

Research

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Beyond China: Asia's next manufacturing powerhouse

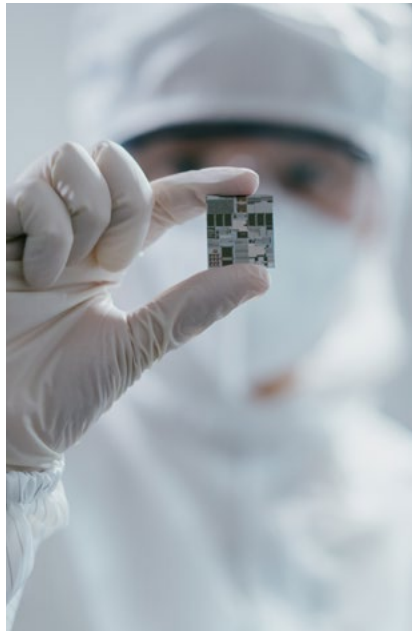
Contents

01



Preface →

02



Manufacturing in SEA and India →

- Financial indicators
- Non-financial indicators

03



Country snapshots →

- India
- Indonesia
- Malaysia
- Philippines
- Singapore
- Thailand
- Vietnam

Preface

The global economy is highly integrated. Free trade networks, infrastructure developments, global mobility and technology are just some factors which have supported the globalisation journey over the past 30 years. China joining the World Trade Organisation (WTO) in 2001 helped consolidate China's position as the global manufacturing epicentre.

Economies are arguably more connected than at any other point in history. Nevertheless, the evolving geopolitical landscape is reversing some of this global interconnectivity. This is especially true for manufacturing industries. Many countries and companies are looking to evolve their supply chain networks by moving manufacturing and production 'closer to home'. For example, domestic policies such as the US' CHIPS and Science act, Germany's Supply Chain Act, and the UK's Critical Import Council are driving near/re/friendshoring.



In Asia Pacific (APAC), this near/re/friend shoring trend is manifesting in the China+1 strategy. This is a diversification strategy where companies add additional manufacturing bases outside of China. The objective is to hedge against supply chain disruptions by reducing reliance on a single country.

The relocation of manufacturing outside of China has had a relatively small impact to the share of Chinese exports as a percentage of global exports¹. The impact has been mostly felt at the destination country, especially those in Southeast Asia (SEA) and India. This has led to rising manufacturing opportunities across these geographies. Governments recognise these opportunities and are implementing a greater number of policies which aim to boost their local manufacturing industries.

Companies are starting to respond, but they need to be flexible given the ongoing volatile landscape. Land selection and the capital used will be key in determining success factors for companies. Alternative funding and new leasing options are becoming more readily available. These are enabling manufacturers to set up quickly and to pivot as needed if and when global trade and supply chains shift again.

¹ UNCATD

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Manufacturing in SEA and India

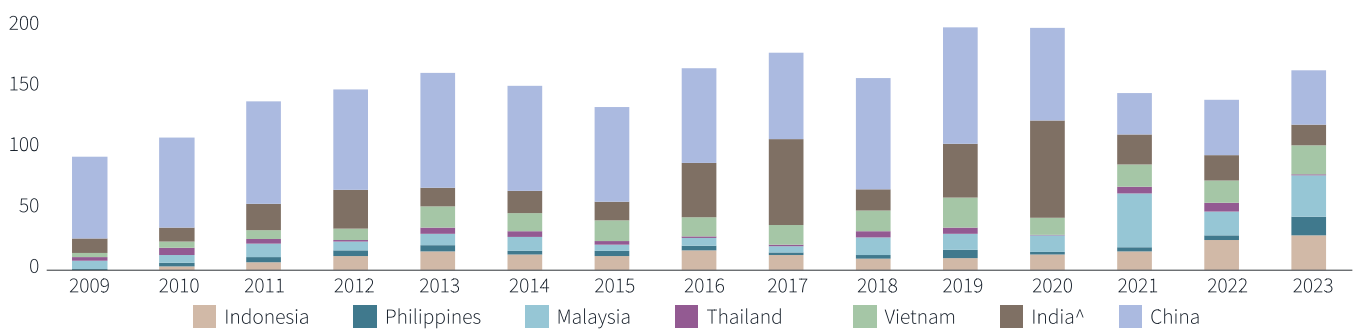
The global manufacturing foreign direct investment (FDI) movement has been shaped by a complex interplay of economic, technological, and geopolitical factors. Companies need to carefully evaluate various factors such as costs, market access, infrastructure, labour, and governmental

support before determining their global manufacturing investment strategies.

This evolving landscape has created significant opportunities in SEA and India. This is reflected in significantly rising FDI levels – see Figure 1.

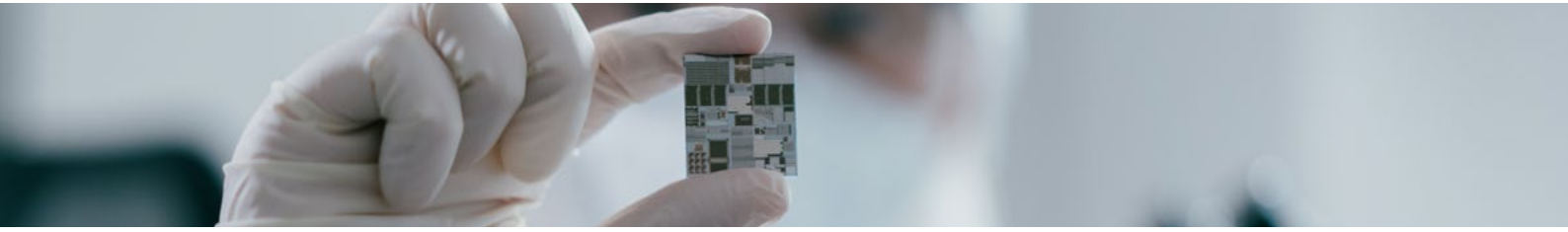
Figure 1

Regional manufacturing FDI over the years (USD billion)



^India: The manufacturing FDI in India includes all investments in manufacturing sectors and excludes Computer Software & Hardware, Transportation, Construction Activities, Hospital and Diagnostic Centres, Hotel & Tourism, Information & Broadcasting, Service Sectors and Trading.

Source: Malaysian Investment Development Authority (MIDA), Philippines Statistics Authority, Bank of Thailand, Indonesia Investment Coordinating Board, Vietnam Ministry of Planning and Investment Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India, Statista, Press Research



The driving force behind this trend is not only the need for supply chain diversification, but also to capitalise on the strong fundamentals of this region. These fundamentals include a large population and labour pool, favourable

costs, and various incentives (see Table 1). From a manufacturing investment perspective, these factors position SEA and India as major manufacturing hubs for global markets.

Table 1

Macro fundamentals drivers

	Total GDP (nominal, USD bil.)	Population (mil. ppl)	Middle income pop.^ (mil. ppl)	Total labour force (mil. ppl)	Manufacturing labour cost (2023, USD/hour)	Logistics Performance Index (LPI) score 2023	Goods exports (USD bil.)	Shared Free Trade Agreements (FTAs)
China	17,784	1,426	700	983	5.6	3.7	3,274	RCEP
vs								
SEA+India*	7,141	2,039	913	1,384	1.2	3.3	2,249	RCEP AFTA-India
India	3,488	1,433	551	975	2.0	3.4	465	RCEP AFTA-India
Indonesia	1,371	278	172	189	1.1	3.0	188	RCEP AFTA
Malaysia	400	34	30	24	4.4	3.6	226	RCEP AFTA CPTPP
Philippines	437	117	58	76	1.4	3.3	104	RCEP AFTA
Singapore	501	6	6	4	21.0	4.3	766	RCEP AFTA CPTPP
Thailand	515	72	42	49	2.7	3.5	220	RCEP AFTA
Vietnam	429	99	53	67	1.6	3.3	280	RCEP AFTA CPTPP

Source: Oxford Economics, EIU, World Bank, 2023 Update

* LPI and Manufacturing labour cost for SEA+India are weighted averages based on exports and population, respectively.

