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ORIGINAL ARTICLE

Japanese infrastructure investment in Southeast Asia†

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ABSTRACT

Japan's investment in the domestic construction industry has fallen to less than half its peak in 1992. Given the country's declining population, Japanese construction companies must go global to remain profitable. To what extent the Japanese government and Japanese companies can contribute to meeting the growing infrastructure needs in the region is unclear as Japanese companies have long been operating primarily in Japan. The Japanese government has in recent years passed a series of new laws that encourage private sector participation in financing, building and operating public infrastructure. Through involvement in such public projects, Japanese companies have developed the skills and technologies to build a variety of infrastructures that are resilient to natural disasters and adaptable to various geographical conditions and social and economic development. But the major challenge for Japanese companies is to transform their business model drastically from one that relies on the domestic market to one that contributes to the social and economic development of third countries.

Keywords: *Japanese infrastructure investment; Southeast Asia; Construction industry; Public-private partnership*

1. Introduction

Asia has a strong demand for infrastructure development. Of the US$482 billion in contracting revenue outside their home countries that the top 250 international contractors reported in 2017, Asia accounted for the largest share of 27%.[1] Chinese companies enjoyed the largest share of 10% of the total revenue reported; in contrast, Japanese companies enjoyed only 2.8% of the share.

The Asian Development Bank (ADB) estimates that from 2016 to 2030, developing Asia's infrastructure investment needs will reach US$22.6 trillion or US$1.5 trillion per year.[2] By region, East Asia's infrastructure investment needs are estimated to constitute the largest share of 61% of this total, followed by

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[1] Engineering News Record, "*ENR The Top 250*", ENR.com, August 20/27, 2018.

[2] Asian Development Bank, "Meeting Asia's Infrastructure Needs", ADB Manila, Philippines, 2017.

Southeast Asia's share of 24%. By sector, the need for power infrastructure is estimated to constitute the largest share of 52% of this investment, followed by the transport sector's share of 35%.

This paper analyses the outlook for Japan's infrastructure investment in Southeast Asia as the region has become the primary destination for Japan's foreign direct investment (FDI) in recent years. Section 2 reviews how the construction industry in Japan has evolved in the post-war period until today. Japan's domestic demand for infrastructure investment is expected to decline in the future as its population is shrinking. This brings major challenges for Japanese construction companies that have depended on domestic demand. Section 3 discusses how the Japanese government supports Japan's infrastructure exports by promoting Public-Private Partnerships (PPP) and launching a Partnerships for Quality Infrastructure strategy. Section 4 shows that Japanese infrastructure investment in Southeast Asia aims to enhance connectivity to support supply chains, in particular, to buttress the region as a base for manufacturing production.

2. The construction industry in Japan

Figure 1 shows a clear correlation between the ratio of construction investment to GDP and the GDP growth in Japan. From the period of high economic growth starting in 1954 to the bubble economy of the 1980s, Japan had rapidly developed infrastructure, especially in the metropolitan areas, in response to increasing population, automation and rapid urbanisation. Construction investment increased steadily and reached 84 trillion yen at its peak in 1992 while the ratio of construction investment to GDP reached 25% at its peak in 1973. In the early 1990s, Japan's bubble economy collapsed and the economy stagnated thereafter. Both construction investment and its ratio to GDP declined continuously and fell by half from the peak. More recently, recovery and reconstruction demands after the Great East Japan Earthquake of 2011 revived the construction investment and brought back the ratio of construction investment to GDP to 10.2% in 2017.

