2021

BSP DISCUSSION PAPER

Series No. 007

ASEAN-5 countries: In competition for FDI

Hazel C. Parcon-Santos
Maria Rica M. Amador
Marie Edelweiss G. Romarate

BSP RESEARCH ACADEMY

ABSTRACT

Hazel C. Parcon-Santos,[a] Maria Rica M. Amador,[b] Marie Edelweiss G. Romarate [c]

This paper explores the factors that may account for the disparities in FDI received by five ASEAN member-countries, namely, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, from 15 source countries for the period 2009-2019. As funding from FDI will be paramount in reviving economies post-COVID-19, governments need to take the necessary steps to improve their investment environments to retain and attract FDI. Using a gravity model approach, this study found that foreign direct investors are attracted by a range of economic and non-economic factors. First, sovereign credit ratings have signaled effects for foreign direct investors. Second, while reducing corporate tax rates and FDI restrictions can potentially increase FDI, improving the efficiency of doing business in a country, particularly on trading across borders, is considered as more relevant by foreign direct investors. Third, the quality of human capital appears to be more important than the cost of labor. Finally, while public governance appears to be important only for some investors, it is positively and highly correlated with the indicators of ease of doing business, quality of infrastructure, competitive industrial performance, and technological innovation in production – implying that improvements in governance can have both direct and indirect significant effects on a country's FDI performance. Findings suggest that foreign investors are attracted to a range of economic and non-economic factors. FDI promotion can be successful only if it is accompanied by relevant policies, including but not limited to those that improve the efficiency of business regulations, raise the quality of public governance and infrastructure, and improve the availability of appropriate human capital.

JEL Classification Numbers : F21, F23, F36, F02, H32

Keywords : foreign direct investment, ASEAN-5, sovereign credit rating

Corresponding author : Hazel C. Parcon-Santos (parconhc@bsp.gov.ph)

[a] Senior Researcher, BSP Research Academy
[b] Bank Officer V, Investor Relations Office, Bangko Sentral ng Pilipinas
[c] Research Associate, BSP Research Academy

Acknowledgement: The authors are grateful for the insightful comments of BSP Deputy Governor Maria Almasara Cyd N. Tuaño-Amador, Dr. Myrna S. Austria, Dr. Laura B. Fermo, Dr. Cielito F. Habito, Mr. Jade Eric T. Redoblado, Mr. Roberto Batungbacal, participants at the BSP-PIDS Research Forum on "Resilient Legs for Economic Recovery in the Post-Pandemic Era" held on 27 October 2021 via Zoom, and participants at the American Chamber of Commerce Investment Talks Webinar Series on "FDI and Post-Pandemic Recovery in the Philippines" held on 23 November 2021 via Zoom.

1. Introduction

Foreign direct investments (FDI)[1] has been an important source of external financing for developing countries. The benefits of FDI to host countries are well documented and include, among others, increased employment, technology spillovers, transfer of managerial practices, and increased integration with international markets, which ultimately contribute to economic growth and development. Moreover, given its long-term nature, it provides a stable source of funding for host countries and is, thus, preferred over other types of external funding.

In 2020, as a consequence of the coronavirus disease 2019 (COVID-19) pandemic, FDI flows plunged globally by 35%, the biggest decline recorded since 2009. Lockdown measures imposed in response to the successive waves of COVID-19 infection, supply chain disruptions, falling corporate earnings, economic uncertainties, and delayed investment plans were the primary reasons for the contraction (UNCTAD, 2021).

As countries plan their recovery from the effects of the pandemic, funding will be paramount in reviving their economies. The significant financial resources needed for recovery and the limited fiscal space from various pandemic-related expenditures make financing from FDI crucially important (UNESCAP, 2021). Global FDI is expected to partially recover in 2021 but is expected to remain below pre-crisis levels. The lower levels of FDI will lead to heightened competition to attract FDI. UNESCAP (2021) emphasized that even before the COVID-19 pandemic, countries were already under great pressure to attract FDI, but the pandemic further intensified the competition. Thus, governments need to take the necessary steps to improve their investment environments to retain and attract FDI.

Countries have implemented various measures to incorporate FDI in their COVID-19 recovery plans. In Indonesia, the government is working to pass a law to overhaul tax and labor market laws to boost FDI. In Vietnam, the government has expanded the list of domestic small and medium-sized enterprises eligible for investment incentives. In Myanmar, the government has fast-tracked approvals for investment in labor-intensive and infrastructure projects and reduced investment application fees (UNESCAP, 2021).

In the Philippines, the Corporate Recovery and Tax Incentives for Enterprises Act (CREATE), which was passed in the first half of 2021, reduces corporate income tax rates for foreign corporations from 30% to 25%.[2] The Philippine government has also been pushing to further open the economy to foreign investors by lifting restrictions in certain sectors.[3]

---

[1] Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise interest (10 percent or more of voting stock) that is resident in another economy (IMF Balance of Payments and International Investment Position Manual, 6th Edition (BPM6)).

[2] https://taxreform.dof.gov.ph/tax-reform-packages/p2-corporate-recovery-and-tax-incentives-for-enterprises-act/

[3] https://www.cnnphilippines.com/news/2021/4/13/duterte-certifies-urgent-economic-bills-relax-foreign-investments-restrictions.html

Amidst efforts to attract FDI, some economies are facing deterioration in their macroeconomic outlook as a result of potential scarring effects of the pandemic. For instance, some credit rating agencies have flagged downward pressures in the economies of Indonesia, Malaysia, and the Philippines.[4] This makes it even more challenging for countries to attract and retain FDI. As this study shows, sovereign credit ratings may play a role in attracting FDI.

At the outset, it is emphasized that this study only provides an overview of the different facets of an economy that are considered by foreign direct investors when they choose their host countries. An exhaustive list is not provided. In addition, while the factors considered in this study are already widely recognized in the literature, the analyses remain very relevant as they provide valuable lessons and a reminder on how policies should be shaped to attract and retain FDI. Moreover, this study recognizes the efforts of the ASEAN Economic Community to enhance investment opportunities for all its member-countries. While regional efforts are beneficial, the policies and strategies implemented by each member-country will largely determine the competitiveness of each economy.

FDI host countries can compete on the basis of labor and other business costs, macroeconomic performance, economic openness, governance, business regulations, and infrastructure. Findings suggest that there is no factor that can single-handedly attract FDI. While countries can offer tax incentives and open their economies to foreign investors, these must be accompanied by efficient business regulations and good governance. Potential host countries need to compete in different dimensions and an amalgamation of the different factors is required. For policy, this suggests that a wholistic approach is needed to successfully attract and retain FDI.

The study covers five ASEAN economies, namely, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, which is collectively referred to in this study as the ASEAN-5.[5] FDI is particularly important for this group as the Southeast Asian region, an engine of global FDI growth for the past decade, recorded a 25% FDI contraction in 2020 (UNCTAD, 2021). Competition for FDI can thus be considered intense for the countries in the region.[6]

Section 2 presents some stylized facts on the developments of FDI in ASEAN over the decades. Section 3 presents a brief review of theoretical and empirical literature on FDI determinants. Section 4 presents an empirical exercise. Section 5 discusses the findings. Section 6 concludes and provides some policy implications.

[4] See for instance, Trinidad (2021), Noble (2021a, 2021b), Suroyo (2021), and Idris (2020).

[5] The IMF World Economic Outlook has also referred to these five economies as ASEAN-5, which was based on economic size: thus, including Vietnam instead of Singapore.

[6] Among the ASEAN countries, Thailand recorded the highest decline in FDI in 2020 (with annual growth in FDI inflows plunging by 201 percent, based on Balance of Payments data from the IMF). Nonetheless, it has recovered by the 1st quarter of 2021 (with year-on-year growth of 49 percent).

2. Stylized facts

From the 1980s to the 2010s, average world FDI inflows have increased from US$92.9 billion to US$1.6 trillion, while world FDI inward stock has increased from US$1.8 trillion at the end of the 1980s to US$36.5 trillion by the end of the 2010s, reflecting a twenty-fold increase (Table 1). Throughout these decades, average FDI inflows to ASEAN member countries have likewise increased from US$4.0 billion in the 1980s to US$124.2 billion in the 2010s. An almost sixty-fold increase in FDI stock in the region was observed from the end of the 1980s to the end of the 2010s, from US$46.2 billion to US$2.7 trillion.

Relative to GDP, ASEAN FDI inward flows and stock increased from 1.6% to 4.9%, and from 14.1% to 84.7% in the 1980s to the 2010s, respectively. Similarly, the share of ASEAN to world FDI inward flows and stock increased 4.7% to 8.1%, and from 2.5% to 7.4% in the 1980s to the 2010s, respectively.

Table 1. World and ASEAN FDI Inflows and Inward Stock

Economy	1980s	1990s	2000s	2010s
World				
Inward Flows (US$ million, period average)	92,930.8	397,496.8	1,093,155.8	1,612,611.7
Inward Stock (US$ million, end-of-period)	1,832,224.4	7,086,845.1	17,836,943.7	36,470,161.6
ASEAN				
Inward Flows (US$ million, period average)	4,041.2	22,570.5	40,484.8	124,197.3
Inward Flows (% share to GDP, period average)	1.6	3.9	3.9	4.9
Inward Flows (% share to world, period average)	4.7	6.8	3.8	8.1
Inward Stock (US$ million, end-of-period)	46,240.8	246,998.0	891,373.4	2,687,886.3
Inward Stock (% share to GDP, end-of-period)	14.1	44.2	56.2	84.7
Inward Stock (% share to world, end-of-period)	2.5	3.5	5.0	7.4

Source: United Nations Conference on Trade and Development (UNCTAD) Database

Foregoing trends reflect the increasing attractiveness of the ASEAN region as a destination for FDI due to member-countries' improving macroeconomic fundamentals and policy environment, positive investor sentiment towards the region, and growing regional market prospects (ASEAN-UNCTAD, 2014).

For instance, inflation for the region has substantially decreased from an average of 6.2% to 3.2% from the 2000s to the 2010s (Table 2). Per capita income in the region has likewise increased from US$3,485 to US$4,922 in the past two decades. Policy frameworks and institutions have also improved as rankings in governance indicators have increased. Some dimensions of competitiveness have also displayed improvements.[7]

[7] For the ASEAN-5, improvements were seen in 7 out of the 12 pillars of the Global Competitiveness Index (produced by the World Economic Forum), namely, macroeconomic environment, infrastructure, innovation, market size, technological readiness, higher education and training, and health and primary education.

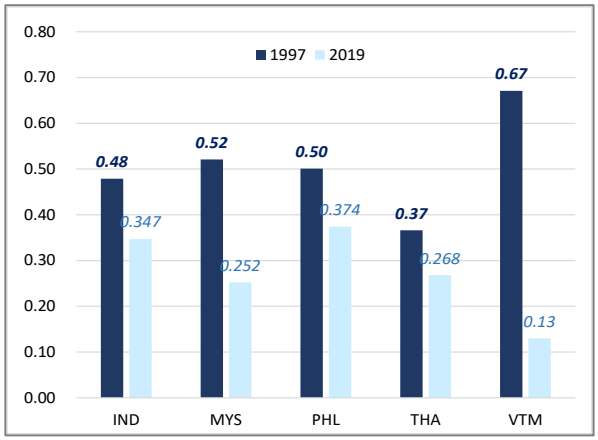
Meanwhile, regulatory restrictions on FDI have decreased (Figure 1), with the largest easing in Vietnam.[8]

Table 2. ASEAN Selected Performance Indicators, 2000s and 2010s

Performance Indicator	2000s	2010s
Inflation[1] (%)	6.2	3.2
GDP per capita[1] (US$)	3,485	4,922
Corruption Peception[2]	32	40
Rule of Governance[2]	0.78	0.89
Global Competitiveness Index[3]	4.4	4.7

Notes: 1 – decade average for ASEAN; 2 – end-2009 and end-2019 figures for ASEAN-5; 3 – 2007-2008 and 2017-2018 figures for ASEAN-5
Sources: ARIC Database, World Development Indicators, Transparency International, The Heritage Foundation, World Economic Forum

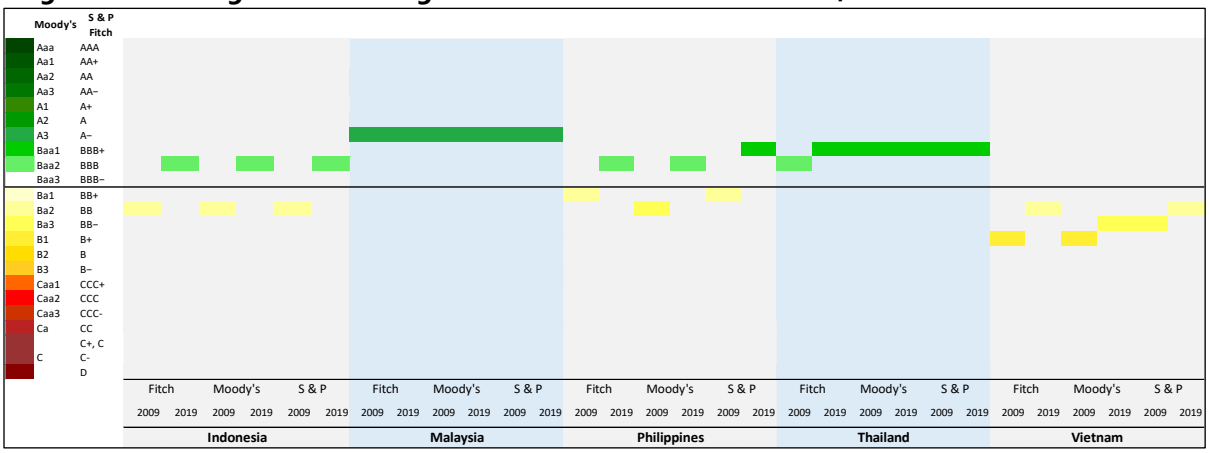
Figure 1. FDI Regulatory Restrictions Index,[1] 1997 and 2019