^ Middle income households (MIH) are defined by JLL as those households with an annual income of US\$20,000 or above in 2015 PPP terms. The middle income population is determined by considering the average household size in each country together with the MIH criteria.

Financial value drivers

Rising cost in China over the past decade has been the accelerator of this shift towards diversification. The continuous influx of capital has nearly tripled the China wage between 2010-2020 according to data from the Economist Intelligence Unit

(EIU). Higher demand for industrial land has also pushed up land prices. Consequently, these costs in China are up to two times higher compared to some SEA countries and India (with the exception of Singapore and Malaysia which are service-based economies).

Figure 2

Industrial land price (USD/sqm)*

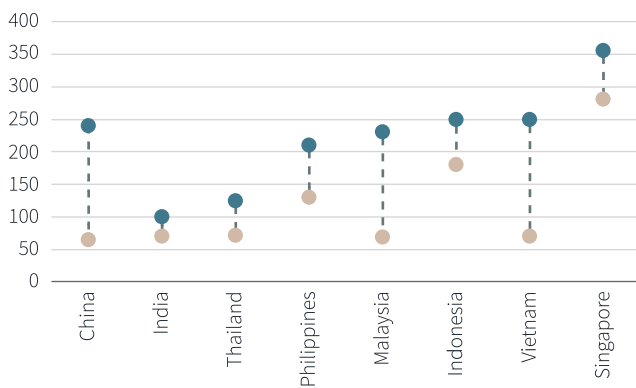


Figure 3

Construction cost (USD/sqm)^

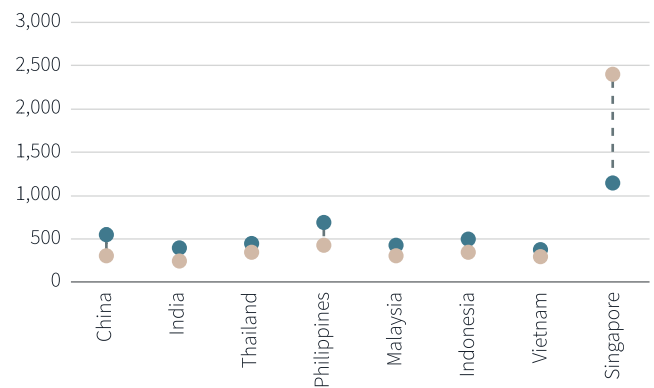


Figure 4

Manufacturing wage (USD/hour)

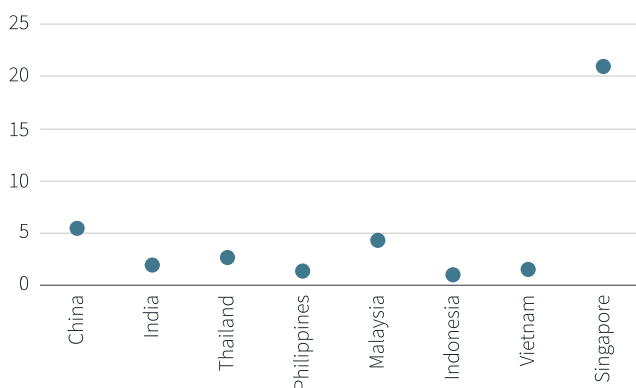
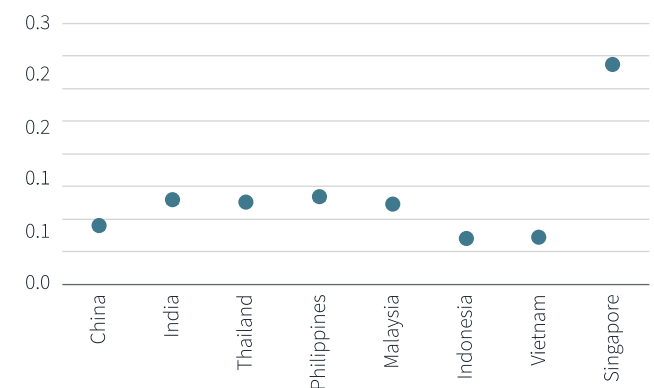


Figure 5

Electricity-Business use (USD/kWh)



Source: Arcadis, EIU, Globalpetrolprices, Statista, JLL estimate

* Land prices range is typical range in major industrial clusters of each country. Singapore land price is for Jurong area, plot ratio 1.4.

^ Construction cost applies to either large cities in each country or major industrial clusters.

Note: Cross geography data may not be fully comparable because of different methodologies and sources. Local currency to USD exchange rates also need to be taken into account.

Non-financial value drivers

Factors such as skilled labour, infrastructure, environmental regulations, proximity to suppliers and customers, and political stability contribute significantly to a factory's long-term success and sustainability. Careful evaluation of these non-cost or qualitative factors is crucial to make an

informed decision and lay a strong foundation for future growth.

In the table below, JLL has examined these non-financial factors to gauge the potential opportunities and constraints of each geography.

Table 2

Non-financial indicators snapshot

	Infrastructure			Labour forces		Business environment		Localisation rate*
	Logistics performance index score (higher better)	Quality of roads rank (higher better)	Quality of port rank (higher better)	Labour productivity ('000 USD/person/year)	Labour availability (million people)	Ease of doing business (higher better)	JLL Transparency Index, 2022 (lower better)	
China	3.7	4.6	4.5	22	983	78	2.54	High
India	3.4	4.5	4.5	4	975	71	2.73	High
Indonesia	3.0	4.2	4.3	6	189	70	2.86	High
Malaysia	3.6	5.3	5.2	21	24	82	2.61	Medium
Philippines	3.3	3.7	3.7	8	76	63	2.91	Medium
Singapore	4.3	6.5	6.5	102	4	86	1.96	Low
Thailand	3.5	4.4	4.1	8	49	80	2.63	Medium
Vietnam	3.3	3.4	3.8	7	67	70	3.36	Low

Source: Oxford Economics, World Bank, Euromonitor, JLL Index, World Economic Forum, updated to latest data available

Note: The 'high', 'medium', and 'low' classification is a qualitative assessment based on the geographies assessed in the table.

* OECD's domestic value added (DVA) data is used as a proxy for localisation rates assessment. It's important to note that DVA is influenced by country size (i.e. typically larger countries typically using more domestic inputs due to their scale) and top export sectors (i.e. countries specialising in natural resources or agricultural products tend to have higher reliance on domestic inputs compared to countries focused on manufacturing). Therefore, the findings should be considered as expert opinions and used as a preliminary reference point only.

03

Country snapshots



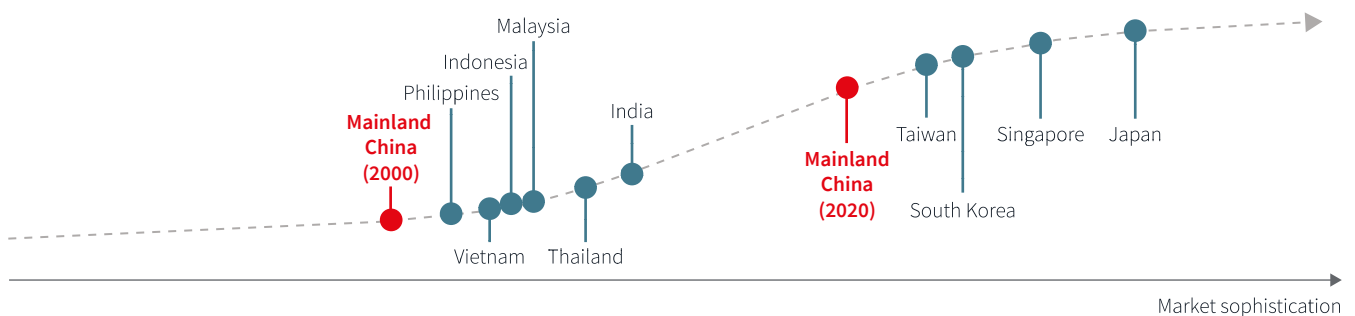
As manufacturers contemplate establishing manufacturing facilities in SEA and India, a key question arises: **Which country should they select?**

While each country in the region presents its own unique benefits and challenges, this section delves into the current landscape and examines what each country has to offer. Directly, there will be greater opportunities in investing and developing manufacturing facilities. Indirectly, there will be greater need for logistics facilities and implications for future logistics hubs.