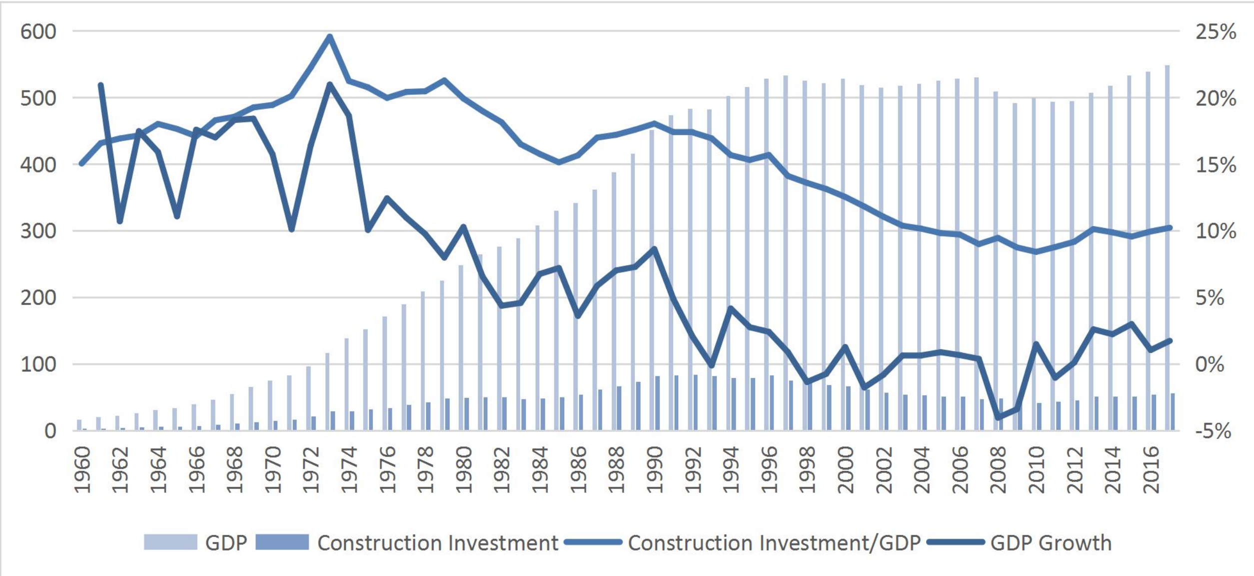

Figure 1. GDP and construction investment in Japan (FY1960–FY2017; in trillion yen).

Sources: Cabinet Office, Japan, "National Accounts of Japan"; Ministry of Land, Infrastructure, Transport and Tourism, Japan, "An Overlook for Construction Investment in Japan (FY2018)"

Japan's total population started declining in 2010. It is estimated that the total population will continue to decline and fall below 100 million in 2053. The number of productive persons (15–64 years old) started declining in 1995 while the ratio of elderly people has increased gradually. Likewise, the number of employees in the construction industry decreased from 6.9 million (10.4% of total employees) at its peak in 1997 to 5 million (7.6% of total employees) in 2017. The construction labour force is not only shrinking but also ageing. Today, more than 30% of employees in the construction industry are 55 years old and above, whereas only about 10% are under 29 years of age. The pace of ageing in the construction industry has been the fastest among all industries.

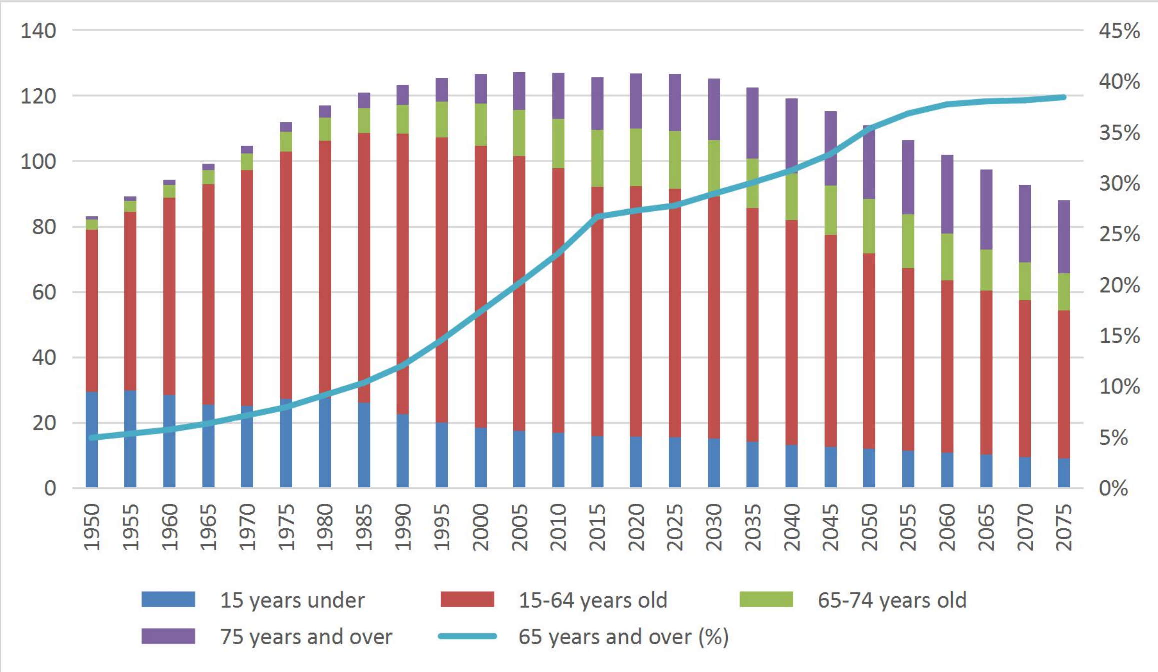

Figure 2. Demographics of Japan (in millions).

