40% Japanese
Jasaan Misamis Oriental Ecozone	Misamis Oriental Land Development Corporation	20	25.3	60% Filipino, 40% Japanese
Taganito Special Economic Zone	Taganito Mining Corporation	3,250	687.5	65% Filipino, 35% Japanese

Source: PEZA, based on list of operating manufacturing economic zones as of 31 July 2016, www.peza.gov.ph/index.php/economic-zones.

Company Ltd. Japanese banks such as Mizuho Bank, Sumitomo Mitsui Banking Corporation and Bank of Tokyo Mitsubishi UFJ have small investments in SEZ development in ASEAN. For instance, these three banks have a small stake in the Thilawa SEZ in Myanmar.

Major Japanese trading companies have also acted as sales and marketing agents for other developers. For instance, Sumitomo was the sales agent for Suryacipta Industrial Zone (Indonesia), an industrial estate in Surabaya (Indonesia) and Gateway Business Park (Philippines); Sojitz was the agent for the Cikarang Industrial Zone (Indonesia) and Carmelray Industrial Zone (Philippines); and Mitsui for Noi Bai EPZ (Viet Nam) and Tan Tuan EPZ (Viet Nam).

Chinese companies are increasingly visible in the development and ownership of economic zones in ASEAN. For instance, in Indonesia, two Chinese companies (Shenzhen Yantian Port Group and Country Garden Holdings Co. Ltd.) plan to develop the \$14 billion Indonesia–Shenzhen Industrial Estate in West Java with the Lippo Group (Indonesia).¹⁴ The Chinese partners are expected to help attract other Chinese companies to locate in the estate. In Malaysia, Chinese companies (Guangxi Beibu Gulf International Port Group and Qinzhou Investment Company) are developing the Malaysia–China Kuantan Industrial Park.¹⁵ Holley Group and a local partner developed the Thai–Chinese Rayong Industrial Zone in Thailand.

Fuhua Co. Ltd. (China) developed and operates the Yun Zhong industrial park in Viet Nam. Jiangsu Taihu Cambodia International Economic Cooperation Investment Co. Ltd. co-owns the Sihanoukville SEZ in Cambodia. A consortium of the Chinese State-owned conglomerate CITIC and other Chinese companies (China Harbour Engineering, China Merchants Holdings, TEDA Investment Holding and Yunnan Construction Engineering Group) is developing an SEZ in Myanmar, which includes a \$2.3 billion industrial park.¹⁶ Chinese company Xuanye/AVIC International Beijing Co. Ltd. signed a memorandum of understanding in the Lao People's Democratic Republic in April 2017 to develop an agricultural industrial park.¹⁷ A number of SEZs in the Lao People's Democratic Republic were developed or are being developed by Chinese owners.¹⁸

Many foreign investors in economic zone development undertake projects through JV arrangements. In some cases, the local partners hold the majority stake and a special-purpose vehicle is established to manage the zones, including to address the complex relationship between the partners.

Some foreign MNEs have developed their own economic zones to house some of their suppliers, to improve logistical efficiency. For instance, Samsung is developing its own large industrial complex within a major industrial park in Viet Nam to support its electronics operation. Similarly, LG is building a \$1.5 billion complex in Trang Due Industrial Park in Hai Phong to house its various electronics subsidiaries and business operations in Viet Nam. Toyota has established an agglomeration of supply chain networks in its industrial parks in Thailand and Indonesia.

5.2.4. Specialized and dedicated parks

In ASEAN, there are generally three types of manufacturing industrial parks. General industrial parks cater to a wide range of industries or industrial activities. Specialized parks are developed to attract specific types of industries, investment or technology. They include science and technology parks, IT zones, aerospace parks, medical parks and education parks. Dedicated parks are developed to cater to the needs of specific investor groups (e.g. Karakatau Industrial Estate in Indonesia for steel- and chemical-related companies) or investments from a major investing country (Toyota Tsusho Industrial Park in Indonesia, Pakse Japan SME SEZ in Lao People's Democratic Republic, Toyota Santa Rosa Special Ecozone in the Philippines and OTA Techno Park in Thailand).

Although general industrial parks are also being developed, specialized and dedicated parks are increasing in numbers (table 5.11). Specialized parks are usually developed by the public sector as part of the country's economic infrastructure to attract specific types of investments or industries (box 5.6). In some cases, local private sector and foreign MNEs participate in the development of specialized parks. They also build dedicated parks to house their complex operations and clusters of suppliers.

Table 5.11. Specialized and dedicated industrial parks (Selected cases)

Name	Location	Country	Year	Purpose	Selected cases of companies
Karakatau Industrial Estate Cilegon	Banten	Indonesia	1982	Support upstream and downstream production of steel and related industries	DyStar Group (China), BASF (Germany), Siemens (Germany), Daewoo Group (Republic of Korea), Posco (Republic of Korea)
Toyota Tsusho Techno-Park	Jawa Barat	Indonesia	2011	Attract Japanese automobile manufacturers Established by Toyota Tsusho (Japan)	Nusa Toyotetsu Engineering (Japan), Fujimuki Stell (Japan)
Pakse Japan SME Special Economic Zone	Pakse	Lao People's Democratic Republic	2016	Attract FDI especially from Japan	Nishimatsu Construction (Japan)
MSC Malaysia	Selangor	Malaysia	1996	Attract digital companies	Accenture (Ireland), Aegis (India), Roche (Switzerland)
Kulim Hi-Tech Park	Kedah	Malaysia	1996	Attract technology-intensive industries and R&D activities	Intel (United States), Infineon (Germany), Panasonic Corporation (Japan)
Technology Park Malaysia	Kuala Lumpur	Malaysia	1996	Attract innovative and knowledge-based businesses	Rockwell Automation (United States), British American Tobacco (United Kingdom), CompuGroup Medical (Germany), Novozymes (Denmark), InQpharm (United States)
Toyota Santa Rosa (Laguna) SEZ	Laguna	Philippines	1995	Car production and sales	TRP (Japan), Hikari Seiko (Japan), San-Ei (Japan), Aichi Steel (Japan)
Subic Shipyard Special Economic Zone	Cabaangan Point, Subic, Zambales	Philippines	..	Attract shipping companies	Keppel Corporation (Singapore), Hanjin Heavy Industries (Republic of Korea)
Norkis Cyberpark	Cebu	Philippines	2014	Attract BPO companies	Rakuraku Technologies (Japan), Mercator (United Arab Emirates), Catapult (United States)
Hi-Tech Industrial Estate	Ayutthaya	Thailand	1986	Attract high-tech but low-polluting companies	Canon (Japan), Asahi Kasei Corporation (Japan)
OTA Techno Park	Chonburi	Thailand	2005	Attract Japanese SMEs	Mitoyo Rubber (Japan), Japan Factory Group (Japan)

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Table 5.11. Specialized and dedicated industrial parks (Selected cases) (Concluded)

Name	Location	Country	Year	Purpose	Selected cases of companies
Thai-Chinese Rayong Industrial Zone	Rayong	Thailand	2007	Designed to attract Chinese FDI	Has attracted Chinese companies JV developers include Amata (Thailand) and Holley Group (China)
Rubber City Industrial Estate	Tambon Chalung, Amphor Hadyai, Songkhla province	Thailand	2018	Dedicated to attracting businesses in the latex and rubber industry	..
Seletar Aerospace Park	Seletar	Singapore	2007	Attract companies operating across the value chain in the aerospace industry	Rolls-Royce (United Kingdom), Airbus (France), Bombardier (Canada)
One-North	Queenstown	Singapore	2001	Specialized areas in business park for biomedical sciences, ICT, media, physical sciences and engineering	GlaxoSmithKline (United Kingdom), Novartis (Switzerland), Genome (United States), Seiko Instruments (Japan)
Jurong Island	Jurong	Singapore	2009	Attract companies in the energy and chemicals industry	BASF (Germany) BP (United Kingdom) Evonik Industries (Germany) ExxonMobil (United States) Mitsui Chemicals (Japan)
Tuas Biomedical Park	Tuas	Singapore	2013	Attract pharmaceutical, biotechnology and medical technology companies	Genentech (United States), GlaxoSmithKline (United Kingdom), Merck Sharp & Dohme (United States)
MedTech Park	Jurong	Singapore	2014	Attract companies in the medical technology industry	3M Company (United States), Ace Pillar (Taiwan Province of China), Aerin Medical (United States)
Danang Hi-Tech Park	Danang	Viet Nam	2010	Attract knowledge-based companies such as in biotech, microelectronics, automation and precision mechanics, and nanotechnology	Tokyo Keiki (Japan), NIWA Chuzo (Japan), Nakamura Electric (Japan)
Quang Trung Software City	Ho Chi Minh City	Viet Nam	2001	Attract high-tech companies	HP (United States), IBM (United States) KDDI (Japan), Swiss Post Solutions (Switzerland), Luxoft (Switzerland)
Saigon Hi-Tech Park	Ho Chi Minh City	Viet Nam	2002	Attract businesses in science and technology industry	Intel (United States) Air Liquide (France)

Source: ASEAN Investment Report 2017 research, based on information on the websites of respective government agencies and industrial parks.

Note: BPO = business process outsourcing, ICT = information and communication technology, SME = small and medium-size enterprise.

Box 5.6. Viet Nam: Quang Trung Software City (Viet Nam)

Quang Trung Software City (QTSC) was established in 2001 by the Provincial Government in Ho Chi Minh City. It offers a 43 ha facility for software production, IT services, an exhibition centre and other ICT activities. It is the largest IT park in the country: some 150 local and foreign companies operate in the park. The other technology parks in the country include the Saigon Hi-tech Park, Saigon Software Park, Hanoi IT Trading Centre, Da Nang ICT Infrastructure Development Centre, National University of Ho Chi Minh City's IT Park and Can Tho University Software Center.

Some of the foreign IT companies in QTSC include Augen (New Zealand), BTM Global Consulting (United States), IBM (United States), Global Cybersoft (United States), Hexagon Metrology (Thailand), HP (United States), Luxsoft (Switzerland), Siambrother (Thailand), Sunjin-Acenet (Republic of Korea) and Teamwork (Switzerland). Japan is well represented, by Cube System, GAIT, Gifu Kogyo, Gamelab, Japan Technology and Engineering Company, KDDI, Rakus, Sasia and Shinkawa. Germany is also well represented, by B2Invent, Digi-Text, Rasia, Sanhammer, Schellenberg Consulting and TUV Rheinland.

Source: ASEAN Investment Report 2017 research, based on Quang Trung Software City website.

5.3. DRIVERS AND MOTIVATIONS OF FDI IN ECONOMIC ZONE DEVELOPMENT

Companies involved in economic zone development operate abroad for a combination of reasons. In general, the drivers and motives of FDI in economic zone development are similar to those for real estate and infrastructure investments (*AIR 2015*). They are primarily driven by market-seeking factors, to win contracts, diversify revenue streams, exploit ownership advantages and to expand business. There are also strategic reasons such as bilateral cooperation in developing economic zones as tools to support industrialization. Such cooperation often takes the form of JVs between two SOEs or government-linked companies, such as the development of the various Vietnam–Singapore Industrial Parks (VSIPs) in Viet Nam.

Investment in economic zone development is closely connected with national economic growth, industrial development, demand for industrial facilities and the state of FDI in host countries. Strengthening of these drivers can lead to a rise in demand for more economic zones by both local and foreign tenants. The increase in FDI and manufacturing activities in ASEAN in past decades has led to a rise in demand for factory facilities, which in turn encourages investment in industrial estates. This is evident from Japanese MNEs' involvement in economic zone development in ASEAN, aimed at attracting Japanese and other foreign manufacturing companies.

A number of “push” and “pull” factors also drive and motivate companies to invest abroad in developing, managing and operating economic zones. Push factors are those that drive companies to invest abroad, such as firm-specific factors (e.g. ownership advantages, internationalization drive and corporate vision) and the business environment in which the firm operates (e.g. limited opportunity or increasing competition at home, or persuasion by clients to go abroad). Pull factors encompass locational and regional factors that encourage MNEs to invest in a host country (e.g. host-country-specific factors) (*AIR 2015, WIR 1998 and 2013*).

The possession of ownership advantages is important because investment requirements and risks associated with economic zone development can be huge, and the ability to manage large, complex industrial development projects is crucial. Engineering skills and management skills in planning, managing, developing and operating economic zones are essential. Brand name, reputation and a proven record of successful projects in economic zone development and a strong network of customer bases are also significant factors.

Many major Japanese trading companies are active in economic zone development in ASEAN. Their integrated business model involves a portfolio of skills for developing and marketing industrial real estate. In addition, strong business records and networks with Japanese companies offer them a specific advantage. For instance, Itochu (Japan) has been involved in overseas economic zone development because of the influence of its real estate experience, its skill set in a wide range of businesses and its client networks. In response to the current needs and demand of Japanese companies, Itochu expanded the Karawang International Industrial City (KIIC) in Jakarta with an additional 200 ha in 2017. The original 1,200 ha KIIC was developed more than 20 years ago in partnership with local partner Sinar Mas. More

than 85 per cent of the occupants in the KIIC are Japanese-affiliated companies. Similarly, Ascendas-Singbridge (Singapore) and UEM Sunrise (Malaysia) partnered with Mitsui (Japan) in developing the Nusajaya Tech Park in Iskandar, Malaysia.¹⁹ The JV is expected to benefit from Mitsui's extensive network of Japanese clients, strong industrial property development, and management and leasing experience.

Sojitz (Japan) and Sinar Mas (Indonesia) announced plans in 2017 to expand their Greenland International Industrial Centre (GIIC) by 130 ha, bringing the industrial park area to a total of 1,600 ha.²⁰ The GIIC is part of the bigger 3,200 ha Deltamas City urban development project, 37 km to the east of Jakarta in the Bekasi Regency. Some 200 companies have already moved into the park (81 of them Japanese); they are involved in a range of businesses from automobiles and motorbikes to lifestyle commodities, foods and daily use items. Sojitz has a 25 per cent interest in the project, Sinar Mas 55.7 per cent and general shareholders 19.3 per cent.

Like many companies, Sumitomo (Japan) has an extensive network of clients, and its reputation as a credible MNE has helped it attract tenants to its overseas economic zones. Some companies, such as Marubeni (Japan) and Mitsubishi Corporation (Japan), also act as marketing or sales agents for other industrial estate developers because of their brand names and the business network advantages they possess.

Some industrial estate developers invest abroad to exploit the business experience they acquired at home in planning, developing and managing large successful economic zones. Japanese conglomerates and trading companies (e.g. Itochu) and ASEAN economic zone developers such as Hemaraj (Thailand), Amata (Thailand) and Sembcorp (Singapore) have many years of experience in delivering successful economic zone projects. Their experience and know-how encouraged them to invest abroad. Some conglomerates and infrastructure companies are involved in industrial park development as part of their integrated business model (e.g. ITD-Thailand and Sojitz-Japan).

The drive for internationalization is another contributing factor in corporate investment abroad. As a firm matures and establishes a strong foothold domestically, going abroad is a natural progression or process for growth. The process of internationalization can also be accelerated by the pressure of increasing numbers of fellow firms going abroad, as has been the experience of many Thai firms in the past few years. This creates peer pressure, which encourages more Thai firms to internationalize, including Thai industrial estate developers and infrastructure-related companies.

Investment in economic zone development requires large amounts of capital. Access to intragroup finance or lower costs of borrowing can be important factors for going abroad. For instance, major Japanese trading companies have access to sources of intragroup finance, which help them take on large-scale industrial development projects abroad. Some Japanese banks have also played a role in providing financing or even taken a stake in the development of economic zones in other countries.

A firm can enter a host-country market through a number of arrangements, which include a wholly owned operation, a JV or a public-private partnership. As the development of most

industrial parks in the region takes place through JVs, the existence of a strong, reliable local partner can be an important factor. Although MNE developers of industrial estates have the experience, reputation and capability to develop these facilities on their own, in many cases they prefer to enter the host-country market through a JV. The influence of local partners and their local knowledge advantages are important considerations. Examples of economic zone development done through JV arrangements include Sumitomo (Japan) in the Philippines and Viet Nam; by Sembcorp (Singapore) in Indonesia and Viet Nam; and by Amata (Thailand) and Hemaraj (Thailand) in Viet Nam.

Other significant determinants are emerging investment opportunities, including under public–private partnerships, and the clarity of industrial estate or SEZ law, as well as institutional support (e.g. the PEZA-Philippines and the SEZ authorities in Cambodia, the Lao People's Democratic Republic and Myanmar).

Table 5.12 summarizes key drivers and motivations of FDI in economic zone development. FDI can also be significantly affected by home- and host-country conditions, including regional factors.

Home-country factors

Government-to-government cooperation can also encourage companies to venture abroad. The Singapore Government's cooperation with neighbouring countries played a role in Sembcorp's decision to participate in the development of the VSIPs in Viet Nam and industrial parks in Indonesia (e.g. Batam). Government efforts to encourage regionalization or internationalization of home-country firms can play a role, as in the case of Singapore and Thailand. The Japanese government, through the role played by institutions such as the Japan International Cooperation Agency, has facilitated Japanese FDI in economic zone development in ASEAN.

Host-country factors

Host-country factors are important in attracting FDI in economic zone development. These factors include strong economic growth, rapid industrialization, commitment of the host-country government to infrastructure development, an increasing trend in FDI and rising demand for economic zones in the country. Sojitz (Japan) expanded an industrial park in Indonesia that it jointly owned with a significant local partner, because of increasing FDI and demand for industrial lands and factories by Japanese and other MNEs. The strong growth of the manufacturing sector in ASEAN is driving up demand for industrial estate facilities. This industrial growth is a key factor in the growth of economic zones and in encouraging FDI in the development of such zones in the region. The influx of MNEs, particularly Asian companies, to the CLMV countries has also encouraged industrial estate developers from various countries to invest in these economies.

Limited budgets and the need for more economic zones have led some ASEAN Member States to actively promote FDI in the sector. Some ASEAN Member States, such as the CLMV countries, have liberalized their regulatory environment and passed SEZ laws to increase transparency and

Table 5.12. Drivers and motivations of FDI in economic zone development

Sources	Key elements	Specific factors
Firm ownership advantages	Proprietary advantage, business knowledge and integrated business system	<ul style="list-style-type: none"> • Experience and skill set in real estate and economic zone development, management and organization • Integrated business, allowing the company to draw on skills from different business operations
	Business reputation and brand names and business networks	<ul style="list-style-type: none"> • Proven business records and brand names in industrial estate development generate confidence and security in clients • Business networks and alliances in developing and marketing economic zones
	Financial capacity and access to financial facilities	<ul style="list-style-type: none"> • Advantage in access to finance (some firms)
Internationalization or regionalization drive	Pressure from network of customers to venture overseas	<ul style="list-style-type: none"> • Motivated by home-country customers or other customers, encouraging industrial estate developers to develop industrial facilities in the host country for those customers
	Vision of company to internationalize to diversify revenue sources	<ul style="list-style-type: none"> • Vision and aspiration of firms
New generation of technology or industrial parks development	Arises from upgrading of industries and higher knowledge content or technology requirements	<ul style="list-style-type: none"> • Demand from new industries and tenants for facilities to support high-tech or knowledge-based operations
Home-country factors	Limited opportunity for growth at home Government policy supporting or encouraging going abroad	<ul style="list-style-type: none"> • Competition at home or saturated market
	Internationalization wave of home country firms	<ul style="list-style-type: none"> • Examples: Singapore and Thailand • Peer pressure influence, as more firms from the same country internationalize
Host-country factors	Market size, market attraction, rapid economic growth and industrialization	<ul style="list-style-type: none"> • Rapid economic and industrial growth can lead to higher demand for economic zones. Such situation leads to emerging investment opportunities.
	Liberalization and market opening, provision of incentives	<ul style="list-style-type: none"> • Supportive policy framework for FDI in economic zones
	Availability of a strong local partner	<ul style="list-style-type: none"> • Existence of strong local partners can encourage JVs with foreign developers.
Regional factors	AEC influence and regional production networks	<ul style="list-style-type: none"> • Regional integration encourages division of labour and investment, which in turn influence FDI in economic zone development in new markets (e.g. CLMV countries). Growing regional production networks facilitate connectivity between countries and generate demand for more factories for expansion in the region. This development has an impact on demand for economic zones.
	Border SEZ development	<ul style="list-style-type: none"> • Growing cross-border trade and regional production networks encourage economic zone development in contiguous border areas with good road networks supporting smooth transportation of goods between countries (e.g. the Lao People's Democratic Republic and Thailand, Cambodia and Thailand). • Bilateral cooperation in border SEZ development also encourages FDI in economic zone development.

Source: ASEAN Investment Report 2017 research.

specifically promote FDI in economic zone development. For instance, Japanese developers have been encouraged to invest and operate the Pakse SME-specific economic zones for Japanese SMEs in the Lao People's Democratic Republic. The Government has also encouraged foreign companies to help develop the various SEZs it has planned (chapter 4).

In attracting FDI for economic zone development, some ASEAN Member States have also provided incentives and established dedicated institutions, including one-stop service centres to facilitate such investment.

Regional factors

Regional integration and regional factors can help attract FDI, as they provide an enabling environment and generate synergy and economies of scale for firms to more efficiently carry out division of labour and production networks in ASEAN. Such regional integration is increasingly an important determinant for FDI in the region (*AIR 2014* and *2015*). Complementary locational factors and significant wage differentials are contributing to regional expansion of production networks by MNEs. Regional production networks or value chains in ASEAN are intensifying (*AIR 2014*). As companies carry out more regional division of labour operations, this trend also adds to the demand for industrial lands, factories, and a greater interconnection between economic zones in the region. Some Member States in the region are cooperating to develop border SEZs. Regional integration has also increased cross-border trade, contributed by intrafirm transactions with factories established across borders or in contiguous areas at borders.

5.4. ECONOMIC ZONE TENANTS

Build it and they will come: This is true for strategically located and competitive estates that provide good infrastructure facilities, access to labour supply and government incentives. Building the estate is one thing. Bringing tenants and a critical mass of them to the industrial estate is quite a different challenge. Not all industrial estates are successful. There are many cases of industrial estates having few tenants.

The success of an industrial estate depends on efforts to bring in tenants, especially major anchor companies. If they come, the industrial estate is likely to be successful. These major anchor companies can in turn help attract other tenants that supply them and other firms within the estate or in nearby facilities. It is important to understand key factors of site location, including *what* elements attract tenants and *why* and *how* tenants decide on specific industrial estates.

5.4.1. FDI determinants

In choosing a location for overseas investment, firms make two levels of decisions – at the country level (i.e. determining which host country) and at the local level (i.e., deciding on a suitable site

location in the identified host country). A number of factors influence the choice of host country, and subsequently a set of key factors determine where operations will be located. For the latter, much depends on the products or services to be produced, the facilities and the location of the zones, including benefits associated with operating in the selected zone. For instance, if an FDI project is energy intensive, then an industrial park location close to a cheap and plentiful supply of hydropower would be an appealing factor. If a business is IT intensive (e.g. BPO, call centres) then an IT park with good related infrastructure and amenities would be attractive.

The site location choice would also depend on the type of FDI activities. If the FDI project is efficiency-seeking, then lowering the cost of operation is an important consideration. Access to a plentiful supply of low-cost labour, facilities that support export processing activities, quick start-up and access to fiscal incentives would be relatively important factors (section 5.4.3). Many economic zones in ASEAN support efficiency-seeking FDI.

Market-seeking FDI projects would prefer economic zones that are close to markets and supply chains, including in industrial clusters. Many suppliers of major MNEs locate in the same economic zones or other zones near major customers (see section 5.5).

5.4.2. Site location decision

Why are some economic zones more successful than others? Successfully developed economic zones have a number of common features (box 5.7). They are located strategically close to major cities, capital, ports, airports and national road networks and near markets, production hubs and supply chains (box 5.8). They are also better managed by professional management teams and provide good infrastructure facilities (electricity, water and security). Government incentives and access to a large labour supply are also important factors. The existence of major OEM MNEs provides added appeal in terms of attracting supplier companies and an agglomeration of firms in related industries.

Box 5.7. Factors influencing the choice of industrial estates

Why some industrial estates are more successful depends on a number of factors. These factors may vary by industry, type of FDI and firms, but a few are common in most cases:

- Strategic location of the economic zones, near major ports and airports, good access to major national road networks or near major economic zones of neighbouring countries. Proximity to markets, customers and supply chains are also important as is easy access to a large supply of low-cost labour or near an urban area.
- Provision of security and efficient facilities of the zones. Facilities include logistics and infrastructure services in and around the zones. Good roads, a reliable supply of power and water, and wastewater management are important.
- Clear and supportive regulatory framework governing economic zone development and for investors operating inside them.

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Box 5.7. Factors influencing the choice of industrial estates (Concluded)

- Dominant role or reputation of the developer, including sales agents (e.g. Sumitomo with the Thilawa SEZ, the First Philippine Industrial Park, the East Jakarta Industrial Park and the Amata Nakorn Industrial Estate). For example, a Japanese management company or marketing agent such as Sumitomo, Mitsui or Marubeni can influence Japanese investors. Aside from their reputation, they also help reduce language barriers.
- Provision of incentives for investors or economic zone tenants.
- One-stop investment service centre and facilitation can be useful, as provided by management companies of many large industrial parks in the region. For instance, Marunix (Japan) established a plant in the Phnom Penh SEZ (Cambodia) in 2011 partly because of the one-stop service centre where five relevant government authorities are stationed in the zone. The Thilawa SEZ (Myanmar) also has a one-stop service centre where nine government offices are stationed. The SEZs in the Lao People's Democratic Republic also have one-stop service centres.
- Facilities, housing and amenities, including for expatriates.

Source: ASEAN-UNCTAD seminar on Special Economic Zones in ASEAN: Investment, Development and Challenges, 1–2 June 2017, Bangkok.

Box 5.8. First Philippine Industrial Park

The FPIP, established in 1996, was among the first privately owned industrial parks in the country. It covers 457 ha. The FPIP is jointly owned, developed and managed by First Philippine Holdings Corporation or FPHC (Philippines, 70% ownership) and Sumitomo Corporation (Japan, 30% ownership). Expansion of the park is ongoing and has involved a cumulative \$156 million investment since 1996. The park currently has two distinct zones, and a third phase set to open in 2017.

Strategic location and facilities of FPIP

The FPIP is located in the thriving industrial Cavite–Laguna–Batangas–Rizal–Quezon (Calabarzon) area, south of Manila. The original area was about 350 ha. In 2014, another 100 ha was added as the FPIP II (adjacent to the FPIP I). About 90 per cent of the park's total land area is occupied. Pending the receipt of another Presidential Proclamation, a 30 ha block of land will be added to become the initial phase of the FPIP III.

The FPIP provides tenants with a strategic location. It is 52 km from Metro Manila, 49 km from the Ninoy Aquino International Airport in the capital, 61 km from the Manila International Port and 48 km from the Batangas port (an alternative to the Manila International Port) and has access to major road networks.

Infrastructure and facilities within the FPIP are considered good by tenants interviewed for this study. The FPIP provides a conducive manufacturing environment and ease of doing business, with support from relevant national authorities such as the PEZA and the Bureau of Customs. The FPIP liaises closely with the PEZA to facilitate tenants' operations in the park and provide various competitive infrastructure facilities. In addition to the various parks services and facilities, the FPIP assists tenants in addressing challenges to deliver more value to their operations in the park.

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Box 5.8. First Philippine Industrial Park (Concluded)

Investment in the development of industrial parks and management of them can be a profitable business when done properly. The FPIP is a business partnership model between a foreign company and a Filipino company that works. It was able to fill the 457 ha with tenants operating in different industries.

Institutional support

The FPIP was established in response to the opportunity created by the Government for the private sector to help in the country's development and industrialization. The role of the government is important, aside from the policy framework. It needs to create a business environment conducive to attracting FDI (e.g. economic stability, good infrastructure, provision of fiscal incentives, and support to industrial estate developers, particularly for land conversion).

Motivations to invest in development of industrial parks

According to Edwin CoSeteng, FPIP president, "FPHC values the country's needs for industrial park development. These needs are also opportunities for FPHC. Investing, developing and operating industrial estate is a good business at two levels: (i) increasing bottom-line figures to shareholders; and (ii) helping in the country's overall industrial development. The future for FPIP is multiplying the success model in other provinces. This requires massive support and close collaboration with the national and local governments on infrastructure development."

Source: ASEAN Investment Report 2017 research, based on information from FPIP.

The influence of developers or marketing agents in site location choices can also make a difference. In some cases (such as the Sumitomo-owned zones), the developer plays a key role in determining the success of a zone in terms of bringing in tenants. Some industrial estate developers draw on the strength and networks of Japanese trading companies such as Marubeni and Mitsubishi Corporation to market an industrial estate to their networks of clients. They act as sales and marketing agents.

The influence of the customer–supplier nexus is another important determinant of site location. This is illustrated by the cases of Karakatau Steel in Indonesia, Toyota in Thailand and Indonesia, and Samsung in Viet Nam, which led the development of clusters of interrelated firms that operate close to their main activities in the host country.

Some developers built integrated industrial zones (based on an integrated business model) where they provide support services in addition to basic infrastructure (e.g. water, power, telecommunication, sewage) to tenants. They help these companies in dealing with various government issues, recruiting employees, making various types of applications, obtaining logistics support and building customized factories. Sojitz's (Japan) provision of meal service for tenants' employees at the Long Duc Industrial Park in Viet Nam is an example of a developer making an estate more competitive.

5.4.3. Case studies

Companies interviewed for this study expressed several key factors in determining the choice of their site locations in Indonesia and the Philippines. At the country level, the companies interviewed in the First Philippine Industrial Park (FPIP) revealed that important determinants were factors such as the political and economic stability of the host country, investment incentives, labour supply and conditions, infrastructure and ease of doing business. On location of plants or factories, these companies indicated that key considerations were factors such as the security of the industrial park; the availability of infrastructure within it; the cost of setting up operation, including the cost of land; and proximity to international ports and airports, including easy access to major road networks.

The cases (see annexes 5.1 and 5.2) highlight some of the key factors in determining site location. The tables also highlight the linkage effect associated with the operations of these tenants in the respective economic zones. The linkages involve both local and foreign firms operating in the host country and also in other ASEAN countries. These cases illustrate how firms operating in economic zones support production networks within a country and across ASEAN. For instance, Toshiba produces hard disk drives and solid state electronics storage equipment in the Philippines, sourcing inputs from within the host country as well as other ASEAN Member States. A majority of the production of this Toshiba subsidiary is exported and supplied to the Toshiba group of companies.

5.4.3.1. Perspectives of MNEs in Indonesia

The companies interviewed in Indonesia emphasized that a number of factors influenced their site location choice. A critical mass of tenants, the strategic location of the industrial estate, competitive management services and a reputable marketing agent are important considerations (box 5.9). The companies also stressed the importance of the provision of competitive and reliable on-site infrastructure facilities such as electricity, industrial water supply and security (table 5.13 and Annex 5.1). In addition, Unilever (Netherlands and United Kingdom), Nippon Indosari Corpindo (Indonesia–Japan JV), Chemco Harapan Nusantara (Indonesia–Japan JV) and Mane (France) chose to locate in Jababeka Industrial Estate because of synergies, proximity to supply chains, land ownership arrangements and the relationship of Jababeka Group with the Indonesian authorities (section 5.2.2.1). Efficiency in logistical coordination was also emphasized.

All the companies interviewed are significantly influenced by Indonesia's local market factors (e.g. large market size and existence of large industrial customer base). Some of these companies have intrafirm production activities with other subsidiaries in Indonesia (e.g. Unilever) and with sister subsidiaries located in other ASEAN Member States (e.g. Unilever, Chemco Harapan Nusantara, Mane). In two cases, the companies have strong business linkages with local suppliers and connection with farmers (e.g. Unilever, Nippon Indosari Corpindo). Some companies operate near customers in the same industrial estate or nearby facilities (Chemco Harapan Nusantara) or source from customers in the same industrial estate (Nippon Indosari Corpindo).

Box 5.9. Suryacipta City of Industry

Suryacipta City of Industry (Suryacipta) was established in 1990 by PT Suryacipta Swadaya (a member of the Indonesian Surya Internusa Group). Its 1,400 ha are home to 144 companies from different economies. The most prominent industry is automotive (77 companies), followed by consumer goods (including food and beverages), building materials, pharmaceuticals, steel and electronic industries. A majority of the tenants are foreign investors, dominated primarily by Japanese companies, most of them operating in the automotive industry. Some major tenants in the industrial estate (e.g. Daihatsu, Isuzu, Bridgestone, Nestle) in turn help attract other companies, to operate close to those tenants and to supply chains.

Suryacipta has been successful in attracting tenants for a number of reasons. The industrial estate is strategically located in Karawang (West Java), which connects it to the Jakarta metropolitan area, near Bandung and major cities in Central Java. It is also in close proximity to the Soekarno-Hatta and Halim Perdana Kusuma airports, and the Tanjung Priok seaport. Suryacipta launched in 2016 a one-stop-service centre (i.e. Suryacipta Centre of Information) to facilitate existing and potential investors/tenants through improving efficiency and access to information for its tenants.

Operation of the industrial estate involves partnership with Sumitomo Corporation (Japan) who acts as the sole marketing agent, targeting at attracting Japanese companies. Such partnership also helps in attracting other tenants.

Source: ASEAN Investment Report 2017 research, based on information from Suryacipta.