Figure 6

Typical manufacturing market characteristics


	Nascent-growth	Mature	Advanced
Product and value added	<p>Mostly basic with some intermediate</p> <p>Basic</p> <ul style="list-style-type: none"> • Woodwork • Textiles • Paper and printing 	<p>Mostly intermediate with some basic</p> <p>Intermediate</p> <ul style="list-style-type: none"> • Heavy machinery • Refining • Automobiles (combustion engine cars) 	<p>Mostly high-tech with some intermediate</p> <p>High tech</p> <ul style="list-style-type: none"> • Biotech • Pharmaceuticals • Petrochemical
Resourcing	<p>Mostly labour-intensive</p>	<ul style="list-style-type: none"> • More capital-intensive and less labour-intensive • More automation 	<ul style="list-style-type: none"> • Low labour content • High capital • High automation and robotics
Manufacturing real estate product typology	<ul style="list-style-type: none"> • Low density • Close to port/airport, major infrastructure node • Low specialisation of buildings 	<ul style="list-style-type: none"> • Medium density with some low density • Some clustering • Some built to suit 	<ul style="list-style-type: none"> • High density with some medium density • Clustering of industry sectors; separation of polluted and non-polluted industries • Built to suit • Redevelopment of older factories close to residential into other higher value uses amid city urbanisation
Ownership	<ul style="list-style-type: none"> • Owner-occupied • Government-owned land with annual rental 	<ul style="list-style-type: none"> • Some third party owned • Government sells industrial land for development 	<ul style="list-style-type: none"> • Government sells industrial land for development - professional industrial or logistics developers • REITs



Source: JLL



India

 Where are the opportunities?

Industry	Overview	Key products
Electronics²	Expected CAGR of 6.8% from 2023 to 2030, reaching USD 124.9 bn by 2030. FDI amounted to ~USD 539.9 mn in FY 22-23 (1.2% of India's total FDI)	<ul style="list-style-type: none"> • Smartphones • Camera • Locks & security • Cooking essentials • Home appliances
Automotive³ (Electric vehicles)	India is the world's third-largest automobile market. Further, the EV market is expected to grow at an estimated CAGR of 8.1% between 2022 and 2027. FDI amounted to ~USD 1.9 bn in FY 22-23 (4.1% of the total FDI)	<ul style="list-style-type: none"> • Cars • Multi-utility vehicles • Light weight commercial vehicles
Renewable energy⁴	India's renewable energy market is projected to reach nearly USD 35.6 bn by 2028, reflecting a CAGR of around 5.4% from USD 20 bn in 2022. FDI into the non-conventional energy sector totalled ~USD 2.5 bn in FY 22-23	<ul style="list-style-type: none"> • Wind power • Solar power
Semiconductor⁵	Currently valued at USD 23.2 bn, the market is set for strong growth given the investments into AI technology	<ul style="list-style-type: none"> • Silicon wafers • Hard disk drives • Print heads • Batteries • RF filters
Pharmaceutical⁶	Forecast to grow from USD 41 bn in 2021 to USD 130 bn by 2030. India accounts for 60% of global vaccine production. FDI totalled ~USD 2.1 bn in FY 22-23	<ul style="list-style-type: none"> • Vaccines • Drug ingredient production • Instruments and test kits

Sources:

²Grandviewresearch.com

³Mordor Intelligence

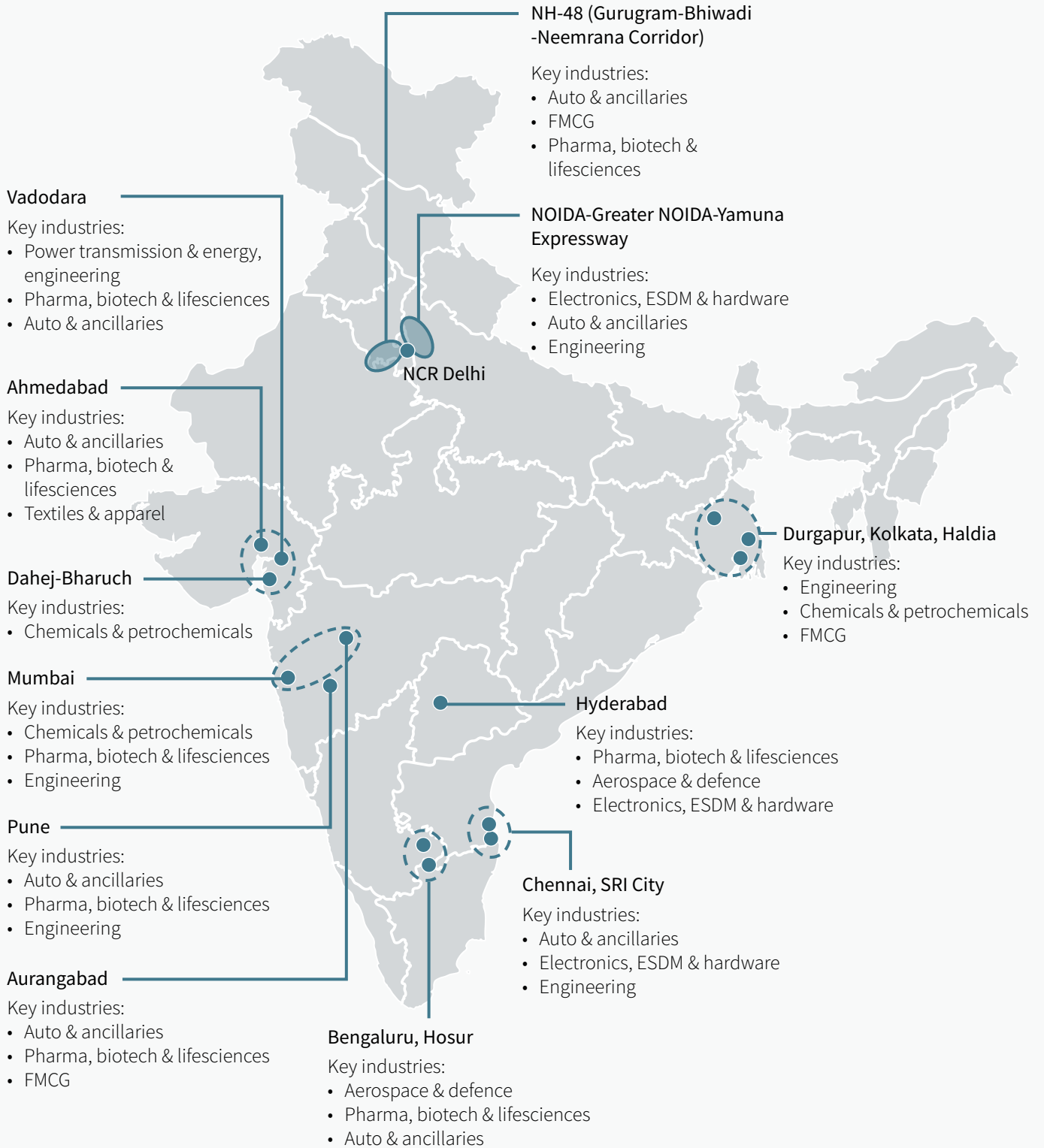
⁴IMARC Research

⁵Invest India


⁶Economic Survey 2022-23

Where are the key industrial clusters?

Top 10 industrial clusters in India



Source: JLL

 What policies are driving manufacturing?

Make in India initiative: Launched in September 2014 to facilitate investment, foster innovation, build best-in-class infrastructure and to make India a hub for manufacturing, design and innovation. In May 2020, the PM launched the Atmanirbhar Abhiyan Package, paving the way for Make in India 2.0 – which evolved from 1.0's 'one-size-fits-all' approach for all identified sectors, to a clear focus on select sectors. The Make in India 2.0 initiative focuses on 15 manufacturing sectors and 12 service sectors.


Production Linked Incentives (PLI): India shifted gears from investment-linked incentives to production sales-linked incentives. The government has allotted USD 31 bn of incentives - across 15 sectors - to be distributed through a fair EOI evaluation process by different ministries. The ministry has given approvals to more than 700 manufacturing companies of international & national repute under this scheme for investments in BF & GF manufacturing units.

