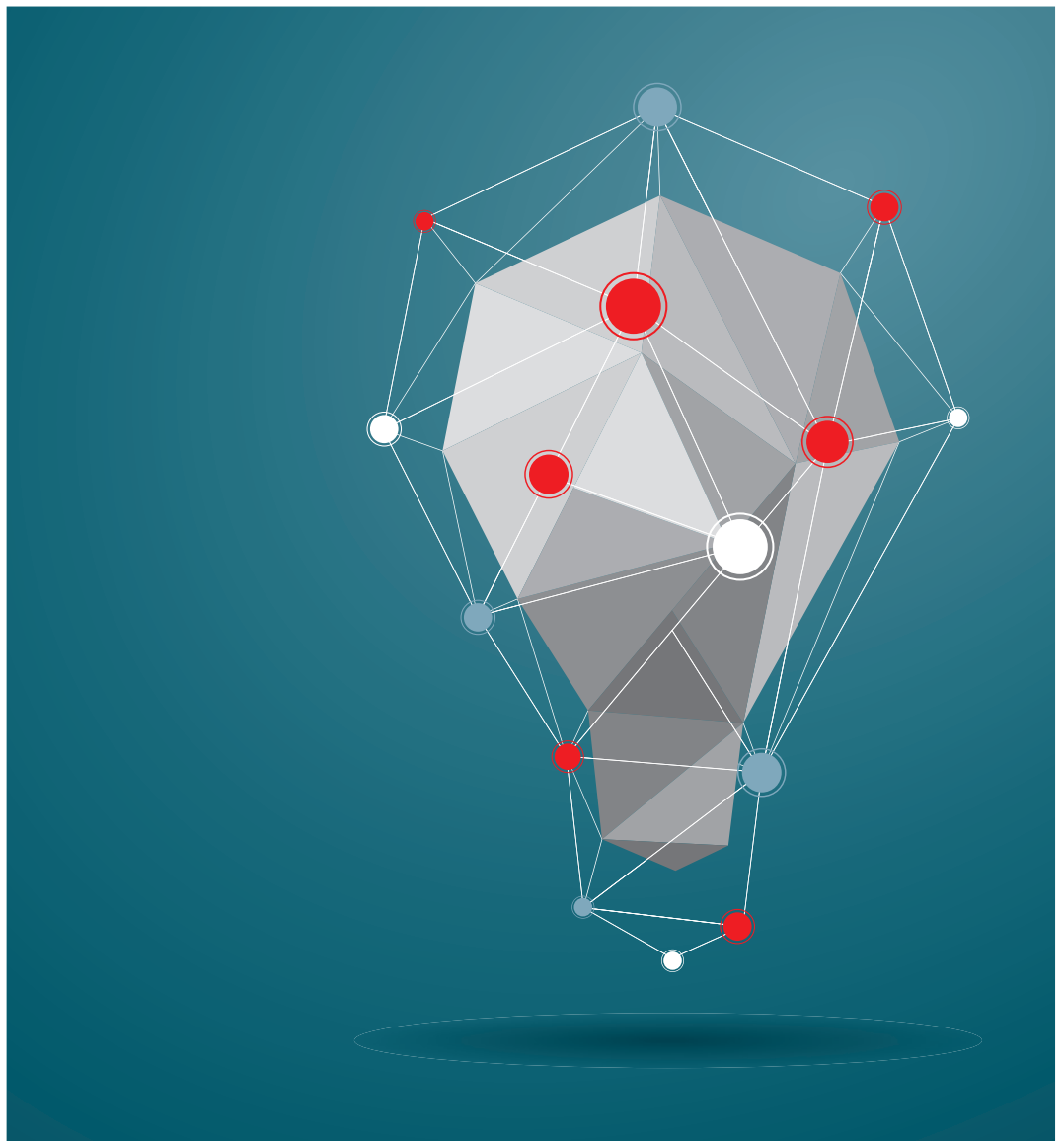


Understanding ASEAN: The manufacturing opportunity

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Understanding ASEAN: The manufacturing opportunity

China remains the goliath of global manufacturing, with every fluctuation in its manufacturing output and cost levels making headlines around the world. But foreign investors are increasingly turning their gaze southward to the ten dynamic markets comprising the Association of Southeast Asian Nations (ASEAN). Founded in 1967, ASEAN today encompasses Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam—economies at vastly different stages of development, but all sharing immense growth potential.

ASEAN is already a major manufacturing hub, but three developments could stimulate substantial growth in the sector: the implementation of the ASEAN Economic Community (AEC) integration plan, which aims to increase intra-regional and global trade; attracting more production from multinationals as labor costs rise in China; and the application of big data and mobile Internet, disruptive technologies where many ASEAN manufacturing firms lag behind their multinational counterparts.