Table 5.13. Jababeka Industrial Estate location choice: perspectives of some MNEs

Company	Activity	Location factors	Linkages effect
PT Unilever Indonesia (Netherlands and United Kingdom)	Manufactures a wide range of consumer goods from food and beverage to home and personal care products	<p>Invested in Indonesia for domestic market reasons and to serve other ASEAN markets.</p> <p>Chose Jababeka Industrial Estate (JIE) for the following reasons:</p> <ul style="list-style-type: none"> • Significant and integrated industrial infrastructure that matches Unilever's needs in a site location • Provision of reliable supply of power, water and other on-site infrastructure facilities, and security • Proximity to Jakarta and the country's main sea port and airport • Access to the International Dry Port, which is inside the JIE • The JIE's working relationship with national and local governments, which is useful in supporting companies operating in the estate <p>Established an additional production facility in JIE for the following reasons:</p> <ul style="list-style-type: none"> • Synergy from managing the two plants with the same plant management team • Easier coordination, particularly of raw materials and machinery management • Delivery of raw materials in one area simplified logistical coordination 	<p>The company has strong export links with markets in other ASEAN Member States and in Australia.</p> <p>Unilever's personal care product factory in Indonesia supplies personal care products across the ASEAN region.</p> <p>Although a number of raw materials are sourced abroad, Unilever Indonesia has successfully built a local supply chain for some of its products. For instance, for the Bango sweet soy sauce product it worked through cooperatives to build a network of 25,000 farmers supplying coconut sugar and black soya beans. For oleo products (e.g. soap, noodles, glycerine and fatty acids), Unilever procures these materials from a sister company, PT Unilever Oleochemical Indonesia, which operates in the Sei Mangkei SEZ in North Sumatra. Palm oil fruits are sourced, processed and refined at this plant near the raw material supply.</p>

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Table 5.13. Jababeka Industrial Estate location choice: perspectives of some MNEs

Company	Activity	Location factors	Linkages effect
PT Nippon Indosari Corpindo (Started as a JV: Indonesian majority shareholder and a Japanese company)	Manufactures soft bread for mass market distribution	<p>The investment is driven by the large domestic market.</p> <p>Chose the JIE because of the following factors:</p> <ul style="list-style-type: none"> • Good industrial estate infrastructure including reliable power and industrial water supply • Proximity to Jakarta and the city's international airport • Easy access to toll roads • Easier access to land ownership and utilization • The JIE's good relationship with the national and local governments, which helps facilitate operation inside the estate 	<p>The company sources 95 per cent of its raw materials locally. It works with small and medium-scale enterprises or cooperatives in sourcing some local ingredients. These enterprises and cooperatives in turn established links with small farmers.</p> <p>The company sources chocolate from another tenants in the JIE (PT Puratos Indonesia, a subsidiary of the Belgian Puratos Group).</p> <p>As part of plans to expand to markets overseas, a JV between the company (55%) and a Filipino food manufacturer (45%) was established in the Philippines in 2016.</p>
PT Chemco Harapan Nusantara (JV: 60% Indonesian and 40% Japanese)	Produces automotive parts and components (e.g. brake system products, aluminium wheels and casting parts)	<p>The investment is market-seeking oriented.</p> <p>Chose the JIE for the following factors:</p> <ul style="list-style-type: none"> • Location within the automotive industry zone (i.e. where major car manufacturers and supporting industries are located) • JIE's reliable power, industrial water supply and telecommunication infrastructure • The availability of large tracts of land that meet the company's plant requirement • The JIE's connection with national and local governments, which is useful in supporting companies operating in the estate 	<p>Chemco supplies parts and components to motorbike and motor vehicle manufacturers in Indonesia. It operates close to its major customers and supply chains. It has a number of significant customers in Indonesia such as Astra Honda Motor, Kawasaki Motor Indonesia, Yamaha Indonesia Motor Manufacturing, Astra Daihatsu Motor, Hino Motor Manufacturing Indonesia, Honda Prospect Motor, Krama Yudha Tiga Berlian Motor and Suzuki Indomobil Motor.</p> <p>Chemco also exports brake system and parts to its sister companies in the Philippines, Thailand and Viet Nam. It is more cost efficient to produce some spare parts in Indonesia for the sister companies in other ASEAN Member States owing to synergies and economies of scale.</p>
PT Mane (France)	Produces compounded ingredients for food and beverage, beauty and health care, and cleaning products (domestic market oriented)	<p>The investment is market-seeking oriented.</p> <p>Chose Indonesia for the following factors:</p> <ul style="list-style-type: none"> • To use the Indonesian operation as a production platform for the ASEAN market • Lower production costs • Chose the JIE for the following factors: <ul style="list-style-type: none"> • Lower land cost • Easier access to land ownership and utilization • Proximity to Jakarta, international seaport and airport • Reliable supply of utilities (power and industrial water) • Security 	<p>About 90 per cent of the raw materials needed to create flavours and fragrances are imported. Ingredients sourced within Indonesia are oils (i.e. patchouli, nutmeg and clove) and citronella. These are sourced from domestic traders, who have refined the products suitable to be used as compound ingredients by Mane. These traders are linked with small farmers through cooperatives.</p> <p>Mane Indonesia exports certain ingredients to its sister subsidiary in Thailand for further processing. Mane Indonesia is connected with other sister subsidiaries through an R&D network, in which Mane Singapore conducts R&D for medium-term projects (e.g. creating coffee flavour varieties, salt reductions) while Mane Indonesia handles immediate R&D requests from clients.</p>

Source: ASEAN Investment Report 2017 research, based on interviews with companies (annex table 5.1).

5.4.3.2. Perspectives of MNEs in the Philippines

The companies interviewed in the Philippines revealed that the influence of a Japanese marketing agent (e.g. Sumitomo) plays a role in influencing their site location choice (box 5.10, table 5.14, Annex 5.2). They also consistently emphasized the provision of good infrastructure, efficient connections to national transportation infrastructure and security of the industrial estate. The support of the PEZA and the management of the FPIP were also deemed important considerations for existing and prospective investors.

In some cases, the investment of major or anchor MNEs encouraged their suppliers to expand to the host country and operate in the same industrial estate or other nearby facilities (e.g. Japanese companies such as Brother, Toshiba Information Equipment and Yamaha Motor). In the case of Vacuumtech (Japan), the company sources major materials from suppliers located in the same industrial estate.

There are also strong interfirm and intrafirm connections in terms of getting involved in regional production networks in ASEAN (e.g. Murata, Ibiden, Yamaha Motor) or the broader context of global value chains (e.g. Brother, Sonion, Toshiba Information Equipment, AIC) including those directed by parent companies in the home country (e.g. Vacuumtech, Arriva Medical, Alere).

Box 5.10. The influence of prominent marketing agents of economic zones

Many successful economic zones in the Philippines (in terms of number of tenants) (section 4.8) offer similar features and facilities. The competitive edges that differ between them are the extra services and relationships that they establish with investors. Interviews with several tenants at the First Philippine Industrial Park (FPIP), Laguna Technopark Inc (LTI) and Lima Technology Center for this report indicate that having a Japanese co-developer/operator (e.g. Mitsubishi for LTI and Sumitomo for FPIP) has a large influence on the decision-making process on location choice. The parent of most Japanese-owned tenants in these two parks have good relations with Mitsubishi and Sumitomo Japan.

Source: ASEAN Investment Report 2017 research, based on interviews with companies (annex table 5.2).

Table 5.14. Site location choice: perspectives of some MNEs in the Philippines

Company	Location	Activity	Location factors	Linkages effect
Brother Industries (Japan)	FPIP	Produces inkjet printers, label printers and accessories (Export oriented)	<p>Invested in the Philippines for two key reasons:</p> <ul style="list-style-type: none"> Diversify operations to more locations Benefit from incentives and low-cost labour supply <p>Chose the FPIP because of the following factors:</p> <ul style="list-style-type: none"> Presence of Sumitomo (Japan), the co-shareholder and developer of the park Good-quality infrastructure and reasonable land costs Close proximity to central business district and to Manila international airport and seaport PEZA and FPIP administration also played a role 	<p>Brother (Philippines) imports most of its raw material from Japan and other Asian countries. It sources several printer parts from other companies in the Philippines.</p> <p>Some of these suppliers followed Brother to the Philippines to supply these parts to Brother.</p> <p>All the manufactured printers are exported to Brother Group's sales and marketing business units worldwide, including in Asia.</p>
Ibiden (Japan)	FPIP	Manufactures integrated-circuit packages (e.g. chipset-package and processor) (Export oriented)	<p>Invested in the Philippines to follow a major client (Intel)</p> <p>Chose the FPIP because of the following factors:</p> <ul style="list-style-type: none"> Sumitomo's relationship with Ibiden Competitive land cost Fiscal incentives provided through PEZA PEZA supports Proximity to Manila international seaport and airport, including easy access to major road networks Secure environment with good infrastructure facilities (e.g. wide roads, power supply, communication infrastructure) Good communication and support from FPIP administration 	<p>Because of the lack of local suppliers, Ibiden sources about 75 per cent of its raw materials from Japan. Ibiden also sources production inputs from Malaysia, other Asian countries and Japanese companies based in neighbouring ecozones in the Philippines. These Japanese suppliers include Almextech (customized metal products), located in the Cavite Ecozone, and Nakayama Kogyo (Philippines) (fabricated metal), located at Laguna Technopark. About 47 per cent of exports go to Viet Nam, 27 per cent to Malaysia, 25 per cent to China, and 1 per cent to the United States.</p> <p>Ibiden products are used in chip processors, which in turn become components of phones and personal computers produced by companies such as Samsung (Republic of Korea), Dell (United States), Toshiba (Japan), Apple (United States) and Vivo (China).</p>
Murata (Japan)	FPIP	Produces monolithic ceramic capacitors (Export oriented)	<p>Location choice determinants included the following:</p> <ul style="list-style-type: none"> Access to quality and low cost labour force Low costs of doing business Availability of fiscal incentives <p>Chose the FPIP because of the following factors:</p> <ul style="list-style-type: none"> Influence of Sumitomo (Japan), a co-shareholder/developer of the FPIP Well-organized industrial park Reasonable land cost Good infrastructure (e.g. wide roads for container trucks, dedicated telecommunication and power structures) Easy access to nearby Manila international seaport and airport Security within the park Accessibility to major road networks Good support from PEZA 	<p>Murata (Philippines) contributes to the host country's electronics and automotive clusters. It is a production network player, supplying parts for the automotive industry in the value chain led by Toyota. The plant also plays an important role in Murata's regional production network, supplying parts (i.e. ceramic chips for further processing) to Murata Electronics (Singapore). It also supplies parts to Murata Electronics (Thailand) through the parent company in Japan.</p> <p>All production of the plant is exported through sales affiliates and directly to clients. The plant supplies Murata Electronics (Philippines), an affiliate located in the Laguna Technopark. It also sells directly to other factories in Singapore, China and Japan.</p>

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Table 5.14. Site location choice: perspectives of some MNEs in the Philippines

Company	Location	Activity	Location factors	Linkages effect
Sonion (Denmark)	FPIP	Produces advanced miniature components and solutions for hearing instruments and advanced acoustics (Export oriented)	<p>Invested in the Philippines mainly for three reasons:</p> <ul style="list-style-type: none"> • Access low-cost operation environment • Establish a second facility and expand production in ASEAN • Diversify facility to two countries rather than relying on only one in the region <p>Located in the zone because of the following factors:</p> <ul style="list-style-type: none"> • Rapid set up of operation • A relatively low-cost workforce with English-language proficiency • The longer industrial tradition of the host country • Fiscal incentives provided <p>Chose the FPIP because of the following factors:</p> <ul style="list-style-type: none"> • Low cost land • Well-organized park • Park's proximity to Manila international seaport and airport as well as easy access to major road networks • Good infrastructure inside the park (e.g. wide roads, power supply, communication infrastructures) • Park management's orientation towards the needs of tenants • Support of PEZA 	<p>The plant involves about 10 assembly lines and uses components produced in sister factories in Viet Nam.</p> <p>About 80 per cent of the raw materials and other components are imported, including from China and Taiwan Province of China.</p> <p>A few top local suppliers, in terms of purchase spent, provide services such as shuttle service, X-ray analysis and ESD test equipment. In this regard, Sonion (Philippines) contributes towards business linkages with local SMEs.</p> <p>Sonion supplies six major hearing aid manufacturers: Oticon (Denmark), GN Hearing (Denmark), Widex (Denmark), Sonova (Switzerland), Starkey (United States) and Sivantos (owned by Swedish EQT Funds), which have facilities in countries such as Singapore and Viet Nam. In this connection, Sonion plays an important role in connecting the Philippines to global value chains in the production of hearing aid devices.</p>
Toshiba Information Equipment (Japan)	Laguna Technopark	Produces electronics storage equipment (hard disk drives and solid state devices) and printed circuit boards (Export oriented)	<p>Invested in the Philippines for three reasons:</p> <ul style="list-style-type: none"> • Access low-cost operation environment (e.g. low-cost labour) • Presence of other Japanese companies in the electronics industry (e.g. NEC, Fujitsu, Hitachi) • Investment incentives <p>Located in Laguna Technopark because of the following factors:</p> <ul style="list-style-type: none"> • Proximity to Manila seaport and airport • Access to major road networks • Secure zone environment • Infrastructure of the park 	<p>The company is an important player in disk drive value chains and a key supplier of storage equipment to the Toshiba Group and other electronics OEMs (e.g. laptops, personal computers, car navigation system, servers).</p> <p>Some of the suppliers of this Toshiba subsidiary also operate close to it in the same industrial park and nearby parks, to strengthen the supply chain. Some materials are sourced locally and some from other ASEAN Member States.</p>
Vacuumtech (Japan)	FPIP	Produces insulated food and beverage containers (Export oriented)	<p>Invested in the Philippines for three reasons:</p> <ul style="list-style-type: none"> • Availability of low-cost labour force • Support of the Philippine Government and PEZA • Availability of fiscal incentives <p>Chose the FPIP for the following reasons:</p> <ul style="list-style-type: none"> • Competitive land cost • Competitive infrastructure facilities and secure environment • Good power supply and dedicated power station • Accessibility to the Manila airport and seaport, the Batangas AT1 seaport • Accessibility and connectivity to major road networks • Service facilities inside the park such as a one-stop shop provided by PEZA office and other amenities • Sumitomo (Japan) presence as partner and co-developer of the park 	<p>Sources stainless steel, a major raw material to make the insulated containers and paint from suppliers located in the FPIP. Other raw materials are sourced from Japan and Singapore such as resin requirement.</p> <p>The company produces only what the parent company in Japan orders for clients around the world. All production is exported to the parent company, which distributes the shipment to the group of companies and to various clients.</p>

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Table 5.14. Site location choice: perspectives of some MNEs in the Philippines (Concluded)

Company	Location	Activity	Location factors	Linkages effect
Yamaha Motor (Japan)	Lima Technology Center (LTC)	Manufactures motorcycle parts and motorcycles (Local market oriented)	<p>Located in the Philippines for three key reasons:</p> <ul style="list-style-type: none"> Local market potential Ease of doing business Pioneer status and fiscal incentives <p>Chose LTC because of the following factors:</p> <ul style="list-style-type: none"> PEZA one-stop shop support Unavailability of industrial land in the Laguna area to accommodate the needs and requirements of Yamaha (Philippines) Construction of the South Luzon Express Way, which would be convenient for transport of products Considerably cheaper land than other nearby areas 	<p>Yamaha and other manufacturers of motor vehicles in the Calabarzon area encouraged clustering of suppliers in the area. Yamaha has 29 local suppliers, and 4 of them operate in LTC.</p> <p>The majority of the parts are sourced in ASEAN, contributing to regional production networks. About 50 per cent of the completely knocked-down (CKD) parts are imported from Indonesia; 35 per cent from Singapore, Thailand, Viet Nam, China, India, Japan; and 15 per cent from local suppliers. Body parts, such as the plastic parts and handlebars, and some electrical components are sourced locally.</p>
AIC (Bill Gosling Outsourcing) (Canada)	McKinley Hill Cyberpark, an IT ecozone in Bonifacio Global City	Provides outsourcing services to the parent company and its clients	<p>Reasons for locating in the Philippines:</p> <ul style="list-style-type: none"> The Philippines is a major global call centre and BPO centre that offers a conducive BPO support environment Fiscal incentives provided through PEZA Low-cost labour supply with proficient English-language skills Adaptability of the workforce to the North American and Western culture Overall lower costs of doing business <p>Reasons for choosing the IT ecozone:</p> <ul style="list-style-type: none"> Easier opportunity to network with other companies to maximize value and operation strategy Specifically designed and developed IT zone with dedicated infrastructure facilities (e.g. telecommunication, water supply and safety) Growing cluster of IT-BPO in the industry 	<p>The networking advantages with other tenants, such as access to workforce and sharing of information, outweigh the competition threats.</p> <p>The linkages formed are basically with the parent company, clients and neighbouring IT/BPM-BPO companies.</p> <p>Most of the clients are in Canada, the United Kingdom and the United States, hence linking the Philippines to the IT-BPO global value chain.</p>
Arriva Medical (United States)	E-Square IT Park within the Bonifacio Global City (BGC)	A "dedicated" service delivery centre for Arriva Medical (United States), a subsidiary of Alere (United States)	<p>Reasons for locating in the Philippines:</p> <ul style="list-style-type: none"> Competitiveness in IT-BPO services, clusters Relatively low-cost labour force with English language skills Fiscal incentives provided through PEZA Existence of competitive IT services ecozones 	<p>The linkages formed are basically with the parent company, clients and neighbouring IT/BPM-BPO companies, and contribute to forming the IT cluster at the BGC.</p> <p>Most of the clients are in the United States.</p>
Alere (United States)	W Fifth Avenue, an ecozone within the BGC with close proximity to the Manila business district	Operates as a "dedicated" entity to support Alere's global business operations. The parent company is the leading global developer and manufacturer of rapid point-of-care diagnostics. Alere (Philippines) provides customer contact operation and back-office services to the parent company.	<p>The favourable operation experience of Arriva (Philippines) played a role in the location decision. Arriva (United States) is a subsidiary of Alere. Other reasons:</p> <ul style="list-style-type: none"> PEZA incentives Low cost of doing business Low-cost labour with English proficiency 	<p>The linkages formed are with the parent company, clients, and neighbouring IT/BPM-BPO companies, and contribute to forming the IT cluster at the BGC.</p> <p>Most of the clients are in North America.</p>

Source: ASEAN Investment Report 2017 research, based on interviews with companies (annex table 5.2).

Notes: BGC = Bonifacio Global City, BPM-BPO = business process management and business process outsourcing, FPIP = First Philippine Industrial Park, IT = information technology, LTC = Lima Technology Center, PEZA = Philippine Economic Zone Authority.

5.5. ECONOMIC ZONE AND CLUSTER DEVELOPMENT

On its own, an economic zone does not necessarily develop industrial clusters. An interplay of economic, policy and geographic factors is essential to facilitate the development of clusters. If planned correctly and effectively, economic zones with appropriate facilities and support can be catalysts in developing industrial clusters (box 5.11). Achieving a critical mass of related tenants within and around the economic zone or in connection with other zones in the country is important.

Developers of economic zones and industrial parks can be seen as catalysts of cluster development or the agglomeration of firms of interrelated industries. Firms agglomerate in the same parks or get involved with other tenants in nearby industrial estates because of the need to be close to customers, markets, and supply chains; to develop synergy and to obtain logistical advantages, including other agglomeration benefits (chapter 4). Many tenants and lead MNEs play an important role in the agglomeration of firms in related industries. The operation of major Japanese MNEs such as Brother Industries, Ibiden and Yamaha Motor in the FPIP and of Toshiba in Laguna Technopark have attracted their suppliers to the same park or nearby economic zones, to serve them (Annex 5.2).

When Canon (Japan) invested in Thang Long Industrial Park (Viet Nam) in the early 2000s, it attracted some of its suppliers to the park to provide parts and components to Canon at that time (Kuchiki 2003). They include Parker Processing (paint and surface treatment for metal parts), a Japanese dye-casting company, Volex Cable Assembly (Singapore) (power supply cards and interconnectors), Sumitomo Coil Centre (Japan) (parts for printers) and Santomas (Malaysia) (precision plastic injection mould). In strengthening their supply chains and localization rates in Viet Nam, Korean MNEs such as Samsung and LG are encouraging their suppliers (foreign and local) to operate close to their activities in that host country. Other major electronics MNEs such as Fuji Xerox (Japan) in Viet Nam are mainly supplied by foreign suppliers based in that host country.²¹

Box 5.11. Agglomeration economies and economic zones

Industrial clusters are geographic concentrations of similar or related firms that together create competitive advantages for member firms and regional and national economies (Porter 1990). Though the term was coined and popularized by Porter, the advantages of clustering have been recognized in the economic literature since the time of Marshall (1890), who laid the foundation in explaining geographical clustering of firms.

Proximity of firms by geography generates externalities. Marshall called these externalities “agglomeration (or localization) economies”; they arise from labour market pooling, knowledge interactions, specialization, and the sharing of inputs and outputs, and are associated with economic benefits for member firms in the form of access (such as to specialized human resources and skills), economies of scale, knowledge spillovers and pressure for higher performance.

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Box 5.11. Agglomeration economies and economic zones

The geographic proximity of firms can act as a major driving force for knowledge inflows, knowledge creation, innovation, learning, and knowledge spillovers (Gilbert, McDougall and Audretsch 2008; Kesidou and Szirmai 2008). Producers in industrial agglomerations derive benefits from knowledge and ideas that are present “in the air” (Marshall 1890:198). The concentration of rivals, suppliers and customers fosters important linkages, complementarities, and knowledge and technology spillovers, stimulating innovative activity and raising productivity and competitiveness (Porter 1990).

The presence of providers of customized business development and infrastructure services, regulatory agencies, research institutions, consultants and other logistics-related organizations in and around the cluster leverages interdependencies to provide innovative new solutions, cut costs and create external economies. A key element of agglomeration economies is circular and cumulative causation (Myrdal 1957) or chain reactions (Kaldor 1966), whereby initial investment attracts more firms and promotes further specialization. This process is supported by the tendency of spinoffs and suppliers of both the clustered industry and related industries to locate near the zone. The process is self-reinforcing: the clustered firms and industries create a mutually supporting system with benefits flowing forward, backward and vertically, generating evolutionary dynamics that can push the economy into a process of growth that is self-reinforced, accelerated and cumulative (Mathews 2010).

The value of a cluster, however, depends not on the proximity of firms but on synergies and networks that they establish with the local economy. Although physical closeness of enterprises exists in both natural clusters and government-created economic zones, the functional elements of clustering, such as trust, cultural cohesion and collaboration that develop over time, may not be as evident in the latter (Ali 2012). This is essentially because economic zones attract multiple plants and/or multinational firms, which locate their subsidiaries there to benefit from government facilities and incentives. These subsidiaries have linkages with extraregional or global rather than local production systems. Economic zones are also seen as real estate propositions, set up to attract investment, unlike organically developed clusters that are associated with functional dynamism and are seen as instruments of promoting growth and productivity.

Evidence however suggests that many economic zones have evolved over time and have integrated well with regional economies. The transformation of Shenzhen from a small fishing town to a large metropolitan city is well known. Other examples are Baguio and Bataan in the Philippines; Bayan Lepas in Penang, Malaysia; and Lat Krabang, outside of Bangkok. Porter (1990) promoted his cluster concept with an overarching focus on the competitiveness of firms, industries, regions and nations in a global economy, which makes his clusters trade-oriented. He identified exposure to foreign competition as both a driving factor and a distinctive feature of cluster formation and development. In China, SEZ firms are found to have significantly higher value added per worker, profits per worker and wage per worker than their non-SEZ counterparts or the average for the economy. Foreign firms in SEZs enjoy significantly higher productivity than those outside such zones (Ebenstein, 2012; Ge, 1999). There is also evidence that foreign companies looking for outsourcing options favour firms located in clusters, as insurance against delays and risk of non-delivery (Aggarwal 2011). The concept of a cumulative and circular process has been re-emphasized in the new economic geography theories, wherein a concentration of manufacturing in one region can lead to a still larger concentration of manufacturing in that region, assisted essentially by international trade (Ottaviano and Naghavi 2009; Fujita, Krugman and Venables 1999; Krugman 1991).

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Box 5.11. Agglomeration economies and economic zones (Concluded)

Literature also shows that internationally competitive clusters in host countries act as a pull factor for inward FDI (Nachum and Keeble 2000; Ng and Tuan 2006; Amiti and Javorcik 2008; Debaere, Lee and Paik 2010). Agglomeration economies generated in clusters increase the attractiveness of these locations by lowering the cost per unit, ensuring availability of labour, strengthening supply chains and supporting a more efficient logistical coordination between the different players.

Economic zones are growing bigger, becoming better integrated with the economy and shifting to more technology- and capital-intensive production. They can thus serve as highly useful catalysts if they can be better linked with the rest of the economy. Government interventions in domestic capacity-building, network platform development, skills development, and technology and marketing development are critical in the process.

Source: Aggarwal (2011, 2012).

5.5.1. Economic zone developers: catalysts of cluster development

The case studies in this section examine the role of economic zone developers in the development of clusters in ASEAN Member States, and thereby in improving the competitiveness of the economic zone and the overall investment environment of the host country. To the extent that economic zone developers have succeeded in attracting major or lead locator companies (e.g. Toyota, Western Digital, Samsung), many suppliers of those locators tend to follow suit, to operate close to them in the host country (sometimes in different zones but with easy logistical arrangements) (box 5.12). Such intra- and interfirm connection contributes to the growth of production networks within country and regional value chains in ASEAN (AIR 2014, WIR 2013).

Box 5.12. Jababeka's role in agglomeration of firms

The Jababeka Industrial Estate (JIE) attracted more than 1,650 companies, a critical mass of tenants (section 5.2.2.1). Some 200 companies operate in the electronics industry, followed by consumer goods (112 companies), machinery (110 companies), chemicals (99 companies) and automotive (95 companies). The major tenants include AkzoNobel, Mattel, Samsung, Unilever and Yamaha (box table 5.12.1). These anchor companies are served by many local and foreign suppliers, many of which also operate in the JIE and the neighbouring industrial estates.

Box table 5.12.1. Major MNEs in JIE, 2017 (Selected cases)

Name	Parent company	Nationality	Activity
PT Mattel Indonesia II	Mattel	United States	Entertainment – toy manufacturing
PT Showa Manufacturing Indonesia	Showa	Japan	Shock absorber manufacturing
PT Komatsu Indonesia	Komatsu	Japan	Heavy equipment manufacturing
PT Kao Indonesia	Kao Corporation	Japan	Beauty care, health care, clothes and household care
PT Unilever Indonesia Tbk	Unilever	Netherlands and United Kingdom	Food and beverage, home care, personal care
PT Yamaha Indonesia Motor Manufacturing	Yamaha Motor Company	Japan	Motorbike manufacturing

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Box 5.12. Jababeka's role in agglomeration of firms (Concluded)**Box table 5.12.1. Major MNEs in JIE, 2017 (Selected cases)**

Name	Parent company	Nationality	Activity
PT Chemco Harapan Nusantara	JV of Nissin Kogyo and local partner	Japan	Brake systems
PT L'Oréal Manufacturing Indonesia	L'Oréal	France	Beauty and cosmetics
PT San Miguel Pure Foods Indonesia	San Miguel Corporation	Philippines	Food products supplier
PT International Coatings Indonesia	Akzo Nobel	Netherlands	Performance coatings
Samsung Electronics Indonesia	Samsung Group	Republic of Korea	Electronics manufacturing
PT Mondelez Indonesia	Mondelez International	United States	Food production
PT Kimberly-Clark Indonesia	Kimberly-Clark Corporation	United States	Manufacturing
PT Nippon Indosari Corpindo	PT Nippon Indosari Corpindo	Indonesia	Food production
Tupperware Indonesia	Tupperware Brands Corporation	United States	Manufacturing
PT Kawan Lama Sejahtera	PT Kawan Lama Sejahtera	Indonesia	Commercial and industrial supplier
PT Liwayway Indonesia	Liwayway Holdings Company	Philippines	Snack
PT Conwood Indonesia	Conwood International	Thailand	Panel cement (building material)

Source: ASEAN Investment Report 2017 research, based on information from PT Jababeka Tbk.

The contribution of the JIE has been significant not only in terms of attracting tenants but also in generating employment. Since 1989, through JIE tenants, the company has generated more than a million jobs in Indonesia.

Agglomeration of firms at the JIE

The presence of a big name in a sector or industry encourages second and third tier companies to operate close to them to be part of their supply chain. For instance, there is a significant agglomeration of electronics companies in the JIE, with the presence of major MNEs such as Samsung (Republic of Korea). Samsung has also brought in several of its suppliers to locate in the JIE (box table 5.12.2).

Box table 5.12.2. Korean suppliers of Samsung in JIE (Selected cases)

Name	Products
PT Shin Heung Indonesia	Metal stamping parts, VCR deck mechanism assembly, mould, and plastics injection
PT Surya Multindo Industri	Plastic injection, secondary process (painting, printing, hot stamping), UV and urethane coatings, and assembly
PT Bumjin Electronics Indonesia	Injection mould, mould for television, mould for speaker, home theatre, audio, and video
PT Hit Lector Mechanics Indonesia	Power cord, assembly cable, wire harness
PT Yong Shin Indonesia	Press parts, precision dies, electronics subassembly
PT Samjin Indonesia Electronics	Loudspeakers, etc.
PT Taewon Indonesia	Packaging
PT Dawee Electronic Indonesia	Single-sided PCB, double-sided PCB, tuner
PT Arvico Electronic Indonesia	Industrial equipment and components

Source: ASEAN Investment Report 2017 research.

Similarly, many companies in the JIE are part of the motor vehicle industry supply chain. One example is PT Chemco Harapan Nusantara, a JV between Nissin Kogyo (Japan) and two Indonesian companies (annex table 5.1) that supply Yamaha (Japan), which operate in a neighbouring industrial estate. Chemco produces brake system products, aluminium wheels and casting parts according to the specifications of Yamaha.

Source: ASEAN Investment Report 2017 research, based on information from Jababeka.

5.5.1.1. Karakatau Steel (Indonesia)

The 625 ha Krakatau Industrial Estate (KIE) in Cilegon (Banten, Indonesia) is one of the largest steel industrial complexes in the region, with easy access from both inland and offshore routes. It was established in 1982 to support upstream and downstream production of steel, chemicals and petrochemicals. More than 100 steel- and chemical-related manufacturing companies are located in the KIE, which was developed by Krakatau Steel, a State-owned company of Indonesia.

Two major steel manufacturers are anchor players in the KIE. The first is PT Krakatau Steel, the largest steelmaker in Indonesia. The second is PT Krakatau Posco, a JV between PT Krakatau Steel and Posco (Republic of Korea). The presence of these two attracted other steel-related companies to establish in the KIE to supply them and to provide related manufacturing services. Some companies are located in the KIE to be near these anchor players, to access their steel supply (in the case of downstream steel product manufacturers). A majority of the tenants in the KIE are from Asia, primarily from the Republic of Korea and Japan. The presence of Posco has attracted many Korean steel-related companies to the KIE (table 5.15). The agglomeration of firms driven by various reasons shapes the steel cluster facilitated by the KIE.

Table 5.15. Steel cluster facilitated by Krakatau Industrial Estate and anchor companies

Name (Selected cases)	Nationality	Product/service
PT Krakatau Steel Indonesia	Indonesia	Major steel products: hot-rolled coiled, cold-rolled coil, wire rods
PT Krakatau Posco	JV between Posco (Republic of Korea) (55%) and PT Krakatau Steel Indonesia 45%	Slab products, steel plates, cast and pig iron
PT Krakatau Information Technology	Indonesia (a subsidiary of PT Krakatau Steel)	ICT, automation technology
PT Krakatau Nippon Steel Sumikin	JV between Nippon Steel and Sumitomo Metal Corporation (Japan) and PT Krakatau Steel	Cold-rolled steel and hot-dip galvanized steel products for automotive use in Indonesia
PT Posco MTech	Republic of Korea	Aluminium deoxidizer and alloy
PT Siemens	Germany	Electrification, automation and digitalization
PT BASF	Germany	Petrochemicals and chemicals
PT Stolberg Samil	Republic of Korea	Mould fluxes for casting and other materials for PT Krakatau Posco and other steel product manufacturers in the KIE
PT Jeil JTI	Indonesia	Steel billets
PT Woon Electro Nite	Republic of Korea	Sensors and measuring instruments
PT Kostec Prima Baja	Republic of Korea	Sintered metal filter and wire net filter
PT Ohtori	Indonesia	Valves
PT Ko One	Republic of Korea	Natural gas
PT Posco ICT	Republic of Korea	Provides PT Krakatau Posco with integrated services – design, deployment and management of information systems and manufacturing process automation
PT Krakatau Osaka Steel	JV between Osaka Steel (Japan) (80%) and PT Krakatau Steel (20%)	Steel bars, steel section, channel and flat bar (from steel billet as raw material)
PT Heng Tai Yuan Indonesia Steel	China	Steel products
PT Daekyung	Republic of Korea	Chemical equipment
PT Bluescope Steel	JV between Blue Steel Limited (Australia) and Nippon Steel & Sumitomo Metal Corporation (Japan)	Zinc and aluminium metallic coated steel
PT Mape Steel Industri	Indonesia	Wire net
PT Thermax International	India	Engineering solutions
PT Asahimas Chemical	Japan	Basic chemicals for many downstream industries. They include caustic soda, ethylene dichloride, vinyl chloride monomer, hydrochloric acid.
PT Dong Jin Chemical	Republic of Korea	Blowing agent for rolled steel production

Source: ASEAN Investment Report 2017 research, based on information from KEK.

5.5.1.2. First Philippine Industrial Park (Philippines)

The FPIP plays a catalytic role in connecting companies based in the park with companies based in other economic zones in the country, and with companies based in other ASEAN Member States (Annex 5.2). It is also host to many tenants in businesses such as electronics, metal stamping, metal fabrication, plastics engineering, motor manufacturing and plating that provide a strong support network and enhance the ecosystem within the park (table 5.16). Some of the tenants in the FPIP and nearby economic zones form an agglomeration of firms that support major companies such as Honda (Japan), Nestle (Switzerland), B/E Aerospace (United States) and Thermos (Japan), also in the same park. For example, UAM, Honda Logistics (Japan), Nissin Brake (Japan) are suppliers of Honda (Japan); Kerry (Ireland) is a supplier of Nestle (Switzerland); Arktech (Japan) supplies B/E Aerospace (United States); and Posco (Republic of Korea) supplies Thermos (Japan).

The agglomeration of firms and tenants in the park strengthens the supply chain among the related tenants. Some of these companies are subsidiaries of major global players. Many of them also produce parts for other electronics and automobile multinationals based in Japan and ASEAN. In this context, the FPIP also contributes to the development of regional production networks and global value chains linking the Philippines with Japan and other ASEAN Member States, including home countries of the tenant-MNEs.

The FPIP plays a role in the development of the electronics cluster in the country through the operations of these tenants. For instance, the operations of Canon (Japan) and Brother (Japan) in the FPIP attracted some of its suppliers to the park (table 5.17). Other companies such as Ibiden (Japan) and Murata (Japan) have suppliers and customers operating in the FPIP or nearby parks (section 5.4 and Annex 5.2). Some tenants in the FPIP also supply companies in neighbouring economic zones.

Table 5.16. Major tenants in the FPIP, 2017 (Selected companies)

Name	Home country	Products	Land area ('000 m ²)
Canon Business Machines	Japan	Monochrome laser beam printers	300.4
Philippine Manufacturing Co of Murata	Japan	MLCC (multilayer ceramics capacitor)	230.1
Brother Industries	Japan	Colour inkjet printer and label printer products	134.3
Kinpo Electronics	Taiwan Province of China	Electronic products	133.6
Shimano	Japan	Bicycle components	130.3
Ibiden	Japan	Integrated circuit package products	126.1
Eaton Industries	United States	Electronic and electrical equipment and components	80.5
Vacuumtech	Japan	Insulated food and beverage containers	70.0
Shing Hung Plastics	Taiwan Province of China	Plastic parts from design, tooling fabrication, plastic injection, painting, printing and subassembly of office appliances plastics parts	60.0
Zama Precision Industry Manufacturing	Germany	Diaphragm carburettors	59.0
Posco – Philippine Manila Processing Centre	Republic of Korea	Slitting and shearing of steel sheets in coils to supply tailor-made steel sheet products for various steel components manufacturers	28.7

Sources: PEZA (online list of companies) and FPIP website.

Table 5.17. Suppliers of Brother and Canon at FPIP, 2017 (Selected cases)

Name of supplier	Home country	Parts supplied
Bigmate	Japan	Injection-moulded plastic parts
Changhong Technology	China	Injection-moulded plastic parts
Chiyoda Integre Corporation	Japan	Die-cutting products
Choei Plastic World Philippines	Japan	Plastic compound
Kanepackage	Japan	Packaging material
Meltec Corporation	Japan	Electronic precision parts
New World Nihon Etching	Japan	Etching and repair of mould products
Nissin Precision Corporation	Japan	Pressed parts, components of pressing moulds
Noda Kigata Corporation	Japan	Wood pattern and chromium die steel
Sanko Gosei, Inc	Japan	Injection-moulded plastic parts
Shing Hung Plastics Company	Taiwan Province of China	Injection-moulded plastic parts
Zhong Yu Mould Industry	China	Injection mould and mould parts

Sources: ASEAN Investment Report 2017 research, based on data from the PEZA's online list of companies and the FPIP.