India Semiconductor Mission (ISM): This is a specialised and independent business division within the Digital India Corporation of Govt. of India that aims to build a vibrant semiconductor industry and broader ecosystem. It was launched in December 2022 with the aim to promote India's emergence as a global hub for electronics manufacturing and design.

Industrial Corridor Development Programme: In order to accelerate growth in manufacturing, the Government of India adopted the strategy of developing industrial corridors in partnership with state governments. As part of National Industrial Corridor Programme, eleven industrial corridors are being developed in four phases.

National Logistics Policy (NLP): This policy was launched in September 2022, and aims to lower the cost of logistics and to make performance on par with developed nations. This will help boost economic growth, provide employment opportunities, and make Indian products more competitive in global markets.



 Who's investing?

Company	Sector	Investment size (USD Mn.)
Tata Electronics + PSMC (Taiwan)	Semiconductor	14,162
Nissan, Renault	Automotive	3,048
Adani Energy	Energy	2,940
Pou Chen	Footwear	280
VinFast	Automotive	2,000
Daikin	Consumer electronics	600
Micron	Semiconductor	825
Boeing	Aerospace	192
Hyundai Motors	Automotive	742
Exide Battery Giga Factory	EV battery	720
Nestle	Food and beverage	609

Source: JLL, various company and/or government announcements and news articles





Indonesia

 Where are the opportunities?


Industry	Market trend commentary	Key products
Base metals, metallic items, non-machinery and equipment	A major producer of nickel and other minerals, growing demand for nickel has created a competitive ecosystem in the value chain of lithium batteries and electric vehicles.	<ul style="list-style-type: none"> • Electronics and equipment • Satellite ground equipment • Cement • Interior materials • Nickel mining and ore smelting
Chemicals and pharmaceuticals	Pharmaceuticals are poised for growth, expanding to more than USD 4.5 billion in annual revenue by 2028. Additionally, manufacturing chemicals and chemical products are projected to generate USD 35.5 billion in revenue by 2024.	<ul style="list-style-type: none"> • Construction chemicals • Agrochemicals • Petrochemical • Healthcare, life science, electronics • Medicines, supplements, care products • Formaldehyde, resin, emulsion adhesives • Mortar, gypsum, abrasive materials
Paper and printing	One of the top 20 paper producers globally. The printing industry is also strong, catering to various sectors such as publishing, advertising, packaging, and commercial printing.	<ul style="list-style-type: none"> • Printing products • Textile, pulp and paper, plastics • Pulp, paper, and tissue
Food	The industry received approximately USD 2.3 billion in FDI in 2023. The country's large population and growing economy serves as growth factors for the food sector.	<ul style="list-style-type: none"> • Dairy products • Food and food service • Livestock feed production • Condiments • Cereal, chilled food, baby food, broth
Motor vehicles and other transportation	The largest automotive market in SEA, Indonesia ranks as the second-largest production centre in the region, after Thailand. The EV market is predicted to surpass USD 20 billion by 2030.	<ul style="list-style-type: none"> • Energy storage systems • Equipment manufacturing • Automotive spare parts • Electric vehicles (EV) • Vehicles and related equipment

Source: JLL, BKPM 2023 Report

Where are the key industrial clusters?



*Key industries are based on the National Master Plan for Industrial Development (RIPIN)
Source: JLL

 What policies are driving manufacturing?


Incentives for battery-based electric motorised vehicles: Government incentive support in the form of government-borne value-added tax (VAT).

Investment tax incentives: Available through Special Economic Zones (SEZ), and other free trade or similarly zoned areas. In general, there are four incentive types: tax holidays, tax allowance, import duty exemption, and super tax deduction.

“Making Indonesia 4.0” strategy: Launched in 2018, this initiative aims to implement new manufacturing technologies in the most vital sectors of Indonesia, including automotive, food and beverage, electronics, and chemical.

100% ownership for foreign investment in certain sectors: ‘Presidential Regulation No. 10 of 2021’ allows 100% foreign ownership in some key industries (if some conditions are met) including logistics, e-commerce, and cold storage.

Net-zero commitment by 2050: Indonesia has launched a Long-Term Strategy for Low Carbon and Climate Resilience 2050 (Indonesia TS-LCCR 2050). The aim is to reduce greenhouse gas (GHG) emissions through programmes such as onsite renewables and procurement, decarbonisation strategies, and embodied carbon considerations.

 Who's investing?

Company	Description
Neta	Neta has initiated the process of accepting orders for the Neta V EV and is gearing up for local production in 2024.
PepsiCo	Acquired 60,000 sqm of land in Cikarang, West Java. A USD 200 million commitment over 10 years.
LG Chem and Huayou	LG Chem (South Korea) has signed a memorandum of understanding with China-based Huayou Group to construct an acid-leaching plant and a precursor plant in Indonesia.
Ford Motor, Huayou, and Vale Indonesia	A USD 4.5 billion nickel processing plant project named Pomalaa Blcok High-Pressure Acid Leaching (HPAL) will be built in Kolaka, Southwest Sulawesi.
Gotion Indonesia and PT Anugrah Neo Energy Materials (ANEM)	ANEM and Gotion Indonesia Materials have agreed to build a high-pressure acid leaching (HPAL) plant to produce materials used in batteries for EVs in Sulawesi.
CATL	Ningbo Contemporary Brunp Lygend Co., Ltd. (CBL) signed a tri-party framework agreement with PT Aneka Tambang (ANTAM) and PT Industri Baterai Indonesia (IBI) to cooperate on the Indonesia EV Battery Integration Project.
Hon Hai, Gogoro, IBC, and Indika	Hon Hai Technology Group (Foxconn) has signed a Memorandum of Understanding (MoU) with the Indonesian Ministry of Investment/BKPM, IBC, Indika, and Gogoro to jointly develop a new energy ecosystem in Indonesia that focuses on electric battery, electric mobility, and associated industries.

Source: Various company and/or government announcements and news articles

Note: This is not an exhaustive list – only selected investments shown



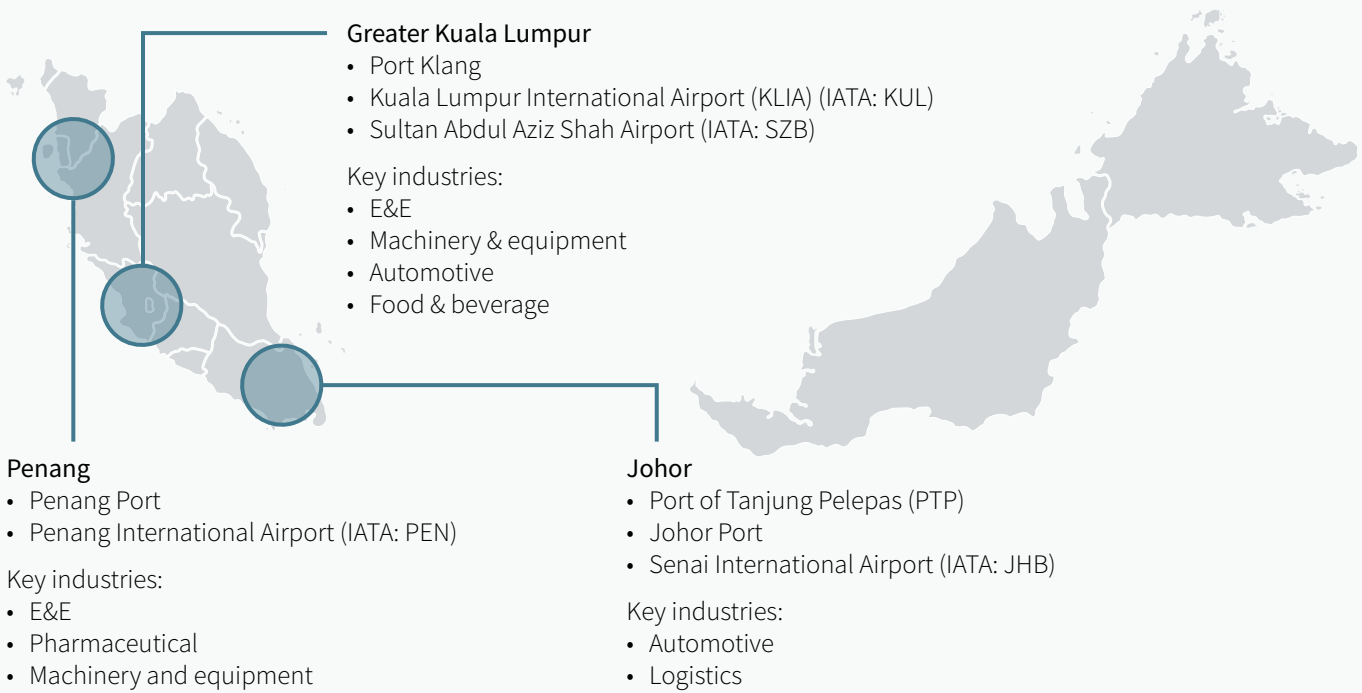
Malaysia

Where are the opportunities?