Sources: Ministry of Internal Affairs and Communications, Japan, "National Census", 2017; National Institute of Population and Security Research, "Future Estimates for Japan's Population", 2017

In response to these trends, Japanese construction companies gradually ventured into overseas markets. In 2017, the value of overseas construction contracts clinched by Japanese construction companies reached a historical record of 1.9 trillion yen, of which 60% were from Asia, 20% from North America and 9% from Oceania.[3] **Figure 3** shows, however, that the ratio of international revenue to total revenue for Japanese companies remains low in international comparison as these companies still mainly depend on domestic demand. Likewise, overseas infrastructure sales by Japanese companies doubled from 10 trillion yen in 2010 to 21 billion yen in 2016. By sector, the largest sales were in the information and communication sector (9 trillion yen), followed by the energy sector (4.7 trillion yen). However, overseas sales in transportation infrastructure were only 1.3 trillion yen despite the strong demand for developing transportation infrastructure across the world. The Japanese government's goal is to push the value of total infrastructure sales overseas up to 30 trillion yen by 2020.[4]

[3] The Overseas Construction Association of Japan, Inc., "Overseas Construction Contracts", June 2018.

[4] "Future Investment Strategy 2018", Cabinet Office, Japan, June 15, 2018.

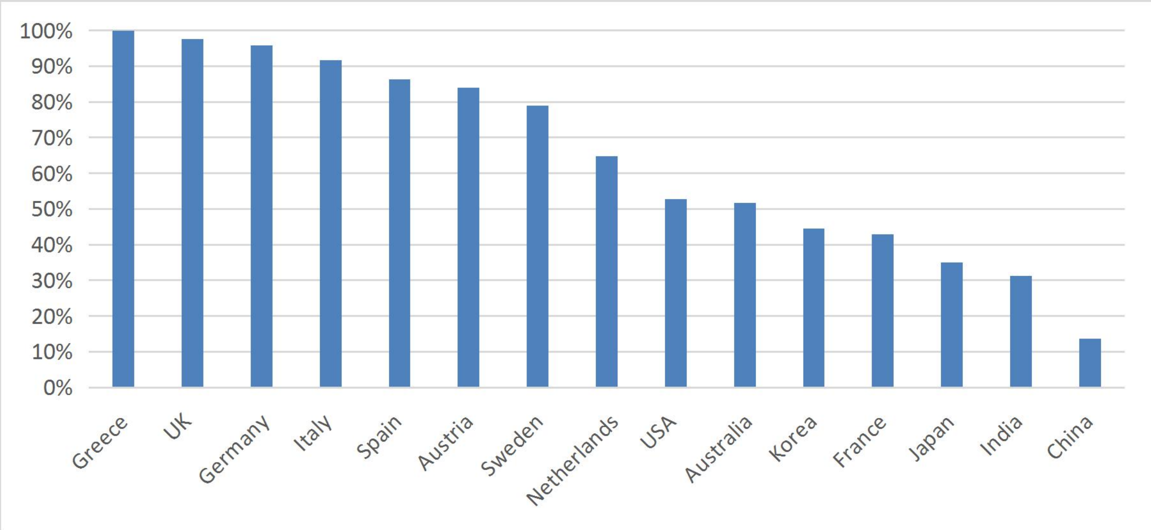

Figure 3. Top 30 global contractors by international revenue ratio in 2017.