5.5.1.3 Sembcorp (Singapore)

The seven VSIPs developed by Sembcorp and Becamex IDC Corporation (Viet Nam) are strategically located in different parts of Viet Nam (figure 5.3 and section 5.2.2.2). They contribute to cluster development and production networks in Viet Nam. They each aim to support the growth of different specific industries, drawing on the locational advantages offered by each area. For instance, the VSIP in Hai Phong focuses on developing supporting industries for the neighbouring industrial parks. It also concentrates on logistics and warehousing because of its close proximity to the largest port city, its easy access to seaports – particularly the new Lac Huyen deep sea port –and its access to ecozones in North Viet Nam.²²

The presence of major OEM manufacturers in the VSIPs helps attract many supplier companies to operate in close vicinity. An example is Thermtrol (United States), which produces wire harness in the Binh Duong VSIP. Thermtrol's operation contributes to developing the supply chain and supplier linkages. Its customers and suppliers operate in various industrial parks in Viet Nam and in different ASEAN Member States. The operations in ASEAN Member States contribute to regional production networks and connections between industrial parks in the region. Firms connected with Thermtrol include, for instance, Yazaki EDS (Binh Duong Province, Viet Nam), Yazaki (Haiphong at Tra Industrial Park, Viet Nam), Yeonho (First Cavite Industrial Estate, Philippines), and Yazaki (YTMI Realty SEZ, Philippines). Table 5.18 highlights some customers and suppliers of Thermtrol, some of which operate in Viet Nam.

Kyocera is also contributing to the agglomeration of firms (suppliers) that support these OEMs. Fuji Xerox and Kyocera Document Technology are in the Hai Phong VSIP, and many suppliers operate in close proximity to these two companies, either in the same park or in nearby parks.

Figure 5.3. Location of the seven VSIPs

Source: Sembcorp.

Table 5.18. Companies associated with Thermtrol (Selected cases)

Name	Nationality	Product or activity
Yeonho Electronics	Republic of Korea	Electronics parts
Sealcon	United States	Cable management and electrical solutions
Panduit	United States	Electric and network cables, connectivity, wire management
Solvay	Belgium	Soda ash and derivatives, emerging biochemicals and peroxides
Pancon Corporation	United States	Cable connectors (discrete and mass terminated) and associated board mount interface
Leoni	Germany	Wire, cable, wiring systems
Heyco	United States	Moulded wire protection products and stamped electrical components
Stocko	France	Electronic parts supplier

Table 5.18. Companies associated with Thermtrol (Selected cases) (Concluded)

Name	Nationality	Product or activity
Sumitomo Electric	Japan	Manufacture and sales of flexible printed circuits
Henkel	Germany	Adhesives, sealants and functional coatings
HellermannTyton	United Kingdom	Cable systems
Textape	United States	Tapes, adhesives, security seals
Western Diversified Plastics	United States	Plastic injection-moulding service
Deutsch Connectors	Switzerland	Connectors, contacts, accessories, wires, and subsea power cables
Delphi	United Kingdom	Automotive parts
Delfingen	France	On-board network protection solutions and fluid transfer tubing
Cooper Bussman	United States	Critical circuit protection, power management and electrical safety
Caplugs	United States	Product protection through plastic moulded components
Berg	United States	Mechanical precision component
Amphenol	United States	Electronic and fibre-optic connectors, cable and interconnect systems
Yazaki	Japan	Global automotive parts supplier with a focus on wire harnesses, instruments and components
3M	United States	Rough material, tapes and glue, filtration equipment, advanced chemicals and materials

Sources: Thermtrol and respective companies' websites.

5.5.1.4. Hemaraj Land and Development (Thailand)

The significance of Hemaraj's operations is its role as a catalyst in facilitating the development of industrial clusters, such as automotive and electronics in Thailand. Figure 5.4 highlights the agglomeration of interrelated automotive firms in Hemaraj's industrial estates that support a strong supply chain, production network of firms and the automotive cluster in the country.

Hemaraj has been involved in developing automotive clusters and attracting major automotive MNEs to its industrial estates since the mid-1990s. The Hemaraj Eastern Seaboard Industrial Estate and the Eastern Seaboard Industrial Estate (Rayong) were instrumental in that early initiative. Some 235 automotive OEM and component manufacturers operate in the industry supply chain, including exporting to other ASEAN Member States, from Hemaraj's various industrial facilities, thus contributing to the rise of regional production networks in ASEAN. Hemaraj is also developing a petrochemical cluster at the Hemaraj Eastern Industrial Estate and an electronics cluster at the Hemaraj Saraburi Industrial Estate.

The connectivity of companies that operate in Hemaraj's various industrial estates is strengthening business linkages and supply chains. The agglomeration of firms and cluster benefits contributed to the company's success in attracting other related tenants. Many of the suppliers of its customers such as Ford (United States), Mazda (Japan), GM (United States), Suzuki (Japan), Isuzu (Japan) and SAIC (China) also operate in the same industrial estate or in other facilities it owns in the country. Proximity to markets and major customers is an important consideration in the supply chain networks and for locating in Hemaraj's industrial estates.

Hemaraj's industrial estates also host many electronics MNEs and their suppliers (annex table 5.1). Their interaction with other electronics MNEs outside of Hemaraj's industrial estates contributed to the formation of a strong electronics cluster in Thailand.

Figure 5.4. Automotive cluster facilitated by Hemaraj's industrial estates



Source: ASEAN Investment Report 2017 research, based on information from Hemaraj.

16 TIRE PARTS

-  BARBE (Thailand) Ltd.
-  Bridgestone Metalpha (Thailand) Co., Ltd.
-  Maxxis International (Thailand) Co., Ltd.
-  Michelin Siam Co., Ltd.
-  SwitzMcLAREN Industries (Thailand) Co., Ltd.
-  TT Assembly East Co., Ltd.
-  LLIT (Thailand) Co., Ltd.
-  Lion Tyres (Thailand) Co., Ltd.
-  Vuteq Thai Co., Ltd.

17 STEERING PARTS

-  Erae (Thailand) Co., Ltd.
-  Fuji Autotec (Thailand) Co., Ltd.
-  HASCO-CP Co., Ltd.
-  Imai Metal (Thailand) Co., Ltd.
-  Johnson Controls & Summit Interiors Ltd.
-  JTEKT Automotive (Thailand) Co., Ltd.
-  NTN Manufacturing (Thailand) Co., Ltd.
-  Somboon Somic Manufacturing Co., Ltd.
-  THK Rhythm (Thailand) Co., Ltd.
-  Tokai Eastern Rubber (Thailand) Ltd.
-  TRW Steering & Suspension Co., Ltd.
-  Yamasei (Thailand) Co., Ltd.

21 BUMPER PARTS

-  DaikyoNishikawa (Thailand) Co., Ltd.
-  HASCO-CP Co., Ltd.
-  Hicom Automotive Plastics (Thailand) Ltd.
-  MHG Plastic (Thailand) Co., Ltd.
-  Off Road Accessories Ltd.
-  Tayih Lun An (Thailand) Co., Ltd.
-  Unity Industrial Co., Ltd.

22 ELECTRICAL SYSTEM PART

-  Clarion Asia (Thailand) Co., Ltd.
-  Imai Metal (Thailand) Co., Ltd.
-  Minoru (Thailand) Co., Ltd.
-  Reydel Automotive (Thailand) Ltd.
-  Siam Furukawa Co., Ltd. (FB Battery)
-  Thai Huawei Battery Co., Ltd.
-  Thai Summit Mitsuba Electric Manufacturing Co., Ltd.
-  MSSL WH System (Thailand) Co., Ltd.
-  Tada (Thailand) Co., Ltd.
-  Visteon Automotive Electronics (Thailand) Co., Ltd.
-  Yuanda (Thailand) Co., Ltd.


23 BRAKE SYSTEM PARTS

-  CCI Automotive Products Co., Ltd.
-  Chassis Brakes International (Thailand) Ltd.
-  Chassis Systems Siam Ltd.
-  Delphi Automotive Systems FMP Group (Thailand) Ltd.
-  K2 Allied Component Ltd.
-  Kiriu (Thailand) Co., Ltd.
-  Maruyasu Industries (Thailand) Co., Ltd.
-  Nissinbo Commercial Vehicle Brake Ltd.
-  Nissinbo Somboon Automotive Co., Ltd.
-  Ryoko Trading (Thailand) Co., Ltd.
-  Thai Kohwa Precision Co., Ltd.
-  Thai Okawa Co., Ltd.
-  TI Automotive (Thailand) Co., Ltd.
-  Wabco (Thailand) Co., Ltd.
-  Yamasei (Thailand) Co., Ltd.

24 OTHER PARTS/SERVICE

-  Bianchi Coating (Thailand) Co., Ltd.
-  Chunichi Mold Co., Ltd.
-  Chuo Thai Cable Co., Ltd.
-  Daifuku (Thailand) Ltd.
-  Dowa Thermotech Co., Ltd.
-  Eftec (Thailand) Co., Ltd.
-  Fine Components (Thailand) Co., Ltd.
-  Furukawa Unic (Thailand) Co., Ltd.
-  Harvest Precision (Thailand) Co., Ltd.
-  Horiuchi Technology (Thailand) Co., Ltd.
-  HYDROWE Engineering (Asia) Ltd.
-  Imai Metal (Thailand) Co., Ltd.
-  INOAC Automotive (Thailand) Co., Ltd.
-  J-T Tooling Co., Ltd.
-  KA Shin Manufacturing (Thailand) Co., Ltd.
-  Kishimoto Kogyo Co., Ltd.
-  Kitagawa (Thailand) Co., Ltd.
-  Kyowa Diecasting (Thailand) Ltd.
-  K2 Allied Component Ltd.
-  Maungmaichromium Electro Plating Co., Ltd.
-  Miyago Industry Co., Ltd.
-  MSX International Co., Ltd.
-  Nagano Engineering (Thailand) Co., Ltd.
-  NEX Coating
-  Nippon Paint
-  Off Road Accessories Ltd.
-  OTC Daihen Asia Co., Ltd.
-  OYT Co., Ltd.
-  Quality Report Co., Ltd.
-  Sankei (Thailand) Ltd.
-  Sekisui Specialty Chemicals (Thailand) Co., Ltd.
-  SGS (Thailand) Limited
-  Shoki (Thailand) Co., Ltd.
-  Showa Mold Industry (Thailand) Co., Ltd.
-  SPF Company LTD.
-  Steel Alliance Service Center Co., Ltd.
-  Summit Hirotani Sugihara Co., Ltd.
-  Sutai (Thailand) Co., Ltd.
-  Taisei Plas (Thailand) Co., Ltd.
-  Tidy Metal (Thailand) Co., Ltd.
-  Thai Fine Sinter Co., Ltd.
-  Thai Parkerizing Co., Ltd.
-  Thai Steel Bar Precision Co., Ltd.
-  Thai Summit Engineering Co., Ltd.
-  Thai Summit Meiji Forging Co., Ltd.
-  Toyoda Seiko (Thailand) Co., Ltd.
-  TRIGO Quality Services (Thailand) Co., Ltd.
-  Tri-Wall Packaging (Thailand) Ltd.
-  TSTT Co., Ltd.
-  TT Techno Park (Thailand) Co., Ltd.
-  Umetoku Thailand Co., Ltd.

18 HEAD LIGHTS PART

-  T.I.T International Co., Ltd.

19 INTERIOR AND CONSOLE PANEL

-  Adval Tech (Thailand) Co., Ltd.
-  Asahi Plus Co., Ltd.
-  Auto Interior Products Co., Ltd.
-  DaikyoNishikawa (Thailand) Co., Ltd.
-  Faurecia Interior Systems (Thailand) Co., Ltd.
-  Feltol Manufacturing Co., Ltd.
-  Futuris Automotive (Thailand) Co., Ltd.
-  Hakueisya (Thailand) Co., Ltd.
-  HASCO-CP Co., Ltd.
-  Hicom Automotive Plastics (Thailand) Ltd.
-  Nakagawa Sangyo (Thailand) Co., Ltd.
-  NHK Antolin (Thailand) Company Limited
-  Plasess (Thailand) Co., Ltd.
-  Reydel Automotive (Thailand) Ltd.
-  Sanko Gosei Technology (Thailand) Ltd.
-  Summit Hirotani Sugihara Co., Ltd.
-  Shinsei Koki (Thailand) Corp. Ltd.
-  Taisei Plas (Thailand) Co., Ltd.
-  U-Shin (Thailand) Co., Ltd.
-  Visteon Automotive Electronics (Thailand) Co., Ltd.

20 AUTOMOTIVE LOGISTICS

-  Autrans (Thailand) Co., Ltd.
-  DHL Supply Chain Co., Ltd.
-  DSV Solutions Ltd.
-  GAC Thoresen Logistics Ltd.
-  Hellmann Worldwide Logistics Co., Ltd.
-  Hitech Nittsu (Thailand) Co., Ltd.
-  Isuzu Motors Ltd.
-  Katoen Natie (Thailand) Co., Ltd.
-  Kerry Logistics
-  Logicom Co., Ltd.
-  Logistic Alliance (Thailand) Co., Ltd.
-  Misumi (Thailand) Co., Ltd.
-  Platinum Workpoint Logistic Co., Ltd.
-  Sankyu Laem Chabang (Thailand) Co., Ltd.
-  Thai VMI Service Co., Ltd.
-  XPO Logistics Worldwide (Thailand) Ltd.



5.5.1.5. Sumitomo (Japan)

Sumitomo Corporation (Japan) is a significant investor, developer and marketer of industrial parks in ASEAN. It is involved in the development of six industrial parks in four ASEAN Member States, which encompass a combined land area of nearly 2,000 ha (table 5.19). The company is also involved in marketing four other facilities in the region for other industrial park owners.

Sumitomo plays a significant role in industrial development in ASEAN. It helps attract more than \$6 billion in FDI and generates 180,000 jobs. It supports ASEAN host economies directly by influencing tenants to choose the various industrial parks it owns and markets. Its operations generate spillover effects. Sumitomo has brought in many major Japanese MNEs to the various industrial parks associated with it. Some of these MNEs (lead or anchor tenants) in turn have attracted other companies to operate close to them, to strengthen their production networks and supply chains management (box 5.13). The influence of Sumitomo on Japanese tenants is considerable. In all the parks, Japanese locators have overwhelming representation; in some, such as Thang Long Industrial Park I and II, over 90 per cent of the tenants are Japanese companies. This reflects the strength of Sumitomo's expertise, network and reputation in attracting FDI in association with industrial park development.

The business model of Sumitomo in industrial estates development is to partner with a leading domestic player in host economies. Sumitomo plays a key role in marketing industrial estates owned by others to its networks and prospective clients. In most projects involving the company, the domestic partner is responsible for the development, construction and administration of

Table 5.19. Industrial parks developed and managed by Sumitomo Corporation, 2017

Park	Country	Year established	Share (%) owned	Total area (ha)	No. of tenants	No. of Japanese tenants	Selected major tenants	Jobs	Total investment attracted as of June 2017 (US\$)
Thang Long Industrial Park	Viet Nam	1997	58.0	274	104	97	Canon; Mitsubishi; Heavy Industries; Panasonic	60,586	2.7 billion
Thang Long Industrial Park II	Viet Nam	2006	81.5	346	67	64	Kyocera; Hoya; Panasonic; Daikin	17,437	1.7 billion
Thang Long Industrial Park Vinh Phuc	Viet Nam	2015	100.0	213	Start of construction and lease scheduled for mid-2017				
First Philippine Industrial Park	Philippines	1996	30.0	448	264	66	Canon; Nestle; Honda; Philip Morris	43,175	156 million (since 1996)
East Jakarta Industrial Park	Indonesia	1990	49.0	320	100	76	Seiko Epson; Toshiba; Panasonic	55,000	..
Thilawa SEZ	Myanmar	2014	12.0	405	82	39	Ajinomoto; Suzuki; Kubota	3,914	1 billion

Source: Sumitomo Corporation.

Box 5.13. Canon in Sumitomo's industrial parks

Canon (Japan) has become one of the largest foreign investors in Viet Nam. The company established its first ASEAN-based production facility for printers in the Thang Long Industry Park (Viet Nam) in 2001 with an initial investment capital of \$307 million. Subsequently, it started operation of its largest laser printer plant in Que Vo Industry Park (Viet Nam) in 2007; this second facility cost \$50 million. In the same year, Canon started building its third factory for \$27 million at Tien Son Industrial Park. In 2016, these three facilities contributed to Canon's exports of 11 million printers and employed 5,400 local workers in two of the three industrial parks.

Canon started its fourth production facility for monochrome laser beam printers in a 30-ha area at the FPIP in 2012. The company's presence helped establish a cluster of electronic industry suppliers in that park. For instance, some tenants (Japanese subsidiaries such as Bigmate Philippines, Inc., Chiyoda Integre (Philippines) Corporation, Kanepackage Philippine Inc., Nissin Precision Philippines Corp.), supply Canon Philippines and other major Japanese electronics manufacturers located at the FPIP.

Sumitomo played a major role in Canon's location choice for its first investment in Viet Nam and also in its investment in the Philippines park that Sumitomo co-owns.

Sources: ASEAN Investment Report 2017 research, based on information obtained from PEZA and Canon websites, and Vietnamnet news.

the industrial estate. In the Philippines, Sumitomo partnered with First Philippine Holdings to develop and operate the FPIP where it played a major role in the marketing of the park, mainly to Japanese investors.

Sumitomo's JVs in industrial parks in ASEAN vary between host economies. In Viet Nam, it holds the majority ownership in its JV projects, whereas in Myanmar's Thilawa SEZ it holds a minority stake.

Sumitomo helped five other industrial parks in Cambodia, Indonesia, the Philippines and Thailand attract tenants (table 5.20). In the four industrial parks where it acts as a marketing agent, it has brought in major Japanese companies such as Yamaha, Daihatsu, Denso, Komatsu and Bridgestone and non-Japanese companies such as BMW. The presence of these major companies has attracted other tenants. Amata Nakorn Industrial Estate generated 150,000 jobs as of December 2016. The Phnom Penh SEZ in Cambodia attracted \$500 million in investment and created 17,000 jobs, in which the majority of the workers are women. By bringing in major automotive manufacturers and component producers, it has also contributed to the development of clusters, such as the automotive cluster in Suryacipta, Amata Nakorn and Amata City.

Sumitomo's success as a significant regional developer and operator of industrial parks in ASEAN rests on its reputation, experience and ability to market to a wide network of industrial clients. In addition, its various industrial parks offer competitive facilities, including such aspects as (i) quality infrastructure, (ii) convenient amenities, (iii) a strong, supportive environment in terms of housing and other needs for expatriates and employees of tenants, (iv) a secure and

safe environment, (v) a good working relationship with relevant government authorities to help facilitate business requirements and (vi) support by the industrial parks' management and administration for tenants.

Sumitomo's ability in approaching and influencing Japanese companies to establish plants in its industrial parks in ASEAN is due to two main elements: (i) its long-term corporate relationship with other Japanese parent companies in Japan, and (ii) Sumitomo's role as a reputable developer of and shareholder in industrial parks.

Table 5.20. Industrial parks where Sumitomo Corporation is sales agent, 2017

Name	Country	Total no. of tenants	Selected major tenants	Employment	Total investments attracted as of June 2017
Suryacipta City of Industry	Indonesia	141	TVS Motor Bridgestone Daihatsu	25,000	..
Phnom Penh SEZ	Cambodia	82	Ajinomoto Minebea Yamaha	17,000	\$500 million
First Industrial Township	Philippines	10	..	..	..
Amata Nakorn Industrial Estate	Thailand	700	Komatsu Bridgestone Daikin Denso	150,000	..
Amata City Industrial Estate	Thailand	280	Sumitomo Rubber BMW Yokohama Rubber	40,000	..

Source: ASEAN Investment Report 2017 research, based on information provided by Sumitomo Corporation.

Note: Information on employment from the respective economic zones.

5.5.2. Economic zones as facilitators of cluster development

In some ASEAN Member States, a number of economic zones collectively provide a strong platform for cluster development such as in automotive and electronics industries (e.g. Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam). A group of tenants in the same industry interact or produce for major anchor companies or tier 3 companies that are producing for tier 2 companies located in the same or nearby parks. The development of specialized industrial parks has also contributed to attracting firms in related industries (box 5.14). This section examines industrial clusters facilitated by some economic zones in ASEAN.

5.5.2.1. Automotive cluster in Indonesia

A number of industrial parks on the island of Java have together contributed to the formation of industrial clusters such as in electronics and automotive. These industrial parks have attracted major anchor companies, key component manufacturers and different tiers of suppliers. Together they formed a cluster of interconnected companies involved in production networks and supply chains. The automotive industrial cluster is an example.

Box 5.14. Special industrial parks in Singapore

JTC Corporation (Singapore) has developed specialized industrial parks that facilitated many major MNEs establishing a presence in these facilities, which include oil-related and refinery industries, electronics and knowledge-intensive industries (section 5.2.2.4).

It has built industrial parks to suit specific industries and support the agglomeration of firms. For example, the wafer fabrication and advanced display parks in Singapore were developed to meet the stringent requirements of wafer fabrication and advanced display companies; aerospace parks were built to attract a cluster of related aviation companies and medical technology parks to attract medtech manufacturers, product owners and service providers.

Within some industrial parks, JTC also developed other specialized facilities to support specific industry clusters by building smaller specialized business parks within them. One-North was designed to attract knowledge-intensive R&D companies in industries such as biomedical sciences, physical sciences and engineering (Aw 2005). The Jurong Island industrial estate was developed to support an agglomeration of firms in related industries, which include a chemicals cluster, across its value chain from refinery to research. Companies such as 3M (United States), Bayer (Germany) and BASF (Germany) have set up research centres at Jurong Island, which is supported by the Institute of Chemical and Engineering Sciences that is also based there. The Institute also plays an important role in the development of innovation and fosters the growth of the chemicals cluster in the specialized industrial park. Shell (Netherlands) has one of the largest mono-ethylene glycol plants in the world in Jurong Island, and ExxonMobil (United States) has a refinery based there that produces a wide range of fuels. These significant anchor companies and other MNEs in the island play a big part in the development of the fuel refinery cluster. They are supported by industries such as logistic firms (e.g. Bertschi AG-Switzerland) and local precision engineering companies (e.g. Altech Precision Engineering, Sunyi Precision Engineering and Vigor Precision Engineering).

The ability to attract major anchor MNEs and companies with state-of-the-art technology has in turn attracted supplier firms and related corporations to the various specialized industrial estates. JTC, as a major industrial developer, has played a significant role in facilitating the development of industrial and business clusters through the design and operation of competitive industrial estates and facilities in the country.

Source: ASEAN Investment Report 2017 research, based on information of JTC and company websites.

Many major global automotive companies are present in different industrial parks, primarily in Java Island and a majority of them are Japanese automotive manufacturers (table 5.21). The presence of these anchor MNEs attracted their suppliers and other component manufacturers to operate close to them. The presence of the latter two players strengthened the supporting industry and helped improve the country's investment environment.

A large share of Indonesia's automotive industry players – main motor vehicle manufacturers and component suppliers – are located in West Java, specifically in four major industrial estates: Jababeka, KIIC, MM2100 and Suryacipta City of Industry. These four industrial estates host more than 50 per cent of the companies listed in the directory of the Indonesian Automotive Parts and Components Industries Association.

Table 5.21. Major automotive players and their site locations in Indonesia

Company	Local partner	Foreign partner/s	Location	Product
PT Kawasaki Motor Indonesia	PT Sumber Selatan Nusa	Kawasaki Heavy Industries Ltd	Bekasi	Motorcycles
PT Krama Yudha Tiga Berlian Motors	PT Krama Yudha	MC Automobile Holding Asia BV, Mitsubishi Motors Corporation, Mitsubishi Fuso Truck and Bus Corporation	Bekasi	Trucks
PT Suzuki IndoMobil Motor	IndoMobil Group	Suzuki Motor Corporation	Bekasi	Automobiles, motorcycles
PT Yamaha Indonesia Motor Manufacturing	..	Yamaha Motor	Karawang	Motorcycles
PT Astra Honda Motor	PT Astra International	Honda Motor	Karawang	Motorcycles
PT Honda Prospect Motor	PT Prospect Motor	Honda Motor	Karawang	Automobiles
PT Isuzu Astra Motor Indonesia	PT Astra International	Isuzu Motors	Karawang	Automobiles, trucks
PT Toyota Motor Manufacturing Indonesia	PT Astra International	Toyota Motor Corporation	Karawang	Automobiles
PT Astra Daihatsu Motor	PT Astra International	Daihatsu Motor	Karawang, Sunter	Automobiles
PT Hino Motors Manufacturing Indonesia	PT Indomobil Sukses Internasional	Hino Motors, Ltd, Summit Global Auto Management	Purwakarta	Commercial vehicles
PT Nissan Motor Indonesia	IndoMobil Group	Nissan Motor Company	Purwakarta	Automobiles
PT Astra Multi Trucks Indonesia	PT Astra International	UD Trucks Corporation	Sunter	Trucks

Source: ASEAN Investment Report 2017 research, based on Indonesia Automotive Part and Components Industries Association, and companies' websites.

Annex table 5.2 highlights the connections between selected automotive companies, their suppliers and their customers operating in one of the four industrial estates. These companies and suppliers are involved in the production of a wide range of automotive parts and components, which they supply to multiple customers. Some of the customers are automotive manufacturers, and some are first or second tier companies. Astra International (Hong Kong-China) plays an important role in the connection with many major foreign automotive and components manufacturers in Indonesia, and is a key contributor to the automotive cluster development (box 5.15).

These four industrial estates are dominated by Japanese companies that produce a wide range of automotive components for the major automotive manufacturers. The relationship of the parts and components manufacturers with the automotive vehicle producers highlights how strong interfirm and intrafirm connections of businesses located near each other help strengthen the supply chain, logistical management and cluster development. Many parts and components manufacturers also produce to serve multiple customers, which may or may not be in the same industrial estate. Operating close to markets and customers is a crucial motive. Such agglomeration of firms strengthened the automotive cluster within the four industrial estates and others that also host a critical mass of automotive companies, playing an important catalytic role.

The four industrial estates share similar features, which explain their success in attracting tenants. These features include (i) availability of a lower-cost labour supply in the area; (ii) easy accessibility (proximity to Jakarta, highway and road networks), (iii) proximity to Soekarno Hatta International Airport and Tanjung Priok seaport; (iv) necessary infrastructure and utilities

Box 5.15. Astra International

A significant feature in the growth of the automotive industry supply chain in Indonesia is the extensive involvement of Astra International, which is majority owned by Jardine Cycle and Carriage (Singapore) and ultimately owned by Jardine Matheson, headquartered in Hong Kong (China). It is involved in many JV operations with mostly major Japanese automotive OEM and parts manufacturers. Astra is involved in a wide range of automotive value chains from car, motorcycle and truck production to spare part manufacturing, marketing and customer relationship management. Its relationship with many foreign automotive and automotive component manufacturers contributed to the formation of an automotive cluster where a majority of its partners and business associates operate, in one of the major industrial estates in Java Island (box table 5.15.1 and annex table 5.2).

Box table 5.15.1. Astra International: Joint venture operations and selected businesses

Business	Company	JV partner and/or source of expertise provided by	Nationality	Remarks
Cars	PT Toyota-Astra Motor	Toyota Motor Corporation	Japan	Sole agent, production facilities; shareholding composition: 51% (Astra), 49% (Toyota)
	PT Astra Daihatsu Motor	Daihatsu Motor	Japan	Sole agent, production facilities
	PT Isuzu Astra Motor Indonesia	Isuzu Motors	Japan	Sole agent and manufacturer of Isuzu diesel-engine vehicles and their components
	PT Astra Multi Trucks Indonesia (AMT Indonesia)	UD Trucks Corporation	Japan	Sole agent and national manufacturer for company
	PT Tjahja Sakti Motor	Peugeot	France	Sole importer
	BMW Astra	Bayerische Motoren Werke	Germany	Dealership rights to sell BMW cars and provide after-sales services in Indonesia
Motorcycle	PT Astra Honda Motor	Honda Motor	Japan	JV between Astra (50%) and Honda (50%)
Component	PT Astra Otoparts	..	Indonesia	Spare part needs for cars and motorcycles
Other	AstraWorld	..	Indonesia	Customer relationship management

Source: ASEAN Investment Report 2017 research, based on Astra International website.

PT Astra Otoparts is one of Indonesia's largest automotive component manufacturers. It has 7 business units, 14 consolidated subsidiaries, 20 associates and JVs, and 11 sub-subsidiaries and employs 37,148 workers. It has established strategic linkages through JVs with leading foreign component manufacturers from Japan, Europe, the United States, China and Taiwan Province of China. Some of the foreign manufacturers it is associated with include Aisin Seiki, Aisin Takaoka, Akebono Brake, Asano Gear, Bridgestone, Daido Steel, Denso, GS Yuasa, Kayaba, Keihin Seimitsu Kogyo, NHK Precision, Toyoda Gosei, Toyota Industries and Metalart (all Japan), as well as Pirelli (Italy), Sunfun Chain (China), Aktiebolaget SKF (Sweden) and Visteon (United States). Customers of Astra Otoparts include the major automotive manufacturers such as Toyota, Daihatsu, Isuzu, Hino, Honda, Hyundai, Kia, Mercedes-Benz, Chevrolet, Perodua and major motorcycle producers.^a

Source: Based on information from Astra International website.

^a Astra Otoparts (www.bepolypus.com/company/astra-otoparts-pt-tbk).

in place, particularly the supply of industrial water and stable power and telecommunication networks; and (v) the security of the estate.

Another significant feature is the presence of a Japanese partner as a co-developer and/or co-operator, or a sole marketing agent. For instance, MM2100 was jointly developed by a JV between Marubeni Corporation (Japan) and Manunggal Group (Indonesia); the KIIC involved a JV between Itochu Corporation (Japan) and Sinar Mas (Indonesia); and Suryacipta appointed Sumitomo Corporation (Japan) to be its sales agent, targeting mainly Japanese corporations.

5.5.2.2. Electronics cluster in Penang (Malaysia)

A significant contribution of FIZs and MNEs operating in Penang State has been the development of the electronics industry and clusters (chapter 4). Through industrial parks and FIZs, the State has attracted many major global electronics MNEs, which in turn encouraged other foreign suppliers and firms in related industries to agglomerate around them. Since the 1970s, these firms and the anchor MNEs have contributed to developing an electrical and electronics cluster, transforming Malaysia into a major global electronics centre. These electronics companies, particularly parts and components manufacturers, help also developed local supporting industries – making Penang and Malaysia an attractive location for electronics production. Some local Malaysian suppliers that started as contract manufacturers to these major global MNEs have grown to be MNEs in their own right.

In 1972, eight major pioneer electronics companies started to invest in Penang's Bayan Lepas FIZ (table 5.22). Seven of these eight pioneer electronics companies are still operating in Penang: Intel, Broadcom (previously known as Hewlett Packard), TF AMD Microelectronics (previously AMD), Osram (previously Litronix), Robert Bosch, Renesas (previously Hitachi) and Clarion. In 1974, Motorola invested in a facility in Penang and in 1976 became the first electronics MNE to bring in R&D activities.

Table 5.22. Penang: Pioneer electronics MNEs

Name	Industry Segment	Headquarters	Remarks
Intel	Semiconductor	United States	Intel's first offshore location, founded in 1968
Hewlett Packard	Semiconductor	United States	Now known as Broadcom; HP recently opened another facility at Batu Kawan Industrial Park in the printer business
AMD	Semiconductor	United States	Now known as TF AMD Microelectronics
National Semiconductor	Semiconductor	United States	Changed its name to Fairchild; closed down in 2015
Litronix	Semiconductor	Germany	Now known as Osram; has a wafer fabrication facility
Robert Bosch	Audio (now power tool)	Germany	Started with manufacture of products such as Blaupunkt car audio equipment
Hitachi	Semiconductor	Japan	Now known as Renesas
Clarion	Audio	Japan	Manufactures consumer and commercial products that include audio, cameras, monitors and multimedia

Sources: Tay, Daniel, "Penang is on its way to becoming the Silicon Valley of the East, and IoT is How", TechinAsia (10 June 2015), <https://www.techinasia.com/penang-silicon-valley-of-east-iot>, and Penang Development Corporation Industrial Surveys (various years).

The first wave of electronics investments in Penang FIZ saw the establishment of semiconductor factories by MNEs Hewlett Packard, Intel, AMD and National Semiconductor (all United States), Hitachi (Japan) and Litronix (Germany). Their presence attracted other electronics MNEs and suppliers to Penang. As a result, the Bayan Lepas FIZ was expanded in three more phases and an industrial park was developed nearby to accommodate demand for industrial facilities by MNEs. Other electronics MNEs subsequently establish a presence. They include Keysight Technologies (United States) (formerly Agilent), Integrated Device Technology (United States), Dell (United States), SAM (Singapore), ASE (Taiwan Province of China), Sanmina-SCI (United States), Intel Microelectronics (United States), Sony (Japan), Honeywell (United States), Teleplan (Netherlands), Jabil (United States), Venture (Singapore), Ibiden (Japan), Hewlett Packard (United States), Bose (United States) and Sandisk (United States).

The State government plays an important role in the development of electronics cluster in Penang through planning and institutional development, including the provision of FIZs (box 5.16).

Box 5.16. Penang: Cluster development initiative

A number of initiatives were taken by the State government in the early 1990s to support the development of the electronics industry and attract investments. For instance, the State Government set up the Penang Industrial Council in 1993, made up of captains of industries from various sectors. Several industry cluster subcommittees were set up under the Council, among them computer and peripherals, automation, semiconductors and plastics.

In 2003, the Software Consortium of Penang (SCoPe) was set up to drive software development in the State. By May 2007, SCoPe had 46 member companies, with a collective annual turnover of more than RM 270 million. These 46 members employed more than 1,400 employees; 83 per cent of the technical employees were based in Penang.

In 2010, the manufacturing section of the Northern Corridor Implementation Authority set up the SSL (solid state lighting) cluster and the semiconductor integrated-circuit cluster. Members of these clusters included representatives of the Government, universities and industries. The clusters worked on achieving industry standards as well as completing the industry ecosystems.

In 2012, the Centre for Collaborative Research in Engineering, Science and Technology was set up to accelerate growth in the electronics and electrical industry by creating a vibrant R&D ecosystem for it. The founding members were AMD (United States), Broadcom (United States), Clarion (Japan), Intel (United States), Keysight Technologies (United States), Khazanah International (Malaysia), the Northern Corridor Implementation Authority, Motorola Solutions (United States), National Instruments (United States), Osram Semiconductor (Germany), Silterra (Malaysia) and the University of Science, Malaysia.

The state Government continues to support companies through the development of industrial parks to cater to the needs of industries and the provision of advice and assistance in grant applications.

Source: Ong (2017).

5.5.2.3. IT-BPO clusters in the Philippines

IT-BPO activities such as call centres and business process and software development are growing quickly in the Philippines. The industry is a significant source of employment generation and export revenues, and it is contributing to transforming the Philippines into a major global centre for such services. Export sales from IT parks and centres have risen, from \$206.6 million in 2004 to \$11.4 billion in 2016 (table 5.23). The industry accounted for 24 per cent of all export revenues generated by the country's economic zones last year. IT parks are the fastest-growing source of employment; and in 2016, they were the largest employment generator among all PEZA-registered economic zones. More than 50 per cent of wages and salaries earned in all economic zones in 2016 came from IT-related parks.

Many global MNEs involved with IT-BPO operations have established a presence in the country to provide business process or call centre services to members of the same corporate group or, as offshoring entities, to provide such services to global clients who seek to lower their business process services costs (table 5.24). For example, Arriva Medical (Philippines) is a dedicated service delivery centre for Arriva Medical (United States), a subsidiary of Alere (United States) (Annex 5.2). Some IT-BPO tenants are set up to provide services to the parent company and affiliates, and also to third-party clientele. An example is Ubiquity Global Services Philippines Inc., which is a service delivery centre for the parent company and affiliates, as well as for other clients.