Businesses must understand this changing landscape and how it could affect their decisions on the location of manufacturing plants. The traditional approach of using economy-wide indicators, such as the World Bank Doing Business index, is no longer fit for purpose. Instead, more granular, dynamic, and sector-specific measures are needed to optimize location decisions. In this report, we describe how these important trends will affect the manufacturing sector in ASEAN, and introduce a methodology for making better decisions about plant location in this rapidly changing region.

Trends that will shape ASEAN manufacturing

ASEAN countries account for about 5 percent of global manufacturing (in value-added terms), with dominant shares in sub-sectors such as chemicals, food and beverage, metals, and motor vehicles. Foreign investors have a growing awareness of ASEAN's value as a base of operations.

Three trends will shape the region's manufacturing:

- **The ASEAN Economic Community is gradually becoming a reality.** Some 25 percent of the region's exports go to other ASEAN countries, a share that has remained roughly constant since 2003. But intra-regional trade in goods (along with other types of cross-border flows) could increase with implementation of the AEC integration plan (See sidebar, 'A short history of ASEAN and the AEC'). This development could allow ASEAN to build integrated supply and value chains spanning the region. While full integration appears unlikely by the 2015 milestone set by ASEAN leaders, there has been real momentum. Elimination of tariffs is the most notable step. Average tariff rates in the original six member states (Indonesia, Malaysia, the Philippines, Brunei, Singapore, and Thailand) have been virtually zero since 2010. However, other types of barriers remain a stumbling block. In the automotive sector, for example, non-tariff measures such as import licensing constrain manufacturers. So what is the actual value of full integration? Analysis conducted by the McKinsey Global Institute (MGI) for a forthcoming report on ASEAN has found that in many sectors, greater integration could produce productivity benefits worth up to 20 percent of the cost base in addition to boosting demand and creating consumer surplus (Exhibit 1). One of the largest potential benefits is the opportunity to exploit economies of scale when technical regulations are harmonized and mutual recognition agreements allow companies to produce more

standardized products and pool skilled labor. The automotive, electronics, and food manufacturing industries have already begun to consolidate production. However, McKinsey work across a range of manufacturing sectors has found opportunities to create scale benefits worth 5 to 15 percent of the total cost base. In automotive, for example, smaller factories in locations such as Vietnam and the Philippines operate below the industry's typical minimum efficiency threshold, but integration could set the stage for major productivity gains.¹ A harmonized market could lower inventory costs by reducing the number of specialized products companies need to keep in stock and minimizing obsolescence (goods arriving after customers need them). Reducing 'factory-to-shelf' time and enabling lower inventory levels can also help preserve working capital; these savings are particularly important for small-medium enterprises, for which financing is often a constraint. In food manufacturing, these savings could be worth about 5 percent of the total cost base.

A short history of ASEAN and the AEC

The Association of Southeast Asian Nations (ASEAN) was formed in 1967 by Indonesia, Malaysia, the Philippines, Singapore, and Thailand, with the aim of promoting regional political and economic collaboration. The organization has since expanded to ten countries, adding Brunei, Cambodia, Laos, Myanmar, and Vietnam. Economic integration has been a core goal for ASEAN since its founding, and over the decades, member states have taken gradual steps to remove the barriers between them.

In 2003, officials agreed to initiatives designed to better capture the region's potential and position it to compete with Asia's largest economies. They outlined three 'pillars': the ASEAN Political-Security Community, the ASEAN Economic Community (AEC), and the ASEAN Socio-Cultural Community. In 2007, members committed to accelerating formation of the AEC, aiming to complete it by 2015 (with extensions granted to Cambodia, Laos, Myanmar, and Vietnam). The AEC is premised on the free flow of goods, services, labor, and investment. It aims to create four important components: a single market and production base, a highly competitive economic region, a region of equitable economic development, and a region fully integrated into the global economy. ASEAN's commitment to the AEC represents high aspirations for integration. What started as a straightforward push merely to lower formal trade barriers has evolved into a vision for a dynamic and unified market—one that has the potential to compete head-to-head with the world's biggest economies.¹

¹ "ASEAN economic community: Potential, reality, and the role for business," *Vriens and Partners*, 2013.

- **Some of China's manufacturing is up for grabs.** As China shifts from an export-driven economic model to a consumption-driven one, its wages are rising. While China has many advantages including a much better developed supply base, advanced infrastructure, robust manufacturing and engineering capacity, and a huge domestic market, this could still create an opening for Southeast Asian economies to become the next 'factories to the world.' A recent survey revealed that 19 percent of ASEAN businesses themselves plan to shift investment or business from China into their own region; respondents also identified Indonesia as the most attractive country for new business expansion, followed by Vietnam, Thailand, and Myanmar.² The availability of low-cost labor in countries such as Cambodia, Indonesia, Laos, Myanmar, and Vietnam can be a competitive advantage. Average costs for factory labor are about \$7 a day in

¹ 100,000 units is the minimum operating threshold for efficiency in completely knocked-down production; that threshold rises to 200,000 for completely built unit production.