Notes: 1 - Consist of (1) foreign equity limitations; (2) discriminatory screening or approval mechanisms; (3) restrictions on employment of foreigners as key personnel; and (4) other operational restrictions (e.g., restrictions on branching, capital repatriation, or land ownership by foreign-owned enterprises). The index is valued on a 0 (open or no restrictions on FDI) to 1 (closed to FDI) scale.
Source: OECD FDI Regulatory Restrictiveness Database

Aforementioned progress were attested by the several upgrades received by some ASEAN countries from sovereign credit rating agencies (Figure 2). These upgrades were largely on account of improving macroeconomic stability and strengthening policy frameworks and institutions.[9, 10]

Figure 2. Sovereign Credit Ratings for Selected ASEAN economies, end-2009 and end-2019



Source: Refinitiv, Standard and Poor's

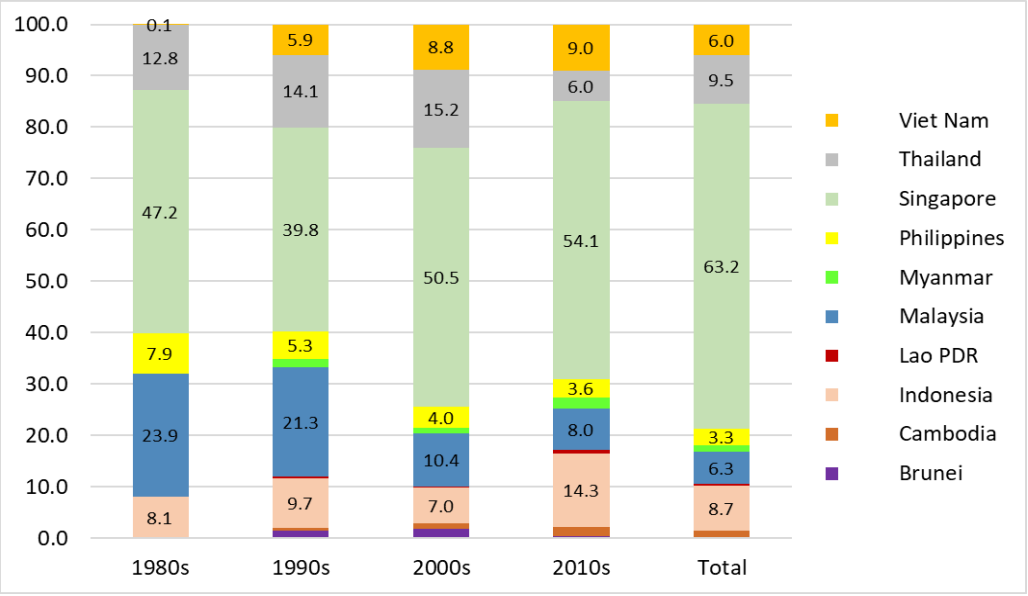
[8] Among the FDI regulatory restrictions, all ASEAN-5 countries mostly reduced equity restrictions (other regulatory restrictions pertain to screening/approval mechanism and employment of foreign personnel).
[9] See for instance Maurya (2019) and Vu (2018).
[10] For the period considered, sovereign credit rating of Malaysia remained at A-.

While sovereign credit ratings relate to the debt and creditworthiness of the central government, they may also serve as a barometer of confidence in the economy that may provide additional information to private direct investors. For instance, from 2011 to 2015, the Philippines received several rating upgrades from the three major sovereign credit rating agencies (Fitch, Standard and Poor's (S&P), and Moody's). During this period and in subsequent years, the Philippines also had notable increases in FDI (Appendix Figure 1).

While the picture for the ASEAN appears propitious on average, individual country experiences have been varied. As seen in Figure 3, in the 1980s, the top recipients of FDI among the ASEAN member countries were Singapore (47.2%), Malaysia (23.9%), Thailand (12.8%), Indonesia (8.1%), and the Philippines (7.9%). While Singapore has been the consistent top recipient country of FDI in the region throughout the decades, the experience of other countries in the region has been mixed. Malaysia and Thailand ranked either in 2nd or 3rd place from the 1980s to the 2000s, while Indonesia has improved its ranking from 4th place in the 1980s and 1990s, and 5th place in the 2000s to 2nd place in the 2010s. Meanwhile, the Philippines slipped to 6th place since the 1990s as Vietnam climbed up the ranks from 5th in the 1990s to 3rd in the 2010s.

In the 1990s and 2000s, Indonesia and the Philippines have been overtaken by Vietnam as its share to total ASEAN FDI climbed to 5.9% and 8.8%, respectively. For the same periods, the shares of the Philippines in total ASEAN FDI declined to 5.3% and 4.0%, respectively. Indonesia, meanwhile, improved its share considerably in the 2010s to 14.3% to rank ahead of Vietnam (9.0%), Malaysia (8.0%), Thailand (6.0%), and the Philippines (3.6%).

Figure 3. ASEAN FDI Stock, by Country and Decade, 1980s-2010s (% share to ASEAN total)

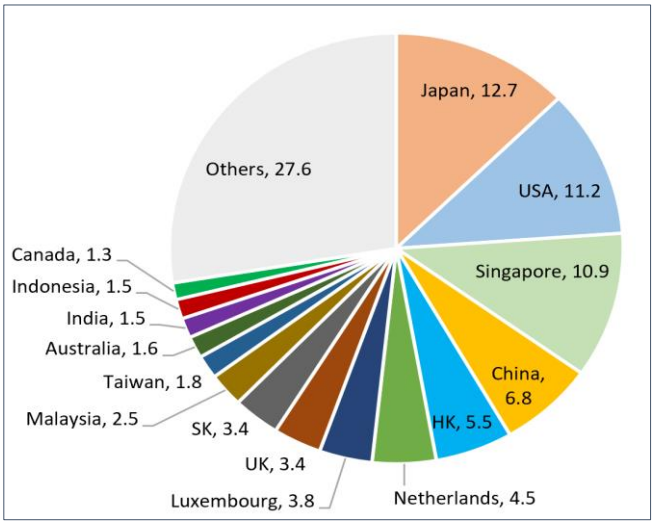


Source: UNCTAD Database

The foregoing reflects that within ASEAN, countries are competing for FDI.

Figure 4 shows the source countries of FDI inflows into ASEAN countries for the 2010s. The top 15 source countries comprise 73% of total ASEAN FDI. The combined volume of FDI from the top 3 source countries (Japan, USA, Singapore) makes up 36% of total ASEAN FDI. Source countries are mainly advanced economies except for some developing countries like China, Malaysia, India, and Indonesia. Six countries are from North America and Europe, while the other 9 are countries in the Asia-Pacific region, prominently, East Asian countries (Japan, China, Hong Kong, South Korea, and Taiwan).

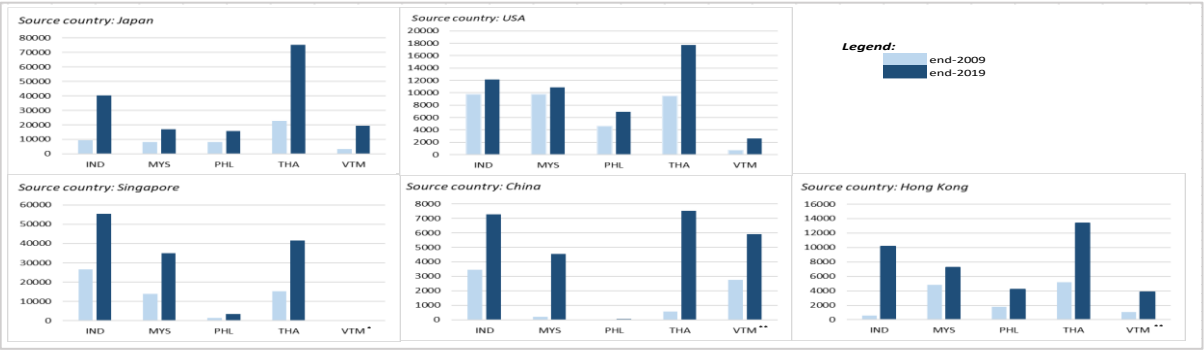
Figure 4. ASEAN FDI by Source Country, 2010s (% share to ASEAN inward FDI)



Source: ASEAN Stats Database

Among the ASEAN-5 countries, the USA and Japan's FDI mainly went to Thailand and Indonesia (Figure 5) as of end-2019. Singapore also increased FDI into its ASEAN neighbors from end-2009 to end-2019 with the bulk likewise going into Indonesia and Thailand.

Figure 5. FDI Outward Position of Source to Host Country, end-2009 and end-2019 (US$ million)

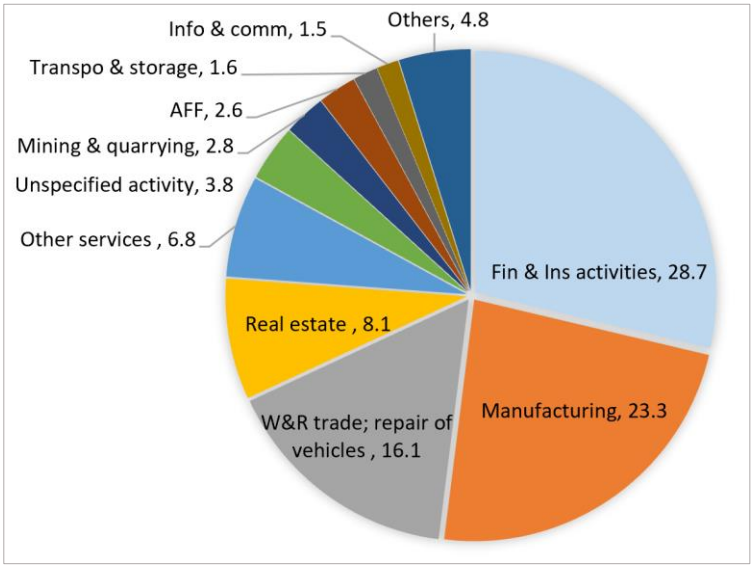


*Notes: *-confidential data; **-some data points estimated*
Source: IMF Coordinated Direct Investment Survey (CDIS)

China has considerably increased its investment into ASEAN-5, particularly into Thailand, closely followed by Indonesia. Malaysia has also received considerably larger FDI from China as of end-2019 compared to end-2009. However, the Philippines has received a minuscule amount of FDI from China relative to its ASEAN-5 neighbors. Meanwhile, Hong Kong has invested heavily in Thailand. Hong Kong has also considerably increased FDI into Indonesia, overtaking the other three ASEAN countries from end-2009 to end-2019.

Figure 6 shows the top 10 recipient sectors of FDI in ASEAN from 2012 to 2019.[11] The top recipient sectors were dominated by tertiary or services-oriented sectors, namely, financial and insurance activities (29%); wholesale and retail trade, and repair of vehicles (16%); real estate activities (8%); and other service activities (7%). Nonetheless, more than 70% of FDI in services goes to Singapore (ASEAN, 2019).[12] This implies that most FDI in other ASEAN member countries still goes to manufacturing (ASEAN, 2019). For 2012-2019, manufacturing received 23% of the total FDI into ASEAN, with the majority going to Singapore, Indonesia, Vietnam, and Thailand. The increase in FDI manufacturing for this period can be partly attributed to the gradual shift of production capacity from China and elsewhere to ASEAN, caused by structural factors such as the increase in relative labor costs in China and the United States-China trade tensions (ASEAN, 2019).

Figure 6. Top Ten Recipient Sectors in ASEAN, 2012-2019 (US$ millions)



Source: ASEAN Stats Database

For the period 2010-2019, financial services is the top destination sector by 8 out of the top 15 source countries. Likewise, noteworthy is that 13 out of the top 15 source countries have manufacturing and wholesale and retail trade, and repair of vehicles in their top 5 recipient sectors (Table 3).

[11] Data in ASEAN Stats Database is limited to these years.

[12] These include investment in holding companies, back-office activities, regional headquarters activities and distribution functions. These may support industrial activities throughout ASEAN but are classified as services FDI (ASEAN, 2019).

Table 3. Top Five Recipient Sectors by Source Country, 2012-2019
(% of total FDI from Source Country)

Japan		United States		Singapore		China		Hong Kong	
Manufacturing	31.5	Financial and Insurance activities	45.7	Manufacturing	35.3	Real estate activities	23.8	Financial and Insurance activities	35.9
Financial and Insurance activities	23.3	Wholesale and retail trade; repair of motor vehicles and motor cycles	16.1	Agriculture, forestry, and fishing	17.7	Financial and Insurance activities	20.9	Manufacturing	23.2
Wholesale and retail trade; repair of motor vehicles and motor cycles	15.6	Manufacturing	15.6	Financial and Insurance activities	15.8	Manufacturing	13.7	Real estate activities	14.3
Other services activities	3.8	Other services activities	8.6	Wholesale and retail trade; repair of motor vehicles and motor cycles	9.0	Wholesale and retail trade; repair of motor vehicles and motor cycles	13.1	Wholesale and retail trade; repair of motor vehicles and motor cycles	8.1
Real estate activities	2.4	Real estate activities	4.0	Real estate activities	8.7	Electricity, gas, steam and air conditioning supply	4.2	Construction	3.0

Netherlands		Luxembourg		United Kingdom		South Korea		Malaysia	
Wholesale and retail trade; repair of motor vehicles and motor cycles	47.83	Financial and Insurance activities	46.59	Wholesale and retail trade; repair of motor vehicles and motor cycles	34.77	Manufacturing	34.49	Real estate activities	33.02
Manufacturing	17.39	Manufacturing	15.33	Financial and Insurance activities	28.08	Wholesale and retail trade; repair of motor vehicles and motor cycles	26.49	Financial and Insurance activities	23.15
Mining and quarrying	12.38	Other services activities	15.18	Mining and quarrying	15.46	Real estate activities	5.48	Manufacturing	19.37
Other services activities	5.93	Wholesale and retail trade; repair of motor vehicles and motor cycles	8.53	Other services activities	9.74	Financial and Insurance activities	5.43	Information and communication	6.75
Electricity, gas, steam and air conditioning supply	3.20	Information and communication	3.01	Transportation and storage	5.65	Electricity, gas, steam and air conditioning supply	4.811	Mining and quarrying	5.15

Taiwan		Australia		India		Indonesia		Canada	
Financial and Insurance activities	24.17	Financial and Insurance activities	58.73	Financial and Insurance activities	53.30	Financial and Insurance activities	36.45	Financial and Insurance activities	54.82
Manufacturing	22.74	Wholesale and retail trade; repair of motor vehicles and motor cycles	32.92	Other services activities	16.25	Real estate activities	29.10	Professional, scientific and technical activities	24.50
Wholesale and retail trade; repair of motor vehicles and motor cycles	20.31	Transportation and storage	5.78	Wholesale and retail trade; repair of motor vehicles and motor cycles	16.16	Manufacturing	12.35	Wholesale and retail trade; repair of motor vehicles and motor cycles	3.71
Construction	8.60	Mining and quarrying	4.27	Real estate activities	9.94	Mining and quarrying	8.23	Manufacturing	3.41
Real estate activities	6.33	Real estate activities	3.18	Manufacturing	1.80	Other services activities	2.24	Real estate activities	1.31

Source: ASEAN Stats Database

Given foregoing developments, this study asks, "What factors explain differences in FDI across ASEAN-5 countries?" and "How do different foreign direct investors choose across potential host countries?" In addition, given the seemingly increasing relevance of sovereign credit ratings in attracting FDI, this study also asks, "Are sovereign credit ratings useful in determining a country's attractiveness for FDI?" Answer to these questions may be useful for policy. For one, given the increasing competition for FDI, results may help governments take the necessary actions and reforms to improve their investment environments to retain and attract FDI. In addition, if sovereign credit ratings are informative for foreign direct investors, then by pursuing measures to improve credit ratings, governments will be hitting two birds with one stone - the government will be able to borrow at lower interest rates and attract more foreign direct investments.