As more foreign and local companies operate in the IT-BPO industry, they contribute to strengthening the competitiveness of the IT-BPO cluster. The agglomeration of IT-BPO companies generates synergy in sharing of knowledge, IT infrastructure, a specialized labour pool and a policy environment supporting further development of the industry.

The provision of competitive IT parks and a high concentration of IT-BPO MNEs have helped the Philippines attract a growing cluster of such companies. IT-BPO companies locate in the country for a number of reasons (box 5.17).

Table 5.23. Philippines: economic contributions of IT parks and centres, 2004–2016

	2004	2006	2008	2010	2011	2012	2013	2014	2015	2016
Employment										
IT parks and centres	15,703	94,082	166,159	277,325	350,349	366,657	452,378	514,601	589,012	682,232
Total ecozones	406,752	545,025	608,387	735,672	840,945	912,047	1,048,351	1,170,017	1,264,263	1,360,342
Export revenues										
Export revenues (\$ million)	206.6	1,004.3	2,572.4	4,426.1	5,852.6	6,029.3	7,540.0	8,701.1	9,579.1	11,413.8
Total export revenues of all ecozones (\$ million)	30,924.1	36,077.7	40,543.9	40,473.6	42,144.4	40,023.6	42,872.7	44,034.3	43,970.7	47,926.7

Source: PEZA.

Table 5.24. Philippines: foreign IT-BPO companies (Selected cases)

Company	Nationality	Location	Type of IT-BPO company	Activity
Accenture	Netherlands	Multiple work stations in different areas	Solutions-based with clientele worldwide	Providing solutions to clients for a wide range of IT-BPO services
Convergys	United States	Multiple work stations in different areas	Solutions-based with clientele worldwide	Provide clients a wide range of IT-BPO services (e.g. management consulting services, outsourced billing, customer care transaction, management software)
JPMorgan Chase Bank NA – Philippine Global Service Center	United States	Cebu IT Park (Cebu) E-Square IT Park (Bonifacio Global City, Taguig)	Dedicated IT solutions company for JP Morgan affiliates worldwide	Provide call centre and IT-BPO services
Telephilippines Inc	Netherlands	Multiple work stations in different areas	Solutions-based with clientele worldwide	Call centre operations
Sutherland Global Services	United States	Multiple work stations in different areas	Solutions-based with clientele worldwide	BPO operations
Stiel Philippines Corp	United States	Multiple work stations in different areas	Solutions-based with clientele worldwide	IT-BPO functions, including call centres
Deutsche Knowledge Services	Germany	E-Square Zone (Bonifacio Global City, Taguig)	Dedicated IT solutions company for Deutsche Bank and affiliates worldwide	Deutsche Bank's primary global shared service centre including for controlling, accounting, reporting, reconciling and risk control services
IBM Business Services	United States	Multiple work stations in different areas	Dedicated IT solutions (operates as a business transformation outsourcing (BTO) delivery centre) to IBM affiliates in the Asia-Pacific region Also provides solutions to other clients in the region	BPO and BTO services, which include human resource functions, payroll delivery and supply chain management functions
Shell Shared Services (Asia) BV	Netherlands	Solaris One (Makati City)	Dedicated support services to Shell and affiliates worldwide	IT-BPO services
HSBC Electronic Data Processing (Philippines) Inc	United Kingdom	Northgate Cyberzone (Alabang, Muntinlupa) UP Science and Technology Park (Quezon City)	Dedicated support services to HSBC and affiliates worldwide	Call centre and IT-BPO services
AIG Shared Services-Business Processing, Inc	United Kingdom	Multiple work stations in different parts of the country	Supports AIG offices worldwide	Various types of IT-BPO services
Lufthansa Services Philippines, Inc	Germany	Aeon Centre	Dedicated to supporting all Lufthansa offices and operations worldwide	IT-BPO services including call/contact centre operations
Dynaquest Technology Services Inc	United States	Ayala Avenue Building	Supports Dynaquest headquarters and affiliates worldwide Also provides solutions-based services to other clients	IT outsourcing and BPO
TMJ BPO Services, Inc	Japan	RCBC Savings Bank Corporate Center	Dedicated service support for TMJ headquarters in Japan and affiliates Also provides solutions-based to third-party clientele	BPO, online English lesson service and consulting service
Tose Philippines, Inc	Japan	Eco Tower, Bonifacio Global City, Taguig	Dedicated service support for Tose headquarters in Japan and Tose affiliates Also provides solutions based to third-party clientele	Software game development
Razona Asia Pacific Inc	Japan	CBP-IT Park	Dedicated service support to Razona headquarters in Japan and affiliates Also provides solutions to third-party clientele	Software development, including development of websites, web/mobile applications and other IT-enabled services
GS East Asia Manila Inc.	Republic of Korea	Aeon Center, Alabang Muntinlupa	Dedicated service support to GS headquarters and affiliates in the group	Provide IT-enabled services, procurement and project management such as planning, computer design and also consulting service
Duzon E&H Corporation	Republic of Korea	Insular Life Corporate Center, Alabang, Muntinlupa	Provides services to its clients	Online teaching and education services

Sources: *ASEAN Investment Report 2017* research, based on data from the PEZA and company websites.

Box 5.17. Philippines: IT-BPO companies: location choice

Executives of several IT-BPM/BPO companies interviewed for this report evinced similar motivations for locating in a Philippine economic zone. Key factors include (i) the Philippines' status as a major global call/BPO centre that offers a conducive BPO support environment, (ii) the low-cost labour supply with proficient English language skills, (iii) the adaptability of the workforce to the North American or Western culture, (iv) the existence of IT-related economic zones (IT parks and centres) in urban areas with facilities and amenities that support people working in the industry, (v) the fiscal incentives offered by the PEZA, and (vi) the presence of competitive IT infrastructure that supports development of the industry.

Interviews also reveal the inherent tendency of IT-BPM/BPO companies to cluster together in an IT ecozone in order to maximize value and execute their operational strategy. Tenants find advantages in being near each other such as (1) ease of networking and discussing issues of common interest, (2) access to a low-cost workforce, (3) ability to share knowledge, and (4) the benefits of the industry's infrastructure. The competitive environment also helped boost the industry standard of service.

Source: ASEAN Investment Report 2017 research.

Some 250 IT parks and centres are registered with the PEZA. They play an important facilitation role in the development of the IT-BPO industry, which is dominated by foreign MNEs. A majority of the IT parks and centres are privately owned, and they are concentrated around Manila.

IT parks that are in urban centres and accessible from road networks, that offer facilities and amenities (i.e. telecommunication, water supply, safety) and that are specifically designed for IT/BPM-BPO operations attract more tenants. The decision to locate IT parks in urban areas is influenced by a number of factors, including the following:

- Strong and more reliable power supply
- Clean water supply
- Telecommunication infrastructure is much more developed in cities
- Access to more educated and more trainable labour pool as many colleges and universities are in cities
- Better road networks and public transportation for employees
- Proximity to amenities and facilities that support a work-live environment for employees as industry working hours are not normal, with the peak work period between 8 pm and 4 am (the following day)
- Telecommunication infrastructure ready for a dedicated-line link-up

IT-BPO companies rent spaces in buildings inside IT parks or IT buildings registered with the PEZA. Some companies set up a number of work stations within these facilities. As a consequence, IT-BPO companies operate in close proximity and tend to be concentrated in a small geographical space (i.e. within buildings or in populated IT parks near cities).

There is an increasing trend of companies moving to other major cities farther from Manila (e.g. Bulacan, Pampanga, Tarlac, Clark, Baguio, Batangas) or even to cities on other major islands (e.g. Cebu City, Bacolod City, Cagayan de Oro City). This is to bring down costs (construction, labour, facilities, power, etc.) while not sacrificing access to a quality labour pool. Two of the largest IT-BPO companies in terms of revenue, Accenture and Convergy's, have established work stations or service delivery centres in other major cities aside from Manila.

For instance, Accenture (Ireland) provides a wide range of services related to IT-BPO. It has 14 work stations in PEZA-registered IT parks (in Manila and on Cebu). Accenture's expertise spreads through 40 industries and the company works with more than three quarters of the Fortune Global 500 companies.²³

As another example, Convergy's has 25 service delivery or customer contact centres in various IT buildings, centres and parks in the country (table 5.25). It handles a wide range of customer service interactions such as account service, billing and transaction management software. Most of its clients are companies in communications, financial services, technology, retail, health care and employee care.

Table 5.25. Philippines: Convergy's service delivery centres (Selected cases)

IT park	Selected activities
Abreeza Corporate Center (Quezon City)	Call centre operations
Arcenas Estate I.T. Building (Cebu City)	Call centre operations
Cebu I.T. Park (Cebu)	Call centre business that serve overseas clients
Convergy's I.T. Building (Makati City)	Call centre operations
Eastwood City Cyberpark (Quezon City)	Call centre business that serve overseas clients
Eton Centris (Quezon City)	Call centre operations
Glorietta 5 (Makati City)	Call centre operations
JMALL IT Center (Cebu)	Call centre business that serve overseas clients
John Hay Special Tourism Economic Zone (Baguio City)	Call centre operations
Lakeside Evozone (Santa Rosa, Laguna)	Call centre operations
MDC 100 (Quezon City)	Call centre operations
Northgate Cyberzone (Alabang, Muntinlupa)	Call centre business that serve overseas clients
One Sanparq (Bacolod City)	Call centre operations
SLC Building (Makati City)	Call centre business that serve overseas clients
SM City Clark IT Park (Angeles City, Pampanga)	Call centre operations
SM Megamall I.T. Center (Mandaluyong City)	Call centre operations
SMNE IT Center (Quezon City)	Call centre operations
Two Sanparq (Bacolod City)	Call centre operations
UP Science and Technology Park (North) (Quezon City)	Call centre operations
Worldwide Corporate Center (Mandaluyong City)	Call centre business that serve overseas clients

Source: ASEAN Investment Report 2017 research, based on data from the PEZA and Convergy's website.

5.5.2.4. Korean FDI and industrial clusters in Viet Nam's industrial parks

Korean FDI and factories in Viet Nam are concentrated in industrial parks and economic zones in the northern area near Hanoi and the southern area near Ho Chi Minh City (tables 5.26

and 5.27). Bac Ninh Province accounted for the biggest portion of Korean FDI, deriving from significant investments from Samsung Electronics, its affiliates and other Korean suppliers. Most of these investments are located in the Yen Phong and Que Vo industrial zones (table 5.28). The second largest area receiving Korean FDI is Hanoi, followed by Dong Nai, Thai Nguyen, Ho Chi Minh City, Haiphong and Vung Tau.

Bac Ninh, Thai Nguyen and Haiphong are provinces adjacent to Hanoi. FDI flows into these four regions accounted for 81 per cent of Korean FDI in the northern area as of June 2016. Dong Nai and Vung Tau are provinces near Ho Chi Minh City, and the three regions together received 70 per cent of Korean FDI in the southern part of the country. In particular, Korean FDI in Bac Ninh and Thai Nguyen contributed more than 50 per cent of the cumulative FDI inflows to both regions.

Table 5.26. Regional distribution of Korean cumulative FDI flows in Viet Nam, as of June 2016

Region	Northern area	Central area	Southern area
Number of provinces	29	13	21
Number of projects	2,594	149	2,619
Investment value in billions of dollars (per cent)	26.8 (55.2)	2.5 (5.2)	19.1 (39.3)

Source: KOTRA.

Table 5.27. Top region for Korean FDI in Viet Nam, as of June 2016 (Billions of dollars and per cent)

Region	Korean FDI	Total FDI	Share (%)
Bac Ninh	6.0	12.0	50.0
Hanoi	5.8	26.9	21.6
Dong Nai	5.4	25.0	21.5
Thai Nguyen	4.9	7.1	69.5
Ho Chi Minh City	4.9	43.7	11.1
Hai Phong	4.8	13.4	35.9
Vung Tau	3.2	26.9	11.7

Source: KOTRA.

Table 5.28. Location of Samsung Electronics, its affiliates and Korean suppliers in the industrial zones of Bac Ninh (Selected cases)

Company	Industrial zones
Samsung Electronics Vietnam	Yen Phong I
Samsung SDI	Que Vo
Samsung Display	Yen Phong 1
Shell-line	Que Vo
DK UIL	Que Vo
Sun Rise I-Tech	Que Vo
Mobase	Yen Phong
Flexcom	Yen Phong

Source: KOTRA.

The concentration of Korean companies in certain regions and industrial parks is contributing to the development of electronics clusters in the country. The preference for northern and southern areas by Korean firms is because the clusters in the two areas have extensive international links with neighbouring countries, which facilitate Korean firms' coordination of their global value chain activities across borders. The north has locational advantages for firms importing inputs and goods (i.e., parts and components) from China, while the south has the advantage of proximity to the largest commercial ports, the main cities for consumption (the economic centre of Ho Chi Minh City) and the ASEAN market. Viet Nam plays an important role in connecting the upstream activities of global value chains in China and the downstream activities of global value chains in the ASEAN market. For example, Samsung Electronics and LG TV aim to serve the ASEAN market through production. By locating production in one location, they can exploit economies of scale and save transportation costs through easier access to supply chains in China. In the context of global value chains, global firms' operations usually involve international-linking clusters rather than on a single domestic cluster.²⁴

Korean firms in the same business group tend to locate their overseas subsidiaries in the same cluster area or near each other in the same industrial estate or nearby facilities. For example, a majority of the investments by Samsung Electronics and its affiliates in Viet Nam are located in Bac Ninh and Thai Nguyen. The two new investments (the R&D centre of Samsung Electronics and the battery production factory of Samsung SDI) approved in 2016 are located in Hanoi and Bac Ninh, respectively. Similarly, LG Electronics and its affiliates' investments are mostly located in the Haiphong area. The two major investments of LG Display and LG Innotek approved in 2016 are also located in Haiphong, near existing LG operations. In addition, large Korean conglomerates are also creating their own industry zone by expanding the industrial clusters they coordinate (box 5.18).

Box 5.18. LG Group FDI in Trang Due Industrial Park, Hai Phong City

In 2015, LG Electronics launched the LG Hai Phong technology complex in Trang Due Industrial Park, Hai Phong City (a northern port city of Viet Nam). The \$1.5 billion complex covering 80 ha is expected to be completed by 2028. It will produce TVs, cellphones, washing machines, vacuum cleaners, and digital devices for automobiles to serve the global market. The company will relocate its existing plants in Hung Yen (producing smartphones and TVs) and Hai Phong (producing washers, air-conditioners, and vacuum cleaners) to the Hai Phong complex.

In 2016, LG received approval to develop two large-scale investments in Trang Due Industrial Park with LG Display (\$ 1.5 billion) and LG Innotek (\$ 550 million). These two projects will cover 40.5 ha and 3 ha, respectively. Three major LG projects (i.e. LG Electronics, LG Display and LG Innotek) cover about one fifth of the area of Trang Due Industrial Park. LG Display investment was the only capital project of more than \$1 billion approved in Viet Nam in 2016.

The concentration of LG's various production activities in the complex will encourage more FDI from other LG subsidiaries, satellite companies and suppliers to operate in close proximity to the

/...

Box 5.18. LG Group FDI in Trang Due Industrial Park, Hai Phong City (Concluded)

park to provide parts, components, equipment and services. By concentrating and upgrading the production lines and capacity at the Hai Phong industrial park, LG plans to create its own industrial ecosystem to serve as a global manufacturing base. In the process, LG (like other major electronic MNEs) is contributing to the development of electronics clusters and supporting industries in Viet Nam facilitated by industrial parks. Their agglomeration will create greater synergies among them and with other firms operating in industrial parks in the country.

Source: ASEAN Investment Report 2017 research, based on media information and company website.

Aside from investing in large-scale projects and locating in industrial parks, Korean MNEs are also upgrading their operations in Viet Nam with higher value added activities. The new wave of Korean FDI in Viet Nam after the 2008 financial crisis was initiated by establishing large-scale assembly plants (labour-intensive activity) for the production of electronic goods by companies such as Samsung Electronics and LG. More recently, Korean electronic MNEs are involved with investment in more technology- and capital-intensive activities, such as Samsung Electronics' R&D centre. Some of these Korean MNEs and their affiliates are involved with the production of high value added parts and components in Viet Nam (table 5.29). For instance, in 2016 LG Display announced plans to set up a facility for mass-producing TV modules. Other Korean suppliers (e.g., Seoul Semiconductor and Lumens) also became involved with large-scale investment projects for producing high-end parts and components (e.g., LEDs) in 2016, facilitated by the existence of supportive industrial parks.

Table 5.29. Major Korean investments in Viet Nam, 2016–2017 (Selected cases)

Investor	Location	Investment value and products
Samsung Electronics	Hoang Mai District, Hanoi	A \$300 million R&D centre
Samsung SDI	Que Vo industrial park, Bac Ninh	Investing \$117.6 million more in its mobile phone battery production factory
LG Display	Trang Due Industrial Park, Haiphong	A \$1.5 billion display-panel module assembly facility
LG Innotek	Trang Due Industrial Park, Haiphong	Production of camera modules for major phone makers
Seoul Semiconductor	Dong Van I Industrial Park, Ha Nam	A \$300 million LED assembly facility
Taekwang Industrial	Hiep Phuoc Industrial Complex, Ho Chi Minh City	A composite fertilizer plant (JV)
Taekwang Co	2B Hung Phu industrial park, Can Tho City	A \$171 million shoe-manufacturing factory
Kolon Industries Inc.	Bau Bang Industrial Park, Binh Duong province	A \$14.1 million plant manufacturing airbags and industrial fabric for automobile tires
Lumens	My Phuoc Industrial Park, Binh Duong	A \$30 million LED production plant
Samsung SDS High Tech	Hanoi	A JV with Aviation Logistics Service to provide global and inland logistics
Hyosung Corp	Cai Mep Industrial Zone, Ba Ria-Vung Tau Province	A manufacturing and storage complex

Source: ASEAN Investment Report 2017 research, based on media information and company websites.

5.5.3. Growing role of border SEZs

MNEs and ASEAN companies are involved with regional production networks. This trend has been intensifying recently. The differences in wage cost and standard of living, complementary locational advantages and the strengthening of ASEAN's integration have been major drivers for the increase in regional production networks. The increasing number and proximity of border SEZs between two or more Member States are also contributing to MNEs adopting division of labour strategy in ASEAN (chapter 4). MNEs' regional production networks are connecting industrial parks in two or more ASEAN Member States (box 5.19). Such interconnection of industrial parks facilitated by forms is providing a platform for regional production networks including cluster development.

Foreign MNEs based in other ASEAN Member States have established manufacturing facilities in the CLMV countries, contributing to a wider diversification of industries involving FDI in these Member States.

Box 5.19. Essilor

Essilor, headquartered in France, is a leading global manufacturer of eyeglasses. It has a significant presence in ASEAN, in the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. In Thailand, it has three production plants, one distribution centre, one R&D activity and a regional headquarters. Essilor's operations in the Lao People's Democratic Republic and Thailand are closely connected. Parts produced in the former are transported back to the latter to produce eyeglasses for export.²⁵ The operations in the Lao People's Democratic Republic complement those in the Thai plants. All the plants in these two ASEAN Member States are located in industrial parks where incentives are offered.

Essilor continues to expand in ASEAN because of the market potential, competitive cost advantage and regional integration. It operates in Amata's industrial parks in Thailand because of its strategic location, the park's facilities and the easy access to airports and major national road networks. The benefits of incentives also encouraged its investment in Thailand. In the Lao People's Democratic Republic, the company operates a \$14 million plant in the Savan-Seno SEZ, with significant logistical advantages due to efficient road connections to Thailand and air transportation. Essilor's operations illustrate the value of connection between industrial parks or economic zones in two or more countries in ASEAN. In addition to manufacturing activities, the company has also established a training centre in Savannakhet province to train local workers and to upgrade their skills to meet new industrial needs. Essilor also has a R&D facility in Singapore.

Factors influencing site location choice in the Lao People's Democratic Republic

The lower wage cost, provision of incentives and proximity of the Savan-Seno SEZ to the Lao–Thai border and links to Thailand through the Second Lao Mekong Bridge all played an important part in Essilor's decision on the site location. The security, low cost of land lease and reliable supply of electricity in the zone, including integrated services provided by the management company to investors, were also considered important factors. Essilor has invested in the country to benefit from a regional division of labour and production networks and to pursue its supply chain strategy.

Source: Essilor website.

Box 5.20. Regional production networks by Japanese companies

Marunix established a factory in the Amata City industrial estate in Rayong, Thailand, in 2009 to follow its customers to the host country. Production volume rose rapidly, which requires expansion of production capacity. Marunix expanded to Cambodia in 2011, with a factory in the Phnom Penh SEZ, because of the relatively lower labour cost and the suitable road connection between the two Member States. The Phnom Penh SEZ was selected because of the zone's one-stop service centre, which made it easier for Marunix to establish a presence in Cambodia. The company is planning to orient the Thai factory to be involved in higher value added operations after having transferred labour-intensive operations to Cambodia. Some 80 per cent of products that Marunix-Cambodia produces are exported to Thailand and 20 per cent are exported to China. Products to Thailand are delivered and stored in the company's warehouse in the Amata City industrial estate in Thailand once a week. Marunix-Cambodia recently started to export small amount of products to Viet Nam by land route.

Yazaki has produced wire harnesses and related products in Thailand since 1962. In 2011, it established Yazaki (Cambodia) in the Neang Koh Kong SEZ at the southern part of the Thailand–Cambodia border. The drive to reduce production costs led to the investment in Cambodia. Workers from the Cambodian factory were trained in Thailand, and technology and know-how were transferred from Thai factories. Parts are delivered from the Thai factory to the Cambodian plant by truck. After processing in Cambodia, these products are then transported back to the Thai factory. A final check is done in the Thai factory, and products are then supplied to customer in based in Thailand.

Koyorad has produced radiators for the automotive aftermarket in the Thilawa SEZ in Myanmar since 2015. The company has a significant presence in Indonesia and China. Cost pressures have led the company to establish an operation in Myanmar through a subsidiary based in Singapore. Raw materials such as rolled aluminium and resin nylon are imported from Thailand and Taiwan Province of China. Semi-assembled products are then exported to the Indonesian plant for consolidation with other parts that it produced. The Myanmar operation is also beginning to export parts directly to Japan and the United States.

More Japanese companies are establishing factories in SEZs in the Lao People's Democratic Republic that have production links to their factories in Thailand. For instance, MMC has factories in Thailand and Malaysia to produce thermistor sensors for home appliances such as air conditioners and refrigerators. The company established a factory in VITA Park in 2014 to reduce costs and take advantage of the park's proximity to its Thai factory. Nikon built a factory in the Savan-Seno SEZ in 2013 to produce parts and components (e.g. camera lenses) for its operations in Thailand. The parts are assembled into finished products (digital SLR cameras) in its factory in Rojana Industrial Park in Ayuthaya (Thailand) for export. Nikon-Thailand sends parts to and received assembled parts as a unit back from Nikon-Lao People's Democratic Republic by road five times a week.

Toyota Boshoku set up an operation in the Savan-Seno SEZ in 2014 to produce vehicle seat covers, which are then transported by road to its Thai operation at the Gateway Industrial Estate, near the Toyota Motor Thailand plant. The Thai operation procures and supplies necessary raw materials, such as fabrics, to the Lao factory by truck. The labour-intensive process of cutting and sawing fabrics has been transferred from the Thai factory to the Lao operation.

Source: Kojima (2017).

Japanese MNEs are actively using regional production networks in ASEAN (box 5.20). In recent years, many Japanese companies based in Thailand have transferred labour-intensive operations to their newly established facilities in the CLMV countries. Production from these plants, which are mainly in SEZs or industrial parks, is then transported to facilities in Thailand as intermediate parts and components for the Thai operations.

Good transportation networks between countries and SEZs involving neighbouring countries plays a key role in linking cross-border industrial parks or SEZs. For example, Yazaki (Japan) set up a factory in Neang Koh Kong SEZ (Cambodia) at the southern part of the Thailand–Cambodia border with a good road connection into Thailand. Nikon (Japan) and Toyota Boshoku (Japan) each established a factory in Savan-Seno SEZ (Lao People’s Democratic Republic), which is strategically located along the East–West Economic Corridor that connects Bangkok and Hanoi. Smooth logistical movement of parts and intermediate goods by road between factories in SEZs in neighbouring countries is an important consideration.

Aside from Japanese companies, MNEs from ASEAN and other countries are also involved in regional production networks across two or more ASEAN host countries. Their efforts in establishing and cooperating on cross-border SEZs will encourage more regional production networks in the region.

5.6. Conclusion

ASEAN has many economic zones. Both the public and the private sector play an important role in their development. Although in most ASEAN Member States most economic zones are developed with significant involvement by the private sector, the public sector provides the crucial enabling environment through policy, institutional support and public–private partnerships.

The development of economic zones in ASEAN has strongly involved local companies (industrial estate and economic zone developers), public authorities and foreign MNEs (industrial estate and economic zone developers). Companies from ASEAN Member States are increasingly participating in the development of economic zones in the region. MNEs specialised in economic zone development and operations from Japan, China and other countries are involved in economic zone development in the region. Opportunities to exploit ownership advantages, diversification of revenue streams, encouragement from home-based customers, increasing demand and bilateral cooperation between ASEAN Member States are among the key drivers and motives for investment in and ownership of economic zones in the region.

Although developers of economic zones play an important role, it is a critical mass of tenants that makes a zone successful. Interviews with firms for this study identified certain factors that companies look for when deciding on site locations. Much of this decision depends on the tenant, the type of FDI, the industry and the motives of the firm. Common aspects include the strategic location of the industrial estate, the provision of infrastructure facilities, security,

access to labour, proximity to markets and supply chains and cost, as well as the services and professionalism of the industrial estate's management company.

Development of economic zones alone does not create industrial clusters. Also needed are an effective interplay of factors such as policies attracting investment and supporting industrialization, a critical mass of major companies, and a competitively developed economic zone. Some zones are developed to provide specialized environment (e.g. science and technology park) to target specific types of tenants. Some Member States have also developed dedicated industrial estates targeting primarily tenants from specific countries. Some MNEs (e.g. Samsung and Karakatau) built their own industrial estates to facilitate their operations. They generated or encouraged their subsidiaries, suppliers and other firms in related industries to operate in the same estate or in nearby facilities to gain agglomeration benefits and strengthen their supply chains.

Some economic zones in ASEAN have facilitated the development of clusters in industries such as steel, electronics and automotive. Some industrial estates have been successful at attracting major anchor companies and related tenants, which contributed to the development of industrial clusters (e.g. the Amata and Hemaraj industrial estates in Thailand for automotive and electronic clusters; Kota Jababeka and other nearby industrial estates in Java, Indonesia, for automotive clusters; and the various IT parks in the Philippines for the IT-BPO clusters). Other SEZs have also generated a critical mass of tenants, which play a catalytic role in the development of agglomeration of firms, as has happened in the garment, shoes, IT and other service industries.

NOTES

- ¹ See MIDF Property Bhd (www.midfproperty.com.my/services-overview).
- ² IZVietnam, “Tu Zon Industrial Zone” (<http://industrialzone.vn/Ing/2/industrial-zone-detail/844/Bac-Ninh/Tu-Son.aspx>) and www.izabacninh.gov.vn/?page=introduction_detail&category_id=3740&id=6274&portal=kcnbn.
- ³ Thua Thien Hue Authority, “Jababeka Group – Indonesia seeks investment opportunity in Thua Thien Hue province”, News, 18 July 2017 (<https://sngv.thuathienhue.gov.vn/?gd=8&cn=477&tc=3113>).
- ⁴ www.ijm.com/web/aboutUs/ir_structure_masscorp-vietnam.htm.
- ⁵ See www.massa.net.my/massda-land-company-limited-developer-of-fortune-park-at-son-tra-district-danang-city-vietnam/ and www.iza.danang.gov.vn/eng/gioi-thieu/cac-khu-cn-cx.html#kcn-2.
- ⁶ www.massa.net.my/massda-land-company-limited-developer-of-fortune-park-at-son-tra-district-danang-city-vietnam.
- ⁷ https://sinaran.com.my/index.php?option=com_content&view=article&id=138&Itemid=840.
- ⁸ See www.jtc.gov.sg/about-us/Pages/default.aspx.
- ⁹ www.jtc.gov.sg/industrial-land-and-space/Pages/default.aspx
- ¹⁰ www.jtc.gov.sg/industrial-land-and-space/Pages/jurong-island.aspx.
- ¹¹ Before the merger of Ascendas-Singbridge in 2015, Ascendas was fully owned by JTC. On 16 February 2015, JTC and Temasek confirmed the merger of their subsidiaries (i.e. JTC’s Ascendas and Jurong International Holdings, and Temasek’s Surbana and Singbridge).
- ¹² See http://amata.com/site/view_tomorrow.php?id=5.
- ¹³ Connectivity covers five major areas of interest: policy coordination, infrastructure construction, unimpeded trade, financial integration, and people-to-people ties (similar cultural factors and social norms).
- ¹⁴ Straits Times, “Indonesia Lippo says to build \$14 billion industrial park with China firms”, 25 May 2016 (www.straitstimes.com/business/indonesia-lippo-says-to-build-us14-billion-industrial-park-with-china-firms).
- ¹⁵ HKTDC Research, “Prospects for the Malaysia-China Kuantan Industrial Park and Kuantan Port”, 16 May 2017 (<http://economists-pick-research.hktdc.com/business-news/article/Research-Articles/Prospects-for-the-Malaysia-China-Kuantan-Industrial-Park-and-Kuantan-Port/rp/en/1/1X000000/1X0AA0CO.htm>).
- ¹⁶ Nikkei Asian Review, “Chinese-led group to build Indian Ocean port, industrial park”, 5 January 2016 (<https://asia.nikkei.com/Politics-Economy/International-Relations/Chinese-led-group-to-build-Indian-Ocean-port-industrial-park>); Reuters, “Exclusive: China seeks up to 85 percent stake in strategic port in Myanmar”, 5 May 2017 (www.reuters.com/article/us-china-silkroad-myanmar-port-exclusive-idUSKBN1811DF).
- ¹⁷ Xinhua News, “Chinese company to build modern agricultural industrial park in Laos”, 26 April 2017 (http://news.xinhuanet.com/english/2017-04/26/c_136236572.htm).
- ¹⁸ See Investment Promotion Department, Ministry of Planning and Investment, Lao People’s Democratic Republic (www.investlaos.gov.la/index.php/where-to-invest/special-economic-zone?start=10).
- ¹⁹ Mitsui, “Mitsui to participate in project to develop rental warehouses and factories in Iskandar Malaysia”, press release, July 2015 (https://www.mitsui.com/jp/en/release/2015/1209083_6474.html; www.uemsunrise.com/mitsui-partners-ascendas-and-uem-sunrise-to-jointly-offer-build-to-suit-developments-for-lease-in-nusajaya-tech-park).
- ²⁰ Sojitz Corporation, “Sojitz group to expand Deltamas City’s (Kota Deltamas) industrial park in Indonesia – Becomes largest comprehensive urban development project backed by Japanese capital”, press release, 16 March 2017 (<https://www.sojitz.com/en/news/2017/03/20170316.php>).
- ²¹ See BDG Vietnam, “Vietnam’s electronics sector: development, locations and opportunities”, October 2016 (<http://bdg-vietnam.com/de/about/news/details/items/vietnams-electronics-sector-development-locations>).

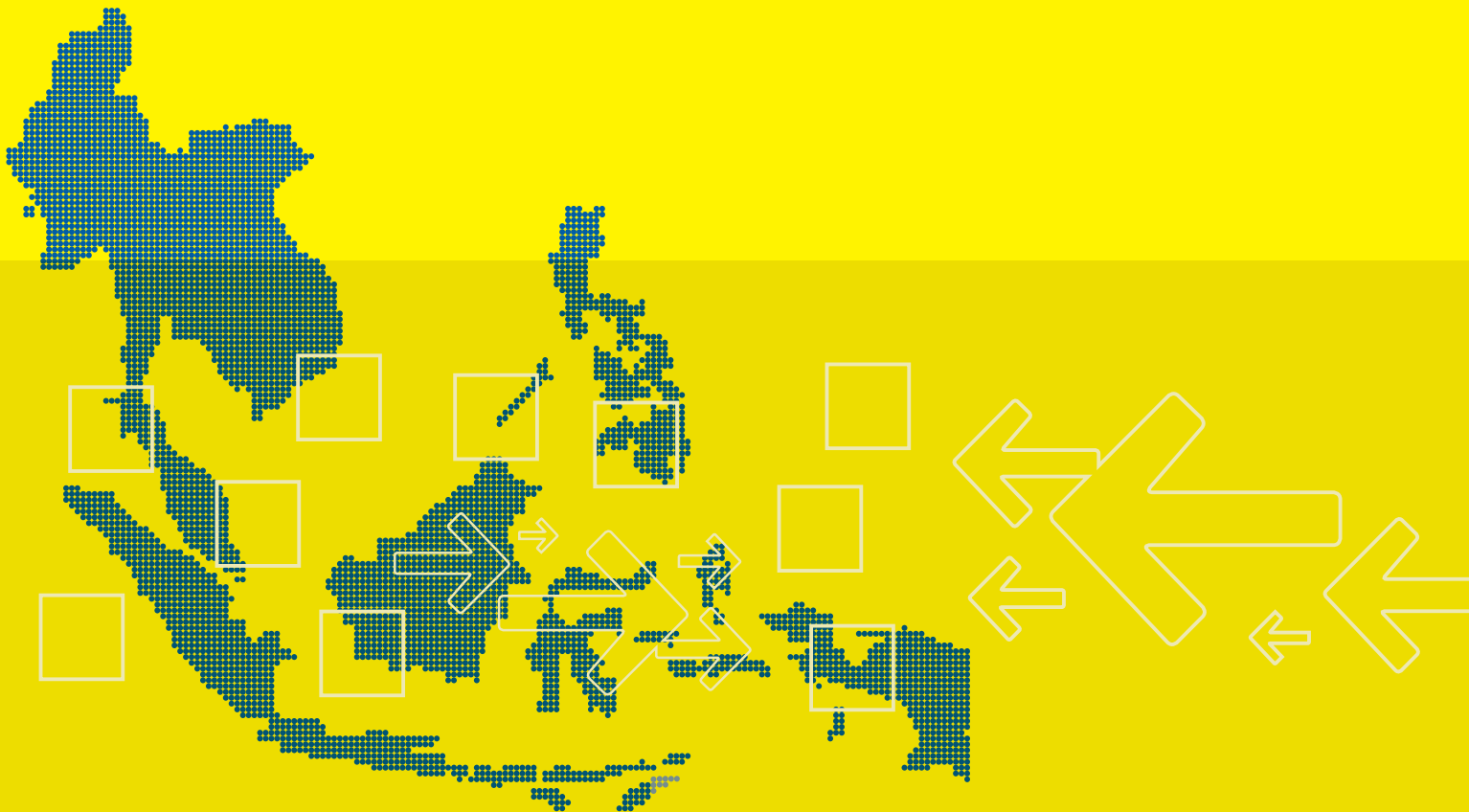
²² See information on VSIP specialization at www.vsip.com.vn/out-project/industrial-park/vsip-hai-phong-vsip-project-10.html, www.vsip.com.vn/latest-news/sembcorp-opens-logistics-hub-in-vsip-hai-phong.html, www.vsip.com.vn/assets/uploads/myfiles/files/Leaflet/Brochure/VSIP-brochure-English-Vietnam-2014.pdf, www.vsip.com.vn/out-project/industrial-park/vsip-hai-duong.html, www.sembcorp.com/en/featured-projects?Id=9376, <http://www.sembcorp.com/en/featured-projects?Id=9354>, www.sembcorp.com/en/featured-projects?Id=9359, and www.amchamvietnam.com/vietnam-singapore-industrial-park-vsip-no-5-launched-in-quang-ngai.