Source: Engineering News Record (ENR.com), August 20/27, 2018

3. Japan's strategy of overseas infrastructure investment

Japan's geographical conditions make it prone to serious natural disasters such as earthquakes, typhoons and heavy rain and snowfall. To deal with these severe situations, Japanese construction companies have developed reliable and advanced technologies that can potentially contribute to improving infrastructure in developing countries. Examples of ongoing Japanese construction projects in Southeast Asia include the Bali beach conservation project, the project for the development of Regional Disaster Risk Resilience Plan in Central Sulawesi, the Patimban port development project in Indonesia, and the Pasig-Marikina river channel improvement project in the Philippines.[5] In 2010, the Japanese government announced a strategy for advancing the development of "package-type infrastructure" overseas. This "New Growth Strategy" identifies Asia as a growing market for Japanese companies to create new businesses and envisages Japanese construction companies with advanced skills and technologies sharing their experience of supporting urban and infrastructure development. The master plan study for establishing the Metropolitan Priority Area for Investment and Industry in Jabodetabek area (Greater Jakarta)[6] is an example of such efforts. There are, however, many challenges for Japanese companies seeking to invest overseas. It is essential that Japanese companies reduce their costs and adjust to local conditions when investing in developing countries. Moreover, Japanese companies typically lack human resources for global operations. The government aims to enhance the international competitiveness of Japanese construction companies by capitalising on their technologies, skills and experiences. Below, we review Japan's strategy to promote infrastructure exports through PPPs and Partnerships for Quality Infrastructure.

[5] Details of the projects can be found on the website of the Japan International Cooperation Agency (JICA), https://www.jica.go.jp/oda/project/IP-475/index.html, https://www.jica.go.jp/project/indonesia/020/outline/index.html, https://www.jica.go.jp/project/indonesia/020/outline/index.html, and https://www.jica.go.jp/oda/project/PH-P252/index.html.

[6] JICA, "Master Plan Study for Establishing Metropolitan Priority Area for Investment and Industry (MPA) in JABODETABEK Area Approved by the Steering Committee consisting of the cabinet members of the Japanese and Indonesian governments", Press Release, October 9, 2012, https://www.jica.go.jp/english/news/press/2012/121009.html.

3.1. Public-Private Partnerships

The amended Act on Promotion of Private Finance Initiative (PFI Act) came into force in 2011 to utilise private capital as a measure to improve Japan's public infrastructure. Later, in 2016, the Japanese government announced an action plan for promoting PPP/PFI programmes (revised in 2017 and 2018) to create new opportunities for businesses and reduce the public cost. The government aims to expand PPP/PFI programmes to 21 trillion yen by 2022.[7] Based on this plan, the government is supporting Japanese companies to gain experience in operating and managing large infrastructure projects and to participate in infrastructure construction and operation projects overseas.

Table 1. Japanese government's initiatives to promote Public-Private Partnerships

Date	Initiative	Purpose
2011	The amended Act on Promotion of Private Finance Initiative	To utilise private capital as a measure to improve public infrastructure.
2014	Japan Overseas Infrastructure Investment Corporation for Transport and Urban Development (JOIN)	To support private companies in transport and urban development projects.
2016	The action plan for promoting PPP/PFI programmes	To create new business opportunities and reduce the public cost.

In October 2014, the Japanese government established the Japan Overseas Infrastructure Investment Corporation for Transport and Urban Development (JOIN) as a public-private investment fund. The role of JOIN is to support private companies in transport and urban development projects by jointly investing with the private sector, taking high investment risks, facilitating procedures, negotiating with foreign governments to reduce costs and mitigate political risks, and attaching human resources to special-purpose companies to share Japan's technologies and experience and develop human resources on-site for infrastructure management. Up to the time of writing, JOIN has jointly invested in 10 projects with private companies.

In 2018, the Japanese Cabinet approved a new law to promote the development and management of social infrastructure overseas by private companies in areas such as railways, airports, ports, sewerage systems and urban infrastructure.[8] Under the law, where the technical knowledge and special skills needed in specific projects reside only with the public sector, private companies need to partner with the public sector to participate in such projects. This provision makes it easier for private companies to participate in large-scale infrastructure projects overseas.

3.2. Partnership for Quality Infrastructure

In 2012, the Japanese government articulated its "Infrastructure Export Strategy", aimed at raising infrastructure exports to 30 trillion yen by 2020. The "Japan Revitalization Strategy—Japan is Back" strategy launched in 2013 singled out expanding overseas infrastructure investment as one of the main policies in Japan's international business development efforts. The prime minister and other ministers made "top-level sales" pitches, with a focus on strengthening cooperation between the public and private sectors, promoting international standardisation of the advanced technologies

[7] "The Action Plan of Promoting PPP/PFI Programs 2018", Cabinet Office, Japan.

[8] More details on the new law can be found on the website of Ministry of Land, Infrastructure, Transport, and Tourism: http://www.mlit.go.jp/report/press/sogo07_hh_000500.html.

possessed by Japanese companies and implementing economic cooperation with foreign governments.