Industry	Overview	Key products
Rubber	Malaysia plays an important role in the rubber industry in SEA. It is also the sixth-leading producer of natural rubber in APAC.	<ul style="list-style-type: none"> • Gloves • Tyres • Thread • Automotive components • Seals & O-rings
Machinery and equipment (M&E)	From January to July 2022, Malaysia experienced a significant 25.5% increase in machinery and equipment (M&E) exports, reaching USD 8.34 billion y-o-y.	<ul style="list-style-type: none"> • Industrial machinery • Electrical equipment • Construction and mining machinery
Food	Malaysia wants to be one of the largest global suppliers of Halal products. The Global Islamic Economy Indicator forecasts that the global halal market will expand from USD 2.09 trillion in 2021 to almost USD 3.27 trillion by 2028.	<ul style="list-style-type: none"> • Processed and canned foods • Dairy products • Beverages • Snack foods
Chemical	The industry contributes 6% to the nation's GDP and employs 292,969 workers, 12.5% of the total manufacturing employees.	<ul style="list-style-type: none"> • Petrochemicals • Oleochemicals • Plastics and polymers • Agrochemicals
Transportation	Malaysia has attracted many global automotive manufacturers to operate their flagship facilities in the country, including the first Porsche assembly plant outside of Germany, several regional distribution centres such as Volkswagen, Mercedes Benz, BMW, and Volvo's regional EV hub. Other manufacturers like Proton, Perodua, and Honda have also established manufacturing facilities in Malaysia, which is poised to become a regional hub for the EV industry.	<ul style="list-style-type: none"> • Automobiles • Motorcycles • Commercial vehicles • Electric vehicles and components
Electronics and electrical	Now one of the largest export-oriented industries in the country. It contributes 38% to Malaysia's total exports and 78% to the net trade surplus.	<ul style="list-style-type: none"> • Consumer electronics • Electrical appliances • Electronic components • Semiconductors

Source: JLL, various 3rd party sources

Where are the key industrial clusters?



Source: JLL

What policies are driving manufacturing?

New Industrial Master Plan 2030 (NIMP 2030):

Industrial master plan that lays out a clear course for Malaysia between 2023 and 2030 to keep the country's manufacturing industry and its related services competitive on a global level. The NIMP 2030 aims to capitalise on rising global trends, supply chain disruptions, the present geopolitical scenario, digitalisation, and environmental, social and governance (ESG) considerations.

Moving to sustainability. The 12th Malaysia Plan (2021 to 2025), outlines the country's commitment to achieving net-zero greenhouse gas emissions by 2050. Currently, Malaysia holds the top ranking in SEA in the Energy Transition Index (World Economic Forum).

National Fourth Industrial Revolution (4IR)

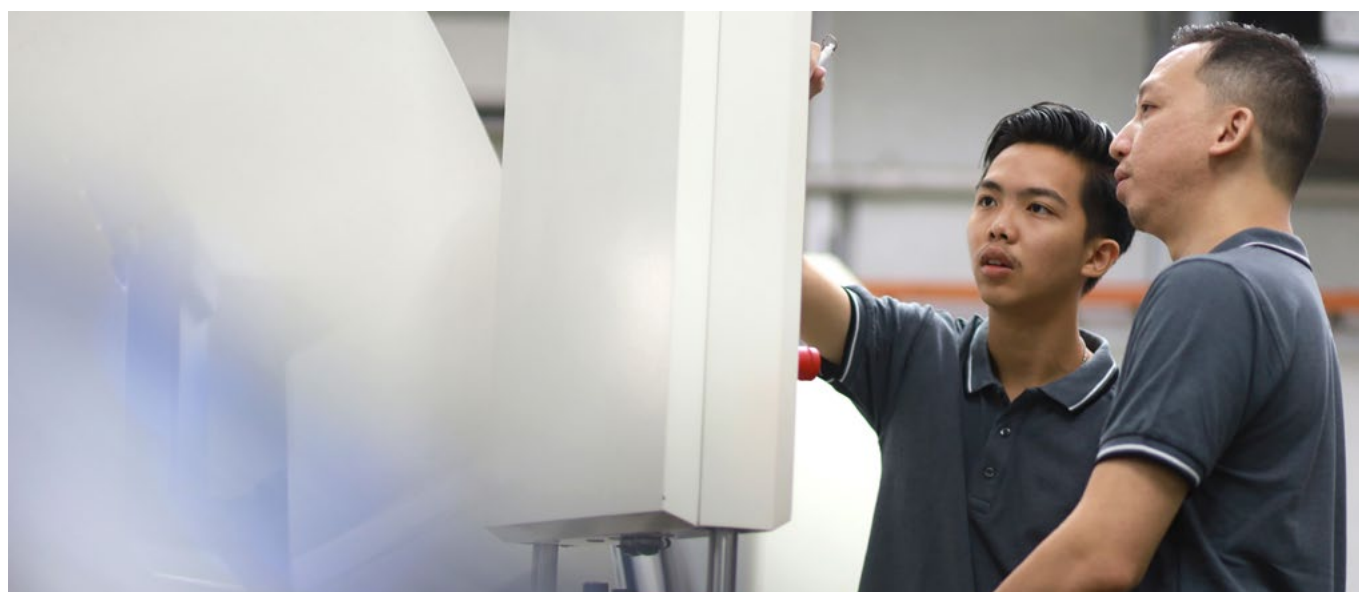
Policy: Policy to increase manufacturing productivity; elevate the contribution of the manufacturing sector to the economy; strengthen innovation capacity and capability; and increase the number of high-skilled workers.

 Who's investing?

Company	Sector / product(s)	Investment size (USD Mn.)
Infineon	Semiconductor	7,000
Intel	Semiconductor	7,000
Micron	Semiconductor	2,000
Lumileds Malaysia Sdn Bhd	Semiconductor	5,400
INV New Material	Lithium battery plant	672
Enovix Corporation Technology (M) Sdn Bhd	Advanced silicon battery	1,200
SBH Kibing Solar	Solar photovoltaic glass	630
EVE Energy Co. Ltd	Cylindrical lithium-ion batteries	422
LONGi Malaysia	Electronics and electrical	273
Masdar	Renewable energy projects	8,000
Alton	Consumer and commercial tools, appliances, and floor care	420
Texas Instruments Malaysia Sdn. Bhd	Semiconductor devices and high-performance integrated analogue circuits	1,600


Source: Various company and/or government announcements and news articles

Note: This is not an exhaustive list – only selected investments shown






Philippines

 Where are the opportunities?

Industry	Market trend commentary	Key products
Semiconductor	The Philippines is one of the seven countries that the USA partnered with in line with their CHIPS Act, which aims to expand and diversify the US' semiconductor supply chain.	<ul style="list-style-type: none"> • Assembly and testing services • Integrated circuits • RF/microwave
Electronics and electricals	Semiconductor and Electronics Industries in the Philippines Foundation, Inc. (SEIPI) reported an all-time high of electronics export of USD 49.1 billion in 2022.	<ul style="list-style-type: none"> • Consumer electronics • Industrial electronics • Telecommunication equipment



 Where are the key industrial clusters?