² "ASEAN Business Outlook Survey 2014," *American Chamber of Commerce Singapore and U.S. Chamber of Commerce*, 2014.

Exhibit 1

Accelerating ASEAN integration could unleash sizable economic value

Direct cost impact in consumer goods, Percent of total costs		EXAMPLE SECTORS		
Benefits		Automotive	Electronics	Food
Total cost (pre-integration)		100	100	100
Economies of scale	<ul style="list-style-type: none"> Production cost savings from scale/SKU rationalization Consolidation of R&D & back office (e.g. legal, HR) Sourcing savings from scale 	10-15	5-10	1-2
Factor cost optimization	<ul style="list-style-type: none"> Labor sourcing optimization Input/component sourcing optimization (not from scale) 	0-1	1-2	2-3
Inventory impact	<ul style="list-style-type: none"> Reduced stock-outs¹ Reduced obsolescence Reduced warehousing costs Reduced working capital costs 	0-1	3-5	3-5
Logistics cost impact	<ul style="list-style-type: none"> Reduced customs costs Reduced transport costs (due to scale) Simplified logistics chain 	0-1	2-3	2-3
Transaction cost impact	<ul style="list-style-type: none"> Elimination of duplicate registration, laboratory, certification costs Tariff costs Other transaction cost saving 	-	0-1	0-1
Total cost (post-integration)		82-88	79-89	86-91

¹ Stock-outs drive emergency shipments and substitution (revenue loss included here as a direct benefit of integration)
 SOURCE: McKinsey Global Institute analysis

Vietnam and \$9 in Indonesia, far lower than the \$28 average in China (which has posted a 19 percent compound annual growth rate in labor costs since 2007).³ However, while labor costs may be low in these ASEAN countries, the output per worker is also weak, which undermines this advantage. In 2012, average labor productivity in Vietnam's manufacturing sector was only about 7 percent of that in China.⁴ These countries will have to focus on boosting productivity to lift the wages of factory workers while remaining competitive.

- The technology opportunity is still waiting to be harnessed in ASEAN.** In manufacturing, disruptive technologies could increase profit margins and lower costs, potentially creating \$25 billion to \$45 billion of annual economic impact in ASEAN by 2030, according to research by MGI. The use of big data and the Internet of Things could improve demand forecasting and production planning, leading to better customer service and higher profit margins. Fifteen percent of ASEAN respondents in a recent survey said they were optimistic that big data's ability to improve forecasting accuracy could increase revenue or efficiency for their company by more than 50 percent.⁵ On the cost side, analyzing detailed, real-time data on everything from suppliers' inventory and shipments in transit, to downstream customer demand, allows manufacturing companies to tighten inventory control and maximize production capacity. However, many manufacturing firms in ASEAN are still lagging behind in applying available technologies to their operations. Beyond awareness of the opportunities, skill gaps appear to be an important barrier. Companies will need to recruit or groom three types of talent: workers with deep analytical skills to execute big data analyses; managers and analysts who know how to request and consume these analyses; and supporting technology personnel focused on implementation.

³ Wage data sourced from General Statistics Office Vietnam, Statistics Indonesia and the National Bureau of Statistics of China.

⁴ Labor productivity is calculated as output per worker in the manufacturing sector. These averages do mask important differences in the sector mix of these countries and differences in productivity between firms within a sector, but they nonetheless point to the broader productivity challenge facing the region.

⁵ "The hype and the hope: The road to big data adoption in Asia-Pacific," *The Economist Intelligence Unit*, 2013.

These trends could help ASEAN economies become the next ‘factory to the world.’ They may also require manufacturing firms to adopt a more sophisticated approach to plant location decisions to reflect this rapidly changing landscape. Below, we look at the ASEAN investment landscape and outline a new approach to guide these decisions.

A manufacturing competitiveness index for locating plants in ASEAN

ASEAN is ripe with opportunity. It is an immensely dynamic market made up of ten economies at different stages of development and with diverse investment landscapes. In developing our competitiveness index, we have focused on the ASEAN-6—Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam—which account for more than 95 percent of regional GDP (See sidebar, ‘ASEAN-6 manufacturing highlights: A brief overview of recent developments that have influenced investors to build and expand operations in the region’). Countries like Cambodia and Myanmar are growing strongly, with increased economic liberalization and development, but will still contribute only a small percentage of manufacturing foreign direct investment (FDI) in the coming years.

To understand the drivers of competitiveness and the profiles of manufacturing industries in ASEAN, we looked at FDI flows using a framework developed by MGI which categorizes manufacturing sectors into five broad categories, based on shared characteristics (Exhibit 2). Industries within each group have similar sources of competitiveness and share important factor inputs and geographic requirements, such as the need for proximity to certain types of transportation infrastructure and talent requirements. For example, competitiveness for chemicals and automotive manufacturers is characterized by innovation, R&D spending, and a global manufacturing strategy that usually entails regional assembly and production.