3. Review of Related Literature

The theoretical and empirical literature on the determinants of foreign direct investment is vast, reflecting not just the great interest in the subject but the importance of FDI as a source of capital and the potential of multinational enterprises (MNEs) to influence domestic economic activities and outcomes.

3.1 Theoretical Literature

A standard and influential framework that has been used in the empirical investigation of determinants of FDI is the eclectic paradigm of Dunning (2001) called the OLI (Ownership, Location, and Internalization) framework. The framework points to three conditions that increase the likelihood of a firm becoming a multinational and for FDI to occur: the firm must have an ownership (O) and an internalization (I) advantage, and the host country must offer a locational (L) advantage. Ownership advantage refers to firm-specific assets such as technology, management, patents, and brands. Internalization advantage meanwhile refers to benefits that accrue to the firm from exploiting the ownership advantage from choosing to produce abroad internally, rather than through franchising or licensing.[13] Both ownership and internalization advantages depend on the firm, while locational advantage depends on the host country. When several countries are being considered by an MNE to host its FDI, it will choose based on the locational advantages offered by the host. Locational factors help explain why host countries continue to upgrade their own competitive advantage/s (Dunning, 2001).[14]

Dunning and Lundan (2008a) identified four types of FDI, namely, *resource-seeking, market-seeking, strategic asset-seeking,* and *efficiency-seeking.* These types help explain the location choice of MNEs. *Natural resource–seeking* FDI goes into a country to exploit locally available natural resources in a country, for instance, mineral fuels, industrial minerals, metals, and agricultural products. *Market-seeking* FDI (or horizontal FDI) enters a country to gain access to the domestic market. It leads to domestic sales of final products to consumers or ~~of~~ intermediate goods to firms. *Efficiency-seeking* FDI (or vertical FDI) seeks to take advantage of differences in the availability and relative cost of factor endowments in different countries. It involves exporting of final products or intermediate goods from the FDI host country to the FDI source country. *Strategic asset–seeking* FDI is motivated by investor interest in acquiring or having access to strategic assets (for example, local knowledge, management capabilities, distribution networks, technology, innovation clusters, and brands), through mergers and acquisitions. This type of FDI is typically used to explain FDI coming from emerging market economies to advanced economies (Meyer, 2015).

[13] Producing within the firm, rather than licensing to an outside firm, may make it easier for a firm to protect its assets. Retaining complete control over the process may also be preferable when it is difficult to write a contract between firms for the good or service to be produced (for instance, due to asymmetric information).

[14] For instance, MNEs which earlier found a foreign country attractive to invest in because of its low labor cost may no longer do so if other countries begin to offer lower labor costs (Dunning, 2001).

Meanwhile, Ekholm et al. (2007) identified another type of FDI – the *third-country export-platform*, where the output of the FDI host country is exported to third countries rather than to the FDI source country. This type is a combination of the other types of FDI, whereby a multinational company establishes a presence in a host country due to efficiency or cost considerations, then makes it an export base to take advantage of the demand or market size in a region or third countries.[15]

Due to different motives, different types of FDI assign varying weights to different host country characteristics. For instance, vertical and export-platform FDI are expected to be more sensitive to factors associated with the cost of operations or factors that affect a host country's free exchange of goods with the rest of the world (for instance, as part of global value chains (GVCs)), while horizontal FDI is expected to be more concerned with market size and potential market growth of the host economy.

3.2 Empirical Literature

A large number of empirical studies on the determinants of FDI are premised on the locational advantages of host countries.

Since FDI constitutes long-term investments, it can be expected that it will be largely driven by long-term considerations about the real economy and less subject to short-term financial fluctuations (Koepke, 2015). Thus, foreign investors will most likely prefer to invest in a country with macroeconomic stability. For one, an uncertain economic environment may have adverse consequences on the MNE's profitability (Aizenman and Marion, 2003). Nonetheless, the literature has shown that a stable macroeconomic environment (mostly using inflation and different transformations of the exchange rate as indicators) is not a sufficient condition for attracting FDI. Using the volatility of the real effective exchange rate as the indicator of macroeconomic uncertainty, Das (2018) shows that the impact of macroeconomic uncertainty depends on the income level of a country. Macroeconomic uncertainty deters FDI if the income level of a country is below a certain threshold. But once a country reaches a certain level of income, the negative impact of macroeconomic uncertainty fades away and the impact of other factors gain more importance. Khan (2020) likewise shows that middle income countries that adopt inflation targeting (IT), which presumably helps mitigate economic uncertainty, do not necessarily receive higher FDI inflows relative to non-IT adopters. Nonetheless, several studies argue that high inflation rates reduce the expected return on investment and signifies an uncertain economic environment (Akinboade et al., 2006; Rogoff and Reinhart, 2003). Thus, FDI inflows will be deterred by economies that have higher inflation rates since the home currency will be depreciated by inflation.

[15] An example is the establishment of Ford Motor Corporation in Thailand in 2012 to meet the rising demand in the Asia-Pacific region (market-seeking). Ford transferred its production base from the Philippines to Thailand due to the latter's wider supplier base and lower production costs, among others (efficiency-seeking) (Harman, 2012).

Among the other important factors that influence FDI identified in the literature include market size, cost and quality of labor, economic openness, and quality of governance and business regulations.

The market size of the host country reflects economic conditions and potential demand, which is important particularly for horizontal or market-seeking FDI. The importance of the size of the FDI host country has been validated by a large number of studies (Hoang, 2012; Kawai and Naknoi, 2015; Bhasin and Murthy, 2017).

Profit-maximizing investors look at minimizing production costs by relocating in countries with low labor costs. This is particularly important for vertical and export-platform FDI. Nonetheless, some studies show that cheap labor does not help to attract FDI because foreign investors are particularly interested in labor productivity (Hoang and Bui, 2014). Some studies even find a positive relationship between labor costs and FDI inflows, indicating that skilled labor is more important than cheap labor (Tri et al., 2019). Kaliappan et al. (2019) emphasize that the quality of human capital is particularly important for FDI in the services sector that require interaction between providers and customers.

Economic openness may refer to different aspects of an economy. It may refer to the trade policy environment in terms of border restrictions and multilateral agreements that facilitate the exchange of goods among signatory countries (Mistura and Roulet, 2019). Nonetheless, the impact of trade openness on FDI depends on the type of FDI. It is expected to be positively associated with vertical and export-platform FDI but may be negatively related to horizontal FDI.[16] Economic openness may also refer to policies on foreign investments. Empirical studies generally find that economies with more open investment regimes receive more FDI (Mistura and Roulet, 2019; Kox and Rojas-Romagosa, 2019; Parcon, 2009). Economic openness may also refer to capital account openness, where restrictions on currency coverability, such as foreign exchange control laws, are likely to deter FDI (Asiedu, 2002).

Over time there have been changes in the significance of determinants of FDI as shown by some studies. While market size and per capita incomes are still important determinants of FDI, tax-related variables, infrastructure, and institutions have become prominent factors (Bhasin and Murthy, 2017; Sahiti et al., 2018).

Many studies argue that corporate income tax rates across countries help explain variations in FDI received by different countries as it directly affects a firm's after-tax income (Eshghi et al., 2016). Some also argue that competitive corporate tax rates are used by countries as an incentive to attract FDI inflows. Nonetheless, Sujarwati and Qibthiyyah (2020) show that the corporate income tax rate is a significant determinant of FDI inflows only for lower-middle to low-income countries.

[16] A firm may establish a local production through direct investment in a foreign market in order to jump a tariff on cross-border trade with the foreign market. This is referred to as tariff jumping FDI.

Dunning and Lundan (2008b) argue that institutions are important determinants of FDI because they reflect major immobile factors such as legal, political, and administrative systems, which affect the transaction and coordination costs as well as the uncertainty faced by MNEs. A large number of studies show that the presence of high-quality institutions and good governance raises the probability of a country's selection as FDI location (Akbar and Idris, 2020). Nonetheless, some studies show that the impact of institutions may depend on the foreign investor. For instance, Odunga (2020) argues that Chinese firms continue to invest in corrupt economies such as Kenya and Tanzania because Chinese investors are used to dealing with corruption.

Infrastructure is a vital cost factor that affects FDI as it can affect the operational costs of a business (Odunga, 2020). A reliable and adequate system of hard infrastructure (i.e., roads, bridges, ports) allows the movement of output and input from source to production point to port of shipment (Kinuthia, 2012; Osei, 2014). Recent literature has placed emphasis on the role of soft infrastructure, particularly information and communication technology (ICT) infrastructure (broadband services, internet speed, availability of online platforms) since it can increase the efficiency in delivering services (Al-Azzam and Abu-Shanab, 2014). It is also important for FDI in the services sector, particularly for financial services (Kaliappana et al., 2019). Al-Sadiq (2020) provides evidence that the use of e-government services helps in attracting FDI inflows. The outbreak of the COVID-19 pandemic has also highlighted the importance of soft infrastructure as it allows the remote access and delivery of government services, financial services, and other consumer services (e.g., retail trade, delivery services).

An emerging strand of the literature is the possible role of the sovereign credit rating of a country as a determinant of FDI inflows (Emara and El Said, 2019; Cai et al., 2018; Kinato, 2017). Sovereign credit ratings aim to provide lenders or bond investors an assessment of a sovereign's creditworthiness as well as a broad view of a country's investment environment and guidance on potential risks and opportunities (Baranenko, 2011). Credit rating agencies use a host of quantitative and qualitative variables to determine the rating of a bond issuer. These primarily include an assessment of a country's macroeconomic fundamentals and institutional quality – locational factors that are also identified in the literature as FDI determinants. Thus, the information provided by credit rating agencies (CRAs) can spillover to FDI as it can help MNEs to differentiate between countries when determining locational decisions. Nonetheless, empirical results show mixed evidence. For instance, Emara and El Said (2020) showed that increase in sovereign ratings increase FDI inflows in emerging markets. Cai et al. (2018) meanwhile provided evidence that lower rated non-OECD recipient countries receive more FDI from OECD countries, which may imply that OECD investors are willing to invest in high-risk environments. Kinato (2017) found that the relationship is region-specific. In particular, improvements in sovereign credit rating in Asia and Europe encourages inward FDI but has no influence for the African region.

Aforementioned empirical studies find support on actual surveys conducted on foreign investors. The results of the Global Investment Competitiveness Report 2019/2020[17] revealed that the top three factors influencing investment decisions are political stability, macroeconomic stability, and a country's legal and regulatory environment. These factors outranked low tax rates, low labor and input costs, and access to resource endowments. Meanwhile, in the EU-ASEAN Business Survey 2020, EU companies with presence in the ASEAN identified five drivers of expansion — adequate laws and regulations to encourage foreign investment; availability of trained personnel and efficient manpower; diversification of customer base; reasonable production costs, including labor cost; and stable government and political system.

While there is no one-size-fits-all rule when it comes to what determines the flow of inward direct investments to a country, these studies offer guidance to policy and decision-makers on the appropriate measures to attract FDI.

4. Empirical Exercise

This section undertakes an empirical investigation into some of the possible determinants of FDI to the ASEAN-5 countries, namely Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, from the top 15 ASEAN FDI source countries[18] over the period 2009-2019[19] using a gravity model approach. Since Tinbergen's initial application to international trade (Tinbergen, 1962), the gravity model has been extensively applied in the empirical literature analyzing the determinants of FDI (Kox and Rojas-Romagosa, 2019; Mistura and Roulet, 2019; Mishra and Jena, 2019; Head and Ries, 2008).

In its basic formulation, the gravity model applied to FDI states that FDI in a host country is positively related to the product of the economic or market sizes of the source and host countries, and negatively related to the distance between them, as presented in equation (1).

$$Y_{ijt} = \frac{X_{it}^{a} \; X_{jt}^{b}}{D_{ijt}^{d}} \qquad (1)$$

Y_{ijt} is an indicator of FDI from source country i to host country j at time t; X_{it} is the economic or market size of source country i at time t; X_{jt} is the economic size of host country j at time t; and D_{ijt} is the distance between countries i and j. As a convention in the literature, other factors that impose investment costs on the source country has been added to D. a, b, and d are the unknown parameters to be estimated.

[17] The survey covers more than 2,400 foreign investors in 10 large middle-income countries - Brazil, China, India, Indonesia, Malaysia, Mexico, Nigeria, Thailand, Turkey, and Vietnam.