Economic zones in Luzon

Has 58 key manufacturing economic zones spread across Northern and Southern Luzon, as well some areas in Metro Manila.

Key industries:

- Paper
- Clothing apparel
- Food
- Electronic
- Metal products

Economic zones in Visayas

Has 10 key manufacturing economic zones located in Cebu, Leyte, and Negros Occidental

Key industries:


- Food
- Motor vehicles
- Clothing
- Electronic
- Chemical products

Economic zones in Mindanao

Has 10 key manufacturing economic zones located in Davao del Norte, Misamis Oriental, South Cotabato, and other parts of Mindanao.


Key industries:

- Food
- Chemical products
- Furniture
- Plastic
- Basic metal products

 What policies are driving manufacturing?

Build Better More Programme: The current administration's infrastructure development programme seeks to expand the previous administration's "Build, Build, Build" programme that will push high-impact infrastructure projects,

boosting efficiency and production in the country. In 2024, the administration proposed a PHP 1.418 trillion (USD 24.4 billion) budget for essential infrastructure projects focusing on improving connectivity within and outside Metro Manila.

 Who's investing?

Company	Description
Sercomm Philippines	Networking equipment manufacturer expanded by 20,000 sqm which will produce wireless telecommunication devices such as 5G and fiber products.
Ogura Clutch Philippines	Relocated from Calamba, Laguna to LIMA Estate, the new facility covers over 16,000 sqm which will cover the distribution and manufacturing functions of the company. Ogura is the world's largest producer of electromagnetic clutches and brakes.
Knoll Packaging	The new factory opened with 8,000 sqm space fully equipped with a full rooftop solar array, rainwater collection, and a low carbon footprint.
Glovax Lifescience Corp	Glovax partnered with Eubiologics, and started building a PHP 7.5 billion (USD 130 million) vaccine facility in Taysan, Batangas.
D&L Industries Inc	A PHP 10.5 billion (USD 183 million) plant listed as chemical and food manufacturer in Batangas.
Brother Industries	An 87,000 sqm expansion of the manufacturing facility. The company is known for its printers, as well as other products like All-in-Ones, labelling systems, and other consumables.

Source: Various company and/or government announcements and news articles
 Note: This is not an exhaustive list – only selected investments shown





Singapore

 Where are the opportunities?

Industry	Overview	Key products
Electronics and electrical	Singapore's largest manufacturing industry accounting for around 41% of total manufacturing output in 2023.	<ul style="list-style-type: none"> • Silicon wafers • Hard disk drives • Print heads • Batteries • RF filters
Chemical	The chemicals industry cluster which includes petroleum, petrochemicals and specialty chemicals, contributed around 23% of total manufacturing output in 2023.	<ul style="list-style-type: none"> • Refined oil products • Petrochemicals • Resins • Specialty chemicals
Precision engineering	The precision engineering industry cluster accounted for 12.8% of total manufacturing output in 2023.	<ul style="list-style-type: none"> • Critical components (e.g. lasers, optics, motors, sensors, precision pumps and valves) • Semiconductor, test & measurement, light emitting diode (LED), additive manufacturing and machining tools
Biomedical	In 2023, the industry cluster contributed 9.6% of Singapore's total manufacturing output.	<ul style="list-style-type: none"> • Vaccines • Small molecules (ingredients that go into the production of drugs) • Instruments and test kits
Transport engineering	The transport engineering sector contributed to 7.8% of Singapore's total manufacturing output in 2023.	<ul style="list-style-type: none"> • Automotive parts • Electric vehicles • Offshore platforms • Marine-related parts • Aircraft-related parts

Source: Singstat, JLL Research

Where are the key industrial clusters?



Source: MapIT, URA, JTC, JLL Research

What policies are driving manufacturing?

Pioneer Industries (Manufacturing) Incentive:

Granted to eligible companies that establish new-in-Singapore “pioneering” activities. Qualifying firms will enjoy a corporate tax exemption on the income derived from the manufacturing of the pioneer product(s). The government extended the scheme to 31 December 2028.

Development and Expansion Incentive for Manufacturing:

Encourages companies to undertake high value-add manufacturing activities in Singapore. Eligible firms will enjoy a

concessionary tax rate on the income derived from qualifying manufacturing activities in Singapore. The government also extended this scheme to 31 December 2028.

Enterprise Innovation Scheme: Enhances tax deductions for businesses engaged in activities such as research and development (R&D), registration of intellectual property and innovation carried out with polytechnics and Institutes of Technical Education. The scheme will be available between 2024 and 2028.

Who's investing?

Company	Description
BioNTech	BioNTech acquired Novartis Singapore Pharmaceutical Manufacturing's GMP manufacturing site to establish its first mRNA facility in Singapore. It's also the first step in BioNTech's plans to establish a regional hub in the APAC region.
Sanofi	Sanofi broke ground for a first-of-its-kind Evolutive Vaccine Facility (EVF) in Singapore, as part of a EUR 900 million (USD 969 million) investment over five years to create two new EVFs (the other in France) globally.
Ardentec	Ardentec broke ground for a new test facility in Singapore's Woodlands Industrial Park, investing more than SGD 250 million (USD 185 million) in the new six-storey facility ("Fab2").
Soitec	Soitec broke ground on its Singapore fab extension in Pasir Ris Wafer Fab Park to grow its global semiconductor wafer production capacity.
JIOS Aerogel	JIOS Aerogel commissioned a new factory in Singapore for electric-vehicle battery components, located at the JTC Chemicals Hub in Tuas.
Pall Corporation	Pall Corporation broke ground for a new USD 100 million manufacturing facility in Singapore as part of initial large-scale investment to drive expansion in the APAC region.
Cariflex	Cariflex broke ground at a 6.1 ha site in Jurong Island for the world's largest and Singapore's first polyisoprene latex plant. The combined investment for the first phase and pre-investment of necessary infrastructures for the second phase is over USD 350 million.
UMC	UMC announced new 22nm wafer fab in Singapore, with a planned investment of USD 5 billion.
Dyson	Dyson announced the setting up of a new advanced manufacturing plant for next generation batteries in Tuas, Singapore.
GSK	GSK broke ground for its SGD 343 million (USD 253 million) state-of-the-art vaccines facility expansion at Tuas, Singapore, which will manufacture drug substances for GSK's vaccines that protect against Hepatitis B.

Source: EDB, JLL

Note: This is not an exhaustive list – only selected investments shown






Thailand

 Where are the opportunities?

Industry	Overview	Key products
Electrical and electronics (E&E)	Producers from Taiwan and China have entered Thailand in recent years to diversify their supply chain network.	<ul style="list-style-type: none"> • Washing machines • Refrigerators • Air conditioners • Hard disk drives • PCB
Automotive	Thailand is moving towards the EV market with the goal to be an EV hub. China-based automotive players (Changan and BYD) have recently entered Thailand's market. Thailand is home to around 27 motor vehicle makers and 18 motorcycle makers. Most of the carmakers are MNCs.	<ul style="list-style-type: none"> • Passenger cars (ICE/EV) • Motorcycles • Vans • Trucks
Food and Beverage	Thailand is well-known for food and beverage manufacturing. Thailand was the third-largest exporter of chicken and chicken meat products in 2023, exporting over 100,000 tonnes and improving from the fourth rank in 2022.	<ul style="list-style-type: none"> • Rice • Fresh and frozen meat products • Canned tuna • Casava • Canned pineapple • Sugar • Seasonings
Rubber	Thailand accounted for around 33% of the world's natural rubber production (top-ranked globally). Thailand's rubber consumption share was 7% (third globally).	<ul style="list-style-type: none"> • Tires • Rubber gloves • Hoses • Elastics • Condoms

Source: JLL, Board of Investment (BOI), Office of Industrial Economics (OIE)

 Where are the key industrial clusters?