²³ <https://www.accenture.com/us-en/company>.

²⁴ Moon and Jung (2010) distinguished clusters into four stages: regional cluster, regional-linking cluster, international-linking cluster, and global-linking cluster.

²⁵ Bangkok Post, “Savannakhet industrial zone in Laos”, 23 September 2013, www.bangkokpost.com/learning/advanced/371247/new-industrial-park-in-savannakhet-laos.

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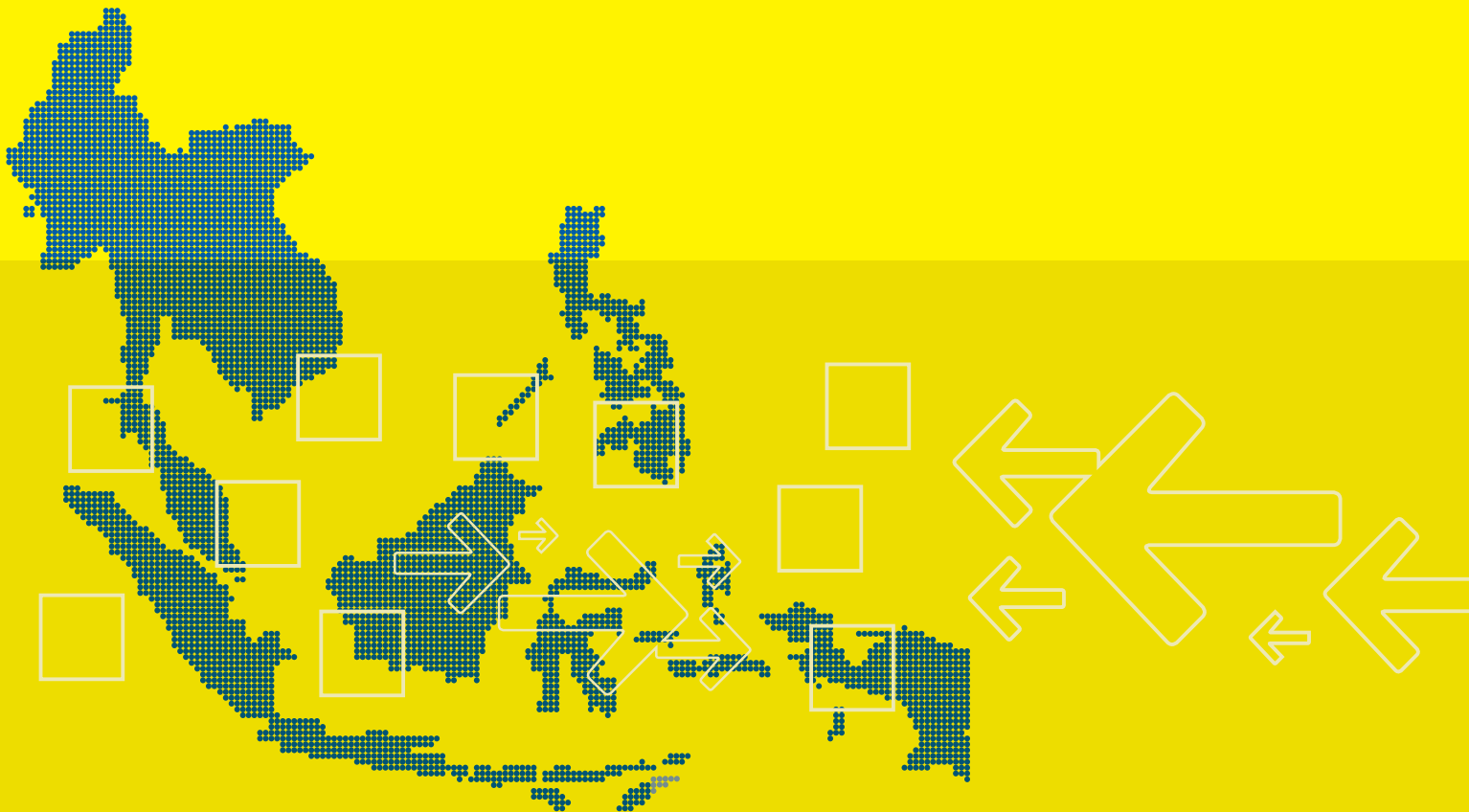
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ANNEXES



Annex table 1.1. M&A sales in ASEAN: Significant deals, 2016–2017 (Selected cases)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
ExxonMobil Corp	United States	InterOil Corp	Singapore	Crude petroleum and natural gas	3,952	100	2017
CMA CGM	France	Neptune Orient Lines	Singapore	Marine cargo handling	2,421	100	2016
China General Nuclear Power	China	Edra Global Energy Bhd-Power Assets	Malaysia	Electric services	2,295	100	2016
Warburg Pincus	United States	ARA Asset Management	Singapore	Investment advice	1,278	100	2017
Amphenol Corp	United States	FCI Asia	Singapore	Electronic connectors	1,275	100	2016
QEWEC	Qatar	PT Paton Energy	Indonesia	Cogeneration, alternative energy sources	1,270	35.51	2016
Temasek Holdings	Singapore	Intouch Holdings	Thailand	Radiotelephone communications	1,182	21	2016
Central Group	Thailand	Casino Guichard-Perrachon SA - Big C Vietnam Stores	Viet Nam	Grocery stores	1,135	100	2016
Donata Holdings	Austria	Super Group	Singapore	Roasted coffee	1,047	100	2017
ams AG	Austria	Heptagon Advanced Micro-Optics	Singapore	Semiconductors and related devices	881	100	2017
CITIC Securities	China	Biosensors International Group	Singapore	X-ray apparatus and tubes and other irradiation equipment	818	80.51	2016
Mitsubishi UFJ Financial Group	Japan	Security Bank Corp	Philippines	Banks	778	20	2016
Investor Group	Australia	G-Resources Grp Ltd - Martabe gold mine in Indonesia	Indonesia	Gold ores	775	95	2016
TCC Holding	Thailand	Metro Cash & Carry Vietnam	Viet Nam	Grocery stores	705	100	2016
Investor Group	Japan	edotco Group	Malaysia	Radiotelephone communications	600	34.1	2017
Citigroup	United States	Nirvana Asia	Malaysia	Funeral service and crematories	598	57.31	2016
Manulife Financial Corporation	Canada	8 Cross Street, Singapore	Singapore	Operators of nonresidential buildings	526	100	2017
Bank of China	China	Bank of China (Malaysia)	Malaysia	Banks	502	100	2016
Bank of China	China	Bank of China (Thai)	Thailand	Banks	424	100	2017
21st Century Fox	United States	iProperty Group	Malaysia	Real estate agents and managers	421	78.67	2016
Synnex Corp	United States	The Minacs Group	Singapore	Business services, nec	420	100	2016
Investor Group	United States	AirTrunk	Singapore	Data processing services	400	0	2017
GIC	Singapore	Trans Retail	Indonesia	Miscellaneous apparel and accessory stores	398	0	2016
BRF SA	Brazil	Golden Foods Siam	Thailand	Poultry slaughtering and processing	360	100	2016
Investor Group	China	Microsoft Mobile Vietnam	Viet Nam	Electronic components, nec	350	100	2016
China Merchants Group	Hong Kong, China	China Merchants Holdings (Pacific)	Singapore	Inspection and fixed facilities for motor vehicles	324	24.12	2016
Baring Private Equity Partners	United Kingdom	Interplex Holdings	Singapore	Engineering services	321	97.9	2016
Bourbon	France	Greenship Gas	Singapore	Deep sea foreign transportation of freight	320	100	2016
Investor Group	United States	Serenity Holding Group	Viet Nam	Hotels and motels	300	100	2016

Source: UNCTAD M&A database.

Annex table 1.2. ASEAN companies bought foreign owned assets in home country, 2016–2017 (Selected cases)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
Thai Charoen Corp Group	Thailand	Big C Supercenter PCL	Thailand	Grocery stores	3,439	58.56	2016
PT Amman Mineral Internasional	Indonesia	PT Newmont Nusa Tenggara	Indonesia	Gold ores	1,323	48.5	2016
MYP Ltd	Singapore	Straits Trading Building	Singapore	Operators of nonresidential buildings	407	100	2016
Halcyon Agri Corp Ltd	Singapore	GMG Global Ltd	Singapore	Forest nurseries and gathering of forest products	369	97.04	2016
Oversea-Chinese Bkg Corp Ltd	Singapore	Barclays Bank PLC - Singapore Wealth & Investment Management Business	Singapore	Investors, nec	320	100	2016
PT Sarana Menara	Indonesia	XL Axiata Tbk PT - Telecommunications Towers	Indonesia	Radiotelephone communications	267	100	2016
Halcyon Agri Corp Ltd	Singapore	Sinochem International Natural Rubber Investment (Overseas) Pte Ltd	Singapore	Synthetic rubber (vulcanizable elastomers)	149	100	2016
Dorado Holdings Pte Ltd	Singapore	Corwin Holding Pte Ltd	Singapore	Land subdividers and developers	140	100	2016
Thai Beverage PCL	Thailand	Golden Land Property Development PCL	Thailand	Land subdividers and developers	139	29.51	2016
Adaro Energy Tbk PT	Indonesia	IndoMet Coal Project	Indonesia	Bituminous coal and lignite surface mining	120	75	2016
PT Gelanggang Maju Bersama	Indonesia	Global Kalimantan Makmur PT	Indonesia	Vegetable oil mills, nec	64	100	2016
Pavilion REIT	Malaysia	Intermark Mall	Malaysia	Operators of nonresidential buildings	37	100	2016
Investor Group	Indonesia	PT Era Mitra Selaras	Indonesia	Operators of coal and lignite surface mining	37	100	2016
PT Gelanggang Maju Bersama	Indonesia	Semai Lestari PT	Indonesia	Vegetable oil mills, nec	28	100	2016
BRG Group JSC	Viet Nam	Quang Ba Royal Park Co Ltd	Viet Nam	Operators of apartment buildings	22	70	2016
Investor Group	Indonesia	PT REA Kaltim Plantations	Indonesia	Crop planting, cultivating and protecting	20	100	2016
PT Dharma Satya Nusantara Tbk	Indonesia	PT Melon Indonesia	Indonesia	Crop planting, cultivating and protecting	15	15	2016
Indonesia Republic	Indonesia	PT Rea Kaltim Plantations	Indonesia	Information retrieval services	13	49	2016
Towerpack Sdn Bhd	Malaysia	Aluminium Co of Malaysia Bhd	Malaysia	Metals service centers and offices	12	59.16	2016
Padiberas Nasional Bhd	Malaysia	Gardenia Bakeries (KL) Sdn Bhd (OAF Ltd)	Malaysia	Bread and other bakery products, except cookies	7	20	2016
Cabaran Premix Sdn Bhd	Malaysia	Laforge Aggregates (poth) Sdn Bhd	Malaysia	Ready-mixed concrete	7	100	2016
Kim Hin Industry Bhd	Malaysia	Johan Ceramics Bhd	Malaysia	Ceramic wall and floor tile	6	100	2016
Johor Corp	Malaysia	Asia Logistics Council Sdn Bhd	Malaysia	Trucking, except local	6	30	2016
Singapore Press Holdings Ltd	Singapore	Brand New Media Singapore Pte Ltd	Singapore	Management consulting services	5	34.7	2016
PT Mandhala Cipta Purnama	Indonesia	PT Nusaraya Permai	Indonesia	Vegetable oil mills, nec	4	100	2016
HS Engineering Svcs Pte Ltd	Singapore	UMW Helmsion Engineering Pte Ltd	Singapore	Industrial trucks, tractors, trailers and stackers	1	60	2016
Quest Group Holdings Ltd	Singapore	Groupama SA - General Insurance Business	Singapore	Insurance agents, brokers and service	4	100	2016
Enso Asia PT	Indonesia	Triangle Energy Ltd - PASE Production Sharing Contract, North Sumatra	Indonesia	Crude petroleum and natural gas	3	100	2016
Decoluit Ltd	Singapore	Pacnet Internet (S) Ltd - Singapore Business	Singapore	Information retrieval services	2	100	2016
Investor Group	Thailand	Mercator Lines(Singapore)Ltd	Thailand	Deep sea foreign transportation of freight	2	66.17	2016
Venture Inc PCL	Thailand	Regional Asset Management Ltd	Thailand	Investment advice	1	99.99	2016
Nelson Dass	Malaysia	PVT Engineering Sdn Bhd	Malaysia	Industrial machinery and equipment	..	60	2016
PT Mandhala Cipta Purnama	Indonesia	Saban Sawit Subur PT	Indonesia	Vegetable oil mills, nec	..	100	2016
Texchem Resources Bhd	Malaysia	D&N Coffee & Restaurant Malaysia Sdn Bhd	Malaysia	Eating places	..	11	2016
PT Jinantra Karya Raya	Indonesia	PT Anugerah Alam Manuhing	Indonesia	Bituminous coal and lignite surface mining	..	75	2016
Vingroup JSC	Viet Nam	Acuatco Pte Ltd - V1 & V2	Viet Nam	Water supply	..	100	2016
Totalgaz Vietnam Co Ltd	Viet Nam	Petronas(Vietnam)Co Ltd	Viet Nam	Petroleum refining	..	100	2016
Banco De Oro Unibank Inc	Philippines	General Pilipinas Holdings Co Inc	Philippines	Life insurance	..	0	2016
Bank of the Philippine Islands	Philippines	BPI Globe Banko Inc	Philippines	Banks	..	60	2016
PT Amman Mineral Internasional	Indonesia	PT Newmont Nusa Tenggara	Indonesia	Gold ores	..	33.7	2016
Encore International Ltd	Indonesia	South Natuna Sea Block B,Indonesia	Indonesia	Crude petroleum and natural gas	..	40	2016
Lion Diversified Holdings Bhd	Malaysia	Pewira Berkas Sdn Bhd	Malaysia	Metals service centers and offices	..	100	2016
Ayala Corp	Philippines	NorthWind Power Development Corp	Philippines	Cogeneration, alternative energy sources	..	17.79	2016

Source: UNCTAD M&A database.

Annex table 1.3. Intra-ASEAN M&A transactions, 2016–2017 (Selected cases)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
Temasek Holdings (Pte) Ltd	Singapore	Intouch Holdings PLC	Thailand	Radiotelephone communications	1,182	21	2016
Central Group of Cos	Thailand	Casino Guichard-Perrachon SA - Big C Vietnam Stores	Viet Nam	Grocery stores	1,135	100	2016
TCC Holding Co Ltd	Thailand	Metro Cash & Carry Vietnam Co Ltd	Viet Nam	Grocery stores	705	100	2016
GIC Pte Ltd	Singapore	Trans Retail PT	Indonesia	Miscellaneous apparel and accessory stores	398	0	2016
Investor Group	Singapore	Prasac Microfinance Institution Ltd	Cambodia	Miscellaneous business credit	264	68.75	2017
Hatten Land Ltd	Singapore	Prolific Properties Sdn Bhd	Malaysia	Land subdividers and developers	174	100	2017
Malaysia	Malaysia	Garena Interactive Holding Ltd	Singapore	Information retrieval services	169	0	2016
UEM Edgenta Bhd	Malaysia	Asia Integrated Facility Solutions Pte Ltd	Singapore	Investors, nec	137	100	2016
Health Management International Ltd	Singapore	Mahkota Medical Centre Sdn Bhd	Malaysia	General medical and surgical hospitals	130	51	2017
LMIR Trust	Singapore	Lippo Mall Kuta	Indonesia	Operators of nonresidential buildings	58	100	2016
SATS Ltd	Singapore	Brahms Airline Catering Holdings Sdn Bhd	Malaysia	Eating places	51	49	2016
Aliran Armada Sdn Bhd	Malaysia	Southeast Asia Telecommunication Holdings Pte Ltd	Singapore	Investors, nec	50	100	2017
Vinametric Ltd	Viet Nam	Dalton Investment Pte Ltd	Singapore	Hotels and motels	49	100	2016
SC Capital Partners Pte Ltd	Singapore	Undisclosed Myanmar Hotel Property	Myanmar	Hotels and motels	46	100	2016
Xurpas Inc	Philippines	Art of Click Pte Ltd	Singapore	Advertising agencies	45	100	2016
Kharisma Mutiara Agung PT	Indonesia	Bangkok Container Terminal	Thailand	Deep sea foreign transportation of freight	40	100	2016
Mapletree Logistics Trust Management	Singapore	Mapletree Shah Alam Logistics Park	Malaysia	General warehousing and storage	39	100	2016
CapitalLand Ltd	Singapore	River View Co Ltd	Viet Nam	Land subdividers and developers	38	75	2016
Keppel Corp Ltd	Singapore	Keppel Land Watco I Co Ltd	Viet Nam	Land subdividers and developers	37	8.2	2017
Manhattan Resources Ltd	Singapore	PT Kariangau Power	Indonesia	Heavy construction, nec	37	92.18	2016
Axiata Group Bhd	Malaysia	edotco Investments Singapore Pte Ltd	Singapore	Investors, nec	35	12.5	2016
Genting Bhd	Malaysia	Cahaya Agro Abadi Pte Ltd	Singapore	Investors, nec	35	100	2016
Employees Provident Fund Board	Malaysia	CIMB-Trustcapital Australia Office Fund No 1 LP	Singapore	Investment offices, nec	28	12.42	2016
New Toyol International Holding Ltd	Singapore	PT Bintang Pesona Jagat	Indonesia	Tobacco and tobacco products	23	100	2016
3Cherry Ltd	Singapore	Liberty Bridge Sdn Bhd	Malaysia	Investors, nec	21	100	2016
CapitalLand Ltd	Singapore	CapitalLand-Thien Duc Co Ltd	Viet Nam	Dwelling operators, except apartments	18	30	2017
AA Group Holdings Ltd	Malaysia	Engineering Manufacturing Services (S) Pte Ltd	Singapore	Operators of nonresidential buildings	18	100	2017
Philippine Long Distance Tele	Philippines	Iflix Sdn Bhd	Malaysia	Information retrieval services	15	7.5	2016
Keppel Corp Ltd	Singapore	Quoc Loc Phat JSC	Viet Nam	Land subdividers and developers	15	20	2016
All Star International Holding	Malaysia	Tong Heer Fasteners (Thailand) Co Ltd	Thailand	Manufacturing industries, nec	15	49.99	2016
Cordlife Group Ltd	Singapore	Sterimile Bhd	Malaysia	Health and allied services, nec	15	56.86	2016
Bowsprit Capital Corp Ltd	Singapore	Siloam Hospitals Labuan Bajo	Indonesia	General medical and surgical hospitals	14	100	2017
Golden Agri-Resources Ltd	Singapore	Palmino Blitton Berjaya PT	Indonesia	Vegetable oil mills, nec	10	100	2016
Vinamilk	Viet Nam	Angkor Dairy Products Co Ltd	Cambodia	Fluid milk	10	51	2017

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Annex table 1.3. Intra-ASEAN M&A transactions, 2016–2017 (Selected cases)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
Mandala Energy Ltd	Singapore	Cooper Energy Ltd - Exploration Assets	Indonesia	Crude petroleum and natural gas	8	100	2016
Genting Bhd	Malaysia	Palm Capital Investment Pte Ltd	Singapore	Investors, nec	8	100	2016
Plato Capital Ltd	Singapore	ECM Libra Financial Group Bhd	Malaysia	Investment advice	7	25.89	2016
Kronologi Asia Bhd	Malaysia	Quantum Storage (India) Pte Ltd	Singapore	Investors, nec	6	80	2016
mm2 Asia Ltd	Singapore	Mega Cinemas Management Sdn Bhd- Mega Cineplex	Malaysia	Motion picture theaters, except drive-in	5	100	2016
Thai Beverage PCL	Thailand	Yoke Food Industries Sdn Bhd	Malaysia	Canned fruits, vegetables, jam, and jellies	5	30	2016
Capitaland Ltd	Singapore	Capitaland Vista Joint Venture Co Ltd	Viet Nam	Operators of apartment buildings	5	10	2016
Capitaland Ltd	Singapore	Capitaland Vista Joint Venture Co Ltd	Viet Nam	Operators of apartment buildings	5	10	2016
SHS Holdings Ltd	Singapore	TLC Modular Construction JSC	Viet Nam	Single-family housing construction	4	60	2017
Bonita Corp Bhd	Malaysia	IBB Pte Ltd	Singapore	Investors, nec	4	100	2016
SATS Ltd	Singapore	MacroAsia Catering Services Inc	Philippines	Eating places	4	13	2016
MKH Bhd	Malaysia	PT Sawit Prima Sakti	Indonesia	Land subdividers and developers	4	75	2016
Nippon Indosari Corpindo PT	Indonesia	All Fit & Popular Foods Inc	Philippines	Bread and other bakery products	4	100	2016
Nova MSC Bhd	Malaysia	CNA Development Pte Ltd	Singapore	Offices of holding companies, nec	3	31	2016
CNMCM Goldmine Holdings Ltd	Singapore	Pulai Mining Sdn Bhd	Malaysia	Gold ores	3	51	2016
CNMCM Goldmine Holdings Ltd	Singapore	Pulai Mining Sdn Bhd	Malaysia	Gold ores	3	51	2017
Investor Group	Singapore	Farms Best Food Industries Sdn Bhd	Malaysia	Poultry slaughtering and processing	3	100	2016
Cordlife Group Ltd	Singapore	Stemlife Bhd	Malaysia	Health and allied services, nec	3	8.85	2017
Gallant Venture Ltd	Singapore	PT Batamindo Executive Village	Indonesia	Membership sports and clubs	2	17.5	2016
Lay Hong Bhd	Malaysia	Takaso SC (Thailand) Ltd	Thailand	Fabricated rubber products, nec	2	100	2016
Sunway Bhd	Malaysia	PND Hardware & Trading Pte Ltd	Singapore	Manufacturing industries, nec	2	100	2016
Dialog Group Bhd	Malaysia	EC-Dialog Pte Ltd	Singapore	Investors, nec	2	60	2017
Poh Teck Boon	Malaysia	AWS Distribution Philis Corp	Philippines	Electric equipment, nec	1	40	2017
Annica Holdings Ltd	Singapore	GPE Power Systems (M) Sdn Bhd	Malaysia	Equipment rental and leasing, nec	1	70	2016
PEC Ltd	Singapore	PEC Malaysia Sdn Bhd	Malaysia	Engineering services	1	0	2016
Turbo-Mech Bhd	Malaysia	Turbo-Mech (Thailand) Co Ltd	Thailand	Industrial machinery and equipment	1	26	2016
Lee Swee Fatt	Singapore	I-World Technology Sdn Bhd	Malaysia	Data processing schools	1	30	2017
Investor Group	Singapore	Vietnam Rare Earth Co Ltd	Viet Nam	Nonferrous forgings	1	100	2016
Boon Siew Sdn Bhd	Malaysia	Sumatera Sawit Lestari PT	Indonesia	Forest nurseries and forest products	1	90	2016
Latitude Tree Holdings Bhd	Malaysia	Grob Holz Co Ltd	Thailand	Wood household furniture	1	15	2016
Ly Sakhun	Cambodia	AWS Cambodia Ltd	Cambodia	Electronic parts and equipment, nec	1	55	2016
Kim Teck Cheong Cnsid Bhd	Malaysia	Grandtop Marketing Sdn Bhd	Brunei Darussalam	Groceries and related products, nec	..	60	2017
Texchem Resources Bhd	Malaysia	Sushi King Co Ltd	Viet Nam	Eating places	..	100	2016
QLM Label Makers Pte Ltd	Singapore	Kopacklabels Press Sdn Bhd	Malaysia	Adhesives and sealants	..	100	2016

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Annex table 1.3. Intra-ASEAN M&A transactions, 2016–2017 (Selected cases)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
CSC Holdings Ltd	Singapore	GPSS Geotechnic Sdn Bhd	Malaysia	Engineering services	..	35	2016
DNA 2002 PCL	Thailand	AEK Sole Co Ltd	Lao People's Democratic Republic	Computer facilities management services	..	51	2016
KC Metalsheet PCL	Thailand	SKSC Metal Product Co Ltd	Cambodia	Rolling and extruding of nonferrous metals	..	33.33	2016
8I Holdings Ltd	Singapore	8 MAD Group Sdn Bhd	Malaysia	Investors, nec	..	51	2016
Omega Attraction Sdn Bhd	Malaysia	PT Boxon Nikkon Jayaindo	Indonesia	Electrical apparatus and equip	..	30	2016
Hotel Properties Ltd	Singapore	Boathouse Holding Co Ltd	Thailand	Investors, nec	..	49	2016
OLS Enterprise Ltd	Singapore	Mojo Film Co Ltd	Thailand	Services allied to motion picture production	..	40	2016
Investor Group	Singapore	PT Brotis Prima Agrisindo	Indonesia	Pharmaceutical preparations	..	100	2016
Hatten Land Ltd	Singapore	Admiral Merger Sdn Bhd	Malaysia	Land subdividers and developers	..	100	2017
Towerpack Sdn Bhd	Malaysia	Aluminium Co of Malaysia Bhd	Malaysia	Metals service centers and offices	..	0.06	2016
OLS Enterprise Ltd	Singapore	Mojo Film Co Ltd	Thailand	Services allied to motion picture production	..	8	2016
Changjiang Telecom Hldg (S)	Singapore	Cambodian Supreme Telecommunication	Cambodia	Cable and other pay television services	..	30	2016
Central Group of Cos	Thailand	Lan Chi Business Co Ltd	Viet Nam	Grocery stores	..	51	2016
Entrp Investment Holding Inc	Philippines	CII Bridges & Roads Investment JSC	Viet Nam	Lighting equipment, nec	..	14.15	2016
Enviectus International Holding Ltd	Singapore	Lyndarrahim Ventures Sdn Bhd	Malaysia	Eating places	..	85	2016
Mohamad Ridza Bin Mat Ali	Malaysia	Industrial Power Technology Pte Ltd	Singapore	Electric services	..	100	2016
Yes Boss	Indonesia	Hey Kuya	Philippines	Prepackaged software	..	100	2016
Bright Peak Consultants Pte	Singapore	PT Super Exim Sari	Indonesia	Business services, nec	..	0	2016
Bright Peak Consultants Pte	Singapore	PT Super Makmur	Indonesia	Plastics foam products	..	0	2016
Eversendai Corp Bhd	Malaysia	Technics Oil & Gas Ltd	Singapore	Oil and gas field services, nec	..	10.25	2016
Crope Group Pte Ltd	Singapore	MakanLuar	Indonesia	Eating places	..	100	2016
Investor Group	Singapore	Langkah Bahagia Sdn Bhd	Malaysia	Investors, nec	..	100	2016
Bioalpha Holdings Bhd	Malaysia	PT Herbal Malindo Makmur	Indonesia	Food preparations, nec	..	60	2016
Navis Capital Partners Ltd	Malaysia	Hanoi French Hospital	Viet Nam	General medical and surgical hospitals	..	0	2016
JWD Infologistics PCL	Thailand	Phnom Penh Special Economic Zone Plc	Cambodia	Water, sewer, pipeline and utility line construction	..	5.2	2016
Singapore	Singapore	Aurum Healthcare Sdn Bhd	Malaysia	Biological products	..	0	2016
Ong Kah Meng	Singapore	Rossano Joint Stock Co	Viet Nam	Household furniture, nec	..	35	2016
Entrp Investment Hldg Inc	Philippines	CII Bridges & Roads Investment JSC	Viet Nam	Lighting equipment, nec	..	15.23	2016
Kallang Ltd	Singapore	An Phat Plastic & Green Environment JSC	Viet Nam	Plastics, foil and coated paper bags	..	6.3	2016
Kallang Ltd	Singapore	An Phat Plastic & Green Environment JSC	Viet Nam	Plastics, foil and coated paper bags	..	6.3	2016
KV Asia Capital Pte Ltd	Singapore	TF Value-Mart Sdn Bhd	Malaysia	Grocery stores	..	0	2016
Johor Corp	Malaysia	Tempirai Palm Resources PT	Indonesia	Forest nurseries and forest products	..	95	2016

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Annex table 1.3. Intra-ASEAN M&A transactions, 2016–2017 (Selected cases) (Concluded)

Ultimate acquiring company	Ultimate acquiring nation	Target company	Target nation	Target industry	Value (\$ Million)	Shares acquired	Year
Johor Corp	Malaysia	Rambang Agro Jaya PT	Indonesia	Forest nurseries and forest products	..	95	2016
CapitalLand Ltd	Singapore	Twin Peaks Developments Ltd	Viet Nam	Land subdividers and developers	..	100	2016
Manhattan Resources Ltd	Singapore	Kariangau Power PT	Indonesia	Bituminous coal and lignite surface mining	..	92.18	2016
Mercurial Capital Ltd	Singapore	Digiland (Thailand) Ltd	Thailand	Electronic parts and equipment, nec	..	100	2016
Kim Teck Leong Pte Ltd	Singapore	KTL Offshore Services (Malaysia) Sdn Bhd	Malaysia	Crude petroleum and natural gas	..	100	2016
Serial System Ltd	Singapore	Hydra & Thermal International (Cambodia) Co Ltd	Cambodia	Metal stampings, nec	..	100	2016
Employees Provident Fund Board	Malaysia	CIMB-Trustcapital Australia Office Fund No 2 LP	Singapore	Investment offices, nec	..	13.7	2016
TCC Holding Co Ltd	Thailand	C-Distribution Asia Pte Ltd	Singapore	Investors, nec	..	100	2016
Singapore	Singapore	Kumho Asiana Plaza Saigon Co	Viet Nam	Hotels and motels	..	100	2016
Electricity Generating PCL	Thailand	Masinioc Power Partners Co Ltd	Philippines	Electric services	..	8.05	2016
Encore International Ltd	Indonesia	ConocoPhillips Singapore Operations Pte Ltd	Singapore	Crude petroleum and natural gas	..	100	2016
KFit Holdings Pte Ltd	Singapore	Groupon Sdn Bhd	Malaysia	Information retrieval services	..	100	2016
Singha Corp Co Ltd	Thailand	Masan Brewery Co Ltd	Viet Nam	Malt beverages	..	33.3	2016
Navis Invest Partners (Asia)	Malaysia	PT Classic Stripes Indonesia	Indonesia	Special industry machinery, nec	..	100	2016
Pansar Bhd	Malaysia	Pansar Singapore Pte Ltd	Singapore	Lumber and other building materials dealers	..	100	2017
Bangchak Petroleum PCL	Thailand	PetroWind Energy Inc	Philippines	Crude petroleum and natural gas	..	40	2017
Keppel Corp Ltd	Singapore	Keppel Land Watco II Co Ltd	Viet Nam	Land subdividers and developers	..	8.2	2017
Keppel Corp Ltd	Singapore	Keppel Land Watco III Co Ltd	Viet Nam	Land subdividers and developers	..	8.2	2017
GIC Pte Ltd	Singapore	Mega Khatulistiwa Propertindo PT	Indonesia	Investors, nec	..	11.6	2017
ABR Holdings Ltd	Singapore	Permai Puncakmas Sdn Bhd	Malaysia	Investors, nec	..	100	2017
Keppel Corp Ltd	Singapore	Keppel Land Watco IV Co Ltd	Viet Nam	Land subdividers and developers	..	8.2	2017
Keppel Corp Ltd	Singapore	Keppel Land Watco V Co Ltd	Viet Nam	Land subdividers and developers	..	8.2	2017
Kim Teck Leong Pte Ltd	Singapore	PT KTL Offshore Indonesia	Indonesia	Business services, nec	..	35	2017
Health Mgmt Intl Ltd	Singapore	Regency Specialist Hospital Sdn Bhd	Malaysia	General medical and surgical hospitals	..	39.2	2017
Ayala Corp	Philippines	Chevron Pacific Indonesia PT - Geothermal Assets	Indonesia	Electric services	..	100	2017

Source: UNCTAD M&A database.

Annex table 2.1. EU cross-border M&A purchases in ASEAN, 2012–2017 (Selected cases)

Year	Ultimate acquiring company	Target nation	Target company	Location	Target industry	Value (\$ millions)	Shares owned (%)
2012	L'Arche Green (Heineken International BV)	Netherlands	Asia-Pacific Breweries	Singapore	Beverages	4,337	81.6
2016	CMA CGM	France	Neptune Orient Lines	Singapore	Transport	2,421	100
2013	L'Arche Green (Heineken International BV)	Netherlands	Asia-Pacific Breweries	Singapore	Beverages	2,009	100
2012	Perenco	France	ConocoPhillips Co Oil & Natural Gas Assets	Viet Nam	Oil and gas	1,290	100
2017	Donata Holdings	Netherlands	Super Group	Singapore	Food and beverages	1,047	100
2017	ams AG	Austria	Heptagon Advanced Micro-Optics	Singapore	Semiconductors	881	100
2013	Augment Investments	Cyprus	Bever Pharmaceutical	Singapore	Pharmaceutical	590	100
2013	Prudential	United Kingdom	Thanachart Life Assurance	Thailand	Insurance	568	100
2013	CVC Capital Partners	Luxembourg	QSR Brands	Malaysia	Restaurants	416	100
2012	FrieslandCampina UA	Netherlands	Alaska Milk	Philippines	Dairy products	302	68.8
2013	CVC Capital Partners Ltd	Luxembourg	SPI Global Solutions	Philippines	IT Services	300	80
2013	Investor Group	United Kingdom, Sweden and Belgium	Ecart Services Malaysia	Malaysia	E-commerce	250	...
2014	Standard Chartered	United Kingdom	PT Astra Sedaya Finance	Indonesia	Finance	206	25
2016	CVC Capital Partners	Luxembourg	Siloam International Hospitals	Indonesia	Hospitals	167	15
2017	SPEV	Belgium	Agro Muko	Indonesia	Plantation	144	95
2014	Senior	United Kingdom	UPECA Technologies	Malaysia	Manufacturing	127	100
2012	UniCredit	Italy	Latexx Partners	Malaysia	Rubber latex manufacturing	123	100
2014	Wirecard	Germany	PT Aprisma Indonesia	Indonesia	Software solutions	120	100
2015	Berlinda International	Netherlands	Carnarvon Petroleum -Thailand Assets	Thailand	Petroleum	58	20
2014	Carl Bennet	Sweden	Mentor Media	Singapore	Publishing	48	60
2012	Deutsche Telekom	Germany	PropertyGuru Group	Singapore	Information retrieval services	47	...
2014	Essentra	United Kingdom	Abric Bhd - Undisclosed subsidiaries	Malaysia	Gaskets, packing, and sealing devices	45	100
2016	Haydale Graphene Industries	United Kingdom	Innophene Co	Thailand	Chemicals and chemical preparations, nec	42	100
2016	Standard Chartered	United Kingdom	N Kid Corp	Viet Nam	Amusement and recreation services	40	...
2014	Standard Chartered	United Kingdom	Golden Gate Trade Services JSC	Viet Nam	Eating places	35	...
2017	Valeo	France	Precico Electronics	Malaysia	Manufacturing	29	100
2015	Braas Monier Building Group	Luxembourg	Golden Clay Industries	Malaysia	Clay refractories	28	100
2013	SHV Holdings	Netherlands	Siam Makro	Thailand	Grocery stores	26	55
2012	Grupo Pkolin	Spain	Dunlopillo Holdings	Malaysia	Forest nurseries and gathering of forest products	24	100
2013	Tarsus Group	United Kingdom	Infrastructure Asia	Indonesia	Business services, nec	23	100
2012	Diageo	United Kingdom	Hanoi Liquor JSC (HALICO)	Viet Nam	Distilled and blended liquors	22	45.7
2016	Gebr Heinemann	Germany	DFZ Capital	Malaysia	Real estate agents and managers	22	10
2016	Cie de Saint-Gobain	France	Emix Industry	Malaysia	Fabricated structural metal	17	100
2012	Pearson	United Kingdom	Efficient English Services	Indonesia	Investors, nec	16	100

Source: UNCTAD M&A database.