[18] Japan, USA, Singapore, China, Hong Kong, the Netherlands, Luxembourg, United Kingdom, South Korea, Malaysia, Taiwan, Australia, India, Indonesia, Canada

[19] The period covered by this study is constrained by the availability of bilateral FDI data from the Coordinated Direct Investment Survey (CDIS) of the International Monetary Fund (IMF).

In line with recent empirical literature, the Poisson pseudo-maximum likelihood (PPML) estimator is used to estimate the gravity equation (Kox and Rojas-Romagosa, 2019; Mistura and Roulet, 2019). Santos Silva and Teneyro (2006) demonstrated that the PPML estimator is superior in estimating the gravity equation in comparison to other traditional linear estimators. In particular, the authors show that PPML is consistent in the presence of heteroskedasticity, in the presence of zero values in the dependent variable, and regardless of the distribution of the data. In addition, the PPML approach allows the dependent variable to be entered in levels, which effectively deals with zero dependent variables. All estimations cover the period 2009-2019 using annual frequency.

Dependent variable. The outward FDI position from source country *i* to host country *j*[20] obtained from the Coordinated Direct Investment Survey (CDIS) of the International Monetary Fund (IMF) is used as the indicator of FDI.[21] A number of studies emphasize that FDI stocks better capture the capital allocation across countries than FDI flows (Kox and Rojas-Romagosa, 2019; Mistura and Roulet, 2019; Kawai and Nakoi, 2015) since the latter is more likely to be influenced by the business cycle and other short-term adjustments and single events (for example, large cross-border mergers and acquisitions) that may lead to irregularities or outliers.[22]

Explanatory variables. The set of explanatory variables can be categorized into traditional gravity variables and other factors that increase or decrease investment costs. For the traditional gravity variables, real Gross Domestic Product (GDP) is used to capture the economic or market size of source and host countries, while the distance between each country's capital cities is used to capture geographical distance.

The coefficient of the source country size could either be negative or positive. Large real GDP indicates greater aggregate income, and therefore higher ability to invest abroad, while small real GDP of the source country implies limited domestic market size, and thus greater desire by firms to expand operations abroad (Hattari and Rajan, 2008). The coefficient of the host country's market size as proxied by real GDP is expected to be positive as a large market tends to attract more FDI.

The coefficient of distance is ambiguous and depends on the type of FDI (Markusen, 2002). For vertical FDI, a too distant country may be less likely to be a host since

[20] The mirror data of the outward FDI position reported by source country *i* is the inward FDI position reported by host country *j*. The former is more complete than the latter, at least for the set of countries included in this study; hence, is used in the estimations. Nonetheless, when data is missing for the former, the latter is used.

[21] The CDIS data has a number of limitations. For one, since it is a survey, participation is on a voluntary basis. Thus, there may be missing data. There are also asymmetries between the reported outward and inward reported data due to differences in valuation methods for equity, in reporting of counterpart economy (ultimate/immediate), and in collection methods, among others. In addition, some data are missing due to confidentiality. This study proceeds with these limitations in mind. Nonetheless, the ranking of countries in terms of FDI position of host countries as reported in CDIS is consistent with the data of UNCTAD (Appendix Table 1).

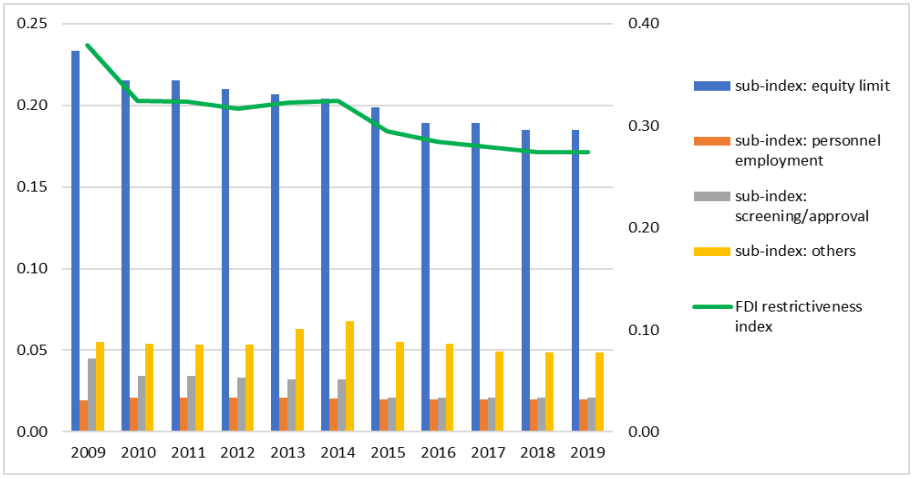
[22] Nonetheless, in the robustness checks, FDI outflows from source country to host country was used as the dependent variable.

transporting goods back to the source country may be too costly; hence, distance is expected to have a negative impact on FDI between source and host countries. Moreover, Hattari and Rajan (2008) and Head and Ries (2008) contend that greater distance between source and countries may increase the costs associated with monitoring and supervision of foreign operations. Nonetheless, greater distance may encourage horizontal or market-seeking FDI. Instead of exporting to a distant country, an MNE may decide to establish a local presence in the host country to save on transportation costs.

The choice of the other explanatory variables is motivated by the empirical literature. Inflation is used as a proxy variable for macroeconomic stability. The minimum wage is used as the proxy for the cost of labor. Corporate tax rate is included to account for additional costs that may reduce the profit of foreign investors. A human capital index consisting of adult literacy rate; the combined primary, secondary and tertiary gross enrolment ratio; expected years of schooling; and the average years of schooling is used as the indicator of the quality of human capital.

The FDI regulatory restrictiveness index produced by the Organization for Economic Cooperation and Development (OECD) is used as a proxy for economic openness. Nordås and Kox (2019) emphasize that FDI restrictions may amplify the disadvantage of remoteness, increasing the costs more sharply for relatively more distant investors. The index measures statutory restrictions on FDI across 22 economic sectors based on (1) foreign equity limitations; (2) discriminatory screening or approval mechanisms; (3) restrictions on the employment of foreigners as key personnel; and (4) other operational restrictions (for instance, restrictions on branching, capital repatriation, or land ownership by foreign-owned enterprises). The index is valued on a 0 (open or no restrictions on FDI) to 1 (closed to FDI) scale, thus a negative coefficient is expected. The sub-index on foreign equity restrictions is used in the estimations since restrictions on foreign ownership largely comprise the composite index (Figure 7).[23]

Figure 7. ASEAN-5 FDI Regulatory Restrictiveness, 2009-2019



Source: OECD FDI Regulatory Restrictiveness Database

[23] Nonetheless, the composite index and other sub-indexes were used as well for robustness checks.

Two indicators for infrastructure quality are used. First is an index for the quality of roads, scaled from 1 (worst) to 7 (best). The other is an indicator of ICT infrastructure – a telecommunications index comprising of the estimated Internet users per 100 inhabitants; number of main fixed telephone lines per 100 inhabitants; number of mobile subscribers per 100 inhabitants; number of wireless broadband subscriptions per 100 inhabitants; and number of fixed broadband subscriptions per 100 inhabitants.

Several institutional quality indicators are considered. Two public governance indicators are included separately. First is the Corruption Perception Index produced by Transparency International. The index takes into account perceived levels of public sector corruption from different opinion surveys and expert assessments from different institutions. A higher score indicates a less corrupt government. The other is an index for rule of law obtained from the World Bank's World Governance Indicators. The index captures perceptions of the extent to which people have confidence in and abide by the rules of society, and the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Another aspect of institutional quality that is regarded as important by investors is the business regulatory environment. The different components of the World Bank's Ease of Doing Business index are considered but the sub-index on trading across borders is used in the estimations.[24]

The sovereign credit ratings provided by the "Big Three" private credit rating agencies (Fitch, S&P, and Moody's) are likewise considered as explanatory variables. The sovereign ratings range from the highest AAA to the lowest D, indicating investment grade to speculative grade.[25] The ratings were transformed into numerical scores on a linear scale for each of the rating grades, from 20 for AAA to 0 for D. Appendix Table 2 lists the mapping of ratings to scores.

Explanatory variables are lagged one year to reduce possible endogeneity issues.[26] In addition, all explanatory variables are introduced in logs,[27] hence can be interpreted as elasticities. Estimations also include source-country and year fixed effects to capture source-country fixed factors and other macroeconomic events that the estimations do not capture. Since this study is primarily concerned with the locational factors affecting FDI, host country fixed effects are not included in the estimations. Doing so may preclude the identification of locational factors that are important but have low time variability.[28] For

[24] All sub-indices are considered, but only the index on trading across borders is statistically significant in the estimations.

[25] The three rating agencies each have their own system of rating, but they are similar in content (Kolk, 2012).

[26] For inflation, the average of the last three years is used since inflation is subject to business cycle and other short-term adjustments. For instance, FDI outward position in 2009 is regressed on the average inflation for 2006-2008.

[27] Except for sovereign credit ratings, which are taken in levels

[28] Salvatici (2012) has pointed this out - fixed effects should be selected not blindly but with a view at how to best isolate developments in the variable of interest. Nonetheless, in the robustness checks, host-country fixed effects are included in the estimations.

example, changes in FDI regulations may take years or decades to change due to required legislation. Meanwhile, the error terms are clustered by country-pair to be robust to autocorrelation and heteroscedasticity. The combination of 15 source and 5 host countries provides 75 unique country-pairs. Nonetheless, actual estimations use 70 country-pairs only.[29]

Table 4 shows the descriptive statistics and sources of the variables used in the empirical estimations as well as the expected relationship of these variables with FDI as suggested in the literature. Meanwhile, to allow comparison across countries and time, Appendix Table 3 provides the values of the variables for the period 2009-2019 for each of the ASEAN countries included in the study. Appendix Figure 2 provides a visual ranking of countries for each locational factor included in the estimations.

As of end-2019, Thailand has the highest inward FDI stock from the 15 source countries, while the Philippines has the lowest. Among the explanatory variables, Indonesia has the largest market size, highest inflation, and lowest telecommunications infrastructure index and ease of doing business score for trading across borders. Malaysia has the highest sovereign credit ratings, while Vietnam has the lowest. Malaysia also has the highest corruption perception index (which means that it is perceived to be the least corrupt among the ASEAN-5), rule of law index, overall ease of doing business score, road quality index, telecommunications infrastructure index, and minimum wage; and lowest inflation rate, along with Thailand. Moreover, Thailand has the highest human capital index and the lowest corporate tax rate, along with Vietnam. In addition, Vietnam has the lowest FDI equity restrictiveness index. Meanwhile, the Philippines has the highest corporate tax rate and FDI equity restrictiveness index; and lowest corruption perception index (thus, perceived to be most corrupt among the ASEAN-5). The Philippines also has the lowest rule of law index, overall ease of doing business score and road quality index.

[29] Indonesia-Indonesia and Malaysia-Malaysia are clearly excluded. FDI data for Singapore-Vietnam, Indonesia-Malaysia, and Taiwan-Vietnam are not reported in the CDIS database.

Table 4. Descriptive Statistics and Sources of Variables

Variable	Definition	Mean	Standard Deviation	Min	Max	Expected Coefficient Sign	Source
Dependent Variable							
FDI	FDI outward position of investing economy to recipient economy (US$ million)	6,272.7	9,925.7	0	75,139.0		Coordinated Direct Investment Survey, IMF
Explanatory Variables							
Source country market size	real GDP of source country (log)	14.2	1.5	10.7	16.8	+ or -	World Development Indicators (WDI)
Host country market size	real GDP of host country (log)	13.6	0.6	12.8	14.9	+	WDI
Distance	geographical distance between source and host countries (log)	8.4	0.9	5.8	9.7	+ or -	CEPII Geography Database
Inflation	annual change in log of consumer price index	4.3	3.0	0.0	12.0	-	WDI
Tax	corporate tax rate (%)	26.3	3.5	20.0	35.0	-	Tax Foundation
Labor cost	monthly minimum wage (US$)	149.3	81.6	0.0	274.9	+ or -	International Labor Organization
Human capital	index, consisting of (i) adult literacy rate; (ii) the combined primary, secondary and tertiary gross enrolment ratio; (iii) expected years of schooling; and (iv) average years of schooling	0.8	0.1	0.6	0.9	+	UN e-Government Knowledge Database
FDI restrictiveness	FDI regulatory restrictiveness sub-index on foreign equity limit	0.2	0.1	0.1	0.3	-	OECD
Corruption	Corruption Perception Index	35.0	7.7	23.7	50.7	+	Transparency International
Rule of Law	index, consisting of (i) irregular payments and bribes; (ii) transparency of government policymaking; (iii) absence of corruption; (iv) perceptions of corruption; (v) government and civil service transparency	-0.2	0.4	-0.6	0.6	+	World Governance Indicators
Road quality	index of road quality; value: 1 = worst to 7 = best	3.9	1.1	2.3	5.7	+	Global Competitiveness Report
Telecomms infra	index, consisting of (i) estimated Internet users per 100 inhabitants; (ii) number of main fixed telephone lines per 100 inhabitants; (iii) number of mobile subscribers per 100 inhabitants; (iv) number of wireless broadband subscriptions per 100 inhabitants; and (v) number of fixed broadband subscriptions per 100 inhabitants	0.3	0.1	0.1	0.5	+	UN e-Government Knowledge Database
Ease of doing business	sub-index on trading across borders	77.8	7.0	62.5	90.3	+	World Bank
Credit rating	Sovereign credit rating					+	Refinitiv, and S&P
	Fitch	10.9	2.3	7.0	14.0		
	Moody's	10.7	2.7	6.3	14.0		
	S&P	10.9	2.3	8.0	14.0		

5. Results

Tables 5.1-7.2 display the estimation results. Tables 5.1-5.2 present the results for the whole sample with 15 source countries and ASEAN-5 host countries. Table 1.1, column (1) is the baseline specification including the traditional gravity equation variables. Among the market size variables, only the host country market size is statistically significant. Distance is likewise statistically significant and appears with a negative sign, consistent with efficiency-seeking FDI and with the monitoring and supervision costs argument of Hattari and Rajan (2008) and Head and Ries (2008).