Exhibit 2

Manufacturing is diverse: We identified 5 broad groups based on shared characteristics and requirements

Sector	Traits	Industry examples
Global innovation for local markets	<ul style="list-style-type: none"> Competition based on innovation and quality; high R&D intensity¹ (5–25%) Some components traded globally (40–50% trade intensity²) with more regional assembly and production 	<ul style="list-style-type: none"> Chemicals and pharmaceuticals Transport equipment including automotive Machinery, electrical machinery, appliances
Regional processing	<ul style="list-style-type: none"> Low tradability (5–20% trade intensity²) Highly complex and costly logistics Freshness requirements, and local tastes drive proximity need Relatively automated; little R&D 	<ul style="list-style-type: none"> Rubber and plastics Fabricated metals Food and beverages Printing and publishing
Energy-/resource-intensive commodities	<ul style="list-style-type: none"> Provide commodity-type inputs to other sectors; low tradability Energy- and resource-intensive (energy intensity³ 7–15%) Price competition; little differentiation 	<ul style="list-style-type: none"> Wood products Paper and pulp Basic metals Minerals-based products Refined petroleum, coke, and nuclear products
Global technologies/innovators	<ul style="list-style-type: none"> Competition based on R&D and cutting-edge technology, with high R&D intensity¹ (25–35%) Highly tradable (55–90% trade intensity²) in both components and final products 	<ul style="list-style-type: none"> Computers and office machinery Semiconductors and electronics Medical, precision, and optical equipment
Labor-intensive tradables	<ul style="list-style-type: none"> High labor intensity⁴ (30–35 hours per \$1,000 value added) High exposure to price competition Globally traded (50–70% trade intensity²); low proximity needs 	<ul style="list-style-type: none"> Textiles, apparel, leather Furniture, jewelry, toys, and other manufactured goods not classified elsewhere

1 R&D intensity = R&D expenditure divided by value added (nominal), US, 2007

2 Trade intensity = Exports divided by gross output (nominal), world, 2006–10 average

3 Energy intensity = Cost of purchased fuels and electricity divided by value added

4 Labor intensity = Hours worked per \$1,000 value added (nominal), EU-15, 2007

SOURCE: OECD; 2010 Annual Survey of Manufactures; US 2007 Commodity Flow Survey; IHS Global Insight; McKinsey Global Institute analysis

Our analysis showed that manufacturing-related FDI for ASEAN-6 countries, totaling \$225 billion between 2009 to 2013, is centered on global innovation for local markets (34 percent), regional processing (28 percent), and energy-intensive commodities (27 percent) (Exhibit 3).

Exhibit 3

Manufacturing – related FDI by sector

Percentage of manufacturing-related FDI (2009–2013)

■ X≥20 ■ 10≤x<20
■ 5≤x<10 ■ x<5

Group	Industry	ASEAN-6 Total	Indonesia	Singapore	Vietnam	Malaysia	Thailand	Philippines
Global innovation for local markets	Chemicals	9	5	13	14	5	6	2
	Motor vehicles and components	9	13	<1	3	3	42	3
	Other transport equipment	6	2	4	4	20	2	9
	Electrical machinery	6	2	3	6	20	3	7
	Machinery, equipment, appliances	4	1	4	6	6	6	4
Regional processing	Rubber and plastics products	5	8	2	1	5	14	2
	Fabricated metal products	8	14	3	9	6	9	4
	Food, beverage, and tobacco	14	7	38	9	3	5	14
	Printing and publishing	<1	<1	<1	<1	<1	<1	<1
Energy-/ resource-intensive commodities	Wood products	<1	<1	<1	1	<1	<1	<1
	Refined petroleum, coke, nuclear	6	<1	2	26	1	<1	<1
	Paper and pulp	1	<1	<1	1	2	<1	<1
	Mineral-based products	8	19	5	1	6	1	17
	Basic metals	12	23	1	14	14	2	13
Global technologies/ innovators	Computers and office machinery	3	2	3	<1	1	5	11
	Semiconductors and electronics	5	<1	15	1	4	3	11
	Medical, precision, and optical	2	<1	6	1	3	1	1
Labor-intensive tradables	Textiles, apparel, leather	1	2	<1	2	<1	<1	<1
	Furniture, jewelry, toys, other	<1	<1	<1	<1	<1	<1	<1
TOTAL		100	100	100	100	100	100	100
TOTAL, USD Bn		225	61	56	45	32	21	10

SOURCE: Dealogic, McKinsey analysis

Given ASEAN's diverse manufacturing landscape, MGI developed a competitiveness index to dig deeper and assess how foreign investors should think about plant location decisions in the region. The traditional approach has been to use economy-wide indicators such as wage rates and measuring ease of doing business to identify a priority list of potential locations. However, this approach is no longer adequate. Instead, a more granular and dynamic approach is needed that can assess the relative cost base and productivity levels at a sub-sector level.