Northern – Chiang Mai, Lamphun, Lampang, Phayao

- Key industries:
- Textile and garment
 - Electrical and electronics
 - Food processing
 - Automotive and auto parts

Central – Suphanburi, Lopburi, Nakhon Sawan, Ratchaburi, Samut Songkram

- Key industries:
- Food processing, agro processing
 - Construction materials
 - Chemical and petrochemical

Western Vicinity – Nonthaburi, Nakhon Pathom, Samut Sakhon

- Key Industries:
- Electrical and electronics
 - Agro processing
 - Food/seafood processing

Northeastern – Khon Kaen, Nakhon Ratchasima, Ubon Ratchathani

- Key industries:
- Agro-processing and food
 - Textile and garment
 - Rubber and plastic products
 - Construction materials

Northern Vicinity – Ayutthaya, Pathum Thani

- Key industries:
- Automotive
 - Food processing
 - Electrical and electronics

EEC – Chacheongsao, Chonburi, Rayong

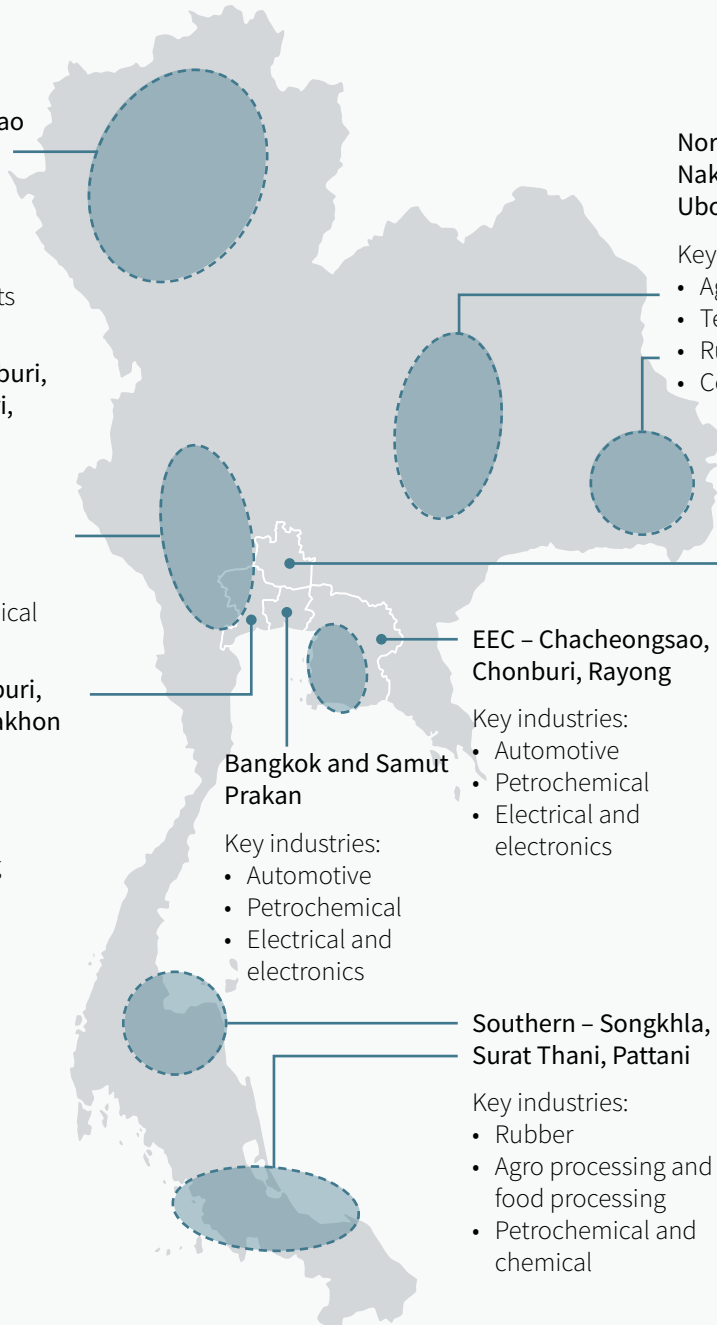
- Key industries:
- Automotive
 - Petrochemical
 - Electrical and electronics

Bangkok and Samut Prakan


- Key industries:
- Automotive
 - Petrochemical
 - Electrical and electronics

Southern – Songkhla, Surat Thani, Pattani

- Key industries:
- Rubber
 - Agro processing and food processing
 - Petrochemical and chemical



Source: JLL

 What policies are driving manufacturing?

Board of Investment (BOI) incentive package:


Incentives for key industries such as electrical and electronics, automotive, petrochemical, and chemical. For example, BOI incentives in E&E focus on high-value production in the supply chain by providing greater incentives such as 10-year CIT exemption for front-end semiconductor production.

30@30 Strategy and the EV 3.5 policy: Promote the growth of EV manufacturing. By 2030, the government aims to increase EV production to at least 30% of the total automotive production. Moreover, EV distributors and manufacturers will receive extra tax benefits such as excise tax and

import duty exemptions in order to lower the price of EVs and encourage the transition to EVs.

Public organisations activities: The E&E Intelligence Unit (EIU) and National Electronics and Computer Technology Centre (NECTEC) are the key government stakeholders that work in collaboration with investors to enhance the E&E industry.

Draft of National Energy Plan B.E.2566-2580 (2023-2037): One focus of the draft is the liberalisation of the energy business to promote more competition and renewable energy production.

 Who's investing?

Company	Sector	Investment size (USD Mn.)
Sri Trang Gloves (Thailand) Public Company Limited	Rubber	8.2
Quanta Computer	Electrical and electronics	13.8
Lotus Bakeries	Food and beverages	12.6
Unimicron Corp (TWN)	Electrical and electronics	36.2
Zhen Ding Tech	Electrical and electronics	281.6
Changan Auto Southeast Asia Co., Ltd.	Automotive	249.6

Source: Various company and/or government announcements and news articles
 Note: This is not an exhaustive list – only selected investments shown