Table 5.1 FDI from Top 15 Source Countries to ASEAN-5: Impact of Gravity Variables and Sovereign Credit Ratings

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)
source market size	0.115 *0.209*	-0.672 *0.246*	-0.678 *0.285*	-0.682 *0.279*
host market size	0.793*** *0.001*	0.785*** *0.000*	0.863*** *0.000*	0.772 *** *0.000*
distance	-0.448** *0.01*	-0.443** *0.028*	-0.457** *0.017*	-0.455** *0.022*
Fitch rating		0.105** *0.029*		
S & P rating			0.102** *0.029*	
Moody's rating				0.085** *0.041*
constant	-0.045 *0.989*	12.680 *0.216*	11.888 *0.281*	13.404 *0.225*
R-squared	0.19	0.77	0.78	0.77
RESET (p-value)	0.63	0.66	0.48	0.62
No. of Observations	700	700	700	700

*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) year and source country dummies included, but not shown; specification (1) excludes country dummies; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

Columns (2)-(4) individually adds sovereign credit ratings by Fitch, S&P, and Moody's. Coefficients of these variables are all positive and statistically significant. This implies that higher sovereign credit ratings can prompt foreign investors to increase their FDI position in a host country.

While sovereign credit ratings appear to provide some information to foreign direct investors, they do not completely explain direct investment decisions. For instance, it can be noted that while both the Philippines and Indonesia have been recognized by sovereign credit rating agencies to have improved macroeconomic conditions and policy frameworks, the latter has fared better in attracting FDI inflows, especially in the 2010s. Likewise, while

Vietnam has lower sovereign credit ratings, it has attracted more FDI in the past three decades relative to the Philippines.

Meanwhile, it can be noted that sovereign credit ratings are highly correlated with indicators of macroeconomic stability, quality of public governance, ease of doing business, and infrastructure (Appendix Table 4). Thus, succeeding specifications exclude sovereign credit ratings and instead include aforementioned indicators, along with other locational factors identified in the literature, to pinpoint which among these are actually significant for inward FDI in ASEAN-5 member-countries.

Table 5.2 adds locational factors associated with cost (corporate tax rate, minimum wage), quality of human capital, economic openness (FDI equity restrictions), governance, ease of doing business (trading across borders), and quality of infrastructure to the traditional gravity variables.

Across all specifications, the coefficient of corporate tax rate is negative and statistically significant, which implies that high corporate tax rates impose high costs to foreign investors. This helps explain why countries are prompted to reduce their corporate tax rates or offer tax incentives.[30] For the ASEAN, the average corporate income tax rate has fallen from 25.1% in 2010 to 21.7% in 2020 (Nguyen and Trang, 2020).

The coefficient of minimum wage is likewise negative, but loses statistical significance once governance, ease of doing business, and infrastructure variables are accounted for. This implies that factors other than labor costs may be more important for foreign investors.

Meanwhile, the quality of human capital is statistically significant in some specifications. This provides some evidence that higher quality of human capital encourages FDI. This may be explained by the fact that twelve out of the fifteen source countries have the financial and insurance activities sector as one of their top (either 1st or 2nd) destination sectors; and this sector may particularly require a certain level of human capital skills, as suggested by Kaliappan et al. (2019). Nonetheless, ease of doing business and the quality of telecommunications infrastructure appear to outweigh the significance of the quality of human capital as the latter loses statistical significance once the former is accounted for.

Restrictions on foreign equity is negative and statistically significant in most specifications. This implies that reducing restrictions on foreign entry has the potential to increase foreign direct investments. This may be particularly important when competing host economies reduce FDI restrictions in attempts to attract more FDI. As of end-2019, among the ASEAN-5 countries, Vietnam has the lowest foreign equity restrictions index.

[30] For instance, in 2001, Vietnam offered a 10-year income tax waiver to Canon of Japan; to compete, the Philippines offered an exemption of 8-12 years. In 2014, Indonesia offered corporate income tax exemption for 10 years to Samsung, but Vietnam offered 15 years (Nguyen and Trang, 2020).

Table 5.2 FDI from Top 15 Source Countries to ASEAN-5: Impact of Gravity Variables and Other Locational Factors

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
source market size	-0.594	-0.446	-0.508	-0.509	-0.517	-0.515	-0.547	-0.485	-0.536	-0.507
	0.316	*0.438*	*0.334*	*0.331*	*0.312*	*0.315*	*0.305*	*0.379*	*0.300*	*0.326*
host market size	0.853***	0.927***	0.943***	0.999***	1.009***	1.029***	0.888***	1.049***	0.968***	1.042***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
distance	-0.469***	-0.481***	-0.447***	-0.442***	-0.443***	-0.442***	-0.451***	-0.462***	-0.446***	-0.450***
	0.000	*0.000*	*0.002*	*0.002*	*0.002*	*0.002*	*0.001*	*0.001*	*0.002*	*0.001*
corporate tax	-1.182***	-0.943***	-1.214***	-1.023***	-0.795***	-0.717***	-1.134***	-1.031***	-0.820**	-0.649*
	0.001	*0.002*	*0.000*	*0.001*	*0.008*	*0.007*	*0.001*	*0.001*	*0.034*	*0.072*
minimum wage	-0.074**	-0.062*	-0.02	-0.015	-0.023	-0.023	-0.026	0.025	-0.026	-0.018
	0.040	*0.079*	*0.350*	*0.467*	*0.262*	*0.216*	*0.323*	*0.424*	*0.316*	*0.528*
human capital	4.328***	2.986***	2.399***	2.199**	1.178	1.17	2.147***	1.053	1.243	0.710
	0.001	*0.001*	*0.010*	*0.020*	*0.160*	*0.110*	*0.010*	*0.167*	*0.219*	*0.424*
FDI equity restrictions	-0.499**	-0.509**	-0.422*	-0.361	-0.431*	-0.409*	-0.337	-0.266	-0.384	-0.403*
	0.022	*0.014*	*0.066*	*0.131*	*0.058*	*0.085*	*0.157*	*0.262*	*0.100*	*0.075*
inflation		-0.054**	-0.037	-0.030	-0.024	-0.023	-0.020	-0.058**	-0.018	-0.030
		0.021	*0.111*	*0.263*	*0.284*	*0.355*	*0.332*	*0.011*	*0.414*	*0.215*
corruption			0.688*		0.312					
			0.069		*0.362*					
rule of law				0.970*		0.418				
				0.063		*0.432*				
EDB-trading across borders					1.579***	1.510**			1.322**	1.834**
					0.004	*0.014*			*0.048*	*0.014*
road infra							0.589**		0.316	
							0.037		*0.269*	
telecomms infra								0.570**		0.141
								0.022		*0.344*
constant	16.621	12.06	10.607	10.808	2.579	3.09	13.552	10.936	5.473	1.572
	0.109	*0.234*	*0.273*	*0.264*	*0.805*	*0.760*	*0.161*	*0.276*	*0.628*	*0.887*
R-squared	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
RESET (p-value)	0.62	0.31	0.37	0.38	0.36	0.37	0.34	0.35	0.34	0.35
No. of Observations	700	700	700	700	700	700	700	700	700	700

*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%; and 1%, respectively; (4) year and source dummies included, but not shown; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

Inflation is, in most instances, statistically insignificant. This is particularly the case when governance, ease of doing business, and infrastructure variables are included in the specification. This result may be consistent with the argument of Das (2018) that when host countries reach a certain level or threshold of income, the significance of macroeconomic uncertainty fades away and the impact of other factors gain more importance. This may imply that the ASEAN-5 member-countries are already above the threshold income suggested by Das (2018).

The two indicators of governance, namely perception of corruption and rule of law, are both positive and statistically significant (columns (3) and (4)), consistent with expectations. These imply that a higher perception that government corruption is

controlled, and better rule of law increase the outward FDI position of a source country to a host country.

The ease of doing business sub-index for trading across borders[31] is positive and statistically significant (columns (5), (6), (9) and (10)), implying that foreign investors are encouraged to increase their FDI outward position in host countries with greater ease of trading across borders. This is consistent with vertical and export-platform FDI.

Both governance indicators and the human capital index lose statistical significance when ease of doing business is accounted for. This could be explained by the relatively high correlation between the ease of doing business and the governance indicators.[32] This suggests that the quality of governance is not necessarily insignificant for inward FDI, rather it is strongly associated with ease of doing business.

The two indicators of infrastructure, namely the index for the quality of roads and the composite measure of telecommunications infrastructure are positive and statistically significant (columns (7) and (8)). However, they lose statistical significance once ease of doing business is accounted for. Nonetheless, it can be noted that the quality of road infrastructure and ease of trading across borders are highly correlated since one of the components of the latter is domestic transport costs.[33, 34]

Among the explanatory variables, the human capital index has the highest elasticity (2.81), on average, followed by the ease of doing business (1.56).[35] However, as noted earlier, the former loses statistical significance once the latter is accounted for. The elasticities of rule of law, corruption perception, quality of roads and telecommunications infrastructure (0.97, 0.69, 0.59, 0.57, respectively) are lower than that of ease of doing business; but lose statistical significance once the latter is included in the estimations due to relatively high correlation, as noted earlier. While the coefficient of the corporate tax rate and the FDI restrictiveness index remain statistically significant, their elasticities (-0.98 and -0.44, respectively) are lower (in absolute terms) than the elasticity of ease of doing business. This suggests that while reducing FDI restrictions and the corporate tax rate could provide a boost to a country's FDI performance, improving the way business is done in a country would most likely have a more positive impact in attracting and retaining FDI.

[31] The sub-index on trading across borders records the time and cost associated with the logistical process of exporting and importing goods. This measures the time and cost (excluding tariffs) associated with three sets of procedures, namely, documentary compliance, border compliance and domestic transport — within the overall process of exporting or importing a shipment of goods (Methodology for Trading Across Borders (doingbusiness.org)).

[32] Correlation coefficient between ease of doing business-trading across borders and perception of corruption index, and rule of law is 0.61 and 0.66, respectively (Appendix Table 5).

[33] The correlation coefficient between quality of road infrastructure and ease of trading across borders is 0.78.

[34] It can also be noted that infrastructure variables are highly correlated with the governance indicators (Appendix Table 5), hence, they are not included in the same estimation.

[35] Average elasticity is calculated from estimates where coefficients of a variables are statistically significant.

Tables 6.1 and 6.2 display estimations including Asian source countries only, namely, Japan, Singapore, China, Hong Kong, South Korea, Malaysia, Taiwan, India, and Indonesia. Table 6.1 reveals that all gravity equation variables are statistically significant.

Table 6.1 FDI from Asian Source Countries[a] to ASEAN-5: Impact of Gravity Variables and Sovereign Credit Ratings

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)
source market size	0.042	-1.485***	-1.482***	-1.488***
	0.739	*0.001*	*0.005*	*0.003*
host market size	0.809***	0.735***	0.793***	0.729***
	0.007	*0.000*	*0.000*	*0.000*
distance	-0.619**	-0.467**	-0.474**	-0.474**
	0.048	*0.032*	*0.024*	*0.028*
Fitch rating		0.057		
		0.376		
S & P rating			0.067	
			0.308	
Moody's rating				0.046
				0.412
constant	2.123	20.438***	19.535***	20.741***
	0.612	*0.002*	*0.009*	*0.003*
R-squared	0.24	0.77	0.77	0.77
RESET (p-value)	0.09	0.67	0.51	0.67
No.of Observations	400	400	400	400

[a]Japan, Singapore, China, Hong Kong, South Korea, Malaysia, Taiwan, India, Indonesia
*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) year and source country dummies included, but not shown; specification (1) excludes country dummies; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

The coefficient of the market size of the source country has a negative sign, which is an indication that the limited market size of some Asian economies is a driver of their investments into the ASEAN-5 countries. This may be the case for Hong Kong, Singapore, and Malaysia.[36] This finding is consistent with that of Hattari and Rajan (2008). Meanwhile, the coefficient of the market size of the host country is positive and statistically significant, similar to earlier results for the whole sample. Distance remains statistically significant, implying that Asian source countries still opt to invest in closer neighboring countries. This may indicate that efficiency-seeking or export-platform FDI are the primary investments coming from Asian countries as the latter and the ASEAN-5 host countries belong to the

[36] For Hong Kong and Singapore, there is some probability that the ultimate investor originated from another country. This may be the case since Hong Kong and Singapore are home to about 1,500 and 7,000 regional headquarters, respectively, for multinational companies (Sources: Hong Kong Census and Statistics Department, Singapore Economic Development Board). The IMF-CDIS data, however, does not provide the ultimate identity of the foreign investor.

Asian production network (Appendix Figure 3). Nonetheless, Asian investors appear not to pay attention to sovereign credit ratings of the ASEAN-5 countries when they invest in them.

Table 6.2 shows that corporate tax rate, quality of human capital, and FDI equity restrictions are statistically significant in all specifications. The latter provides support to the recent trend seen in the Philippine banking industry where the easing of foreign equity restrictions in 2014 has translated into actual increases in FDI in the banking industry, attracting 10 new foreign banks, thus far, all from Asian countries (Parcon-Santos et al., 2021).