The competitiveness index uses a detailed database of hundreds of indicators weighted by their importance to the cost and revenue base for a particular sub-sector. The indicators are grouped into two primary categories:

- Cost**—the factors, such as utility rates, wages, property prices and taxes, and fiscal or tax incentives, that have a tangible impact on a manufacturing operation's profitability. Examples of data inputs in the cost model include employee headcount, utility usage, and size of property.
- Quality**—the overall infrastructure and ecosystem that facilitate and enable manufacturing operations. Components include the labor or talent pool, business environment, quality of life, infrastructure such as roads, utilities, and Internet access for improved connectivity; physical access to other markets; and the current ecosystem or linkages for a given industry. Examples of data inputs into the quality model include sector GDP growth, volume of imports and exports for the associated sector, quality of infrastructure, and employment rate.

The cost index is calculated by estimating costs for key indicators such as the number of employees, utilities, and industrial space required, and comparing each location's total costs with the average of all other locations under consideration. A higher cost index indicates a more expensive location.

The quality index is a weighted index of select quality indicators, depending on factors most relevant to the particular sector and project requirements. The score for each location

is calculated using an algorithm based on the raw data point and weights. A high score indicates a better quality location.

Locations are compared on both dimensions, and ranked by combining quality and cost scores (Exhibit 4). We look more closely at three sectors—motor vehicles, chemicals, and food, beverage and tobacco—to illustrate how cost and quality factors affect the investment landscape and influence plant location decisions.



Motor vehicle and components manufacturing

In this sector, cost optimization is critical for locating operations. Companies must balance low manufacturing costs with overall supply chain costs such as transportation and components supply.

In ASEAN, Thailand has been best positioned to capture the opportunity and attract manufacturing FDI (Exhibit 5). Although Thailand's overall cost index (for example, energy, labor, and property) is 20 to 25 percent higher than Indonesia, Vietnam and the Philippines, its quality index has the strongest weighted score, largely because of a high quality and mature automotive manufacturing ecosystem, including tiered suppliers of auto components.

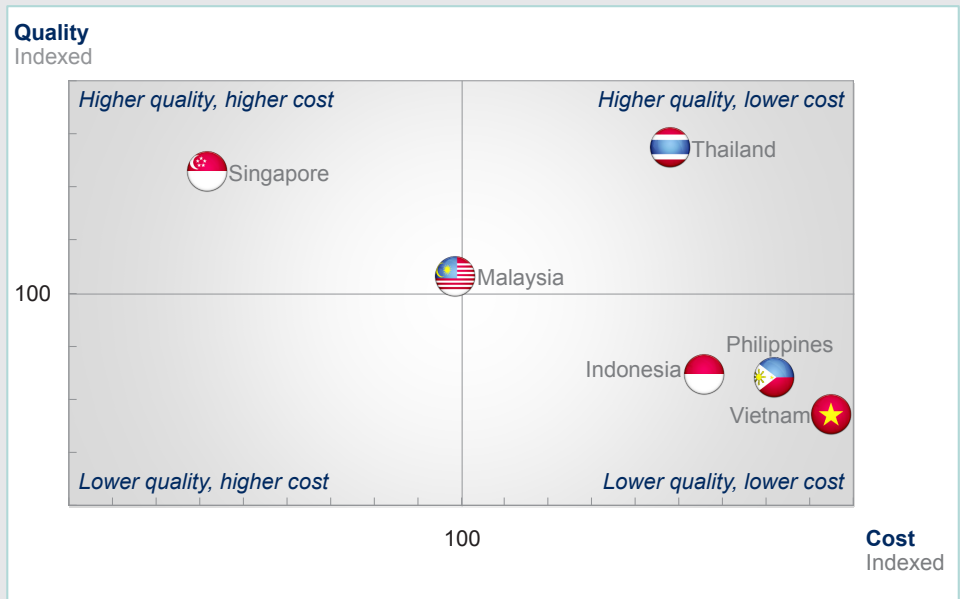
Indonesia is expected to see an increase in FDI in the coming years, given strong local demand for automobiles. The country scores slightly better than Thailand in the cost index but the quality index lags far behind. Developing a robust auto ecosystem could allow Indonesia to compete better with Thailand. The Philippines and Vietnam also score highly on the cost factors, but their respective automotive industries lack both a sizeable motor vehicle and components manufacturing base and sufficient local demand to attract a greater share of investment.