Table 2. Japanese government's initiatives to promote infrastructure exports

Date	Initiative	Purpose
2012	Infrastructure Export Strategy	To raise infrastructure sales to 30 trillion yen by 2020.
2013	Japan Revitalization Strategy—Japan is Back	To expand overseas investment in infrastructure as one of the main policies for Japan's international business development.
2015	Partnership for Quality Infrastructure: Investment for Asia's Future	To collaborate with the ADB and provide approximately US$110 billion for "quality infrastructure investment" in Asia over the next five years.
2017	G7 Ise-Shima Principle for Promoting Quality Infrastructure Investment	To encourage exports of high-quality infrastructure and construct win-win relationships that contribute both to domestic economic growth and economic development of partner countries.

In 2015 Prime Minister Shinzo Abe announced his "Partnership for Quality Infrastructure: Investment for Asia's Future" strategy, mentioning that Japan would collaborate with the ADB to provide approximately US$110 billion for "quality infrastructure investment" in Asia over the next five years. In May 2016, Prime Minister Abe announced the "Expanded Partnership for Quality Infrastructure" initiative, directed toward the G7 Ise-Shima Summit Meeting, stating that "through the initiative, Japan will encourage exports of its high-quality infrastructure and construct win-win relationships that contribute both to domestic economic growth and to the economic development of partner countries. To this end, Japan will aim to provide, among other things, financing of approximately US$200 billion in the next five years to be allocated to infrastructure projects across the world. In addition, Japan will further improve related measures for the promotion of quality infrastructure investment."[9] Later, at their G7 Ise-Shima Summit, the G7 leaders endorsed the "G7 Ise-Shima Principle for Promoting Quality Infrastructure Investment".

Japan tries to differentiate itself from other countries by capitalising on the strength of Japan's high-quality infrastructure, such as inexpensive life-cycle costs and durability, its environmental technologies and the development of local human resources and systems. Nevertheless, the latest "Infrastructure Export Strategy" of 2018 points out that Japanese companies are not meeting the diversified needs of third countries—not only in construction but also in operating and maintaining infrastructure. In addition, Japanese companies lack the strategic know-how of marketing and branding as well as the global human resources that can deal with international projects. Therefore, it is necessary to support these projects through joint public-private sector undertakings that can create the business environment to deal with the problems and various risks of infrastructure development.

4. Japan's investment in Southeast Asia

Figure 4 shows Japan's Official Development Assistance (ODA) for the 10 ASEAN countries from 1969 to 2016. The period is divided into three sub-periods of 12 years each. In the last period from 2005 to 2016, Japan's bilateral ODA disbursements for Indonesia, Thailand, the Philippines

[9] Ministry of Economy, Trade and Industry, Japan, "The 'Expanded Partnership for Quality Infrastructure' initiative directed toward the G7 Ise-Shima Summit Meeting announced", News Release, May 2016, http://www.meti.go.jp/english/press/2016/0523_01.html.

and Malaysia showed a decline from the previous period, while that for Vietnam and Myanmar dramatically increased. In 2016, Vietnam received 46% of Japan's ODA for the ASEAN countries, while Myanmar and Indonesia received 12% each. The importance of Vietnam and Myanmar for Japan's ODA is underlined by the Japanese government's initiatives.