Table 6.2 FDI from Top Asian[a] Source Countries to ASEAN-5: Impact of Gravity Variables and Other Locational Factors

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
source market size	-1.375**	-1.243**	-1.270**	-1.265**	-1.281**	-1.277**	-1.331***	-1.277**	-1.323***	-1.287**
	0.017	*0.031*	*0.020*	*0.025*	*0.022*	*0.023*	*0.007*	*0.016*	*0.009*	*0.019*
host market size	0.952***	1.001***	1.009***	1.027***	1.072***	1.067***	0.977***	1.082***	1.014***	1.079***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
distance	-0.535***	-0.546***	-0.528***	-0.529***	-0.525***	-0.531***	-0.522***	-0.533***	-0.518***	-0.523***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
corporate tax	-1.36***	-1.201***	-1.314***	-1.230***	-0.931***	-0.87***	-1.349***	-1.262***	-1.207***	-1.009***
	0.001	*0.000*	*0.000*	*0.000*	*0.001*	*0.000*	*0.000*	*0.000*	*0.002*	*0.009*
minimum wage	-0.012	-0.006	0.010	0.009	0.007	0.000	0.017	0.048	0.017	0.018
	0.712	*0.859*	*0.722*	*0.726*	*0.819*	*0.995*	*0.572*	*0.273*	*0.589*	*0.627*
human capital	4.435***	3.553***	3.328***	3.306***	2.195***	2.053***	2.984***	2.299***	2.578***	2.129***
	0.004	*0.000*	*0.000*	*0.000*	*0.004*	*0.002*	*0.000*	*0.001*	*0.006*	*0.007*
FDI equity restrictions	-0.942***	-0.944***	-0.917***	-0.901***	-0.931***	-0.96***	-0.841***	-0.797***	-0.863***	-0.898***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	*0.004*	*0.001*	*0.001*
inflation		-0.037	-0.030	-0.028	-0.018	-0.020	-0.012	-0.040	-0.011	-0.021
		0.227	*0.318*	*0.399*	*0.523*	*0.504*	*0.640*	*0.193*	*0.682*	*0.498*
corruption			0.286		-0.058					
			0.484		*0.867*					
rule of law				0.336		-0.308				
				0.536		*0.556*				
EDB-trading across borders					1.457***	1.790**			0.592	1.205
					0.009	*0.016*			*0.349*	*0.159*
road infra							0.426		0.305	
							0.197		*0.344*	
telecomms infra								0.363		0.077
								0.193		*0.644*
constant	21.32***	18.285**	17.592**	17.776**	10.135	8.581	19.250***	17.564**	15.598**	11.274
	0.004	*0.017*	*0.018*	*0.019*	*0.251*	*0.356*	*0.004*	*0.015*	*0.039*	*0.205*
R-squared	0.86	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
RESET (p-value)	0.41	0.24	0.27	0.26	0.25	0.23	0.27	0.24	0.26	0.25
No.of Observations	400	400	400	400	400	400	400	400	400	400

[a] *Japan, Singapore, China, Hong Kong, South Korea, Malaysia, Taiwan, India, Indonesia*

*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%; and 1%, respectively; (4) year and source country dummies included, but not shown; (5) RESET null hypothesis: model is correctly specified*

Source: Authors' estimates

Meanwhile, there is evidence that ease of trading across borders is statistically significant, but the infrastructure variables lose their statistical significance. Minimum wage and inflation are likewise both statistically insignificant. The governance indicators also become statistically insignificant, possibly reflecting that Asian investors are better able to deal with corruption or government bureaucracy since they may be familiar with such

culture/practices in their neighboring ASEAN countries or similar culture/practices in their own countries.

Among the statistically significant locational factors, the human capital index has the highest average elasticity (2.89) (in absolute terms), followed by the ease of doing business (1.62), corporate tax rate (-1.19), host country market size (1.03), and FDI equity restrictions (-0.90).

Tables 7.1 and 7.2 display estimations using FDI from non-Asian investors, namely, USA, United Kingdom, Canada, Australia, the Netherlands, and Luxembourg. Among the market size variables, only the market size of the host country is consistently statistically significant. Distance is statistically insignificant, implying that FDI from non-Asian investors are primarily market-seeking or export-platform, where the output produced in a host country is not necessarily exported back to the source country but is sold either domestically or in the region of the host country as a final product or for further processing.[37] Notable is that coefficients of sovereign credit ratings are positive and statistically significant, in contrast to the results for Asian source countries. This suggests that non-Asian investors find information from sovereign credit ratings useful in their decision to invest in ASEAN-5 member-countries.

Table 7.1 FDI from Non-Asian Source Countries[a] to ASEAN-5: Impact of Gravity Variables and Sovereign Credit Ratings

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)
source market size	0.276*** *0.005*	-0.379 *0.869*	-0.277 *0.915*	-0.283 *0.915*
host market size	0.767*** *0.004*	0.799*** *0.000*	0.868*** *0.000*	0.744*** *0.000*
distance	0.012 *0.980*	0.801 *0.400*	1.235 *0.206*	1.049 *0.269*
Fitch rating		0.194*** *0.000*		
S & P rating			0.169*** *0.000*	
Moody's rating				0.157*** *0.000*
constant	-6.351 *0.212*	-5.720 *0.879*	-11.832 *0.779*	-8.474 *0.844*
R-squared	0.34	0.82	0.81	0.81
RESET (p-value)	0.42	0.54	0.56	0.53
No.of Observations	300	300	300	300

[a]USA, United Kingdom, Canada, Australia, the Netherlands, and Luxembourg
*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) year and source country dummies included, but not shown; specification (1) excludes country dummies; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

[37] For instance, in 2018, only 6% of total sales of foreign affiliates of US multinationals were exported back to the US, while 94% were sold outside of the US (either sold in the host country or in other markets) (Murphy, 2021).

Both corporate tax rate and labor cost are statistically significant in some specifications and appear with a negative sign, implying that cost considerations are important for non-Asian investors. In addition, governance indicators, ease of doing business, and infrastructure variables are statistically significant, which is consistent with the statistical significance of sovereign credit ratings for non-Asian direct investors. Human capital and inflation are in most instances statistically insignificant, particularly when governance, ease of doing business and quality of infrastructure are accounted for.

Table 7.2 FDI from Top Non-Asian[a] Source Countries to ASEAN-5: Impact of Gravity Variables and Other Locational Factors

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
source market size	-0.46	-0.466	-0.441	-0.447	-0.443	-0.447	-0.426	-0.424	-0.439	-0.441
	0.800	*0.759*	*0.773*	*0.783*	*0.770*	*0.777*	*0.810*	*0.787*	*0.780*	*0.763*
host market size	0.646***	0.768***	0.845***	0.983***	0.931***	1.001***	0.727***	0.977***	0.888***	0.989***
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
distance	0.779	0.960	0.332	0.177	0.300	0.210	0.575	0.760	0.487	0.551
	0.384	*0.342*	*0.726*	*0.850*	*0.754*	*0.825*	*0.550*	*0.425*	*0.607*	*0.554*
corporate tax	-1.029***	-0.628**	-1.128***	-0.703**	-0.543	-0.413	-0.878***	-0.735**	-0.229	-0.069
	0.003	*0.026*	*0.001*	*0.021*	*0.172*	*0.249*	*0.006*	*0.013*	*0.620*	*0.863*
minimum wage	-0.162***	-0.135***	-0.044*	-0.028	-0.048*	-0.037	-0.069***	0.015	-0.070***	-0.047
	0.000	*0.000*	*0.089*	*0.193*	*0.051*	*0.115*	*0.010*	*0.667*	*0.005*	*0.121*
human capital	4.646***	2.388**	0.895	0.225	-0.734	-0.641	0.816	-0.66	-1.007	-1.688*
	0.001	*0.021*	*0.393*	*0.822*	*0.481*	*0.494*	*0.382*	*0.407*	*0.378*	*0.089*
FDI equity restrictions	0.283	0.234	0.573**	0.734***	0.576**	0.685**	0.645**	0.69***	0.566**	0.552**
	0.337	*0.393*	*0.043*	*0.010*	*0.038*	*0.018*	*0.012*	*0.004*	*0.023*	*0.029*
inflation		-0.092***	-0.053	-0.040	-0.036	-0.033	-0.035	-0.091***	-0.029	-0.047
		0.003	*0.120*	*0.310*	*0.333*	*0.401*	*0.322*	*0.001*	*0.431*	*0.168*
corruption			1.434***		0.928**					
			0.003		*0.048*					
rule of law				2.115***		1.578**				
				0.002		*0.050*				
EDB-trading across borders					2.154**	1.412			2.699**	3.127***
					0.017	*0.132*			*0.015*	*0.003*
road infra							0.977***		0.419	
							0.003		*0.195*	
telecomms infra								0.961***		0.291
								0.002		*0.149*
constant	5.589	1.142	1.54	3.127	-9.219	-4.35	3.862	-0.439	-11.048	-14.878
	0.868	*0.968*	*0.955*	*0.912*	*0.733*	*0.874*	*0.903*	*0.988*	*0.688*	*0.580*
R-squared	0.80	0.81	0.83	0.83	0.83	0.83	0.82	0.82	0.82	0.82
RESET (p-value)	0.17	0.29	0.44	0.42	0.47	0.42	0.46	0.29	0.41	0.38
No.of Observations	300	300	300	300	300	300	300	300	300	300

[a]USA, United Kingdom, Canada, Australia, the Netherlands, and Luxembourg

*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) year and source country dummies included, but not shown; (5) RESET null hypothesis: model is correctly specified*

Source: Authors' estimates

Meanwhile, FDI equity restrictions are, in most instances, statistically significant and appear with a positive sign. A possible reason for this result is that non-Asian investors may be going into sectors where entry is not restrictive.[38] This finding can be further examined and can be an area of future research.

Among the statistically significant locational factors, the ease of doing business has the highest average elasticity (2.64) (in absolute terms), followed by rule of law (1.85), corruption perception (1.18), quality of telecommunications infrastructure (0.96), host country market size (0.88), corporate tax rate (-0.85), quality of road infrastructure (0.70), FDI equity restrictions (0.63), and minimum wage (-0.10).

The foregoing indicate that additional information can be gathered from using gravity estimations where source countries can be identified. Important differences are seen when foreign investors are segregated into Asian and non-Asian. First, the market size of the source country appears to be a motivation for some Asian foreign investors to invest in ASEAN-5 countries. Second, sovereign credit ratings appear to have a positive signaling effect on foreign investors from non-Asian countries. Third, non-Asian investors are more sensitive to labor costs, infrastructure, and governance. Fourth, Asian investors are deterred by FDI equity restrictions, while non-Asian investors are not.

Nonetheless, there are common findings regardless of the FDI source country. First, foreign direct investors tend to have higher FDI outward positions in host countries with larger market sizes. Second, foreign direct investors tend to invest more in countries where ease of doing business is efficient. Third, foreign direct investors tend to invest more in countries with better quality of human capital. However, for non-Asian investors, governance, quality of infrastructure and ease of doing business appear more important than the quality of human capital since the latter loses statistical significance once these other locational factors are accounted for. Finally, foreign direct investors are deterred by high corporate tax rates.

Following Santos Silva and Teneyro (2006), the Regression Specification Error Test or RESET (Ramsey, 1969) is conducted for all estimations. Results indicate that all models are correctly specified.[39]

Several robustness checks are conducted.[40]

First, the annual change in the sovereign credit rating is used in the estimations instead of the actual sovereign credit rating. Results show that a positive change in sovereign credit rating by Moody's increases FDI stock. The change in sovereign credit rating by the other two agencies are not statistically significant.[41] Moreover, the changes in credit rating agencies' outlook and not just the ratings for each country were included in

[38] Additional estimations were conducted that could help explain this result. This is discussed in the robustness checks.

[39] If the p-value of the RESET test is greater than 0.05, this is an acceptance of the null hypothesis that the model is correctly specified.

[40] Results for the robustness checks are not shown, except for two, but may be requested from the authors.

[41] This requires further investigation and may be a subject for future research.

the estimations. Changes in outlook have been observed to be done more frequently than the actual ratings and this variable could provide additional information. Indeed, the results confirm earlier findings, and the coefficients are a bit higher.

Second, UNIDO's competitive industrial performance (CIP) index is included to capture each economy's ability to produce and export manufactured goods competitively[42] and the possible role of industry agglomeration.[43] It is statistically significant in most instances and has a positive coefficient. This signifies that manufacturing FDI is still dominant in most of the ASEAN-5 countries due to these countries' participation in GVCs or in the Asian production network. In addition, this highlights the importance of having relevant support industries (i.e., suppliers of inputs) within a country to remain competitive in manufacturing FDI. Noteworthy is that the CIP index is positively and highly correlated with governance, ease of doing business, and infrastructure variables.[44] In fact, the latter variables become statistically insignificant when CIP index is included in the estimations.

Third, related to the preceding, variables that may serve as indicators of technological innovation in production are included separately, namely, innovation index,[45] company spending on research and development (R&D), government procurement of advanced technology products, innovation capacity, quality of scientific research institutions, university-industry collaboration in R&D, and availability of scientists and engineers.[46] Inclusion of these variables takes into account the importance of Industry 4.0 as the latter has been recognized as an important factor in ASEAN's continued effective participation in GVCs (ASEAN, 2021). All variables appear with a positive coefficient and are statistically significant for non-Asian investors but are statistically insignificant for Asian investors and the whole sample. This implies that non-Asian investors are attracted to invest in countries with higher technological innovation in production.[47] The particular consideration of Industry 4.0 needs further examination and can be a subject of future

[42] The index is based on four variables that capture different aspects of competitive performance. First, manufacturing value added (MVA) per capita, which is a proxy of a country's level of industrialization. Second, manufactured exports per capita, which indicates the ability of countries to produce goods competitively and, implicitly, to keep abreast of changing technologies. Third, industrialization intensity, which is measured by the simple average of the share of MVA in GDP and the share of medium and high-technology (MHT) activities in MVA. The former captures the role of manufacturing in the economy and the latter the technological complexity of manufacturing. Fourth, export quality, which is measured by the average share of manufactured exports in total exports and the share of MHT products in manufactured exports.

[43] Direct investors may decide to locate near suppliers to save on shipping costs or to locate near similar firms to speed-up their rate of innovation (Ellison et. al, 2010).

[44] Correlation of CIP with corruption, rule of law, edb-trading across borders and road quality is 0.71, 0.76, 0.80, and 0.94, respectively.

[45] The innovation index is a composite indicator of a country's (1) capacity for innovation, (2) quality of scientific research institutions, (3) company spending on research and development (R&D), (4) university-industry collaboration in R&D, (5) government procurement of advanced technology products, (6) availability of scientists and engineers, and (7) patent applications per million population. It is measured on a scale of 1 to 7 (best).