Chemicals

For the chemicals industry, quality considerations typically play a stronger role over cost in guiding investment decisions (Exhibit 6). In particular, companies look at the overall business environment, regulation, ease of import and export, quality of infrastructure (such as ports,

Exhibit 5

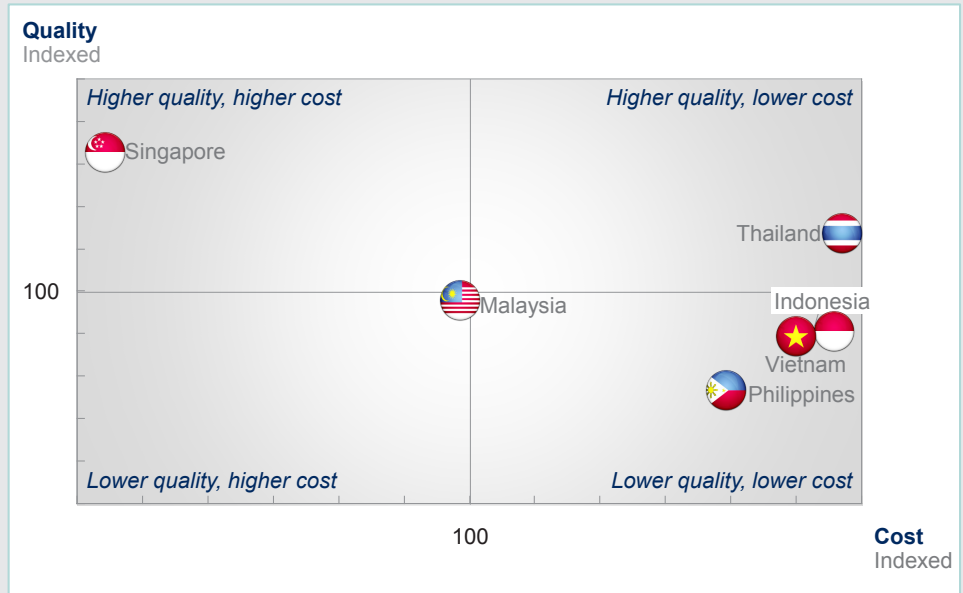
Auto original equipment and components manufacturing



SOURCE: McKinsey analysis

Exhibit 6

Chemicals



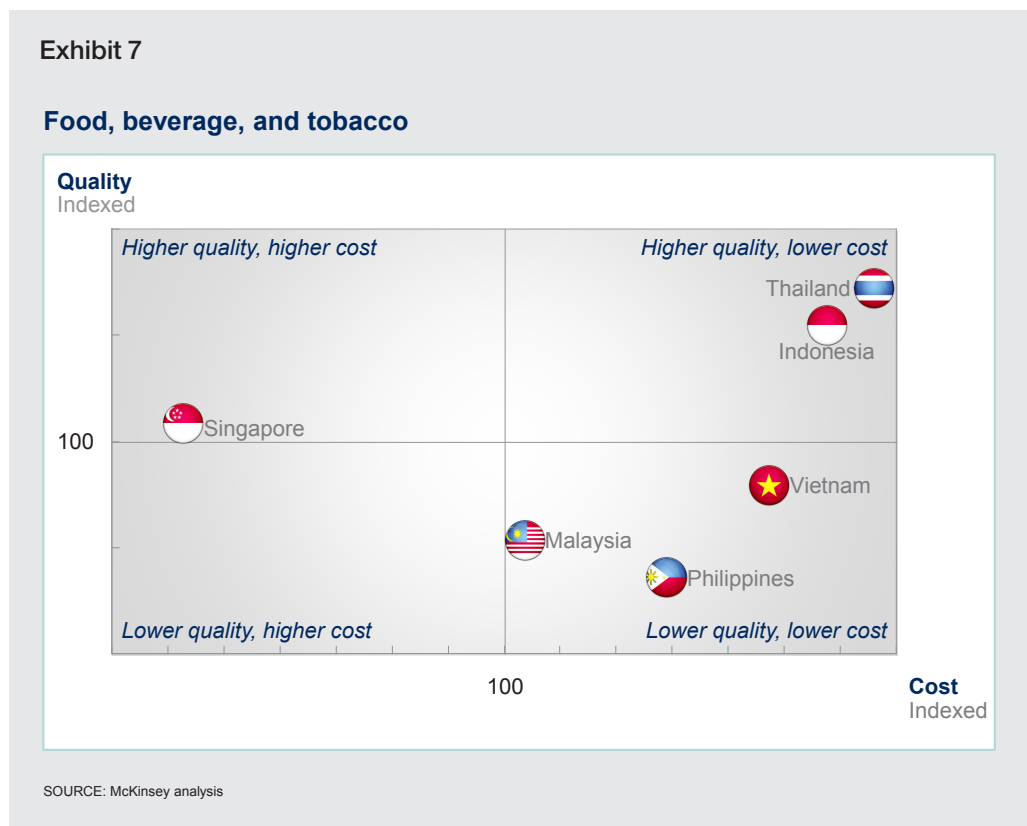
SOURCE: McKinsey analysis

roads, utilities), and the availability of skilled workers. Singapore's strong performance on the quality index, with a dedicated industry infrastructure on Jurong Island and strong connectivity through shipping routes, makes it an attractive location. In practice, this means that quality considerations are more important, and allow Singapore to offset its higher costs when compared with other ASEAN countries.