Annex table 3.1. Cross-border M&As by Indian companies in ASEAN, 2010–2016 (Selected cases)

Year	Ultimate acquiring company	Target company	Target nation	Target industry	Value (\$ millions)	Share (%)
2010	Fortis Healthcare Holdings	Parkway Holdings	Singapore	General medical and surgical hospitals	685	23
2010	One97 Communications	tenCube	Singapore	Prepackaged software	..	25
2010	Essar Global	Aries Coal Mines	Indonesia	Bituminous coal and lignite surface mining	148	100
2010	JBF Industries	JBF Global	Singapore	Yarn spinning mills	60	89
2010	Godrej Consumer Products	Megasari Makmur	Indonesia	Specialty cleaning and polishing	..	100
2010	JBF Industries	JBF Global	Singapore	Yarn spinning mills	104	100
2010	Mercator Lines	Target Ship Management	Singapore	Water transportation services, nec	..	81
2011	Marico	International Consumer Products	Viet Nam	Perfumes, personal care products	..	85
2011	Monnet Ispat & Energy	Sarwa Sembada Karya Bumi	Indonesia	Bituminous coal and lignite surface mining	24	100
2011	Surana Industries	Surana Mines & Minerals	Singapore	Copper ores	12	100
2011	Sicagen India	Wilson Cables	Singapore	Miscellaneous fabricated wire products	..	100
2011	Indian Metals & Ferro Alloys	Undisclosed coal mining company	Indonesia	Bituminous coal and lignite surface mining	9	70
2011	Fortis Healthcare Holdings	Hoan My Medical Corp	Viet Nam	General medical and surgical hospitals	64	65
2011	The India Cements	Undisclosed coal mine, Indonesia	Indonesia	Bituminous coal and lignite surface mining	20	100
2011	Fortis Healthcare Holdings	Adam Road Hospital	Singapore	Psychiatric hospitals	26	100
2011	Mercator Lines	Undisclosed coal mines, Indonesia	Indonesia	Bituminous coal and lignite surface mining	30	50
2012	Aanjaneya Lifecare	Eros Pharmachem	Singapore	Pharmaceutical preparations	..	90
2012	TRF	York Transport Equipment(Asia)	Singapore	Motor vehicle parts and accessories	15	100
2012	Readymade Steel India	KH Foges	Singapore	Engineering services	..	90
2012	Tata Sons	Baramulti Sukses Sarana	Indonesia	Bituminous coal and lignite surface mining	..	26
2012	Mahindra & Mahindra	Infinity Hospitality Group	Thailand	Hotels and motels	..	49
2012	MakeMyTrip India	Hotel Travel Group	Thailand	Business services, nec	25	100
2012	Fortis Healthcare Holdings	RadLink-Asia	Singapore	Medical laboratories	50	85
2012	Blue Star	Infostack Solutions	Singapore	Computer facilities management services	..	100
2012	Larsen & Toubro	Henikwon Corp	Malaysia	Electrical industrial apparatus, nec	..	100
2012	Fortis Healthcare Holdings	Fortis Healthcare International	Singapore	General medical and surgical hospitals	665	100
2013	Micro Labs	Undisclosed pharmaceutical manufacturing company	Indonesia	Pharmaceutical preparations	..	100
2013	VLCC Healthcare	Global Vantage Innovative Group	Singapore	Perfumes, personal care products	..	80
2013	MEMG Intl India	Arunamari Speciality Medical Centre	Malaysia	General medical and surgical hospitals	10	100
2013	Shriram Group	Monarch Insurance	Philippines	Fire, marine and casualty insurance	..	61
2013	R Systems International	Nikko Computer - ERP Business	Singapore	Computer facilities management services	..	100
2013	McLeod Russel India	A tea processing factory	Viet Nam	Food preparations, nec	3	100
2013	Readymade Steel India	PSL Engineering	Singapore	Engineering services	12	100
2013	Shriram Group	Shriram EPC(Singapore)	Singapore	Engineering services	27	100
2013	Asian Paints	Berger International	Singapore	Paints, varnishes, lacquers	5	100
2014	Altruist Technologies	Bubble Motion	Singapore	Prepackaged Software	..	100
2014	Essar Global	Symphony BPO Solutions	Malaysia	Business services, nec	7	100
2015	Kalaari Capital Advisors	Paragon9 Consulting Services	Singapore	Business consulting services, nec	2	30
2015	R Systems International	IBIZCS Group	Singapore	Computer facilities management services	6	100
2015	Adani Enterprises	Chemoil Adani	Singapore	Natural gas distribution	..	100
2016	Fortis Healthcare Holdings	Religare Health Trustee Manager	Singapore	Health and allied services, nec	15	100
2016	Kridhan Infra	Swee Hong	Singapore	Industrial buildings and warehouses	..	50
2016	Indiabulls Real Estate	Indiabulls Properties Investment Trust	Singapore	Operators of nonresidential buildings	9	55
2016	Aditya Birla Management Corp	Thai Carbon Black	Thailand	Carbon black	15	28

Source: UNCTAD M&A database.

Annex table 4.1. Indonesia: registered industrial estates by province, 2017 (Selected cases)

Name	Location	Province	Area (ha)	Developer	No. of companies
Kawasan Industri & Pergudangan Cikupamas	Cikupa, Tangerang	Banten	250	PT Mitratangerang Bhumimas	136
Millenium Industrial Estate	Cikupa, Tangerang	Banten	1,800	PT Bumi Citra Permai	320
Taman Tekno BSD	Tangerang	Banten	200	PT Bumi Serpong Damai	664
Kawasan Industri Terpadu MGM Cikande	Cikande, Serang	Banten	662	PT Mustika Lodan	..
ModernCikande Industrial Estate	Cikande, Serang	Banten	2,175	PT Modern Industrial Estate	210
Kawasan Industri Terpadu Wilmar	Serang	Banten	1,748	Wilmar Group	..
Jababeka Industrial Estate – Cilegon	Keramat Watu, Cilegon	Banten	1,000	PT Jababeka	..
Krakatau Industrial Estate Cilegon	Cilegon	Banten	705	PT Krakatau Industrial Estate Cilegon	> 90
Java Integrated Industrial & Port Estate	Gresik	East Java	3,000	PT Berkah Kawasan Manyar Sejahtera	..
Kawasan Industri Gresik	Gresik	East Java	140	PT Kawasan Industri Gresik	> 110
Kawasan Industri Tuban	Tuban	East Java	227	PT Kawasan Industri Gresik	3
Ngoro Industrial Park	Ngoro, Mojokerto	East Java	550	PT Dharmala RSEA Industrial Estate/PT Intiland Sejahtera	85
Surabaya Industrial Estate Rungkut	Pasuruan and Surabayan	East Java	895	PT Surabaya Industrial Estate Rungkut	441
Kawasan Industri Maspion	Gresik	East Java	1,000	PT Maspion Industrial Estate	34
Pergudangan dan Industry Safe & Lock	Sidoarjo	East Java	197	PT Makmur Berkah Amanda	..
Bekasi International Industrial Estate	Cikarang, Bekasi	West Java	200	PT Hyundai Inti Development	105
East Jakarta Industrial Park	Lemahabang, Bekasi	West Java	320	PT East Jakarta Industrial Park	102
Greenland International Industrial City	Bekasi	West Java	1,430	PT Puradelta Lestari	80
Jababeka Industrial Estate-Cikarang	Cikarang, Bekasi	West Java	1,840	PT Jababeka	1,650
Kawasan Industri Gobel	Cibitung	West Java	54	PT Gobel Dharma Nusantara	14
Kawasan Industri Terpadu Indonesia China	Bekasi	West Java	200	PT Kawasan Industri Terpadu Indonesia China	25
Lippo Cikarang	Cikarang Bekasi	West Java	1,227	PT Lippo Cikarang	820
MM2100 Industrial Town (MM2100 BFIE)	Cibitung, Bekasi	West Java	300	PT Bekasi Fajar Industrial Estate	176
MM2100 Industrial Town (MM2100 MMID)	Cibitung, Bekasi	West Java	805	PT Megapolis Manunggal Ind Dev	188
Marunda Centre (Kawasan Industri & Pergudangan Marunda)	Bekasi	West Java	450	PT Tegar Primajaya, PT Multikarya Hasilprima	..
Artha Industrial Hill (AIH)	Teluk Jembe, Karawang	West Java	390	PT Daya Kencana, PT Karawang Cipta Persada	..
Bukit Indah Industrial Park	Kalihurip, Karawang	West Java	700	PT Indotaisei Indah Development	33
GT Tech Park @Karawang	Teluk Jembe	West Java	400	PT Bintang Puspita Dwikarya	..
Karawang International Industrial City	Karawang Barat	West Java	1,200	PT Maligi Permata Industrial Estate, PT Harapan Anang Bakrie & Sons, PT Karawang Tata Bina	139
Kawasan Industri Mitrakarawang	Karawang Timur	West Java	500	PT Mitra Karawangjaya	69
Kujang Industrial Estate	Kalihurip, Karawang	West Java	110	PT Kawasan Industri Kujang Cikampek	16
Suryacipta City of Industry	Karawang Timur	West Java	1,400	PT Suryacipta Swadaya	144
Podomoro Industrial Park	Karawang Barat	West Java	542	PT Buana Makmur Indah	..
Kota Bukit Indah Industrial City	Kalihurip, KBI	West Java	1,425	PT Bestand Pertiwi	61
Kawasan Industri Lion	Campaka, Purwakarta	West Java	50	PT Singa Purwakarta Jaya	..
Kawasan Industri Sentul	Sentul Bogor	West Java	100	PT Bogorindo Cemerlang	65
Cibinong Centre Industrial Estate	Citeureup, Bogor	West Java	140	PT Cibinong Centre Industrial Estate	26
Kawasan Industri Rancaekek	Sumedang	West Java	200	PT Dwipapuri Abadi	35
Kawasan Industri Dumai	Dumai, Riau	Riau	1,000	PT Kawasan Industri Duma	11
Kawasan Industri Tanjung Buton	Siak, Riau	Riau	590	PT Kawasan Industri Tanjung Buton	..

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Annex table 4.1. Indonesia: registered industrial estates by province, 2017 (Selected cases) (Concluded)

Name	Location	Province	Area (ha)	Developer	No. of companies
Padang Industrial Park	Padang	West Sumatra	616	PT Padang Industrial Park	8
Kawasan Industri Palu	Palu	Central Sulawesi	1,500	Pemerintah Kota Palu	..
Indonesia Morowali Industrial Park	Morowali	Central Sulawesi	Over 2,000	PT Indonesia Morowali Industrial Park between Tsinghan Group (China), Bintang Eight Group (Indonesia)	10
Kawasan Industri Suge	Belitung, Bangka Belitung	Bangka Belitung	1,415	BUMD Kabupaten Belitung	..
Candi Industrial Estate	Semarang	Central Java	500	PT Indo Perkasa Usahatama	46
Jawatengah Land Industrial Park Sayung	Semarang	Central Java	300	PT Jawa Tengah Lahan Andalan	..
Kawasan Industri Turboyo Semarang	Semarang	Central Java	300	PT Merdeka Wirastama	182
Kawasan Industri Tugu Wijayakusuma	Semarang	Central Java	250	PT Kawasan Industri Wijayakusuma	62
Kawasan Industri Wonogiri	Wonogiri	Central Java	400	PT Kawasan Industri Wonogiri	..
LIK Bugangan Baru Semarang	Semarang	Central Java	105	PT Tanah Makmur	674
Taman Industri BSB	Semarang	Central Java	120	PT Karyadeka Alam Lestari	18
Tanjung Emas Export Processing Zone	Semarang	Central Java	101	PT Lamicitra Nusantara	12
Cilandak Commercial Estate	Cilandak South Jakarta	Jakarta Province	11	PT Bhumyamca Sekawan	88
Jakarta Industrial Estate Pulogadung	Pulogadung, East Jakarta	Jakarta Province	500	PT Jakarta Industrial Estate Pulogadung	359
Kawasan Berikat Nusantara	Cilincing, North Jakarta	Jakarta Province	578	PT Kawasan Berikat Nusantara	124
Batamindo Industrial Park	Batam, Riau Islands	Riau Islands	500	PT Batamindo Investment Cakrawala	69
Bintang Industrial Park	Batam, Riau Islands	Riau Islands	70	PT Bintang Propertindo	57
Kabil Integrated Industrial Estate	Batam, Riau Islands	Riau Islands	520	PT Kabil Integrated Industrial Estate	48
Panbil Industrial Estate	Batam, Riau Islands	Riau Islands	200	PT Nusantara Properti Panbil	24
Puri Industrial Park 2000	Batam, Riau Islands	Riau Islands	24	PT Teluk Pantaian Indah	32
Tunas Industrial Estate	Batam, Riau Islands	Riau Islands	64	PT Tritunas Bangun Perkasa	64
Union Industrial Park	Batam, Riau Islands	Riau Islands	23	PT Union Batam Abadi	40
West Point Maritime Industrial Park	Batam, Riau Islands	Riau Islands	75	PT Batam Sentralindo	..
Bintan Industrial Estate	Lobam, Bintan	Riau Islands	273	PT Bintan Inti Industrial Estate	19
Kawasan Industri Medan	Medan	North Sumatra	960	PT Kawasan Industri Medan	335
Medan Star Industrial Estate	Tanjung Morawa	North Sumatra	103	PT Tamoratama Prakarsa	14
Pulahan Seruai Industrial Estate	Medan	North Sumatra	650	PT Lamhotma	..
Kawasan Industri Makassar	Makassar	South Sulawesi	703	PT Kawasan Industri Makassar	260
Kawasan Kota Industri Terpadu Takalar	Makassar	South Sulawesi	5,000	Takalar Land	..
Kaltim Industrial Estate	Bontang	East Kalimantan	246	PT Kaltim Industrial Estate	6
Kawasan Industri Kariangau Balikpapan	Balikpapan	East Kalimantan	300	Perusda Melati Bhakti Satya	..
Delma Industrial Park	Bulungan	East Kalimantan	400	PT Kawasan Industri Delma Mandiri	..
Muara Wahau Industrial Estate	Muara Wahau, East Kutai Regency	East Kalimantan	400	PT Etam Sukses Sejahtera	..

Source: BKPM and HKI (Indonesian Industrial Estates Association) websites.

Annex table 4.2. Malaysia: free industrial zones (Selected cases)

No.	Free industrial zone	Zone authority	Approval year
1	Bayan Lepas I	Majlis Perbandaran Pulau Pinang	1971
2	Sungai Way	Majlis Bandaraya Petaling Jaya	1972
3	Batu Berendam Fasa I	Majlis Bandaraya Melaka Bersejarah	1973
4	Tanjung Kling	Majlis Bandaraya Melaka Bersejarah	1974
5	Bayan Lepas II	Majlis Perbandaran Pulau Pinang	1974
6	Bayan Lepas III	Majlis Perbandaran Pulau Pinang	1974
7	Seberang Perai	Majlis Perbandaran Seberang Perai	1974
8	Batu Berendam Fasa II	Majlis Bandaraya Melaka Bersejarah	1975
9	Hulu Klang	Majlis Perbandaran Ampang Jaya	1978
10	Teluk Panglima Garang	Majlis Daerah Kuala Langat	1980
11	Pelabuhan Johor, Pasir Gudang	Johor Port Bhd	1984
12	Bayan Lepas IV	Majlis Perbandaran Pulau Pinang	1988
13	Batu Berendam Fasa III	Majlis Bandaraya Melaka Bersejarah	1989
14	Jelapang II	Majlis Bandaraya Ipoh	1989
15	Kinta	Majlis Bandaraya Ipoh	1992
16	Sama Jaya, Kuching	Kementerian Pembangunan Perindustrian Sarawak	1993
17	Port Klang Free Zone	Lembaga Pelabuhan Klang	2005
18	Pelabuhan Tanjung Pelepas, Johor	Pelabuhan Tanjung Pelepas Sdn Bhd	2006
19	Senai Airport City, Senai	Senai Airport Terminal Services Sdn Bhd	2009
20	Pusat Petrokimia dan Industri Maritim Tanjung Bin, Pontian, Johor	Johor Port Bhd	2012
21	Senai Airport City Fasa Satu	Senai Airport City Services Sdn Bhd	2015

Source: ASEAN Investment Report 2017 research, based on Malaysian Investment Development Authority.

Annex table 4.3. Malaysia: free commercial zones (Selected cases)

No.	Free commercial zone	Zone authority	Approval year
1	Pelabuhan Johor, Pasir Gudang	Johor Port Bhd	1984
2	Pengkalan Kubor	Majlis Daerah Tumpat	1989
3	Pelabuhan Utara, Pelabuhan Klang	Lembaga Pelabuhan Klang	1993
4	Pelabuhan Barat, Pelabuhan Klang	Lembaga Pelabuhan Klang	1996
5	Deep Water Wharf, Butterworth	Lembaga Pelabuhan Pulau Pinang	1996
6	Bukit Kayu Hitam	Majlis Daerah Kubang Pasu	1996
7	Stulang Laut	Majlis Bandaraya Johor Bahru	1997
8	Pelabuhan Tanjung Pelepas, Johor	Pelabuhan Tanjung Pelepas Sdn Bhd	1999
9	Rantau Panjang	Majlis Daerah Pasir Mas	2002
10	KLIA	Malaysia Airport Bhd	1998
11	Bayan Lepas International Airport	Malaysia Airport Bhd	2003
12	Kompleks Kargo Udara Bayan Lepas	Malaysia Airport Bhd	2003
13	Pelabuhan Selatan, Pelabuhan Klang	Lembaga Pelabuhan Klang	2004
14	Port Klang Free Zone	Lembaga Pelabuhan Klang	2005
15	MILS Logistic Hub, Pelabuhan Klang	MISC Integrated Logistic Sdn Bhd	2007
16	Tasik Kenyir	Lembaga Kemajuan Terengganu Tengah	2017

Source: ASEAN Investment Report 2017 research, based on Malaysian Investment Development Authority.

Annex table 4.4. Thilawa SEZ: registered companies, selected cases, as of 31 March 2017

Year	Company	Nationality	Type of business	Product/service	Benefits for Myanmar
2014	Koyorad Myanmar Corporation Co, Ltd	Japan (through Singapore)	Manufacturing	Radiators	100% export-oriented and labour-intensive
2014	Lu Thai (Myanmar) Co Ltd	China	Manufacturing	High-grade yarn-dyed shirts	100% export-oriented and labour-intensive
2014	Thilawa Cement and Building Materials Ltd	France	Service	Storage, packaging and distribution of cement	Beneficial for the construction sector
2014	Ball Asia Pacific (Yangon) Metal Container Ltd	United States (through Singapore)	Manufacturing	Steel and aluminium cans	Import substitution
2014	Foster Electric (Thilawa) Co, Ltd	Japan (through Singapore)	Manufacturing	Speakers, headphones, audio electronic equipment	100% export-oriented and labour-intensive
2014	Indorama Ventures Packaging (Myanmar) Limited	Thailand (through Singapore)	Manufacturing	Plastics (PET preform and HDPE closure)	Import substitution
2014	Golden Dowa Eco-System	Japan	Service	Industrial waste management	Environmental conservation
2015	Showa Glove	Japan	Manufacturing	Cut-make-pack of knitting gloves	100% export-oriented
2015	Atsumi	Japan	Manufacturing	Cut-make-pack of women's underwear	100% export-oriented and labour-intensive
2015	Cute Myanmar Thilawa	Japan	Manufacturing	Stuffed toys	100 per cent export-oriented
2015	Oji Myanmar Packaging	Japan (through Malaysia)	Manufacturing and services/trading	Corrugated boxes and wholesale of pulp and paper products, packaging materials	Essential packaging materials for other manufacturers
2015	Guston Amava	Hong Kong (China)	Manufacturing	Cut-make-pack of winter clothing	100% export-oriented and labour-intensive
2015	Unimit Engineering	Thailand (through Hong Kong-China)	Manufacturing	Pressure vessels and machinery parts	Import substitution. New product in Myanmar
2015	Acecook	Japan	Manufacturing / services	Instant noodles	Import substitution
2015	Myanmar Wacoal	Japan	Manufacturing	Lingerie	80 per cent export-oriented
2015	Seiji (Myanmar)	Japan	Manufacturing	Garments and accessories	100 per cent export-oriented
2015	Velbon Myanmar	Japan	Manufacturing	Tripods for cameras	100 per cent export-oriented
2015	Standard Urai Paint	Thailand/Myanmar	Manufacturing	Paints for cameras	Import substitution
2015	Pacific-PSP Syntech	Thailand/Myanmar	Manufacturing	Finished lubricant and grease	Import substitution
2015	Myarnak	Japan	Manufacturing	Automotive parts	100 per cent export-oriented
2015	Toyotsu Paragon	Japan/Myanmar	Manufacturing	Materials for detergent	Import substitution
2015	Matsunaga (Myanmar)	Japan	Manufacturing	Wheelchairs	100 per cent export-oriented
2015	Zifam Pyrex Myanmar	Australia/Myanmar	Manufacturing	Medicine	Import substitution
2015	Daizen Myanmar	Japan	Services	Logistics services	International logistics services
2015	YTL Cement	Malaysia	Manufacturing	Cement products	Construction sector development
2015	Suzuki Thilawa Motor	Japan	Manufacturing	Automobile	Automobile industry development
2015	Boxpak (Myanmar)	Malaysia	Manufacturing	Paper boxes and cartons	Packaging standard development
2015	Kianjoo Can (Myanmar)	Malaysia	Manufacturing	Tin and aluminium cans	Substitution of imports for beverage industries
2015	Fujitrans Logistics (Myanmar)	Japan/Thailand	Services	Logistics services	Logistics sector development
2015	A and N Foods (Myanmar)	Thailand	Manufacturing	Frozen surimi-based processed seafood products	Export-oriented
2016	Marubeni Myanmar Fertilizer	Japan/Myanmar	Manufacturing/processing	Slag and foliar fertilizer	Construction sector development
2016	CJ Foods Myanmar	Republic of Korea	Manufacturing	Edible oil	First modern edible manufacturing project in Myanmar
2016	Myanmar Ajinomoto Foods	Thailand	Services/ Trading	Wholesale of food seasoning	Food seasonings for Myanmar market
2016	Konoike Myanmar	Japan	Logistics services	Services and logistics	Logistics services
2016	Nippon Kouatsu Electric Myanmar	Japan	Manufacturing	High-voltage fuses, low-voltage fuses and fuse pipes	100% export-oriented
2016	Yakult Myanmar	Japan	Manufacturing	Fermented milk drinks	Import substitution; new technology in Myanmar
2016	Yojin Myanmar	Singapore	Manufacturing	Portland cement	Domestic market oriented
2016	Kim Pai Printing and Packaging	Thailand	Manufacturing	Paper cartons, packaging, paper labels, promotional products and calendars	Domestic market oriented; new products in Myanmar
2016	Fujifilm Myanmar Investment Co	Japan	Services	Medical diagnosis equipment, graphic system, photo imaging products, digital cameras	New products in Myanmar
2016	TOA Paint	Thailand	Manufacturing	Decorative and industrial coating paint	Domestic market oriented; import substitution in Myanmar
2017	Sahadharawat Can	Thailand	Manufacturing	Metal packaging and cans	Domestic market oriented; new products in Myanmar

Source: Thilawa SEZ MC (2017), "List of Approved Investors" (www.myanmarthilawa.gov.mm/list-investors).

Annex table 4.5. Singapore: Industrial estates (Selected cases)

Industrial estate	Developer or owner
Airport Logistics Park of Singapore	JTC
Alexandra Distripark	Private
Alexandra Village Industrial Estate	Housing and Development Board
Aljunied Industrial Estate	Housing and Development Board
AMK AutoPoint	Housing and Development Board
AMK Tech I	Housing and Development Board
AMK Tech II	Housing and Development Board
AMK TechLink	Housing and Development Board
Ang Mo Kio Industrial Park 1	Housing and Development Board
Ang Mo Kio Industrial Park 2	Housing and Development Board
AutoBay@Kaki Bukit	Housing and Development Board
Bedok Industrial Park E	Housing and Development Board
Biopolis I one-north	JTC
Braddell Tech	Housing and Development Board
Bukit Batok Industrial Estate Park A	Housing and Development Board
Changi Business Park	JTC, Ascendas-Singbridge
CleanTech Park	JTC
Defu Industrial Estate	Housing and Development Board
Depot Lane Industrial Estate	Housing and Development Board
EASTech	Housing and Development Board
EASTLink	Housing and Development Board
Eunos Industrial Estate	Housing and Development Board
Fusionopolis	JTC
Geylang Bahru Industrial Estate	Housing and Development Board
Geylang East Industrial Estate	Housing and Development Board
Henderson Industrial Park	Private
International Business Park	JTC, Ascendas-Singbridge
Jalan Pemimpin Industrial Estate	Private
Jurong Industrial Estate	JTC
Jurong Island	JTC
Kaki Bukit AutoHub	Housing and Development Board
Kampong Ubi Industrial Estate	Housing and Development Board
KB-1	Housing and Development Board
Keppel Distripark	PSA Singapore
Kolam Ayer Industrial Estate	Private sector
Kranji Industrial Estate	Private sector
Lim Chu Kang Agrotechnology Park	Agrifood and Veterinary Authority of Singapore
LogisParks	JTC
Loyang Agrotechnology Park	Agrifood and Veterinary Authority of Singapore
Loyang Industrial Estate	Private sector
Mandai Agrotechnology Park	Agrifood and Veterinary Authority of Singapore
Mandai Industrial Estate	Private sector
Marsiling Industrial Estate	Housing and Development Board
Mediapolis	JTC
MedTech Park	JTC
Murai Agrotechnology Park	Agrifood and Veterinary Authority of Singapore
Nee Soon Agrotechnology Park	Agrifood and Veterinary Authority of Singapore
North Coast Wafer Fab Park	JTC
Offshore Marine Centre	JTC
One-north	JTC and Ascendas-Singbridge
Oxley BizHub	Private sector
Pasir Panjang Distripark	Private sector
Pasir Ris Wafer Fabrication Park	JTC
Seletar Aerospace Park	JTC
Senoko Industrial Estate	Private sector
Sin Ming AutoCare	Housing and Development Board

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Annex table 4.5. Singapore: Industrial estates (Selected cases) (Concluded)

Industrial estate	Developer or owner
Sin Ming AutoCity	Housing and Development Board
Sin Ming Industrial Estate	Housing and Development Board
Sindo Industrial Estate	Private sector
Singapore Science Park	Ascendas-Singbridge
Singapore Science Park II	Ascendas-Singbridge
SkyTech	Housing and Development Board
Sungei Kadut Industrial Estate	Private sector
Tampines North Wafer Fabrication Park	JTC
TeleTech Park	Ascendas-Singbridge
Toa Payoh Industrial Park	Housing and Development Board
Tuas Biomedical Park	JTC
UbiPlex I	Housing and Development Board
Wafer Fab and Advanced Display Parks	JTC
Woodlands Industrial Park E	Housing and Development Board
Woodlands Wafer Fabrication Park	JTC
Yishun Industrial Park A	Housing and Development Board
YS-ONE	Housing and Development Board

Sources: JTC, Housing and Development Board, Ascendas-Singbridge and websites of private developers.

Annex table 4.6. Thailand: industrial estates

Industrial estate	Total area (ha)	Province	Developer and operator	No. of factories	Status
Bangchan Industrial Estate	107	Bangkok	IEAT	87	Operating
Bangpoo Industrial Estate *	873	Samut Prakan	IEAT	455	Operating
Lad Krabang Industrial Estate *	409	Bangkok	IEAT	243	Operating
Laem Chabang Industrial Estate *	569	Chonburi	IEAT	191	Operating
Northern Region Industrial Estate *	286	Lamphun	IEAT	76	Operating
Map Ta Phut Industrial Estate	2,101	Rayong	IEAT	79	Operating
Bangplee Industrial Estate	161	Samut Prakan	IEAT	151	Operating
Samut Sakhon Industrial Estate	233	Samut Sakhon	IEAT	106	Operating
Phichit Industrial Estate *	334	Phichit	IEAT	10	Operating
Southern Region Industrial Estate (Songkhla)*	360	Songkhla	IEAT	27	Operating
Kaeng Khoi Industrial Estate	92	Saraburi	IEAT	5	Operating
Nong Khae Industrial Estate	327	Saraburi	Private developer	36	Operating
Gemopolis Industrial Estate *	27	Bangkok	Private developer	181	Operating
Gemopolis Industrial Estate (Project 2)	7	Bangkok	Private developer	..	Under development
Bangpoo Industrial Estate (North)	122	Samut Prakan	Private developer	12	Operating
Asia Industrial Estate (Suvarnabhumi)	604	Samut Prakan	Private developer	25	Operating
Asia Industrial Estate	504	Rayong	Private developer	17	Operating
TFD Industrial Estate *	48	Chachoengsao	Private developer	33	Operating
TFD Industrial Estate 2	135	Chachoengsao	Private developer	..	Under development
Gateway City Industrial Estate *	829	Chachoengsao	Private developer	115	Operating
Wellgrow Industrial Estate	561	Chachoengsao	Private developer	167	Operating
Saha Rattana Nakorn Industrial Estate	231	Ayutthaya	Private developer	51	Operating
Bang Pa-in Industrial Estate *	316	Ayutthaya	Private developer	97	Operating
Hi-Tech Industrial Estate (Ban Wa) *	394	Ayutthaya	Private developer	140	Operating
Hi-Tech Kabin Industrial Estate	171	Prachinburi	Private developer	7	Operating
Ratchaburi Industrial Estate	202	Ratchaburi	Private developer	34	Operating
Sinsakhon Industrial Estate	250	Samut Sakhon	Private developer	108	Operating
Maharaj Nakorn Industrial Estate	22	Samut Sakhon	Private developer	2	Operating
Hemaraj Chonburi Industrial Estate *	557	Chonburi	Private developer	123	Operating
Hemaraj Chonburi Industrial Estate (Project 2)	101	Chonburi	Private developer	8	Operating
Hemaraj Eastern Industrial Estate (Map Ta Phut)	602	Rayong	Private developer	58	Operating
Eastern Seaboard Industrial Estate (Rayong)	1,411	Rayong	Private developer	278	Operating
Hemaraj Eastern Seaboard Industrial Estate	1,309	Rayong	Private developer	137	Operating
Hemaraj Eastern Seaboard 2 Industrial Estate	102	Rayong	Private developer	6	Operating
Hemaraj Eastern Seaboard 3 Industrial Estate	352	Rayong	Private developer	..	Under development
Hemaraj Eastern Seaboard 4 Industrial Estate	299	Rayong	Private developer	2	..
Hemaraj Rayong 36 Industrial Estate	197	Rayong	Private developer	..	Under development
Amata Nakorn Industrial Estate	2,805	Chonburi	Private developer	759	Operating
Amata Nakorn Industrial Estate (Project 2)	1,316	Chonburi	Private developer	..	Under development
Amata City Industrial Estate	2,314	Rayong	Private developer	331	Operating
Pinthong Industrial Estate	208	Chonburi	Private developer	152	Operating
Pinthong (Laem Chabang) Industrial Estate	163	Chonburi	Private developer	70	Operating
Pinthong Industrial Estate (Project 3)	250	Chonburi	Private developer	48	Operating
Pinthong Industrial Estate (Project 4)	104	Chonburi	Private developer	..	Under development
Pinthong Industrial Estate (Project 5)	236	Chonburi	Private developer	2	Operating
Ban Bueng Industrial Estate	278	Chonburi	Private developer	..	..
Yamato Industries Industrial Estate	110	Chonburi	Private developer	..	Under development
Padaeng Industrial Estate	86	Rayong	Private developer	3	Operating
Rayong Industrial Estate (Ban Khai)	336	Rayong	Private developer	..	Under development
Luckchai Rubber Industrial Estate	391	Rayong	Private developer	3	Operating
RIL Industrial Estate	271	Rayong	Private developer	8	Operating
Lamphun 2 Industrial Estate	59	Lamphun	Private developer	..	Operating
Nong Khai Industrial Estate	474	Nong Khai	Private developer	..	Under development
Udon Thani Industrial Estate	355	Udon Thani	Private developer	..	Under development

Source: IEAT.

* With free zone status.