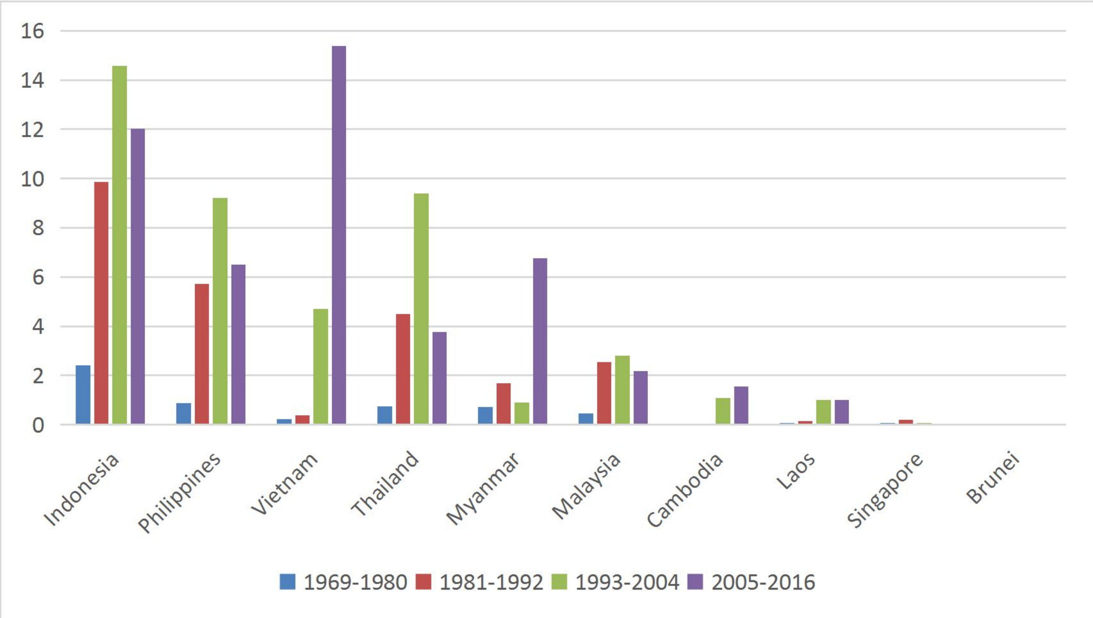

Figure 4. Japan's ODA for ASEAN countries (gross disbursement base, billion US$).

Source: "White Paper on Development Cooperation," Ministry of Foreign Affairs, Japan, 2017

In 2016, the "Japan-Mekong Connectivity Initiative" for the Mekong economic region (comprising Cambodia, Laos, Myanmar and Vietnam) was launched at the Ninth Mekong–Japan Foreign Ministers' Meeting.[10] The following year, Prime Minister Abe stated that along with further contributing to the industrial development of the Mekong region through PPP programmes, Japan hoped to contribute by utilising Japanese expertise in areas such as human resources development, health and medical care and environmental technologies, in addition to the development of "quality infrastructure" that conforms to international standards.[11] Japan aims to identify projects in which Japanese companies will be able to contribute to regional connectivity, support the advancement of industry, solve problems of urbanisation in the Mekong area and develop local human resources. In Vietnam, in particular, Japan aims to invest in the construction of infrastructure such as urban transportation networks and utilities, develop human resources for the management and maintenance of constructed infrastructure, and support the development of legislation in the area of railway construction and eco-city development.

At a meeting with Ms Aung San Suu Kyi, State Counsellor of Myanmar, in 2016, Prime Minister Abe stated that Japan fully supported Myanmar's policy of promoting balanced development among states and regions and planned to contribute 800 billion yen over five years at both public and private levels based on the "Japan–Myanmar Cooperation Programme", which targets "balanced

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[10] Ministry of Foreign Affairs, Japan, "The Ninth Mekong-Japan Foreign Ministers' Meeting", July 25, 2016, https://www.mofa.go.jp/s_sa/sea1/page3e_000521.html.

[11] Ministry of Foreign Affairs, Japan, "The Ninth Mekong－Japan Summit Meeting", November 13, 2017, https://www.mofa.go.jp/s_sa/sea1/page3e_000786.html.

development between urban and rural areas". The fields he singled out for support include areas with ethnic minorities, agriculture, urban development of Yangon, electricity, airports and human resource training.[12] He emphasised the importance of expanding employment through investment by the private sector, human resource training and technology transfers. In 2017, he stated that Japan would pick up the pace of cooperation through contributions centring on the development of Yangon City, transportation and electricity.[13] Through its "Infrastructure Export Strategy", Japan aims to support Myanmar's development of the grand design of the nation, its systems and its human resources.

Figure 5 shows Japan's FDI in Asia from 1998 to 2017. The period is divided into two sub-periods of 10 years each. First, we can see that Japan's FDI in Asia has dramatically increased in the last 10 years. Second, it is remarkable that while Japan's FDI in China and its FDI in ASEAN were equally large from 1998 to 2007, ASEAN surpassed China by a wide margin in receiving Japan's FDI in the following 10 years. While Thailand, Indonesia and Singapore are still the largest recipients, Japan's FDI in Vietnam has grown 750% in the period 2008 to 2017 compared to the preceding 10 years.[14]