Indonesia, the Philippines, and Vietnam, in particular, have similar levels of attractiveness both on cost and quality dimensions. However, Vietnam has been more successful attracting investment in chemical production, largely as a result of aggressive government policies to promote the industry.

Food, beverage, and tobacco

Cost and quality factors are equally competitive in the food, beverage, and tobacco sector. Given the growth of the mass consumer segment in ASEAN, maintaining low costs and producing affordable products is a priority for manufacturers to serve this market. Already some 67 million households across ASEAN are part of the “consuming class,” with incomes exceeding the level at which they can begin to make significant discretionary purchases.⁶ That number could almost double to 125 million households by 2025.⁷ Additionally, quality considerations are essential, with regulation and ease of imports and exports across the region. Based on the competitiveness index, Thailand’s agricultural resources, sophisticated farming technology, and international quality standards make it a particularly attractive location for investment (Exhibit 7).



Beyond pure manufacturing cost and quality considerations, investors also look at “cost-to-serve”, an end-to-end cost calculation including the cost of raw materials and distribution of finished goods. Particularly in this sector, where manufacturing conversion costs are relatively low compared with other sectors, and ranges from 10 to 30 percent, the decision of where to place a manufacturing facility should be part of a bigger supply chain strategy. High costs related to distribution and logistics has led to a more fragmented manufacturing landscape, globally and in the region. In Vietnam, for example, investments in the sector during the last five years have been largely driven by ASEAN and multinational companies setting up manufacturing facilities closer to local demand and optimizing the overall cost-to-serve.

⁶ Defined as households with more than \$7,500 in annual income (in purchasing-power-parity terms).

⁷ Vinayak HV, Fraser Thompson, and Oliver Tonby, “Understanding ASEAN: Seven things you need to know,” mckinsey.com, May 2014.

Similarly, in Indonesia, a robust agricultural industry to supply raw materials and strong local demand has generated significant FDI in the sector.



The ASEAN manufacturing sector is being rapidly transformed by three big trends. Navigating this new environment will require manufacturers to adopt a more granular and dynamic approach to plant location decisions.

Whether expanding into ASEAN or reconfiguring their current regional footprint, foreign investors need to carefully analyze both their medium- and long-term implications for two reasons: first, companies face extended time horizons for realizing returns on capital-intensive investments. Second, as detailed above, the process for plant location requires significant time, resources, and organizational focus. Having to repeat this process unexpectedly, due to significant shifts in demand or significant reduction in incentives, for example, could have a material impact on a company's supply chain, business strategy, and bottom line.

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ASEAN-6 manufacturing highlights: A brief overview of recent developments that have influenced investors to build and expand operations in the region

Indonesia. With an abundance of mineral resources, Indonesia has been focused primarily on basic metals manufacturing (for example, alumina and aluminum) and mineral-based production (for example, coal mining and petroleum and coal products), which accounted for 42 percent of the country's manufacturing FDI from 2009 to 2013. In 2012, for instance, three Chinese companies co-invested \$8.6 billion in iron and alumina smelters in Indonesia.⁸ Other leading manufacturing sectors include automotive, fabricated metal products, plastics, and rubber. In recent years, the government has imposed tighter regulatory controls on the minerals and mining industry, including an increase in the divestment requirement on mining concessions by foreign companies and a ban on export of unprocessed raw materials.⁹ In April 2014, Indonesia revised its Negative Investment List (Daftar Negatif Investasi) to increase foreign and domestic direct investments in specific sectors such as pharmaceutical manufacturing; however, restrictions were also tightened to protect some sectors such as energy and mineral resources.¹⁰ The newly elected Indonesian President, Joko Widodo, has indicated infrastructure and industrial manufacturing will be priorities in his administration.

Singapore. As a leader among the ASEAN-6, Singapore has entrenched concentrations in several manufacturing industries. The food, beverage, and tobacco industries account for a large portion of its total manufacturing FDI (38 percent), mostly because of the takeover of Singapore's Fraser & Neave Ltd. by Thai Beverage in 2013 and the acquisition of Asia Pacific Breweries by the Dutch brewer Heineken in 2012. Singapore is also a global chemicals hub—an integrated facility on Jurong Island hosts some of the world's leading energy and chemical companies, including BASF, ExxonMobil, and Mitsui Chemicals. Historically, semiconductors have been the largest manufacturing sector in Singapore, but its growth has slowed as investors seek locations with either a larger technology market (for example, South Korea) or with lower production costs (for example, China). In 2013, the Economic Development Board, Singapore's lead government investment agency, set aside SGD 500 million over the succeeding five years for a Future of Manufacturing Plan to work with industry partners, universities, and research institutes to build capabilities and promote new technologies, and support the government's transition to an economic model led by research and development and innovation.¹¹