Annex table 4.7. Viet Nam: distribution of industrial parks, by selected provinces and geographical zones

Province	Cumulative FDI inflows, June 2017 (\$ million)	Industrial parks
Northern part of the country (72)		
Ha Noi (13)	26,336.5	Phu Nghia 2, Nam Ha Noi (Hanssip), Soc Son, Dong Anh, Bac Thuong Tin, Phu Nghia 1, Thach That–Quoc Oai, Quang Minh, Ha Noi–Dai Tu, Sai Dong B, Sai Dong A, Nam Thang Long, Noi Bai
Hung Yen (8)	3,737.7	Minh Quang, Thang Long 2, TX Hung Yen, Minh Duc, Nhu Quynh B, Nhu Quynh A, Pho Noi Textile and Garment B, Pho Noi A
Hai Phong (4)	14,691.7	Dinh Vu–Cat Hai EZ, VSIP Hai Phong, Nam Cau Kien, Trang Due
Quang Ninh (7)	5,873.1	Van Don EZ, Mong Cai–Hai Ha EZ, Hai Ha, Dong Mai, Hai Yen, Viet Hung, Cai Lan
Hai Duong (13)	14,691.7	Nam Sach, Dai An expansion, Cong Hoa phase 2, Kim Thanh, Lai Vu, Tan Truong, Phu Thai, Nghia An, Hung Dao, Gia Tan, Doan Hong, Dai An, Cong Hoa phase 1
Bac Ninh (20)	15,591.9	Viet Nam–Japan 1, Tu Son, Que Vo 3, Que Vo 1 expansion, Hanaka, Dai Kim, Dai Dong–Hoan Son, VSIP Bac Ninh, Que Vo 2, Thuan Thanh 3, Thuan Thanh 2, Yen Phong 2D (Song Da), Yen Phong 2B (Song Da), Yen Phong 2 (Kinh Bac–Yen Phong), Gia Binh, Yen Phong 1 phase 2, Yen Phong 1 phase 1, Tien Son, Que Vo 1, Nam Son–Hap Linh
Vinh Phuc (7)	3,954.8	Binh Xuyen 1 expansion (phase 3), Kim Hoa, Son Loi (Binh Xuyen 1 phase 2), Ba Thien 2, Ba Thien 1, Khai Quang, Binh Xuyen 1
Total FDI in 72 parks	84,877.5	
Southern part of the country (146)		
Ho Chi Minh City (22)	41,679.6	Hoa Phu, Vinh Loc 3, Vinh Loc 1 expansion, Tan Binh expansion, Le Minh Xuan expansion, Linh Trung 1 EPZ, Hiep Phuoc phase 3 (Logistics), Hiep Phuoc phase 2, Cat Lai 2, Dong Nam, Hiep Phuoc phase 1, Binh Chieu, Tan Phu Trung, Phong Phu, Linh Trung 2 EPZ, Le Minh Xuan, Tan Binh, Tan Tao expansion, Tan Tao, Tan Thoi Hiep, Tay Bac Cu Chi, Vinh Loc 1
Binh Duong (35)	28,665.1	Mappletree, Tan Dinh, Nam Tan Uyen 2, My Phuoc 5–Bau Bang, My Phuoc 4–Thoi Hoa, My Phuoc 3, My Phuoc 2, Dat Cuoc, Ascendas–Protrade Singapore Tech Park (An Tay), Binh Duong, Rach Bap–An Dien, Tan Binh, An Phu, Phu Hoa, Binh Chuan, Binh An Textile, Mai Trung, Dong An 2, Dong An 1, My Phuoc 1, VSIP 2 expansion, VSIP 2, VSIP 1, Viet Huong 2, Viet Huong 1, Tan Dong Hiep B, Tan Dong Hiep A, Song Than 3, Song Than 2, Song Than 1, Phu Gia–VietRemax, Nam Tan Uyen 1, Kim Huy, Dai Dang, An Hoa
Vung Tau (15)	26,727.1	Con Dao EZ, Long Son, Dat Do, Phu My 3, Phu My 2 expansion, Phu My 2, Chau Duc, Phu My 1, My Xuan B1–Tien Hung, My Xuan B1–Dai Duong, My Xuan B1–Conac, My Xuan A2, My Xuan A, Dong Xuyen, Cai Mep
Nong Nai (30)	26,265.5	Nhon Trach 2–D2D, Loc An–Binh Son, Bien Hoa 2, Dau Giay, Xuan Loc, Thanh Phu, Tan Phu, Tam Phuoc, Song May phase 2, Song May phase 1, Ong Keo, Nhon Trach 6, Nhon Trach 5, Nhon Trach 3–Tin Nghia, Nhon Trach 2–Nhon Phu, Nhon Trach 2–Loc Khang, Nhon Trach 1, Long Binh–Loteco, Long Thanh, Long Khanh, Ho Nai 2, Ho Nai 1, Go Dau, Dinh Quan, Nhon Trach Textile, Bien Hoa 1, Giang Dien, Bau Xeo, An Phuoc, Amata
Tay Ninh (3)	4,914.0	Trang Bang, Linh Trung 3 EPZ, Phuoc Dong–Boi Loi
Binh Phuoc (16)	1,803.6	Viet Kieu, Tan Khai 2, Tan Khai 1, Dong Xoai 4, Dong Xoai 3, Dong Xoai 2, Chon Thanh 2, Tan Khai, Nam Dong Phu, Minh Thanh, Minh Hung–Korea phase 1, Minh Hung 3–Binh Long Rubber, Dong Xoai 1, Chon Thanh 1, Bac Dong Phu
Long An (25)	6,692.8	Phu An Thanh (Bac An Thanh), Duc Hoa 3–Thai Hoa, Xuyen A 2, Xuyen A 1, Vinh Loc 2, Thuan Dao expansion, Thuan Dao, Thanh Duc, Tan Thanh 2, Tan Thanh 1, Tan Kim expansion, Tan Kim, Tan Duc, Long Hiep (Phuc Long), Tan Buu, Nhut Chanh expansion, Nhut Chanh, Nam Tan Lap, Long Hau, Duc Hoa Dong, Duc Hoa 1 expansion, Duc Hoa 1, Cau Tram, Dong Nam A (Bac Tan Tap), An Nhut Tan 1
Total FDI in 146 parks	136,747.7	
Middle (27)		
Thua Thien Hue (4)	2,377.7	Chan May - Lang Co, Phong Dien, Tu Ha, Phu Bai
Da Nang (6)	4,487.0	Hoa Khanh expansion, Da Nang Seafood Service, Da Nang (An Don), Hoa Khanh, Lien Chieu, Hoa Cam
Quang Nam (8)	5,841.6	Chu Lai EZ, Tay An, Dong Thang Binh, Trang Nhat, Dong Que Son, Dien Nam - Dien Ngoc, Dai Hiep, Thuan Yen
Quang Ngai (4)	1,296.0	Dung Quat EZ, Pho Phong, Quang Phu, Tinh Phong
Binh Dinh (5)	643.6	Nhon Hoi EZ, Nhon Hoa, Long My, Hoa Hoi, Phu Tai
Total FDI in 27 parks	14,646.0	
Total FDI	306,302.8	

Source: Invest in Vietnam: list of industrial zones (<http://industrialzone.vn/ing/2/industrial-zone-region/91/Northern-Highland.aspx>). FDI statistics from Ministry of Planning and Investment, Viet Nam.

Note: VSIP = Viet Nam–Singapore Industrial Park.

ANNEX 5.1

Indonesia: Case studies of companies

PT Chemco Harapan Nusantara

Background

PT Chemco Harapan Nusantara, established in 1987, is a joint venture (JV) between Nissin Kogyo (Japan, 40 per cent share) and two Indonesian companies (PT Prospect Motor and PT Mayasari Bhakti Utama). Almost 90 per cent of the company's production is dedicated to original equipment manufacturer (OEM) brake system products, aluminium wheels and casting parts for automotive companies (car, trucks and motorcycles), primarily in Indonesia. Chemco's operation in Indonesia is driven by market-seeking motives – to locate in a rapidly growing automotive industry.

The company exports a small proportion of production to customers in other ASEAN countries and Europe. It also produces OES (original equipment supplier) brake products and a small volume of aluminium wheels for after-market.

Location choice

The company's original plant was located in Jakarta. Chemco subsequently relocated to the Jababeka Industrial Estate (JIE) to expand and to operate within the automotive industry zone (i.e. where major car manufacturers and supporting industries are located).

The JIE was chosen for its facilities, which include a steady and reliable power supply, good-quality industrial water, telecommunication infrastructure, and the availability of large tracts of land that meets the company's plant requirement. The JIE's relationship with the national and local governments is useful in supporting companies operating in the estate.

Production operation and network

Chemco's production is mainly targeted at major manufacturers of motor vehicles (automobile and motorcycle) in Indonesia. Although most of the manufactured cars and motorcycles are for the local market, some are exported to other ASEAN countries. Chemco also exports brake systems and parts to its sister companies in the Philippines, Thailand and Viet Nam. Chemco's regional production networks include connections with these sister companies in ASEAN:

- Nissin Brake Philippines Corp., with one production facility
- Nissin Brake (Thailand) Co. Ltd., with two production facilities
- Nissin Brake Vietnam Co. Ltd., with one production facility

It is more cost-efficient to produce some spare parts in Indonesia for the sister companies because of the benefits of economies of scale, as Indonesia's large population demands large volumes of production. Chemco is a main supplier of many major Japanese motorcycle manufacturers in Indonesia. The company produces millions of units for both motorcycle manufacturers.

Markets and major customers

Chemco operates close to its major customers' supply chains and has a number of significant main customers in Indonesia (Annex table 5.1.1). Only 10 per cent of Chemco's production is exported. Most of the exports are to the parent company in Japan, to sister companies in ASEAN and to Germany.

Annex table 5.1.1. Chemco's main customers in Indonesia

Motorcycles	Automobiles
Astra Honda Motor	Alcar Leichtmetallraeder GmbH (Germany)
Kawasaki Motor Indonesia	Astra Daihatsu Motor
Nissin Kogyo and Group (parent company and sister companies)	Hino Motors Manufacturing Indonesia
Suzuki Indomobil Motor	Honda Prospect Motor
Yamaha Indonesia Motor Manufacturing	Honda Precision Parts Manufacturing
	Krama Yudha Tiga Berlian Motor
	Mesin Isuzu Indonesia
	Suzuki Indomobil Motor

Source: Chemco Indonesia.

Raw materials and labour

About 70 per cent of Chemco's raw materials requirement consists of aluminium and is sourced from the Russian Federation, the Middle East, Australia and China. The type of aluminium (i.e. the quality specification) required is not available in the domestic market. The company also sources some brake system spare parts from its sister company in Thailand, but these are parts that are made of higher-technology materials. Packaging materials, metal stamping and steel bars are sourced locally.

The company has more than 4,200 employees as of January 2017. A majority of the production line workers are men.

PT Mane Indonesia

Background

PT Mane Indonesia is a subsidiary of Mane SA (France). Mane Group is a leading global flavours and fragrances MNE. It produces compounds that are used in food and beverages, and in beauty, health care and cleaning products. The company has two plants in Indonesia: one for manufacturing liquid flavours and fragrances and the other for dry flavours. The former, which started operation in 1998, is located in the JIE. The latter is in the MM2100 Industrial Town, where R&D activities were also moved, in 2015. The company employs 500 people locally, of whom half are women.

Mane's operation in Indonesia is market-seeking. One-third of sales are exported abroad as finished compounds or bases for further compound materials used by other Mane affiliates, primarily to other ASEAN countries. Mane Indonesia is the company's second largest operation in terms of production volume. It is one of the top three flavours and fragrances companies in Indonesia.

Site location choice

Indonesia was Mane's initial investment location in ASEAN. The strategy was to make the Indonesian operation a production platform for the ASEAN market, in addition to reaching the domestic market. Indonesia's large population, market potential and lower cost were major factors influencing the location choice.

The JIE was chosen for the first factory because at that time only two main industrial areas that provided the required utilities infrastructure support were situated near the capital city. However, the cost of land in the JIE was more competitive, making that a key factor in the choice of site location. The JIE's proximity to Jakarta, international air and sea ports, and good infrastructure (i.e. power supply and industrial water) were also influential in the choice. A second facility was later opened in the MM2100 estate. Both facilities are in the Bekasi regency, east of Jakarta.

Production operations and network

About 90 per cent of the raw materials needed to create flavours and fragrances are imported. Ingredients sourced within Indonesia are oils such as patchouli, nutmeg, clove and citronella. All the oil materials are sourced from domestic traders, who further refine the products suitable to be used as compound ingredients by Mane. These traders are generally linked up with small farmers through cooperatives. The overall cost of sourcing from local suppliers is about \$1 million per year.

Mane Indonesia exports certain ingredients to its sister subsidiary in Thailand for further processing. It is connected with other sister subsidiaries through an R&D network, whereby Mane Singapore conducts R&D for medium-term projects (e.g. creating coffee flavour varieties, proposing salt or sugar reduction solutions, studying citrus composition) while Mane Indonesia handles immediate R&D requests from clients.

Main customers

Among the major customers of Mane in Indonesia are companies such as Mayora (Indonesia), Nestlé (Switzerland) and Unilever (Netherlands–United Kingdom) (Annex table 5.1.2). All of these companies operate close to Mane, and some are also in the JIE.

Annex table 5.1.2. Mane: Selected major customers in Indonesia

Flavours	Fragrances
PT Mayora Indah Tbk (Indonesia) Products: <ul style="list-style-type: none"> • Biscuits • Chocolate and wafers • Coffee • Health foods • Sugar flour 	Wings Group (Indonesia) Products: <ul style="list-style-type: none"> • Home care (household cleaners, household fresheners) • Fabric care (detergent, softener, fragrance, ironing aid, bleach) • Personal care (bar soap, liquid soap, fragrance, sanitary napkins, baby and child care)
PT Nestlé Indonesia (Switzerland) Products: <ul style="list-style-type: none"> • Sugar, chocolate and snacks • Coffee • Drinks • Child and family nutrition • Complementary foods of breast milk • Breakfast cereal • Culinary products • Ready drinks • Health nutrition 	PT Kinocare Era Kosmetindo (Indonesia) Products: <ul style="list-style-type: none"> • Hair care • Skin care • Fragrance • Feminine hygiene • Kids personal care • Baby personal care • Men's grooming
Unilever Indonesia* (Netherlands–United Kingdom) Products: <ul style="list-style-type: none"> • Ice cream 	PT L'Oréal Indonesia* (France) Products: <ul style="list-style-type: none"> • Hair care • Makeup • Personal care

Source: Company websites.

*L'Oréal, Unilever and Mane are all located inside the JIE.

PT Mayora Indah was established in 1977 and listed on the Indonesian Exchange in 1990. Its three factories are all located in the city of Tangerang, about 25 km west of Jakarta.

PT Nestlé Indonesia has been present in Indonesia since 1873. It has four factories, one of which is located in the Surya Cipta City of Industry, Karawang. The factory in Kejayan, East Java, is one of the 10 largest Nestlé factories in the world.

Unilever Indonesia is a major consumer goods MNE in Indonesia. It was the fourth largest corporation, by market capitalization, on the Indonesian Stock Exchange as of the end of 2015. Unilever has nine factories in the JIE, in Cikarang and in Surabaya. It has a network of more than 800 independent distributors in the country.

The Wings Group produces a range of consumer goods for the local market and also for export to other Asian and African countries. Its factories are spread throughout Indonesia.

PT Kinocare Era Kosmetindo is a subsidiary of the Kino group (Indonesia). As of 2014, the group had four manufacturing plants in Indonesia: Cikembar, Cidahu-Sukabumi and Cikande-Serang, all in West Java, and Pandaan in East Java.

PT L'Oréal Indonesia started its first production in 1986. In 2012, L'Oreal Indonesia opened the JIE factory – the group's largest, at 66,000 m². The plant serves the ASEAN region, with 30 per cent of production for domestic consumers and 70 per cent for export, primarily in the region.

PT Nippon Indosari Corpindo

Background

PT Nippon Indosari Corpindo is a bread company established in 1995 that makes products under the brand Sari Roti. The company was listed on the Indonesian Stock Exchange in 2010. It started as a JV between PT Indoritel Makmur International (Indonesian majority shareholder) and Pasco Shikishima Corporation (Japan).

Location choice

The company has 10 production facilities spread throughout Indonesia (Annex table 5.1.3), strategically located to serve the growing markets of the archipelagic country. In view of the short shelf life of bread products, it is important for the company to operate near to market. They have to be distributed as soon as they are produced.

Annex table 5.1.3. Location of Nippon Indosari production facilities

Production facility or location	Industrial estate or location
Cikarang Barat	Kawasan Industri MM 2100
Cikarang Plant 1	JIE Blok W
Cikarang Plant 2	JIE Blok U
Pasuruan	Kawasan PIER
Semarang	Kawasan Industri Wijaya Kusuma
Medan	Kawasan Industri Medan
Palembang	Jl. Kerani Ahmad, Banyuasin Palembang
Makassar	Kawasan Industri Makassar
Cikande	Kawasan Industri Modern Cikande
Purwakarta	Kawasan Industri Kota Bukit Indah

Source: Company website

Nippon Indosari's first plant was located in the JIE (Blok W) in 1995. The reasons for locating in the JIE include good industrial estate infrastructure, reliable power supply, the availability of industrial water, proximity to Jakarta and easy access to toll roads. Other reasons include easier route to land ownership and use, and easier to commence operation immediately as ready built facilities were available. In addition, the JIE's good relationship with the national and local governments helps facilitate operations inside the estate.

To meet the growing demand for Sari Roti breads in the greater Jakarta area and the surrounding provinces, the company expanded with another production facility in the JIE in 2008. Several resource-maximizing and cost-minimizing factors influenced the subsequent plant location choice in JIE: (1) efficiency, as the two plants are managed by the same plant management team; (2) easier coordination, particularly on raw materials and machinery management; and (3) simpler logistics, with delivery of raw materials in one area.

Production operation

All of the Sari Roti production is for the domestic market, and raw materials are sourced locally.

Expansion in ASEAN

As part of the company's strategy to expand its market overseas, a JV project was established in Manila in 2016. The project involves a partnership between PT Nippon Indosari Corpindo (55 per cent) and Filipino food manufacturer Monde Nissin Corporation (45 per cent). The plant is under construction, and commercial operation is scheduled to start in 2018.

Labour

The company has more than 5,000 local employees in Indonesia.

PT Unilever Indonesia

Background

PT Unilever started operation in Angke, Jakarta, as Lever's Zeepfabrieken NV in 1933. The company is a subsidiary of Unilever, which is headquartered in Netherlands and the United Kingdom. It manufactures and sells 39 product brands, which range from food and beverage to home and personal care products.

Unilever's operation in Indonesia is market-seeking, and 17 per cent of its \$3 billion net sales in 2016 came from exports. The company employs about 7,000 people. Most of them work in one of the nine production facilities in the country. The employment impact, taking into account indirect employment, is considerable. A 2005 report suggests that for every 1 direct job created by Unilever through its supply chain, 60 other jobs were generated along the chain. The figure today is expected to be larger, given Unilever's continued expansion in Indonesia since 2005.

Unilever Indonesia is the largest operation in ASEAN in terms of production facilities and capacity. The company has strong export links with markets in Malaysia, Myanmar, Singapore, Thailand and Australia. Unilever Indonesia also has a R&D centre, which plays an important role in developing new beverages and ice cream products for the ASEAN, Australia and New Zealand markets. During 2010–2015, the company invested \$616 million in expansion, upgrading, training and R&D in Indonesia. Unilever plans to invest \$500 million in Indonesia over the next few years, which will include technology to recycle flexible plastic and sachet packaging into plastic raw materials.

Production operation

The company has nine production facilities in Indonesia, seven of which are located in the JIE. These seven facilities cover an area of 56 ha, while the two other plants, which are in Surabaya, occupy some 20 ha.

Unilever Indonesia also serves as a production platform for some product categories destined for other ASEAN countries. Its ice cream factory in Indonesia is one of the largest factories in Asia. Unilever's personal care product factory in Cikarang supplies the ASEAN region.

Raw materials

Although a number of raw materials are sourced abroad, Unilever Indonesia has successfully built a local supply chain for some of its products as highlighted in the paragraphs below:

- (1) Bango Sweet Soy Sauce. This product is 80 per cent coconut sugar and black soya beans. The company worked through cooperatives to build a network of 25,000 farmers supplying coconut sugar and black soya beans. The company also works with University Gadjah Mada in Yogyakarta to develop new seed varieties for black soy beans (i.e. malika), which increase the productivity of farmers. This academic–business community model has proven to help secure raw material for the product as part of the Unilever Sustainable Living Plan.
- (2) Oleo products (e.g. glycerin and fatty acids). These are the main raw materials for soap products in home care and body care lines. The company procures these materials from a sister company (i.e. PT Unilever Oleochemical Indonesia), which operates in the Sei Mangkei Special Economic Zone (SEZ), in North Sumatra, where it sources, processes and refines palm oil fruits near the raw material supply. In this regard, Unilever's value chain connects farmers, suppliers and customers in the host country. Unilever has also established connections with palm oil plantations and refineries through the company's dedicated palm oil production plant in Indonesia.

Unilever Oleochemical is the first locator company and major investor in the Sei Mangkei SEZ. It has injected \$175 million in the operation of the 18-ha Unilever complex, which includes the construction of plants (total capacity of 200,000 tonnes per year) and other building structures and the purchase of machinery.

The production plant started commercial operations in 2015. Unilever Oleochemical works with PT Perkebunan Nusantara III (Persero) Holding and IDH (the Dutch-led Sustainable Trade Initiative) to help smallholder palm oil farmers increase productivity. It processes the palm oil seeds from farmers into oleo products. About 15 per cent of the total production of the plant is sold to Unilever Indonesia, and 85 per cent is exported to other Unilever companies in 32 countries.

- (3) Tea. Unilever Indonesia works with local tea-producing companies and cooperatives in Java to supply materials for its tea-based drinks. The R&D centre serves Unilever Indonesia and Unilever companies in ASEAN and in Australia. It develops new tea products for those markets.
- (4) Ice Cream. Unilever Indonesia produces ice cream from one of its plants in the JIE, for local and other ASEAN markets. Ice cream cone and packaging materials are sourced from local suppliers located within the JIE. However, other materials, such as Belgian chocolate, are imported.

Unilever sources other raw material requirements locally and from imports. The sourcing of local content varies from product to product. For instance, for juices, the semi-processed foods are all imported. It sources black soya beans from Java.

Site location choice

The company chose the JIE because it was Indonesia's first significant integrated industrial infrastructure that matched Unilever's site location needs. The JIE offers access to reliable power, water supply, other in-site infrastructure facilities and security. These were key factors in determining the choice of site location.

In addition to the provision of competitive infrastructure, other important considerations are the JIE's proximity to Jakarta and the country's main sea port and airport. This proximity facilitates easier import and export of raw materials and finished products, and their distribution throughout the country.

As Unilever Indonesia added more plants over the years, it was natural to locate them within the JIE for easier coordination. Further, the JIE's ready infrastructure, land availability, strategic location, and the company's good working experience with JIE management were also important consideration.

The establishment of the international dry port inside the JIE is a major attraction, as it has expedited documentation processes. The JIE's access to major toll roads and railways also facilitates the movement of products of JIE locator companies, including Unilever.

ANNEX 5.2

The Philippines: Case studies of companies

Alere (Philippines)

Background

Alere (Philippines) is a subsidiary of Alere (United States), operating as a dedicated entity to support Alere's global business operations. It was registered with the Philippine Economic Zone Authority (PEZA) in 2013. The parent company is the leading global developer and manufacturer of rapid point-of-care diagnostics (cardio, metabolic, toxicological such as testing for drug and alcohol, and for infectious diseases). Alere (Philippines) provides the customer contact operation and back-office services to the parent company.

Alere (Philippines) employed about 350 workers in 2016, half of them women. The company generated more than PhP 285 million in revenues in 2016 – 60 per cent more than in 2015.

Location choice

Alere (Philippines) was established a year after the establishment of another sister subsidiary (Arriva Medical-Philippines). The favourable operation experience of Arriva Medical (Philippines) plays a role in the location decision. Arriva Medical (United States) is a subsidiary of Alere (United States). In addition, PEZA incentives, the low cost of doing business and a workforce with low labour cost and English proficiency skills were important locational determinants.

Alere (Philippines) operates in W Fifth Avenue, an ecozone within Bonifacio Global City (BGC) close to the Manila business district. The provision of facilities and amenities suitable for information technology and business process outsourcing or business process management (IT-BPO/BPM) operations and the ease of setting up a service delivery centre (call centres and back-office processing activities) in BGC contributed to the in-country location choice.

Operations

Alere (Philippines) has 228 workstations. The set-up cost per station is about \$3,000 to \$5,000, depending on the range and technicality of services. For example, if the services include graphic design and software development, the set-up will be more complicated as higher-technology, greater capacity, more programmes and more power computer would be needed.

As in the experience with Arriva, relocating Alere's customer contact and other back-office processing operations from North America to the Philippines enabled the parent company to save about \$2,500 per employee.

Challenges

Alere (Philippines) sees good prospects for growth over the next few years, including expansion of its accounting services to serve the Alere (China) manufacturing and sales operations, and to provide more service solutions to the parent company and sister subsidiaries. The company also sees growth potential in tapping into local and ASEAN companies, as they move towards reducing business services costs.

Arriva Medical (Philippines)

Background

Arriva Medical (Philippines) was established as a PEZA-registered company in 2011. The company is a dedicated service delivery centre for Arriva Medical (United States), a subsidiary of Alere (United States). Abbott (United States) announced in early 2017 plans to acquire Alere. This suggests that Arriva Medical would operate under Abbott after the acquisition process of Alere is completed.

Arriva Medical (United States) is the largest provider of mail-order diabetic testing supplies in the United States. The company is one of the few authorized by the government health program Medicare to distribute mail-order testing supplies to diabetic patients. Arriva Medical (Philippines) provides account management and delivery services (monitoring of home stocks, ensuring timely delivery and provision of basic information to inquiries) to about 600,000 Medicare-based patients of Arriva Medical in the United States.

Arriva Medical (Philippines) employs nearly 800 workers, about 70 per cent of them women. The company's revenue has been growing in recent years, and it generated PhP 550 million in revenues in 2016.

Location choice

The Philippines was chosen for the establishment of the call centre because of the country's competitiveness in IT-BPO services clusters and its relatively low-cost labour force and the level of English-language skills. The fiscal incentives provided through the PEZA and the existence of competitive IT services ecozones were also key factors that influenced the location decision.

Arriva Medical (Philippines) operates in an IT ecozone (i.e. E.Square IT Park) within BGC. The facilities and amenities in the zone are supportive of IT-BPO/BPM operations, and BGC is an IT-BPO/BPM cluster zone. The ease and speed with which service delivery centres could be set up in BGC were important factors.

Operations

Arriva Medical (Philippines) has 700 workstations. The set-up cost per station is between \$3,000 and \$5,000, depending on the services provided. If the services include graphic design and software development, the set-up cost would be higher as more complicated programs and more power computer would be needed.

Relocating service operations from North America to the Philippines has helped the parent company save about \$2,500 per employee. The Philippines operations are regarded as a cost centre.

Challenges

Arriva Medical (Philippines) sees growth potential for its operations in the Philippines with the addition of more product offerings (diabetic shoes and other ancillary items). Arriva Medical serves diabetic patients only in the United States.

Bill Gosling Outsourcing (Formerly AIC Philippines)

Background

Bill Gosling Outsourcing (Philippines), established in 2013, is a subsidiary of Bill Gosling Outsourcing (Canada). The parent company started as a traditional accounts receivable management company in 1955 and then expanded to the United States, the United Kingdom and the Philippines. It offers outsourced customer service solutions to other companies that aim to improve the quality of their customer interactions, and ensure the flexibility and scalability of their customer service function, all while lowering administration-related costs.

The Philippine subsidiary provides outsourcing services to the parent company and to clients of the parent company based in North America and the United Kingdom. Its services range from customer contact centres to accounts receivable management and other BPO (e.g. IT support, data processing).

The company employs over 300 people in the Philippines; the minimum qualification is at least 2 years of college education. More than 80 per cent of the company's employees are college graduates and 53 per cent of them are women. The average age of the company's workforce is 24.5 years.

In 2016, annual revenue for Bill Gosling Outsourcing in the Philippines was \$5.2 million. Twenty-five per cent of the company's Manila client base has a presence in the Philippines, and approximately 18 per cent of its global client base does.

Location choice

The decision to locate the company's outsourcing centre in the Philippines, and in an ecozone, was influenced by a number of key considerations. They include (1) recognizing the Philippines as a major global call and BPO centre that offers a conducive BPO support environment, (2) fiscal incentives provided by the PEZA, (3) a supply of low-cost labour proficient in English, (4) the adaptability of the workforce to the North American or Western culture, and (5) the overall lower costs of doing business.

The company operates at McKinley Hill Cyberpark, an IT ecozone in BGC (adjacent to Makati, the country's business district). The company considered that operating in an IT ecozone offers an easier opportunity to network with other companies to maximize value and operation strategy. The specifically designed and developed IT zone with dedicated infrastructure facilities such as telecommunication, water supply and safety was an important factor.

The decision by Bill Gosling Outsourcing (Philippines) to locate in an IT ecozone that is fast becoming a mini-Silicon Valley added to the growing cluster. Although there are competitors in the same ecozone, the networking advantages – such as access to workforce and sharing of information – outweigh the competition threats.

Operations

Bill Gosling Outsourcing (Philippines) offers business process services to clients who aim to enhance their customer service experience, have access to multiple centres for business continuity and lower their costs. The services include customer contact centres (voice service), accounts receivable management, IT support and data processing. The company's clients include major banks and financial institutions, and online global trading businesses in North America.

The outsourcing services of the company help clients focus their resources on their main operations and other strategic business functions (e.g. research and development (R&D)). The company operates 24 hours per day, seven days per week. Given that most of the clients are in Canada, the United Kingdom and the United States, the full operations of the company take place from the evening (following the business hours in North America and the United Kingdom) until early morning. In the morning, a skeleton team is maintained to continue services.

Competitors are IT/BPO outsourcing companies (located in the Philippines and elsewhere in the world) that offer similar services. Accenture (Philippines), which is larger in scale, is one.

A challenge of the IT-BPO industry in the host country is the supply of human resources. The high concentration of IT-BPO companies in Manila-area ecozones creates strong competition among companies for workers, particularly those who have been trained and have the basic skills set.

For Bill Gosling Outsourcing (Philippines), set-up/start-up costs are about \$5,000 per work station. One of the largest-cost items is power. Relocating the call centre and BPO services to the Philippines helps the parent company save at least 40 per cent on operational costs over similar operations in North America. This cost savings is passed down to clients in the form of lower-priced packages for the company's outsourcing services.

Labour

Hiring and retaining skilled employees is a challenge at times. The company initially trains its employees in-house between 3 to 6 weeks, depending on the complexity of the client's account requirements. On an ongoing basis, and to promote career advancement opportunities from within, they invest in additional leadership training and professional development programs.

Challenges

The company sees growth in the industry at the global level as more companies seek to streamline costs and focus on their core business competencies – outsourcing administrative functions to IT-BPO companies. Bill Gosling Outsourcing (Philippines) plans to expand its operations outside Metro Manila to a satellite city south of Manila, where operating costs, including salaries, would be much lower and there would be less competition for workers.

The company considers the eventual formation of the ASEAN Economic Community (AEC) as an opportunity. A larger regional market would be more attractive to financial institution clients of the company, and the expansion of Bill Gosling Outsourcing in ASEAN will be driven by clients. Jason Henning (Bill Gosling Philippines Senior Vice President) sees the AEC as “offering a possibility of looking at the region as a base for different BPO processes.”

There are challenges to companies like Bill Gosling Outsourcing (Philippines), however, including (1) increasing competition and poaching for trained employees among IT-related companies based in

Manila, (2) higher power costs, (3) the need to further improve telecommunication infrastructure, and (4) concern about the Government's ongoing rationalization of taxes that may result in the abolition of the special tax rate provided to PEZA-registered companies.

Brother Industries (Philippines)

Background

Brother Industries (Philippines) is wholly owned by Brother Industries (Japan). The subsidiary was established in 2012, with an investment of \$134 million. It produces inkjet printers, label printers and accessories in the First Philippines Industrial Park (FPIP).

Economic impacts

Brother Industries (Philippines) employs about 4,500 employees, of which over 3,000 are factory workers. The lion's share is women, as the processes require finer hand motor skills and attention to many details. The company generates about \$20 million in export revenues per month. All the manufactured printers are exported to the Brother Group's sales and marketing business units worldwide, including in Asia.

The company has also contributed to the host country economy by encouraging some of its suppliers to set up operations in the Philippines and in some cases in the same industrial park or nearby ecozones.

Location choice

Brother Group has four factories in ASEAN, of which one is located in the Philippines. The other three are located in Viet Nam.

The company invested in the Philippines for two key reasons: (1) to diversify operation facilities to more locations, and (2) to take advantage of incentives and of the low-cost, good-quality labour supply.

The FPIP was chosen for the plant location for the following factors:

- (1) The presence of Sumitomo Corporation (Japan) as the co-shareholder and developer of the park
- (2) The park's comparatively better-quality infrastructure and reasonable land costs
- (3) The park's close proximity to the central business district of the country and to the Manila international airport and seaport

In addition, both the PEZA and the FPIP administration played a role. They assisted Brother (Philippines) in the initial phase of establishing the production facility in the country. The support included helping Brother (Philippines) obtain permits to import chemicals for the production of printers and ink cartridges.

Production operations

The printer production lines are housed in the 13 ha facility in the FPIP, where Brother (Philippines) is completing a 20,000 m² expansion project to reach full capacity.

Most of the company's raw materials are imported from Japan and other Asian countries; however, the company sources several printer parts (e.g. plastic parts, microchips, special chemicals) from other companies. Some of these suppliers followed the company to the Philippines to supply it. For instance, a subsidiary of a Japanese synthetic resin manufacturer established a facility in the FPIP in 2013, and a precision technology company from Taiwan Province of China established a subsidiary in Lima Technology Centre (an ecozone near the FPIP) in the same year to supply moulds and plastic

products to Brother (Philippines). Other Japanese companies producing moulds in Calamba Premiere International Park, and electronics component manufacturers in the FPIP and in the Lima Technology Centre also supply Brother (Philippines). Other materials such as for packaging are also sourced locally.

Labour

Brother (Philippines) conducts training in-house and abroad for its production workers. Workers are trained at Brother Industries (Japan) production facilities and in China. Such training covers technical knowledge development, team building, technical processes and technology upgrades.

Challenges

Brother (Philippines) sees the creation of a regional integrated community as an opportunity and anticipates more competition in the Philippines as an investment destination and for companies doing business in the region. To remain competitive, Brother (Philippines) sees a need to increase the supply of stable power, thereby lowering power costs, improve telecommunication infrastructure for faster connectivity and build more road networks to ease traffic congestion around Manila. In addition, the time needed to process and release shipments at the Manila international port (documentation processes for the release of shipments) could be shortened.

Ibiden (Philippines)

Background

Ibiden (Philippines), a PEZA-registered company, is a wholly owned subsidiary of Ibiden (Japan). It manufactures integrated-circuit packages, both chipset and central processing unit (CPU) packages, a micro-device that forms part of an electronic processor such as the Intel processor.

The company started operation in 2000 with initial capital of \$52 million. It has created some 2,100 jobs, 60 per cent of which are filled by women. Some 69 per cent of employees work in production; 85 per cent are hired directly while 15 per cent are hired on a contractual basis. As of May 2017, the company was producing 8.5 million chipsets and 2.5 million CPUs per month. All of its production is exported abroad. In fiscal year 2016–2017, the company generated an export value of \$155 million. Export sales for the past five years totaled about \$1.2 billion.

Location choice

Ibiden (Philippines) is the first production facility of Ibiden (Japan) in ASEAN. (A second facility was set up in Malaysia in 2008 to supply printed wiring boards.) Following a major client (Intel) to the Philippines was an important FDI motive.

The company visited several ecozones to decide on a special economic zone (SEZ) in which to house the factory. The FPIP was chosen for the following reasons: (1) Sumitomo's relationship with Ibiden (Japan) played an influencing role; (2) land costs at the FPIP are competitive; (3) the Philippine Government provided incentives through the PEZA, which was easy to communicate with before the registration process; (4) the park is near the Manila international seaport and airport, with easy access to major road networks; (5) the secure environment has good facilities such as wide roads, reliable power supply and communication infrastructure; and (6) the FPIP administration provided good communication and support.

Production operations

The Ibiden (Philippines) facility sits on 126,069 m². It produces high-technology chipsets and CPUs that are customized according to clients' specifications. The chipsets and CPUs are basically original equipment manufacturer (OEM) products but at the lower end of the electronics value chain. They become part of a chip processor (for example: Intel), and the processor in turn becomes a component of a phone or a personal computer produced by companies such as Samsung, Dell, Toshiba, Apple and Vivo.

Given the rapid technological evolution of these electronic products, the design of Ibiden's chipsets also changes rapidly. About 99 per cent of the total production is current chipsets specified by clients. Only 1 per cent are "legacy products", which are chipsets use for repair and maintenance of older versions of certain electronic products (e.g. phones and personal computers).

Ibiden is a major global chip manufacturing company. Its competitors include Shinko (Japan) and companies from Taiwan Province of China and the Republic of Korea.

Supplies and export markets

About 75 per cent of the raw materials used in the company's operations are sourced from Japan. This is because the technology requirements for microchip production make sourcing of raw materials from local suppliers difficult. For example, the company uses a highly specialized chemical mix not produced by any local supplier. Another 20 per cent of the production inputs are sourced from Malaysia, the Republic of Korea, China and Taiwan Province of China. The remaining 5 per cent is sourced locally from other Japanese companies based in neighbouring ecozones. They include Almextech (customized metal products) in Cavite Ecozone and Nakayama Kogyo (Philippines) (fabricated metal) at Laguna Technopark. About 47 per cent of export is for Viet Nam, 27 per cent for Malaysia, 25 per cent for China and 1 per cent for the United States.

Labour

During the period 2000–2017, the company sent 204 employees to Ibiden (Japan) for training on production line responsibilities (e.g. tooling and maintenance of machines). Some training is conducted for upgrading skills when new technology and new versions of a product are introduced.