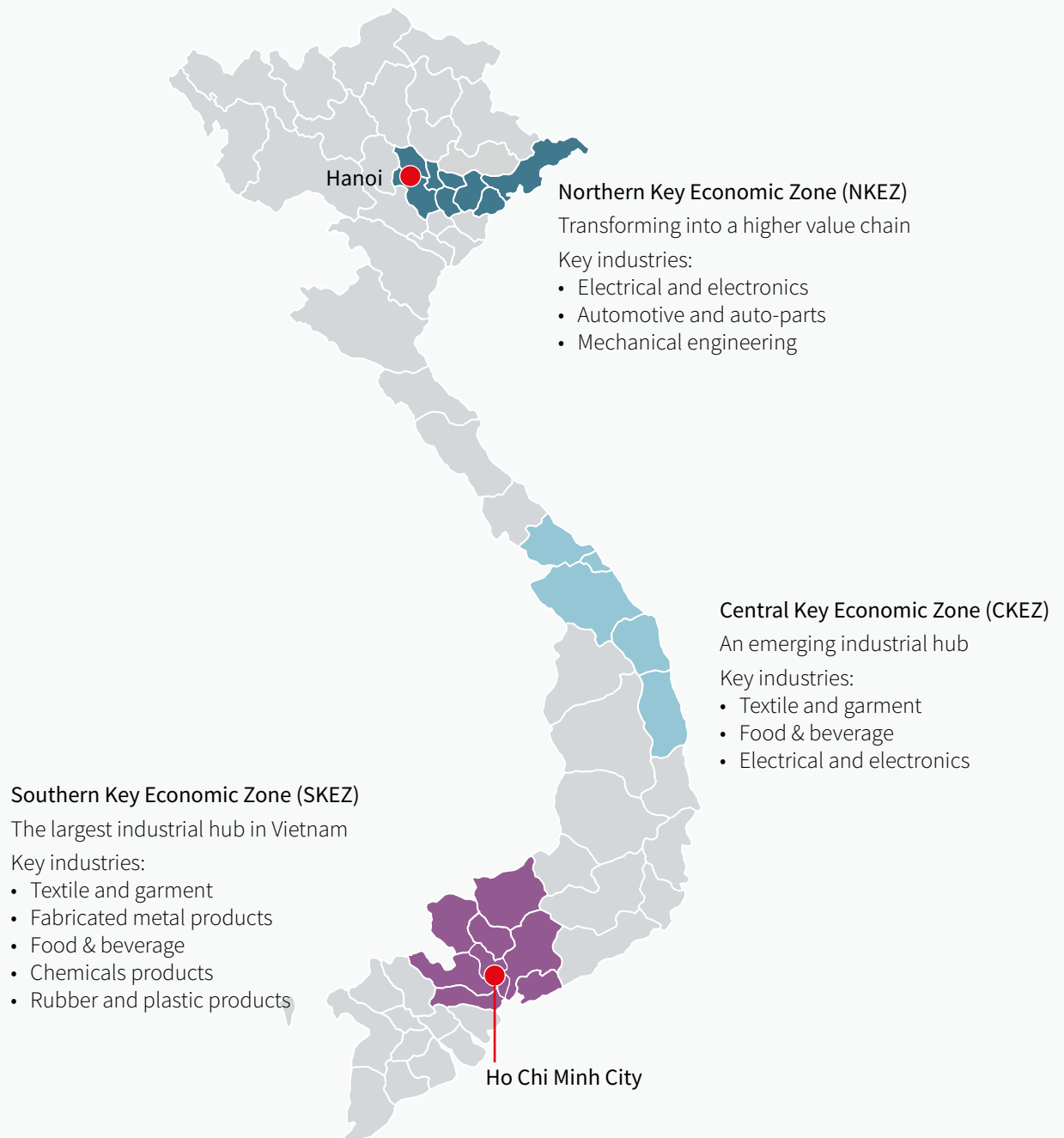
Vietnam


Where are the opportunities?

Industry	Overview	Key products
Computer and electronics	This is the largest sector in Vietnam, accounting for 17.8% of the country's manufacturing output. In 2023, Vietnam exported USD 57.3 billion in electronic devices, computers, and computer parts, as well as USD 52.4 billion in phones and related components, accounting for 31% of total country exports that year. Vietnam has advanced from 47th rank in 2001 to be one of the world's top 10 electronics exporters in 2021.	<ul style="list-style-type: none"> • Phones • Computers • Semiconductor • Microchips
Chemicals	The industry is poised to play a crucial role in Vietnam's economic development and is expected to grow at a compound annual growth rate of 8.7% from 2024 to 2028.	<ul style="list-style-type: none"> • Soap and detergent • Fertiliser • Pesticides and agrochemical • Basic chemicals • Industrial gas
Fabricated metal products	Total export value of USD 16.3 billion in 2023. This industry is forecasted to grow at a CAGR of 8.7% from 2024 to 2028.	<ul style="list-style-type: none"> • Steel • Aluminium • Copper • Zinc • Iron • Non-ferrous metals
Rubber and plastic products	USD 25 billion in 2022 and expected to grow at a CAGR of 8.6% from 2023 to 2027.	<ul style="list-style-type: none"> • Plastic packaging • Rubber and plastic components • Plastic household • Rubber and plastics materials (PVC, PE, PP, PET)
Garment and textile	The third-largest garment and textile exporting country in the world. In 2023, export value reached ~USD 40.3 billion (to over 100 markets). This is expected to rise to USD 44 billion by end-2024.	<ul style="list-style-type: none"> • Protective equipment for workers • Ready-to-wear garments • Sportswear • Jeans • Medical clothing
Food processing	With revenue of around USD 18 billion in 2022, Vietnam's food processing market is ranked third in SEA. The market is forecast to grow at an annual average rate of 8.2% from 2023 to 2027.	<ul style="list-style-type: none"> • Seafood • Meat • Fruit and vegetables • Milk and other dairy products

Source: JLL, Vietnam GSO, various 3rd party sources

 Where are the key industrial clusters?



 What policies are driving manufacturing?

General - extensive array of investment

incentives: Established itself as an export-driven economy, Vietnam government is encouraging business in this sector, demonstrated by a wide range of investment incentives to attract foreign investment such as tax incentives, exemptions or reductions on import duties, land and rents incentives, and comprehensive operational support throughout the investment journey.

Free Trade Agreements (FTAs): Vietnam has signed and implemented 15 FTAs, including the CPTPP, EVFTA, and UKVFTA. These agreements facilitate trade, reduce barriers, and provide favourable terms for manufacturing projects.

Vietnam National Master Plan 2021-2030, vision to 2050: Aim to become an upper middle-income country with a modern industrial base. It focuses on science, technology, innovation, and digital transformation.

State Administration Reform Programme (2021-


2030): Directive No. 23/CT-TT aims to streamline administrative procedures and promote business development in the digital age. Over 1,000 procedures have been simplified, benefitting businesses and investors.

Public-Private Partnerships (PPP) 2020:

Vietnam's first PPP law, effective from January 1, 2021, encourages private investment in critical infrastructure projects. This will expectedly improve infrastructure development, including transportation networks, power grids, and industrial zones, which will enhance logistics, connectivity, and efficiency.

Net-zero Carbon Commitment by 2050: Vietnam pledged to phase out coal power generation by the 2040s and achieve net-zero carbon emissions by 2050. This commitment positions Vietnam as an attractive destination for manufacturers seeking sustainable production environments.

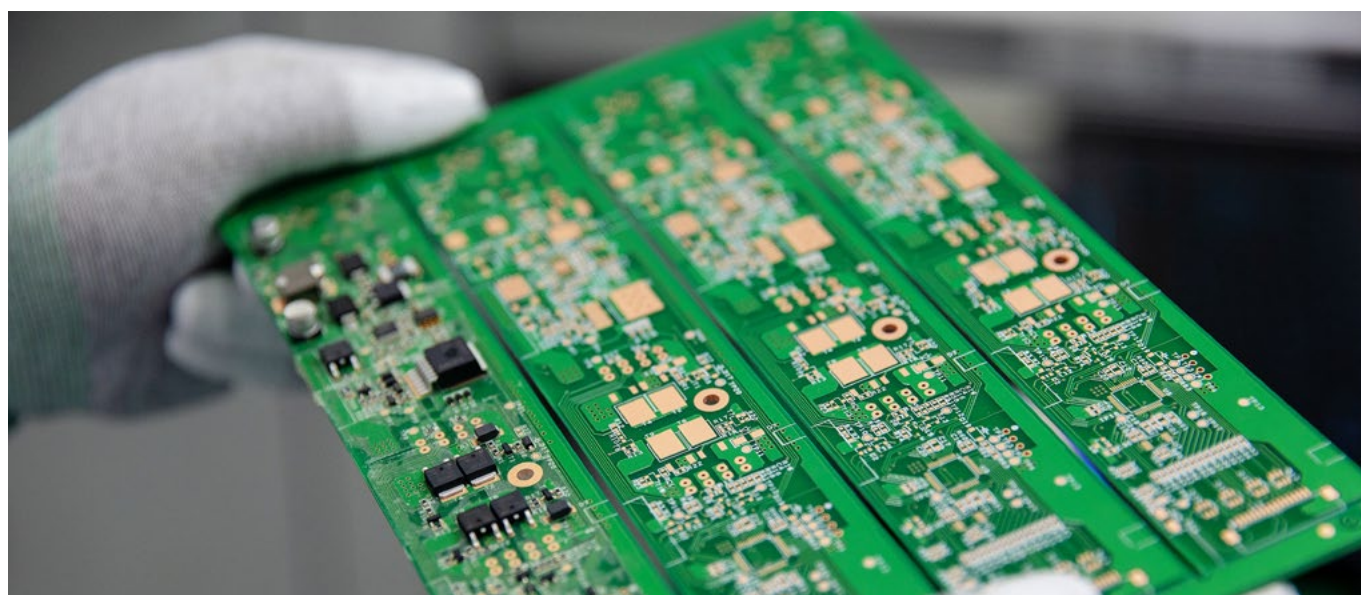


 Who's investing?

Company	Sector	Investment size (USD Mn.)
Pegatron	Electrical and electronics	500
Lego	Toys	20
Amkor Technology	Electrical and electronics	520
Pandora	Wearing apparel	100
JA Solar	Energy	477
Wistron	Electrical and electronics	300
Foxconn	Electrical and electronics	3,200
LG	Electrical and electronics	2,000
Quanta Computer	Electrical and electronics	120
Luxshare ICT	Electrical and electronics	480
Hana Micron	Electrical and electronics	600

Source: JLL

Note: This is not an exhaustive list – only selected investments shown



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