Vietnam. Reduced inflation, stronger external accounts, and a stable foreign exchange market have enabled Vietnam to improve its macroeconomic landscape and enter its third year of macroeconomic stability.¹² The government has undertaken several economic-restructuring efforts, including the privatization of state-owned enterprises and relaxed restrictions on regulations to encourage foreign investment. With these developments and abundant natural resources (for example, bauxite, chromate, coal, manganese, offshore oil and gas deposits, and phosphates) the country has been attracting strong levels of FDI for petroleum refining and chemicals. Recently, PetroVietnam and a consortium of international companies (Idemitsu Kosan, Kuwait

8 'Chinese firms plan to spend \$8.6 billion on Indonesia smelters,' *Reuters*, August 30, 2012.

9 In 2012, the Indonesian government issued a regulation requiring majority or wholly foreign-owned companies holding mining licenses to divest a majority share of the company to local interests after ten years of production. In 2014, Indonesia implemented a ban on mineral ore exports to encourage higher-value-add manufacturing such as metal processing and smelting.

10 Presidential Regulation No. 39/2014, *Indonesia Investment Coordinating Board (BKPM)*, April 2014.

11 Key Budget Initiatives 2013, *Singapore Ministry of Finance*.

12 Asian Development Bank Outlook 2014.

Petroleum International, and Mitsui Chemicals) formed a joint venture to finance the \$9 billion Nghi Son oil refinery south of Hanoi. The government has also invested in industrial zones and export processing zones in an effort to lure additional FDI. In 2014, for example, the Petroleum Authority of Thailand (PTT) submitted a feasibility study for a \$22 billion oil refinery in an economic zone located in Vietnam's coastal Binh Dinh province. Recently, the Ministry of Industry and Trade announced a master plan for Vietnam's industrial development to 2025, with a focus on electronics and telecommunications; industrial processing and manufacturing; and new energy sources.

Malaysia. Investment in transport equipment (such as aerospace, automotive, and shipbuilding machinery and equipment) and electrical machinery has been a primary engine of growth for the country, representing 40 percent of manufacturing FDI from 2009 to 2013. Malaysia is also a hub for aerospace manufacturing, with foreign investor companies such as Honeywell, JMI Aerospace, and Spirit AeroSystems establishing plants there. Malaysia is seeking to capture at least 5 percent of the global maintenance repair and operations market by 2015 as well as significant contracts for next-generation aircraft programs. The latest Tenth Malaysia Plan (2011–2015) has indicated bolstering existing industries that offer opportunities to create higher value-add products. The Malaysian Investment Development Authority (MIDA), the country's principal investment promotion agency, identified key manufacturing sectors in 2013, including high tech, capital, and knowledge-driven industries such as aerospace, biotechnology and advanced materials, and intermediate goods manufacturing.

Thailand. The country is the manufacturing hub for motor vehicles and components in the ASEAN region, and the automotive industry accounted for 42 percent of Thailand's FDI from 2009 to 2013. Thailand has built a thriving ecosystem of manufacturers and assemblers, including BMW, Ford, Honda, Mazda, Mitsubishi, Nissan, and Toyota. Its long history of automotive manufacturing coupled with strong government support has created a relatively low-cost but skilled workforce in the sector. Moreover, it has built a robust cluster of local suppliers and supporting vehicle component industries. In fact, greenfield investment in tire manufacturing generated most of the FDI in Thailand's rubber and plastics industry. Although growth has stalled in 2014 in the wake of Thailand's political unrest, the industry enjoys solid long-term prospects as incomes rise and consumers across the region can afford cars for the first time.

Philippines. The Philippines' economy has been slow to transition from agriculture to manufacturing. As a result, the country has much lower levels of manufacturing investments, which have been spread across a broader set of industries, with no clear industry leader. The availability of natural resources such as copper, gold, and nickel have lured foreign companies in mining and metals processing, representing 20 percent of manufacturing FDI from 2009 to 2013. The semiconductor and electronics industry also accounts for the majority of the country's exports, led by large foreign investors such as Amkor, Canon, Samsung, Sunpower, and Texas Instruments. Companies have also invested in unprocessed and processed tobacco, given the Philippines' strong agriculture base. Despite relatively low levels of manufacturing investment to date, the Philippines has immense growth potential, boasting a deep pool of skilled labor and a sizeable local market. In an effort to attract more FDI, the government's 2014 Investment Priorities Plan targets priority sub-sectors including four-wheel motor vehicles assembly; engineered products; chemicals; copper wire rods; paper pulp, and tool and die. Companies in priority sectors are eligible for fiscal incentives, including an income-tax holiday.