Challenges

A major challenge for Ibiden (Philippines) is to remain cost competitive. The challenge is made more difficult for the following reasons: (1) no local suppliers for chipsets and mixed chemicals inputs required, (2) increasing competition for labour, among locators within the same or neighbouring zones, which results in high turnover, and (3) difficulty in finding and hiring skilled workers. In addition, the company notes that the Government could consider further simplifying customs documentation requirements for chemicals and improving infrastructure such as making the Batangas ATI International Port an alternative to the Manila international port. Having two international ports for shipments could reduce processing and delivery time.

The company does not anticipate any direct impact in terms of market competition when the AEC is realized because its micro-chipsets are highly customized. However, the AEC could provide an opportunity to develop supporting industries for this type of electronics industry.

Murata (Philippines)

Background

Murata (Philippines) is a wholly owned subsidiary of Murata Manufacturing (Japan) established in 2012. It is the fourth Murata production facility in ASEAN. The plant has a workforce of 1,916 employees in 2017. It is located in the FPIP zone and started production in 2013 with an initial investment of \$34 million.

The company contributed to the local economy by exporting 100 per cent of its production, which generated about PhP 350 million per month in 2016. About 70 per cent of the workforce is female. In addition, Murata (Philippines) has created business linkages with local companies and other spillover effects through contract services and through sourcing of certain types of inputs locally. Murata has plans to expand in the host country.

Location choice

Murata (Japan) invested in the Philippines for four reasons: (1) fiscal incentives (income tax holiday, duty-free importation, exemption from local taxes and fees) provided by the PEZA, (2) access to a quality and low-cost labour force, (3) low costs of doing business, and (4) ease of communications with the PEZA.

Murata (Japan) chose to locate at an ecozone. It selected the FPIP mainly for the following reasons: (1) the influence of the business relationship between Murata (Japan) and Sumitomo Corporation (Japan), a co-shareholder and developer of the FPIP; (2) the well-organized industrial park, (3) the reasonable land cost, (4) quality infrastructure such as wide roads for container trucks, and dedicated telecommunication and power structures, (5) easy access to the nearby Manila international seaport and airport, (6) security within the park, and (7) the accessibility of the park to major road networks.

Production operations

Murata (Philippines) contributes to the host country's electronics and automotive clusters. It produces monolithic ceramic-chip capacitors, which are micro-size and form an important part of smartphones and other digital and electronic devices including printers and brake systems of vehicles. The production assembly process is highly technical and precise. The ceramic chips are assembled onto a bigger spare part (e.g. a motherboard) and then shipped to clients that produce the final electronics product.

For example, Murata (Philippines) supplies its chip capacitors to various types of clients operating in the host country including some that operate across ASEAN. It also supplies components to automotive part and component manufacturers in the Philippines. In this context, Murata (Philippines) is a production network player, supplying parts for the automotive industry in the value chain led by Toyota. The plant also plays an important role in Murata's regional production network to which it supplies parts (i.e. ceramic chips for further processing) to Murata Electronics (Singapore) for higher-value production, which involves a more complicated assembly process. It also supply parts to Thai Murata Electronics (Thailand) through the parent company in Japan.

Supplies and markets

The company sources 99 per cent of its raw materials from Japan because of the high-technology nature of its products (chip capacitors). However, it has established business linkages with local companies through the sourcing of packaging materials, machinery parts, consumables and office supplies.

All production is exported through sales affiliates and directly to clients. About 19 per cent of the sales to China are through sales affiliates, as are 18 per cent of sales to Europe, 8 per cent of sales to the United States, 3 per cent of sales to Singapore, 1 per cent of sales to Malaysia, 1 per cent of sales to the Republic of Korea and 3 per cent of sales to the Philippines (an indirect export to Murata Electronics Phils., located in Laguna Technopark). Murata (Philippines) also sells directly to other factories in Japan, China and Singapore.

Labour

Nearly 50 per cent of the workforce is in the skilled or supervisory category while the rest work on the production line. To meet the demand for skilled workers, the company conducts in-house training (covering basic, advanced and upgraded technology) in the Philippines year-round, with 30 employees per course.

Challenges

The company faced a major challenge in hiring workers; however, the PEZA extended assistance to the company to address the challenge. Given the nature of Murata's production assembly process, the company requires a significant number of skilled workers (i.e. technical, science and math knowledge). The difficulty lies in finding these skilled workers. Increasing competition among locator companies inside the park and from neighbouring ecozones exacerbates the challenge.

Sonion (Philippines)

Background

Sonion (Philippines) is a subsidiary of Sonion (Denmark). The former was established in 2011 as a PEZA-registered company for the production and export of advanced miniature components and solutions for hearing instruments and advanced acoustics. The company's initial investment in the host country was \$15 million.

Location choice

Sonion (Philippines) is the parent company's third production facility in ASEAN. The first two, in Viet Nam, were established in 2006 and 2009.

Sonion invested in the Philippines mainly for three reasons: (1) access to a low-cost operation environment, (2) the need to establish a second facility to expand production in the ASEAN region, and (3) to diversify their facilities to two countries rather than relying on only one.

An ecozone in the Philippines was a natural choice for Sonion because of (1) the rapid set-up of operation, (2) the incentives provided by the Government through PEZA, (3) the relatively low-cost, better-educated workforce with proficiency in the English language, and (4) the longer industrial experience of the host country. These factors together influenced the country location choice.

Within the country, among the ecozones considered, Sonion (Philippines) located in the FPIP for the following reasons: (1) low-cost land, (2) a well-organized park, (3) proximity to Manila's international seaport and airport as well as easy access to major road networks, (4) facilities inside the park such as wide roads, stable power supply and good communication infrastructure, and (5) the orientation of the park's management towards the needs of locator companies.

Production operation

The company produces micro acoustic components for microphones and loudspeakers and micro mechanical parts for hearing aids. The acoustic components are generic products designed by Sonion and sold to several customers. In addition, the company produces modules (or subcomponents) based on OEM specification, typically developed in cooperation with the OEM customer.

Sonion supplies to six major hearing-aid manufacturers: Oticon (Denmark), GN Hearing (Denmark), Widex (Denmark), Sonova (Switzerland), Starkey (United States) and Sivantos (owned by EQT Funds (Sweden)). In this connection, Sonion plays an important role in connecting the Philippines to global value chains in the production of hearing-aid devices.

Sonion also produces pro audio components, which are used in advanced headsets and in-ear monitors by audio enthusiasts and musicians. Customers for this type of component include Shure (United States) and Klipsch (United States).

The production of hearing devices involves several chains of assembly lines. The plant in the Philippines involves about 10 assembly lines and uses components produced in sister factories in Viet Nam.

Sonion (Philippines) is engaged in a higher-value production process. The plastic moulding (tooling fabrication), the production of the device (technical expertise) and the assembling of the device into the mould are all carried out within the facility.

Labour

Sonion (Philippines) employs 1,000 employees; of which 800 work in the production line, 40 in tool making (moulding tools for plastic parts) and another 40 as production engineers on customization projects. The rest work in supervisory, administrative and accounting functions. About 85 per cent of the workforce is female.

Supplies and markets

About 80 per cent of the raw materials are imported. A large percentage of the raw materials are imported from China, while those for integrated circuits come from Taiwan Province of China. Other international suppliers include Yamaichi (Japan) and Electrisola (Germany).

Some 20 per cent of the material requirements are sourced through local agents, including from a Taiwanese supplier based in the host country. Some of these local agents source these materials directly from Europe. A few top local suppliers, in terms of purchase spent, provide services such as shuttle service, x-ray analysis and electrostatic discharge test equipment. In this regard, Sonion (Philippines) contributes to local business linkages with local SMEs.

All of Sonion's production is exported directly to the production sites of the six clients, which have facilities in countries such as Singapore, Viet Nam, China, Mexico, the United States and Denmark.

Challenges

The company's experience in doing business inside the FPIP has been positive. The PEZA one-stop shop at the FPIP and the PEZA head office have been supportive in terms of assisting the company with requirements for documentation such as permits and licenses.

The company believes that the telecommunication infrastructure of the country needs to be further improved to enhance connectivity and lower communication costs.

Toshiba Information Equipment (Philippines)

Background

Toshiba Information Equipment (TIP) is a subsidiary of Toshiba Corporation (Japan). TIP was established as a PEZA-registered company in 1996, with an initial investment of \$185 million.

Initially producing and exporting hard disk drives at its first site in Binan (Laguna), TIP has expanded to three production facilities in the country, namely:

- (1) a 60,000 m² facility at Laguna Technopark, Inc. (LTI), established in 1995
- (2) a 21,000 m² facility at LTI Annex, set up in 2012
- (3) a 84,000 m² facility in Carmelray Industrial Park, acquired in 2009 from the former Fujitsu Computer Products Philippines

With these factories, TIP has become a major contributor to Philippine employment and export revenues. In 2016, TIP exported \$2.7 billion worth of products, which accounted for 4.5 per cent of the country's total export and 9.3 per cent of the total sales of electronic products. The company also employed more than 10,000 employees; 85 per cent of which work in production, and the remaining percentage in supervisory and administrative functions. About 85 per cent of the employees are female.

As a major player in the industry, TIP has an important role in supporting the development of the electronics cluster; and attracts its parts and components suppliers to operate close to TIP's production facilities. TIP contributes to a network involving interconnected productions companies in the Philippines and other ASEAN countries. It provides an important link in the development of value chains of electronics and personal computers manufacturing in the ASEAN region.

In the Philippines, its operations evolved to incorporate manufacturing engineering – a step beyond assembly and testing functions – thereby contributing to higher value-added-production activity.

Location choice

TIP is one of Toshiba's largest production facilities in the ASEAN. Its location decision was influenced by (1) rising costs in Japan and the low-cost alternatives in the Philippines; (2) the country's stable political framework; (3) the presence of other Japanese companies such as NEC, Fujitsu and Hitachi; (4) incentives provided by the Philippine Government through the PEZA; (5) the supply of low-cost labour; (6) the availability of human resources at the management level and engineering graduates; (7) the strategic location of the Philippines in Asia; and (8) the English-speaking labour force.

The company established its first Philippine production facility at the Laguna Technopark, Inc. (LTI) for its (1) proximity to the Manila international seaport and airport, allowing easy access to major road networks, and (2) secure environment, with wide roads and good communication infrastructure. In 2012, TIP expanded its facilities to cater to product expansion for storage devices, such as solid state devices (SSDs).

Production operations

TIP has three production facilities that cater to a wide range of storage needs. The TIP site at LTI produces mobile hard disk drives, The TIP plant at Carmelray Industrial Park produces enterprise hard disk drives, and the TIP site at the LTI Annex produces client and enterprise SSDs and printed circuit boards.

TIP is considered an OEM and is at the higher end of the production chain. The company is an important player in disk drive value chains and a key supplier to the Toshiba Group and other electronics OEMs. TIP's products form the main parts of final products, such as laptops and personal computers, car navigation systems, big data storage and servers.

Although the majority of the R&D is conducted in Japan, TIP's manufacturing engineering unit further recalibrates and redesigns production machines for manufacturability. Since 2014, TIP has successfully established its own manufacturing engineering facility, starting with its first locally fabricated automation lines. In 2016 it implemented the design and manufacture of high-technology machines, tools, and jigs for the production of technology-based parts.

Supplies and export markets

TIP operations encouraged several Japanese manufacturing companies, including some of Toshiba's suppliers, to establish their production facilities in the country.

Whereas packaging materials are sourced locally, TIP sources raw materials for the production of SSDs and HDDs from suppliers based mainly in ASEAN countries (i.e. 38 per cent from Singapore, 33 per cent from Japan, 13 per cent from Thailand, 10 per cent from China, 4 per cent from Malaysia, and 3 per cent from the United States). Specifically, raw materials are sourced from sister companies and other MNEs based in the region, for example in Malaysia, Singapore, Thailand and the Philippines.

In terms of manufacturing engineering capacity, TIP sources a substantial amount of its required parts locally, contributing to the development of local business linkages. Most of these parts are based on customized manufacturing requirements.

TIP exports 100 per cent of its SSD and hard disk drive production. The primary destinations are China (51 per cent), MNEs based in Hong Kong (China) (16 per cent), the United States (9 per cent) and Germany (7 per cent); the remaining exports are bound for other countries in Asia. TIP thus fosters business relationships between the Philippines and other companies in global value chains.

Labour

TIP sends its adept employees to Japan for a one- to six-month training and skills upgrade when new technology or equipment is made available for the production of SSDs and hard disk drives. Regular trainings are also conducted to upgrade employees' competencies.

Challenges

High power costs, the need to further improve telecommunication infrastructure, and the implementation of complex road networks to avoid heavy traffic are the challenges the country faces in strengthening the investment environment. Like other MNEs, TIP encounters difficulty in hiring skilled labour such as engineers and technicians. It was suggested that the country could look into developing special incentives targeted at R&D, industrial design, and manufacturing activities that could upgrade the technological capabilities and the development of the country's production value chain, in which TIP has already started to move to manufacturing engineering activities. Tax incentives for transfer of technology could also be considered, such as the deduction allowed for transfer costs of patent rights. A stronger university-industry linkage to spur innovation within firms in SEZs would help address industrial upgrading and scaling up of products and services in firms within SEZs.

Vacuumtech (Philippines)

Background

Vacuumtech Philippines Inc. is a subsidiary of Thermos K.K. (Japan). It is a PEZA-registered company and started commercial production in the FPIP in 2016. The company produces and exports insulated food and beverage containers under the Thermos brand. It exports 100 per cent of its production to Japan.

The company employs 1,000 people, of which 900 work on the production line and the rest at the supervisory level including in technical, administrative and accounting functions. About 80 per cent of the production workers and 50 per cent of the supervisors are women. The company is involved with suppliers based in the same industrial zones – establishing links between the Philippines and Japan, and with other companies in the host country.

Location choice

Vacuumtech Philippines is the second production facility of Thermos K.K. (Japan) in ASEAN. The first facility is in Malaysia.

The company invested in the Philippines for two main reasons: (1) to take advantage of fiscal incentives (e.g. income tax holiday and duty-free importation of raw materials and capital equipment), and (2) to access a low-cost labour force. The support of the Philippine Government and the PEZA played a role in the location decision.

Of all the ecozones considered, the company decided to establish the plant in the FPIP for the following reasons: (1) competitive land cost; (2) competitive infrastructure facilities and secure environment; (3) good power supply with underground cables and dedicated power station; (4) accessibility to the Manila international airport and seaport, and the Batangas ATI SeaPort; (5) accessibility and connectivity to major road and highway networks; and (6) service facilities inside the park, such as a one-stop shop PEZA office, major banks, and other amenities.

A key factor that helped tilt the choice to the FPIP is the presence of Sumitomo Corporation (Japan) as a partner and co-developer of the park. That gave Thermos, K.K. (Japan) an assured business environment and confidence in operating in the FPIP. The park has made it easy for the company to set up operations quickly and access strategic infrastructure facilities.

Production operations

The production processes of Vacuumtech Philippines do not involve a long chain of manufacturing and assembly line processes such as those used in producing motor vehicles. The company also does not require several manufacturing chains for its spare parts. Both production facilities in ASEAN (in Malaysia and the Philippines) are stand-alone production facilities, producing similar products, albeit varying in design based on clients' specifications.

Vacuumtech Philippines is the only company in the country that has the vacuum technology for producing insulated food and beverage containers. The facility occupies 7 ha, with only 4 ha currently used as a production area for. This is larger than the area used by the sister company in Malaysia. The company plans full expansion in the near future, and production will then be at 20 million pieces per year.

Supplies and markets

Vacuumtech Philippines sources stainless steel, a major raw material, and paint from suppliers located in the FPIP, which has implications for cost saving, time efficiency and logistical coordination. Other raw materials, such as resin, are sourced from Japan and Singapore.

Vacuumtech Philippines produces only for its Thermos Group companies. It produces what is ordered by these companies for clients around the world; currently, 100 per cent of production is exported to Japan. These sister or parent companies then distribute the shipment to various clients. The strong chain of production networks is with the parent company (for orders) and a few key suppliers of inputs within ASEAN and the host country in which Vacuumtech operates.

Labour

Vacuumtech Philippines trains its employees by sending them to plants in Malaysia and Japan. In 2015–2016, more than 30 employees were sent to Malaysia for training. In mid-2017, the company will send two Filipino engineers to Japan for one year for training to upgrade their skills. The overseas training covers administrative and production processes, handling of machines, and scaling up of skills to stay abreast of technology upgrades.

Challenges

Thermos is a century-old global brand. Export demand has been strong, and Vacuumtech Philippines expects increasing growth in production in the next few years. To this end, the company is gearing up its facility towards achieving full production capacity in the Philippines by 2020. The challenge for the company is in hiring skilled employees such as certified technicians, engineers and higher-technology mechanics to maintain machines, as well as industrial designers, pollution control officers, accounting staff, and the like. Given the scarcity of labour with these skills, the company must recruit nationwide.

The increasing competition among locator companies inside the FPIP and from neighbouring ecozones for skilled labour is making the challenge more complex. The company is being pressured to develop benefit packages and other measures to retain employees.

Vacuumtech Philippines welcomes the establishment of the integrated regional market that the AEC will bring. However, because the company's market is global, it hopes that ASEAN will work out easier access to markets such as the United States.

Yamaha Motor (Philippines)

Background

Yamaha Motor (Philippines), a subsidiary of Yamaha Motor (Japan), was established in the Lima Technology Centre (LTC) in 2007 and started commercial operations a year later. It manufactures and sells motorcycle parts and motorcycles, primarily to the domestic market. Its initial investment in the LTC amounted to PhP 1.6 billion.

Location choice

Some 10–15 years ago, the internationalization strategy of Yamaha Motor (Japan) was to establish multiple manufacturing and sales units in several ASEAN countries, mainly to serve local markets.

Subsidiaries were established during this period in Cambodia, Indonesia, Singapore, Thailand and Viet Nam.

Yamaha (Philippines) chose to operate in the Philippines for the following reasons: (1) the local market potential, (2) pioneer status and fiscal incentives; and (3) the ease of doing business in the country. The company received a six-year income tax holiday, zero duty on imported capital equipment and spare parts, and exemption from local taxes. It also benefited from the PEZA one-stop shop.

The decision to locate the plant in the LTC was based on the following reasons: (1) the lack of availability of industrial land in the Laguna area to accommodate the needs and requirements of Yamaha (Philippines), which the LTC could provide; (2) the South Luzon Express Way (SLEX) that was being built at the time would be convenient for transport of products; and (3) land values in the LTC at that time were considerably cheaper compared with other nearby areas.

Production networks and clusters

Yamaha (Philippines) produces 100 per cent for the domestic market, with growth in demand for its motorbikes expected to rise by 10–15 per cent a year. A majority of the parts are sourced in ASEAN, contributing to regional production networks. About 50 per cent of the completely knocked down (CKD) parts are imported from Indonesia and 35 per cent from Japan, India, China, Thailand, Singapore and Viet Nam; 15 per cent are sourced from local suppliers. The body parts, such as the plastic parts, handlebars and some electrical components, are sourced locally. Yamaha (Philippines) has 29 suppliers based in the Philippines, of which 4 operate in the LTC.

Labour

Yamaha (Philippines) created 1,400 jobs, of which 1,000 are in production and the rest in sales, accounting and administration functions. In the CKD and completely build up (CBU) production and assembly lines for motorbikes, about 70 per cent of the production workers are men.

The company conducts 90 per cent of its training programme in the Philippines and the rest abroad (particularly for technical skills for improvement of processes and/or products).

Challenges

A regional integrated market would facilitate easier movement of goods around ASEAN, from production sites to markets (e.g. produced in Indonesia and exported to the Philippines and Malaysia). The company believes that some ASEAN countries are already mature or saturated markets for motorbikes whereas others still have potential for growth.

Given the size of the local markets, the operations of Yamaha (Indonesia) are relatively bigger; it produces CKD and CBU parts both for the Indonesian market and for ASEAN. However, Yamaha (Philippines) is looking into the possibility of increasing production in the country as the market for motorbikes continues to grow.

In view of regionalization and more movement of goods among ASEAN countries, the company suggested that the PEZA look into making the application and granting of PEZA permits an online process, to shorten the processing time.

Annex table 5.1. Electronics cluster facilitated by Hemaraj's industrial estates 2017 (Selected cases)

Site	Company Name	Country	Product
ESIE	Daido SP	Japan	Metal wire products, springs in electronic parts
ESIE	Emerson Electric	United States	Scroll compressors for air conditioning and refrigeration
ESIE	ETK EMS Asia Productions	Denmark	Assembly and mounting of printed circuit boards and electronic parts
ESIE	Goldensea Science & Technology	China	Air filters for electronics (export 80%, domestic 20%)
ESIE	Hitachi Tochigi Electronics	Japan	Electronic control systems (domestic 50%, export 50%)
ESIE	Kobayashi High Precision	Japan	Shaft rollers for copy machine, printer or fax
ESIE	Komatsu Seiki	Japan	Screw valves, plate orifices, armature
ESIE	Piper Plastics	United States	Plastic parts for electronics
ESIE	Sakura Tech	Singapore	Plastic injection mould design, mould fabricator (domestic 100%)
ESIE	Yoo Won Electronic	Republic of Korea	Cooling circuit boards for LG
HCIE	Analog City	United States	Electronic parts for musical instruments
HCIE	Fuji Xerox Eco-manufacturing	Japan	Copy machines
HCIE	Honeywell Electronic Material	United States	Electronic materials, heat spreaders
HCIE	KCT	Republic of Korea	Electronics parts
HCIE	Kyoden	Japan	Printed circuit boards and electronic subassemblies
HCIE	Matsuda Sangyo	Japan	Semiconductors and electronics component scrap recycling
HCIE	Namoya Shinpo Nation Group	Thailand	Electronics parts
HCIE	SC Wado	Japan	Electronics parts, grinding process
HCIE	Shinwa Kogyo	Japan	Installation work of steel
HESIE	Lucy Electric	United Kingdom	Switches, electrical distribution systems
HESIE	Mektec Precision Component	Japan	Hard disk drive components, electronic parts
HESIE	Merry Electronics	Taiwan Province of China	Headphones
HESIE	MGC Electrotechno	Japan	Electronic materials, copper-clad laminates
HESIE 2	Fabrinet	United States	Electro-optical, electronic printed circuit board assembly and electro-mechanical
HESIE 2	Nanyang Motor Manufacturing	China	Spare parts for automotive
HRIL	Beko Thai	Turkey	Appliances and consumer electronics
HSIL	Allegro MicroSystems	United States	High-performance semiconductors
HSIL	Brilliant Precision	Singapore	Electroplate coating and die casting
HSIL	Edogawa Gosei	Japan	Paint for electronic parts
HSIL	Fujikoki	Japan	Air conditioning, refrigeration systems
HSIL	Fujikura Automotive	Japan	Wiring harnesses
HSIL	Idec Asia	Japan	Devices and systems
HSIL	JCY HDD Technology	Malaysia	Computer parts, hard disk drives
HSIL	Maspro Amtech	Japan	Printed circuit boards and LED tubes (export 80%, domestic 20%)
HSIL	Muto	Japan	Plastic parts for VDO cameras
HSIL	Nidec Component Technology	Japan	Hard disk drive's plate
HSIL	Nikon	Japan	Warehouse for camera/parts
HSIL	Nong Khae Cogeneration	Thailand	Electricity and steam
HSIL	Rohm Mechatech	Japan	Resin mould products, lead frame products, moulding die used for semiconductors (domestic 70%, export 30%)
HSIL	Seki Corp	Japan	Material stamping parts for VDO camera (domestic 100%)
HSIL	Shibakawa	Japan	Flash light for camera, autofocus support light for camera (domestic 99%, export 1%)
HSIL	SLIK	Japan	Tripods and accessories

Source: Hemaraj.

Notes: ESIE = Eastern Seaboard Industrial Estate; HCIE = Hemaraj Chonburi Industrial Estate; HESIE = Hemaraj Eastern Seaboard Industrial Estate; HESIE 2 = Hemaraj Eastern Seaboard Industrial Estate 2; HRIL = Hemaraj Rayong Industrial Land; HSIL = Hemaraj Saraburi Industrial Land.

Annex table 5.2. Indonesia: Automotive clusters involving selected companies operating in four major industrial estates in Java

Company	Products	Selected customers
Kawasan Industri Jababeka – Bekasi, Jawa Barat		
PT BS Indonesia	Outside mirrors, lamp assemblies	PT Krama Yudha Tiga Berlian Motors, PT Isuzu Astra Motor Indonesia
PT Chemco Harapan Nusantara	Brake system parts, aluminium casting parts	PT Astra Honda Motor, PT Kawasaki Motor Indonesia, PT Suzuki IndoMobil Motor, PT Yamaha Indonesia Motor Manufacturing, PT Akashi Wahana Indonesia, PT Astra Daihatsu Motor, PT Hino Motors Manufacturing Indonesia, PT Honda Precision Parts Manufacturing, PT Honda Prospect Motor, PT Krama Yudha Tiga Berlian Motors, PT Mesin Isuzu Indonesia, PT Mitsubishi Krama Yudha Motors
PT Dharma Controlcable Indonesia	Control cables	PT Astra Honda Motor
PT Grafindo Mitrasemesta	Stripping for motorcycle	PT Yamaha Indonesia Motor Manufacturing, PT Astra Honda Motor, PT Suzuki IndoMobil Motor
PT Menara Terus Makmur	Mechanical jacks, hand tools, forged parts, kick starters	PT Toyota Motor Manufacturing Indonesia, PT Showa Indonesia Manufacturing, PT Astra Daihatsu Motor, PT Astra Honda Motor, PT Kayaba Indonesia, PT Denso
PT Multi Pratama Interbuana Indonesia	Injection moulding, plastic parts and accessories	PT Takagi Sari Multi Utama, PT Sugity Creatives, PT Sanko Gosei Technology Indonesia, PT Hartono Istana Teknologi
PT Pema Meta Presindo	Subassembly parts, deep draw parts, fuel tanks, oil parts	PT Astra Daihatsu Motor, PT Inti Pantja Press Industri, PT Yamaha Indonesia Motor Manufacturing, PT Astra Honda Motor, PT Denso Indonesia
PT Showa Indonesia Manufacturing	Shock absorbers	PT Astra Honda Motor, PT Kawasaki Motor Indonesia, PT Suzuki IndoMobil Motor, PT Honda Prospect Motor, PT Astra Daihatsu Motor, PT Krama Yudha Tiga Berlian Motors, PT Honda Precision Parts Manufacturing
PT Usra Tampi Indonesia	Plastic parts	PT Suzuki IndoMobil Motor
Kawasan Industri Jababeka I, II, V – Bekasi, Jawa Barat		
PT Karyanusa Techindo Cemerlang	Stamping parts, dies, jig, tools	PT Inti Pantja Press Industri, PT Setia Guna Sejati, PT Kaisar Motorindo Industri
PT Ingress Malindo Ventures	Door sashes and mouldings	PT Suzuki IndoMobil Motor, PT Krama Yudha Tiga Berlian Motors, PT Astra Daihatsu Motor
PT Toyonaga Indonesia	Bushing valve guides, gears	PT Astra Daihatsu Motor, PT Kawasaki Motor Indonesia
PT Sari Takagi Elok Produk	Stamping parts, hose clamps, Geomet surface treatment	PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing Indonesia, PT Hino Motors Manufacturing Indonesia, PT Krama Yudha Tiga Berlian Motors, PT Toyota Boshoku
Kawasan Industri KIIC – Karawang, Jawa Barat		
PT Advics Manufacturing Indonesia	Brake master cylinders, brake assemblies, drums in hats	PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing Indonesia
PT Astra Daihatsu Motor	Press parts, engine parts and assemblies, casting parts, body parts, vehicle units	PT Astra International
PT Fuji Seat Indonesia	Seat assembly	PT Astra Daihatsu Motor
PT Fuji Technica Indonesia	Dies, stamping parts, jig and fixture, subassemblies	PT Suzuki IndoMobil Motor, PT Nusa Toyetetsu, PT Astra Daihatsu Motor, PT Nissan Motor Indonesia
PT Ihara Manufacturing Indonesia	Oil pumps, OCC, water pumps, hubs	PT Yamaha Indonesia Motor Manufacturing, PT Astra Daihatsu Motor, PT Kawasaki Motor Indonesia, Ihara Group
PT Meiwa Kogyo Indonesia	Handle sets, brackets, covers	PT Yamaha Indonesia Motor Manufacturing
PT Mesindo Putra Perkasa	Vehicle components	PT Metindo Era Sakti, PT Honda Prospect Motor, PT Tokai Rubber Indonesia, PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, PT Yamaha Indonesia Motor Manufacturing
PT Metalart Astra Indonesia	Forging parts (crankshaft, connecting rod, transmission gear)	PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing
PT Minda Automotive Indonesia (formerly PT Minda Asean Indonesia)	Switches and locks	PT Yamaha Indonesia Motor Manufacturing, PT Suzuki IndoMobil Motor, PT Kawasaki Motor Indonesia
PT Mugai Indonesia	Automotive components	FEG de Querétaro, SA de CV (Mexico), F.tech Philippines Manufacturing, Inc (Philippines), FCC (Thailand) Co, Ltd, Mugai Co, Ltd (Japan)
PT Ochiai Menara Indonesia	Bolts, o-rings, press stamping metal	PT Yamaha Indonesia Motor Manufacturing, PT Astra Honda Motor, PT Musashi Auto Parts Indonesia
PT Sunchirin Industries Indonesia	Industrial pipes and connections for 4-wheel	Denso
PT Taiho Indonesia	Plain bearings (crankshaft, connecting rod bearing)	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, TAC-1, Taiho (Thailand) Co, Ltd
PT TJForge Indonesia	Automobile components (forging and casting parts)	PT Isuzu Astra Motor Indonesia, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor
PT Toyobesq Precision Parts Indonesia	Automotive components	PT Yamaha Indonesia Motor Manufacturing, PT Yamaha Motor Manufacturing West Java, PT Astra Daihatsu Motor
PT TT Metals Indonesia	Cutting steel for automotive	PT Astra Daihatsu Motor

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Annex table 5.2. Indonesia: Automotive clusters involving selected companies operating in four major industrial estates in Java (Concluded)

Company	Products	Selected customers
Kawasan Industri MM2100 – Bekasi, Jawa Barat		
PT Asmo Indonesia	Power windows, power seat motors, electric power steering, radiator cooling, water tanks, hose assemblies, blower motors, rear wiper motors, throttle motors, servo motors	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Honda Prospect Motor
PT Autoliv Indonesia	Safety belts	PT Toyota Motor Manufacturing Indonesia
PT Denso Indonesia	Car and bus A/C, compressor for automotive, copper and aluminium radiators, windshields, washers, radiator reservoirs, sparkplugs, filters, stick coils, oxygen sensors, magnetos	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Honda Prospect Motor, PT Krama Yudha Tiga Berlian Motors, PT Nissan Motor Indonesia
PT Federal Nittan Industries	Engine valves	PT Astra Honda Motor, PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing Indonesia, PT Suzuki IndoMobil Motor, PT Yamaha Indonesia Motor Manufacturing
PT Ichickoh	Lamps, door mirrors	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Krama Yudha Tiga Berlian Motors, PT Nissan Motor Indonesia
PT Kayaba	Front forks, rear cushion units, shock absorbers	PT Yamaha Indonesia Motor Manufacturing, PT Suzuki IndoMobil Motor, PT Kawasaki Motor Indonesia, PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing Indonesia, PT Krama Yudha Tiga Berlian Motors, PT Astra Otoparts
PT NOK Indonesia	Oil seals, o-rings, ultra brushes, tensioners, torsional vibration dampers	PT Yamaha Indonesia Motor Manufacturing, PT Honda Prospect Motor, PT Kayaba Indonesia, PT Showa Indonesia Manufacturing, PT FCC Indonesia, PT Astra Daihatsu Motor
PT Nusa Keihin Indonesia	Floor shift assembly, transmissions, component of engine parts, transmission control parts	PT Astra Daihatsu Motor
PT Nusa Toyotetsu	Brake pedals, brackets, clutch pedals, pad pedals, parking brakes, arm suspension	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor
PT Parker Metal Treatment Indonesia	Heat treatment process	PT FCC Indonesia
PT Progress Toyo Indonesia	Rearview mirrors	PT Yamaha Indonesia Motor Manufacturing, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Nissan Motor Indonesia, PT Honda Prospect Motor, Progress Toyo Manufacture (Thailand)
PT Resin Plating Technology	Plastic parts (bumper, dashboard)	PT Sugity Creatives
PT Roki Indonesia	Air cleaners	PT Astra Honda Motor
PT Shei Tai Industrial	Transmission cases, crank cases	PT Suzuki IndoMobil Motor, PT Mesin Isuzu Indonesia
PT TD Automotive Compressor Indonesia	Compressors, clutches for AC	PT Denso Indonesia, PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor
PT Toyo Denso Indonesia	Switches, coils	PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Kawasaki Motor Indonesia, PT Dan Motor Indonesia
PT Toyo Seal Indonesia	Rubber seals, core metal	PT NSK Bearings Manufacturing Indonesia
PT Toyota Auto Body-Tokai Extrusion	Automotive rubber and plastic parts	PT Toyota Motor Manufacturing Indonesia, PT Astra Daihatsu Motor, PT Suzuki IndoMobil Motor, PT Honda Prospect Motor, PT Isuzu Astra Motor Indonesia, PT Krama Yudha Tiga Berlian Motors, PT Nissan Motor Indonesia
PT Toyota Boshoku Indonesia	Seat assembly, seat frames, adjuster seats, sliding seats, door trim, interior parts	PT Toyota Motor Manufacturing Indonesia, PT Nissan Motor Indonesia, PT Suzuki IndoMobil Motor, PT Toyota-Astra Motor
PT Yutaka Manufacturing Indonesia	Disc brake, mufflers (motorcycle and automobile)	PT Astra Honda Motor, PT Honda Prospect Motor
Kawasan Industri Suryacipta – Karawang, Jawa Barat		
PT Akashi Wahana Indonesia	Transmissions	PT Astra Daihatsu Motor
PT APM Armada Suspension	Coil springs	APM Auto Parts Marketing, PT Primaper Tradea Utama, Sumber Mas
PT JTEKT Indonesia	Bearings, power steering	PT Astra Daihatsu Motor, PT Yamaha Indonesia Motor Manufacturing, PT Toyota Motor Manufacturing Indonesia, PT Astra Honda Motor, PT Nissan Motor Indonesia
PT Musashi Auto Parts Indonesia	Engine parts for automobile (gear transmission and camshaft)	PT Astra Daihatsu Motor, PT Honda Prospect Motor, PT Honda Precision Parts Manufacturing, PT FCC Indonesia
PT Pakoakuina	Alloy wheel rims	Toyota Motor Corporation, Suzuki Motor Corporation, Nissan Motor Company, Ltd, PT Astra Daihatsu Motor, PT Toyota Motor Manufacturing Indonesia, PT Nissan Motor Indonesia, PT Isuzu Astra Motor Indonesia, PT Astra Honda Motor
PT Roki Indonesia	Air cleaners	PT Yamaha Indonesia Motor Manufacturing
PT Topy Palingda Manufacturing Indonesia	Steel wheel rims for truck and bus	PT Hino Motors Manufacturing Indonesia, PT Krama Yudha Tiga Berlian Motors, PT Isuzu Astra Motor Indonesia, PT Astra Multi Truck Indonesia, Isuzu Hicom Malaysia Sdn Bhd, Isuzu Motors Co (Thailand)

Source: ASEAN Investment Report 2017 research, based on Indonesia Automotive Parts and Components Industries Association database.

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