[46] All variables are from the Global Competitiveness Database produced by the World Economic Forum.

[47] Data segregated by sector may provide better information as to why the innovation variables are statistically insignificant for Asian investors. The ASEAN Investment Report 2020-2021 discusses some case studies that may provide insights.

research as this is a growing area of interest and importance. Noteworthy is that the innovation variables are positively and highly correlated with governance and quality of infrastructure indicators.

Fourth, instead of using the tax rate of the host countries, the difference between the source country and host country tax rates is considered. Results indicate that foreign direct investors tend to invest more in host countries with a lower tax rate relative to their own county's tax rate.

Fifth, the overall FDI restrictiveness index and its other components, namely, the sub-indices on restrictions on the employment of foreigners as key personnel, and discriminatory screening or approval mechanisms are used in separate specifications. Results show that the overall FDI restrictiveness index is statistically insignificant for all investors when macroeconomic stability, governance, ease of doing business, and quality of infrastructure are accounted for. Moreover, investors have different sensitivities to different FDI restrictions. In particular, Asian investors do not seem to be deterred by FDI regulations on employment of foreigners and approval mechanisms. Meanwhile, non-Asian investors are deterred by regulations on employment of foreigners,[48] but not by regulations on approval mechanisms.

Sixth, other indicators of the host countries' economic openness are considered instead of the FDI restrictiveness index. The Chinn-Ito index, a measure of a country's degree of capital account openness, is statistically insignificant. The number of bilateral investment treaties (BITs) of the host country, a measure of investment openness,[49] has a positive coefficient and is statistically significant for non-Asian investors. This implies that as the number of BITs increase, non-Asian investors may perceive a host country to be more open and friendly to foreign investors. The ratios of trade-to-GDP and merchandise trade-to-GDP,[50] measures of trade openness of an economy,[51] have positive coefficients and are statistically significant. Again, this signifies that manufacturing FDI is still dominant in most of the ASEAN-5 countries due in part to these countries' participation in the Asian production network.

[48] With reference to the findings in Table 7.2, this suggests that while non-Asian investors do not seem to be deterred by FDI equity restrictions, they may be more concerned with restrictions on personnel employment (For a discussion on the impact of labor market flexibility/rigidity on FDI, see Parcon (2009)). In addition, when the latter is used in estimations, the coefficient of human capital becomes statistically significant (and is positive), which implies that if there are regulations on employing foreign/local staff, then investors want to ensure that the local workforce has a certain level of skills or educational achievement.

[49] Parcon (2009) showed that the number of BITs can act as a signaling mechanism as to the investment openness and friendliness of a host country.

[50] Included separately

[51] Though commonly used in the literature, it must be noted that use of trade volumes as a measure of economic or trade openness has been dealt with criticisms. For one, they may only reflect the size and diversification of an economy and may not provide information about an economy's trade barriers. A large and well-diversified economy, for instance, the USA, does not need to trade as much as smaller countries that are less diversified, for instance, the Bahamas. Nonetheless, the lower trade-to-GDP ratio of the USA (26% as of 2019) compared to the Bahamas (76% as of 2019) does not mean that it is less open to trade (https:// fredblog.stlouisfed.org/ 2021/07/measuring-an-economys-openness/).

Seventh, the difference between the actual inflation and inflation target,[52] and the volatility of the exchange rate are separately used as indicators of macroeconomic stability. Both variables are statistically insignificant, supporting earlier findings.

Eighth, other indicators of governance are considered, namely, The Heritage Foundation's government integrity index and World Bank's World Governance Indicator sub-index on government accountability. Results are consistent that non-Asian investors are more particular at investing in host countries with good governance.

Ninth, other Ease of Doing Business sub-indexes are used in the estimations but are statistically insignificant in most instances. The sub-index on registering a property is statistically significant but only Asian direct investors are sensitive to this sub-index.

Tenth, host country fixed effects are included in the estimations (Appendix Table 6). Results are generally supportive of initial results. Host country market size, distance, corporate tax rate, labor cost, and quality of human capital, and ease of doing business remain statistically significant. However, FDI regulations, governance indicators, and infrastructure variables lose statistical significance. This implies that the host country dummies are capturing these factors, which is expected since these factors have low time variability.

Finally, instead of using FDI outward position as the dependent variable, FDI outward flows from source to host countries is used (Appendix Table 7).[53] While the explanatory power of these estimations has been reduced,[54] results are generally supportive of findings using FDI stock data. The size of the host market, corporate tax rate, governance, and ease of doing business remain statistically significant. In addition, sovereign credit ratings, at least of Fitch, remains statistically significant for non-Asian source countries.[55] However, based on the RESET test, estimations using flows are mis specified. This justifies the use of investment position or stock instead of flows in the main estimations.

The results are limited by the fact that aggregated FDI is used in the estimations, instead of by type (horizontal, vertical, export-platform) or by sector.[56] Hence, the estimates of the impact of different factors on the decision to invest only reflects average effects. In addition, this study only provided an overview of the locational factors that affect the

[52] For the case of Malaysia, a non-inflation targeting country, the inflation forecast was used instead of inflation target.

[53] The outward flows from source to host countries are recovered from the outward position data.

[54] R-squared of the estimations were halved when flows were used.

[55] Result not shown but may be requested from the authors.

[56] More insights can be gained by examining sector/industry-level data. For instance, sectoral data may help explain why labor cost, as proxied by minimum wage, is statistically insignificant. Minimum wage may be of greater concern for investors going into sectors/industries that are labor-intensive (such as garments manufacturing), but for sectors/industries that demand higher skills (for instance, aerospace and ship building) and where labor costs are already higher than the minimum wage, foreign investors may not be as concerned with the minimum wage as with the level of human capital.

decision of foreign investors to invest in ASEAN-5. The factors considered are not exhaustive.[57]

6. Summary and Conclusion

This paper explores the factors that may account for the disparities in FDI position of ASEAN-5 countries. This is particularly important as countries plan their recovery from the effects of the pandemic. As funding from FDI will be paramount in reviving economies, governments need to take the necessary steps to improve their investment environments to retain and attract FDI.

A number of findings are noteworthy.

First, sovereign credit ratings have signaled effects for foreign direct investors, which bodes well for governments that are pursuing measures to improve credit ratings, with the end goal of enhancing an economy's efficiency and competitiveness. Increased attention given to a sovereign through assessments of analysts from credit rating agencies can spill over to FDI as investors better understand and appreciate a country's macroeconomic narrative (Knight and Northfield, 2020). Thus, governments will be hitting two birds with one stone – the government will be able to borrow at lower interest rates and attract more foreign direct investments.[58]

Second, the ease of trading across borders is one of the top locational factors relevant for foreign direct investors in ASEAN-5 region. This suggests that export-platform FDI is particularly important for the region. This may be expected as the ASEAN-5 countries are part of the Asian production network. This implies that countries should continue efforts to increase their efficiency in trading across borders.

Third, while labor cost appears not to be a primary concern of foreign direct investors, the quality of human capital appears to be more important. This may reflect the changing patterns of FDI. In particular, the growth of financial services FDI may demand for labor with a certain level of education. In addition, the move towards Industry 4.0 may require not only a higher level of education but specialization in specific fields (e.g., data science and robotics engineering). Thus, countries need to pay attention to greater investment in human capital.

[57] This study is also cognizant of the issues posed on some indicators used in the estimations (in particular, the Ease of Doing Business indicators). These are currently being debated; hence, the results of this study may need validation once the issues are settled.

[58] It is in this vein that the Philippine government adopted the "Road to Single A Credit Rating" agenda in 2019. While the Philippine government sees the end goal as achieving a high-income inclusive economy, securing higher credit ratings would help the government borrow at lower interest rates thereby freeing up funds from interest payment savings for productive public investments. Also, better credit ratings improve the image of the country as an investment destination, which in turn helps attract job-generating investments.

Fourth, the statistical insignificance of inflation and other indicators of macroeconomic stability may imply that the ASEAN-5 member-countries have already achieved a certain level of macroeconomic stability such that it has become less of a concern by foreign direct investors in the region. Instead, other locational factors have become more relevant.

Fifth, reducing FDI restrictions can potentially increase foreign investments. This underscores the need to regularly assess regulations on FDI as restrictions can have significant opportunity costs associated with foregone investments. This can be particularly important when competing host economies reduce FDI restrictions in attempts to attract more FDI.[59] Nonetheless, careful assessment must be done to identify which particular aspect of FDI restrictions or regulations merits reform (e.g., equity, employment, approval mechanism) as different investors may have dissimilar sensitivities on different regulations.

Sixth, while public governance appears to be important only for some investors, it must be recognized that it is positively and highly correlated with ease of doing business, quality of infrastructure, competitive industrial performance, and indicators of technological innovation in production. This highlights those improvements in governance can have both direct and indirect significant effects on a country's FDI performance.

Seventh, while lower corporate tax rates can potentially increase FDI, countries need to be wary that this should not result in a race to the bottom. Competing for FDI by lowering tax rates and offering tax incentives may end up being counterproductive for the economy as it can have significant repercussions on spending on essential public services, including infrastructure. In addition, improving public governance and business regulations may provide more lasting and beneficial effects for an economy compared to providing tax incentives.

Finally, this study highlights that there is no factor that can single-handedly attract FDI. Foreign investors are attracted by a range of economic and non-economic factors. Reduction in taxes and FDI restrictions will not be sufficient if a strong investment climate does not exist. FDI promotion can be successful only if it is accompanied by relevant policies, including but not limited to those that improve the efficiency of business regulations, raise the quality of public governance and infrastructure, and improve the availability of appropriate human capital.

[59] This finding provides support to recent efforts of the Philippine government to reduce restrictions on foreign investments. There are three bills that are pending in Philippine Congress. One bill (Senate Bill No. 1840) seeks to lower the capitalization requirement for foreign retailers, a bill (Senate Bill No. 2094) that will redefine "public services" to essentially lift foreign ownership restrictions in sectors like telecommunications and transportation, and a bill (Senate Bill No. 1156) that seeks to allow foreigners to operate micro and small enterprises in the country provided they either bring in advanced technology or employ a minimum number of Filipino workers (https://www.cnnphilippines.com/news/2021/4/13/duterte-certifies-urgent-economic-bills-relax-foreign-investments-restrictions.html).

References

Aizenman, J. & Marion, N. (2003). The merits of horizontal versus vertical FDI in the presence of uncertainty. *Journal of International Economics,* 62 (1), pp. 125-148.

Akinboade, O. A., Siebrits, F. K. & Roussot, E. N. (2006). Foreign direct investment in South Africa, in Ajayi (ed.) Foreign direct investment in Sub-Saharan Africa–Origin, targets, impact and potential. Nairobi: African Economic Research Consortium.

Al-Azzam, A. & Abu-Shanab, E. (2014). "E-government: The Gate for Attracting Foreign Investments", Conference: 2014 6th International Conference on Computer Science and Information Technology.

Al-Sadiq, A. J. (2021). The Role of E-Government in Promoting Foreign Direct Investment Inflows. International Monetary Fund Working Paper 21/8.

ASEAN (2019). ASEAN Investment Report 2019 – FDI in Services: Focus on Health Care. ASEAN Secretariat.

ASEAN (2021). ASEAN Investment Report 2020–2021 – Investing in Industry 4.0. ASEAN Secretariat.

ASEAN-UNCTAD (2014). ASEAN Investment Report 2013-2014 – FDI Development and Regional Value Chains.

Akbar, I. & Idris. (2020). Determinants of Foreign Direct Investment in ASEAN. *Advances in Economics, Business and Management Research*, 124, pp. 314-318.

Asiedu, E. (2002). On the Deteminants of Foreign Direct Investment to Developing Countries: Is Africa Different? *World Development,* Volume 30 No. 1, pp. 107-119.

Baranenko, I. A. (2011). Sovereign credit ratings and their influence on foreign direct Investment's inflow. *Economic Herald of the Donbas*, 4 (26), pp. 122-126.

Bhasin, R. & Murthy, K. V. B. (2017). The Evolving Framework of Determinants of Foreign Direct Investment: A Review of Literature. *Journal of Commerce and Management*, 4,(2), pp. 137-152.

Cai, P., Gan, Q., & Kim, S. J. (2018). Do sovereign credit ratings matter for foreign direct investments?. *Journal of International Financial Markets, Institutions and Money*, *55*, pp. 50-64.

Das, P. K. (2018). Macroeconomic uncertainty and FDI in developing countries. *Theoretical & Applied Economics*, 25 (1), pp. 15-30 .

Dunning, J. H. (2001). The Eclectic (OLI) Paradigm of International Production: Past, Present and Future. *International Journal of the Economics of Business,* 8 (2), pp. 173-190.

Dunning, J.H. & Lundan, S. (2008a). Multinational Enterprises and the Global Economy, 2nd edition. United Kingdom: Edward Elgar Publishing Limited.

Dunning, J. H. & Lundan, S.M. (2008b). Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, 25, pp. 573–593.

Ekholm, K., Forslid, R. & Markusen, J.R. (2007). Export-Platform Foreign Direct Investment. *Journal of the European Economic Association*, 5, pp. 776-795.

Emara, N. & El Said, A. (2019). Sovereign Ratings, Foreign Direct Investment, and Financial Contagion: The Case of Emerging Markets. Munich Personal RePEc Archive (MPRA) Paper No. 94504.

Eshghi, G.S., Eshghi, A., & Li, R. (2016). Corporate Income Tax as A Determinant of Foreign Direct Investment In Central And Eastern Europe. Retrieved from www.semanticscholar.org/paper/CORPORATE-INCOME-TAX-AS-A-DETERMINANT-OF-FOREIGN-IN-Eshghi-Eshghi/449e2e1a9e3377cc103c364446a2387b689e07cb#citing-papers.

Harman, A. (2012). Ford to end production in the Philippines. Retrieved from https://www.wardsauto.com/miscellaneous/ford-end-production-philippines.

Hattari, R. & Rajan, R. S. (2008). Sources of FDI Flows to Developing Asia: The Roles of Distance and Time Zones. ADB Institute Working Paper No. 117.