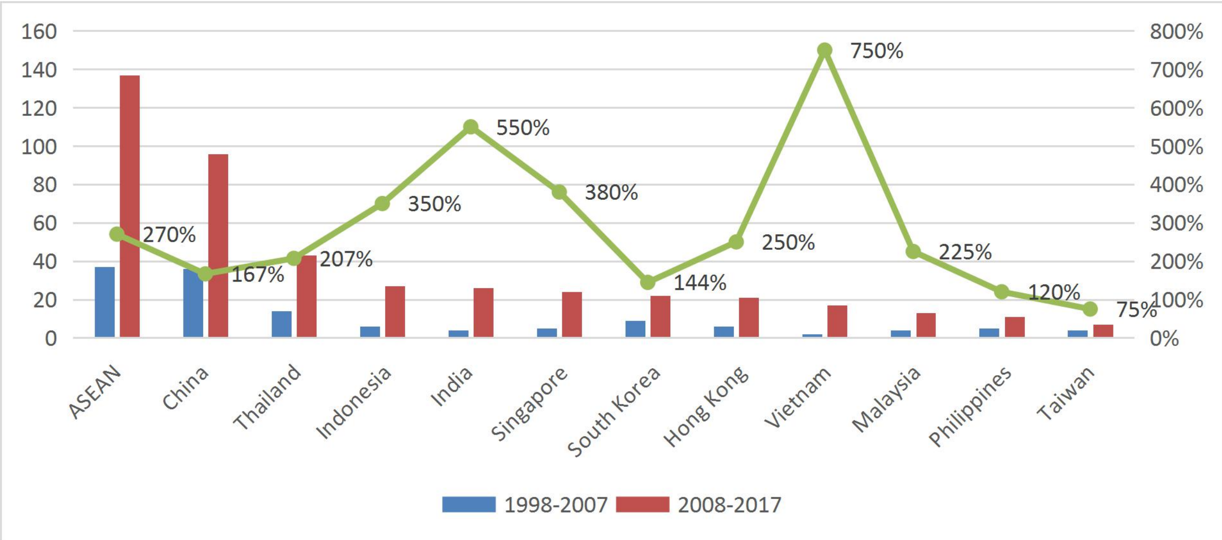

Figure 5. Japan's FDI in Asia (billion US$).

Source: Balance of Payment Statistics, Ministry of Foreign Affairs, Japan.

For the purpose of strengthening connectivity in ASEAN, Prime Minister Abe pointed out at the Japan–ASEAN Summit Meeting of 2016 that Japan would promote the development of infrastructure both qualitatively and quantitatively under the "Expanded Partnership for Quality Infrastructure" initiative, based on the principles agreed at the G7 Ise-Shima Summit.[15] Later, at the ASEAN Summit of 2017, he mentioned that Japan would cooperate to realise a more integrated

[12] Ministry of Foreign Affairs, Japan, "Meeting Between Prime Minister Abe and Myanmar State Counsellor Aung San Suu Kyi". November 2, 2016, https://www.mofa.go.jp/s_sa/sea1/mm/page4e_000547.html.

[13] Ministry of Foreign Affairs, Japan, "Prime Minister Shinzo Abe Meets with the President of Myanmar", December 14, 2017, https://www.mofa.go.jp/s_sa/sea1/mm/page4e_000731.html.

[14] In contrast, Japan's FDI in the European Union was US$110 billion in 1998–2007 and US$333 billion in 2008–2017 and that in the United States was US$97 billion in 1998–2007 and US$359 billion in 2008–2017, still more than twice as large as that in ASEAN.im

[15] Ministry of Foreign Affairs, Japan, "The Japan-ASEAN Summit Meeting", September 7, 2016, https://www.mofa.go.jp/a_o/rp/page3e_000590.html.

ASEAN by strengthening the initiatives under the "four pillars of partnership"[16]—"Partners for Peace and Stability", "Partners for Prosperity", "Partners for Quality of Life" and "Heart-to-Heart Partners"—and by utilising the ADB, as well as promoting the development of quality infrastructure in accordance with international standards, such as openness, transparency, economic efficiency and financial viability of recipient countries.[17]

Table 3. Japanese government's initiatives in Southeast Asia

Date	Initiative	Purpose
2016	Expanded Partnership for Quality Infrastructure	To encourage exports of high-quality infrastructure and construct win-win relationships that contribute both to domestic economic growth and the economic development of partner countries.
2016	Japan–Mekong Connectivity Initiative	To contribute to industrial development in the Mekong region through PPPs and by utilising Japan's expertise in areas such as human resources development, health and medical care and environmental technologies, in addition to the development of "quality infrastructure" that conforms to international standards.
2016	Japan–Myanmar Cooperation Programme	To support balanced development between urban and rural areas.

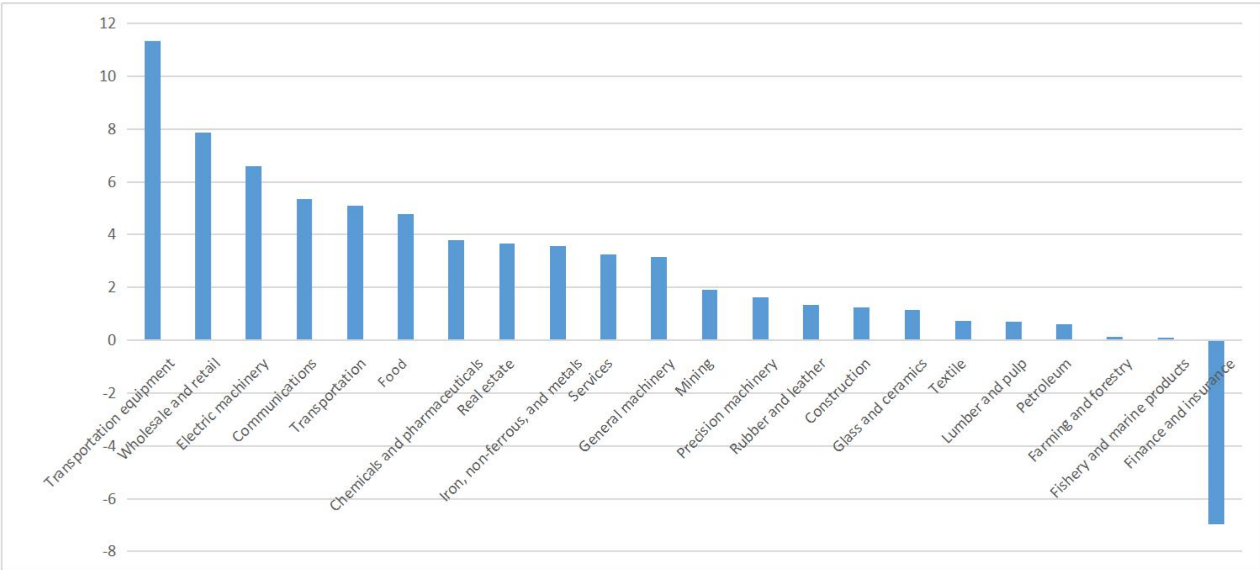

Figure 6. Japan's FDI in ASEAN by sector, 2014–2017 (billion yen).

Source: Balance of Payment Statistics, Ministry of Finance, Japan

Figure 6 shows that transportation equipment, wholesale and retail, and electric machinery are the largest sectors that received Japan's FDI in ASEAN from 2015 to 2017.[18] Japan's FDI in ASEAN by sector indicates the importance of ASEAN as a manufacturing production base for Japanese companies. Infrastructure investment contributes to stronger connectivity, which is vital

[16] The four pillars of partnership were initially announced at the ASEAN–Japan Commemorative Summit Meeting in 2013.
[17] Ministry of Foreign Affairs, Japan, "The Japan-ASEAN Summit Meeting", November 13, 2017, https://www.mofa.go.jp/a_o/rp/page3e_000791.html.
[18] Japan's FDI in finance and insurance recorded negative 6 billion yen. The Japanese multinational holding conglomerate Softbank reportedly decided to distribute dividends amounting to 2.4 trillion yen from its Singapore subsidiary in 2016, which contributed largely to Japan's disinvestment in Singapore amounting to US$19 billion in 2016.

for establishing supply chains in the region.

5. Conclusion

It is clear why Japan wants to invest in Southeast Asia. First, Japan's investment in domestic construction has decreased to less than half of its peak in 1992. Given the country's declining population, Japanese construction companies must go global to remain profitable. Second, Southeast Asia is estimated to be one of the largest markets for infrastructure investment in the coming decades. The importance of the region is underlined by Japanese's FDI in ASEAN surpassing Japanese FDI in China by a wide margin in recent years. Japan's ODA reflects its strategy of enhancing connectivity in the region to support supply chains for Japanese companies, for whom ASEAN is expected to become the primary manufacturing production base. But, while there is synergy between infrastructure investment and manufacturing production, it is not clear to what extent the Japanese government and Japanese companies can contribute to meeting the infrastructure needs in the region as Japanese companies have long been operating primarily in Japan. To support Japanese companies in expanding their business overseas, particularly in Southeast Asia, the Japanese government has passed a series of new laws that encourage private sector participation in financing, building and operating public infrastructure, which would allow the private sector to gain the experience and expertise to venture overseas. In the course of participating in Japan's economic development, Japanese companies have developed skills and technologies to build a variety of infrastructures that are resilient to natural disasters and adaptable to various geographical conditions and social and economic development. The major challenge for Japanese companies today is to transform their business model drastically from one that relies on the domestic market to one that contributes to the social and economic development of third countries.