Head, K. & J. Ries (2008). FDI as an outcome of the market for corporate control: Theory and evidence. *Journal of International Economics*, 74 (1), pp. 2–20.

Hoang, H. H. (2012). Foreign Direct Investment in Southeast Asia: Determinants and Spatial Distribution. DEPOCEN Working Paper Series No. 2012/30.

Hoang, H. H. & Bui, D. H. (2014). Determinants of foreign direct investment in ASEAN: A panel approach. *Management Science Letters*, 5 (2), pp. 213–222.

Idris, A. N. (2020). S&P Global downgrades Malaysia outlook to negative on additional fiscal downside risk. The Edge Market, 26 June 2020.

Kaliappana, S. R., Khamisb, K. M., & Ismailc, N. W. (2015). Determinants of Services FDI Inflows in ASEAN Countries. *International Journal of Economics and Management*, 9 (1), pp. 45–69.

Kawai, M. & Naknoi, K. (2015). ASEAN Economic Integration through Trade and Foreign Direct Investment: Long-Term Challenges. ADB Institute Working Paper No. 545.

Khan, N. (2020). Analyzing the Impact Of Inflation Targeting Adoption On FDI Inflows. *Academy of Strategic Management Journal*, 19 (5), pp 1-11.

Kinato, H. A. (2017). The impact of credit rating on FDI attraction in Africa. Erasmus University Rotterdam, The Netherlands. Master's Thesis.

Kinuthia, E.M. (2012). Determinants of foreign direct investment in Kenya. University of Nairobi. Dissertation.

Knight, J. & B. Northfield (2020). Sovereign Investor Relations: From Principles to Practice. IMF Working Paper 20/204.

Koepke, R. (2015). What Drives Capital Flows to Emerging Markets? A Survey of Empirical Literature. Munich Personal RePEc Archive (MPRA) Paper No. 62770.

Kolk, W. V. D. (2012). On the Explanatory Power of Sovereign Credit Ratings. Master's Thesis. Erasmus School of Economics, Erasmus University Rotterdam

Kox, H. L. M. & Rojas-Romagosa, H. (2019). Gravity estimations with FDI bilateral data: Potential FDI effects of deep preferential trade agreements. European University Institute Robert Schuman Centre for Advanced Studies Working Papers 2019/70.

Kurul, Z. & Yalta, A. Y. (2017). Relationship between Institutional Factors and FDI Flows in Developing Countries: New Evidence from Dynamic Panel Estimation. *Economies*, 5(2), pp. 1-10.

Markusen, J. R. (2002). Multinational Firms and the Theory of International Trade. University of Colorado.

Maurya, S. (2019). S&P raises Vietnam's long-term credit rating to BB. S&P Global Market Intelligence, 5 April 2019.

Meyer, K. (2015). What is "strategic asset seeking FDI"? *Multinational Business Review*, 23(1), pp. 57-66.

Mishra, B. R. & Jena, P. K. (2019). Bilateral FDI flows in four major Asian economies: a gravity model analysis. *Journal of Economic Studies*, 46 (1), pp. 71-89.

Mistura, F. & Roulet, C. (2019). The determinants of Foreign Direct Investment: Do statutory restrictions matter?. OECD Working Papers in International Investment 2019/01.

Murphy, J. G. (2018). 10 Overlooked International Investment Facts. Retrieved from https://www.uschamber.com/series/above-the-fold/10-overlooked-international-investment-facts.

Narayanan, S., Choong, C. K. & Lau, L. S. (2020). An investigation on the role of good governance as a mediating factor in the FDI-Growth nexus: An ASEAN Perspective. *Economics Bulletin*, 40 (4), pp. 2769-2779.

Noble (2021a). Fitch Ratings revises Philippines' outlook to negative. Business World, 13 July 2021.

Noble (2021b). Fitch Ratings revises Philippines' outlook to negative. Business World, 13 July 2021.

Nguyen, D. & Trang, Q. (2020). Lowering taxes to attract FDI is a 'race to the bottom': experts. VN Express, 16 November 2020.

Odunga, P. S. (2020). The Determinants and Impact of Foreign Direct Investment in Kenya and Tanzania: an OECD and Non-OECD Perspective 1996 - 2016. University of Wolverhampton, UK. Doctoral Thesis.

Osei, C. (2014). UK foreign direct investment in Ghana: determinants and implications. Edinburgh Napier University. Dissertation.

Parcon, H. C. (2009). Essays on Trade and Investment Treaties, Foreign Direct Investments, and Domestic Institutions (Doctoral dissertation). Retrieved from ProQuest LLC. (UMI No. 3367919).

Parcon-Santos, H. C., Manlagnit-De Venecia, M. C., and Pagalunan, M. B. F. (2021). The Impact of Foreign Bank Presence on the Performance of Philippine Domestic Banks Post-GFC. BSP Discussion Paper, Series No. 01.

Rogoff, K. & C. Reinhart (2003). FDI to Africa: The role of price stability and currency instability. IMF Working Paper, 03/10.

Sahiti, A., Ahmeti, S. & Ismajli, H. (2018). A Review of Empirical Studies on FDI Determinants. *Baltic Journal of Real Estate Economics and Construction Management*, 6 (1), pp. 37-47.

Salvatici, L. (2012). The Gravity Model in International Trade. African Growth and Development Policy, Modeling Consortium.

Santos Silva, J. & S. Tenreyro (2006). The Log of Gravity. *Review of Economics and Statistics*, 88 (4), pp. 641–658.

Sujarwati, A. I. & Qibthiyyah, R. M. (2020). Corporate Income Tax Rate and Foreign Direct Investment: A Cross-Country Empirical Study. *Economics and Finance in Indonesia*, 66 (1), pp. 25–46.

Suroyo, G. (2021). Moody's warns Indonesia COVID-19 surge threatens fiscal plans, ratings. Nasdaq News, 19 July 2021.

Tinbergen, J. (1962). An Analysis of World Trade Flows. Shaping the World Economy, 3, 1-117.

Tri, H. T., Nga, V. T., & Duong, V. H. (2019). The determinants of foreign direct investment in ASEAN: New evidence from financial integration factor. *Business and Economic Horizons*, 15 (2) , pp.292-303.

Trinidad, J. (2021). Another Fitch Signal of Ratings Downgrade. Union Bank Macro Quick Take, 24 November 2021.

UNESCAP (2021). Promoting inward and outward foreign direct investment in the post-coronavirus-disease era. Seventh session of the Committee on Trade and Investment, Economic and Social Commission for Asia and the Pacific. Bangkok, 27–29 January 2021.

UNCTAD (2021). World Investment Report 2021: Investing in Sustainable Recovery. UNCTAD, 21 June 2021.

Vu, K. (2018). Fitch raises Vietnam sovereign credit rating, sees fast growth. Reuters, 15 May 2018.

Appendices

Appendix Table 1. Stock of Inward FDI, end-2019 (US$ million)

Country	CDIS (from 15 source countries)	UNCTAD (from all countries)
Thailand	182,665	254,416
Indonesia	182,286	232,614
Malaysia	102,670	168,981
Vietnam	67,204	161,111
Philippines	49,334	87,993

Source: IMF-CDIS and UNCTAD Database

Appendix Table 2. Mapping of Sovereign Credit Ratings to Scores

Interpretation	Moody's	S & P	Fitch	Numerical Value
Investment-grade ratings				
Highest credit quality	Aaa	AAA	AAA	20
High credit quality	Aa1	AA+	AA+	19
	Aa2	AA	AA	18
	Aa3	AA-	AA-	17
Strong payment capacity	A1	A+	A+	16
	A2	A	A	15
	A3	A-	A-	14
Adequate payment capacity	Baa1	BBB+	BBB+	13
	Baa2	BBB	BBB	12
	Baa3	BBB-	BBB-	11
Speculative-grade ratings				
Speculative	Ba1	BB+	BB+	10
Credit risk developing, due	Ba2	BB	BB	9
to economic changes	Ba3	BB-	BB-	8
Highly speculative,	B1	B+	B+	7
credit risk present,	B2	B	B	6
with limited margin safety	B3	B-	B-	5
High default risk	Caa1	CCC+	CC+	4
	Caa2	CCC	CCC	3
	Caa3	CCC-	CCC-	2
Default-grade ratings				
Near or in bankruptcy	Ca	CC	CC	1
or default	C/D	SD	D	0

Source: Cai et al. (2021)

Appendix Table 3. Dependent and Explanatory Variables, 2009-2019

	FDI Inward Stock (US$ millions)					Fitch					Moody's					S&P				
	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM
2009	91,072	57,291	25,587	72,015	18,074	9	14	9	12	8	9	14	8	13	8	9	14	8	13	9
2010	115,413	77,389	29,911	87,562	19,460	10	14	9	12	8	9	14	8	13	8	9	14	8	13	9
2011	139,149	81,270	31,793	100,281	23,125	10	14	10	12	7	10	14	9	13	7	10	14	9	13	8
2012	133,188	78,657	31,373	103,421	27,372	11	14	10	12	7	11	14	10	13	7	10	14	10	13	8
2013	148,561	84,977	35,274	110,010	32,271	11	14	11	13	7	11	14	11	13	6	10	14	11	13	8
2014	148,766	86,699	34,457	138,206	37,401	11	14	11	13	7	11	14	11	13	7	10	14	12	13	8
2015	169,451	85,241	51,485	126,369	42,370	11	14	11	13	8	11	14	12	13	7	10	14	12	13	8
2016	187,347	82,483	45,594	139,431	44,641	11	14	11	13	8	11	14	12	13	7	10	14	12	13	8
2017	183,306	95,388	48,786	154,784	51,477	11	14	11	13	8	11	14	12	13	7	11	14	12	13	8
2018	173,210	94,386	47,507	158,123	59,402	12	14	12	13	9	12	14	12	13	8	11	14	12	13	8
2019	182,449	103,650	49,983	185,848	67,204	12	14	12	13	9	12	14	12	13	8	12	14	13	13	9

	Real GDP (log)					FDI Equity Restrictiveness Index					Corruption Perception Index					Rule of Law				
	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM
2009	6.26	5.69	5.70	5.94	5.60	0.27	0.26	0.31	0.17	0.15	28.00	45.00	24.00	34.00	27.00	0.64	1.09	0.66	0.82	0.67
2010	6.29	5.72	5.74	5.97	5.63	0.25	0.22	0.31	0.17	0.12	28.00	44.00	24.00	35.00	27.00	0.62	1.09	0.67	0.83	0.65
2011	6.32	5.74	5.75	5.97	5.66	0.25	0.22	0.31	0.17	0.12	30.00	43.00	26.00	34.00	29.00	0.65	1.09	0.69	0.83	0.67
2012	6.34	5.77	5.78	6.00	5.68	0.26	0.19	0.32	0.17	0.12	32.00	49.00	34.00	37.00	31.00	0.65	1.09	0.68	0.85	0.67
2013	6.36	5.79	5.81	6.01	5.70	0.25	0.19	0.32	0.17	0.11	32.00	50.00	36.00	35.00	31.00	0.68	1.08	0.74	0.87	0.69
2014	6.39	5.81	5.83	6.02	5.73	0.25	0.18	0.31	0.17	0.11	34.00	52.00	38.00	38.00	31.00	0.77	1.13	0.78	0.84	0.76
2015	6.41	5.83	5.86	6.03	5.76	0.25	0.18	0.31	0.17	0.08	36.00	50.00	35.00	38.00	31.00	0.73	1.10	0.77	0.85	0.77
2016	6.43	5.85	5.89	6.04	5.78	0.21	0.18	0.30	0.17	0.08	37.00	49.00	35.00	35.00	33.00	0.77	1.10	0.77	0.92	0.95
2017	6.45	5.88	5.92	6.06	5.81	0.21	0.18	0.30	0.17	0.08	37.00	47.00	34.00	37.00	35.00	0.77	1.07	0.74	0.93	0.94
2018	6.47	5.90	5.94	6.08	5.84	0.21	0.18	0.28	0.17	0.08	38.00	47.00	36.00	36.00	33.00	0.78	1.14	0.70	0.92	0.92
2019	6.49	5.91	5.97	6.09	5.87	0.21	0.18	0.28	0.17	0.08	40.00	53.00	34.00	36.00	37.00	0.77	1.13	0.70	0.96	0.91

	Inflation (annual %)					Corporate Tax Rate (%)					Minimum monthly wage (US$)					Human Capital Index				
	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM
2009	4.4	0.6	4.2 -	0.8	6.7	28	25	30	30	25	80	0	209	154	38	0.84	0.85	0.89	0.87	0.81
2010	5.1	1.6	3.8	3.2	9.2	25	25	30	30	25	100	0	234	169	72	0.85	0.85	0.89	0.89	0.81
2011	5.4	3.2	4.7	3.8	18.7	25	25	30	30	25	113	0	257	183	76	0.83	0.81	0.86	0.84	0.78
2012	4.3	1.7	3.0	3.0	9.1	25	25	30	23	25	119	0	282	251	96	0.80	0.77	0.83	0.78	0.74
2013	6.4	2.1	2.6	2.2	6.6	25	25	30	20	25	127	286	286	254	112	0.74	0.74	0.77	0.72	0.68
2014	6.4	3.1	3.6	1.9	4.1	25	25	30	20	22	105	258	227	222	128	0.68	0.71	0.71	0.66	0.61
2015	6.4	2.1	0.7 -	0.9	0.6	25	25	30	20	22	82	230	254	190	143	0.68	0.70	0.69	0.68	0.61
2016	3.5	2.1	1.3	0.2	2.7	25	24	30	20	22	93	241	248	184	160	0.68	0.70	0.68	0.69	0.60
2017	3.8	3.9	2.9	0.7	3.5	25	24	30	20	20	100	233	244	195	168	0.68	0.70	0.70	0.74	0.63
2018	3.2	0.9	5.2	1.1	3.5	25	24	30	20	20	102	248	245	218	176	0.69	0.70	0.72	0.79	0.65
2019	3.0	0.7	2.5	0.7	2.8	25	24	30	20	20	111	266	249	220	181	0.71	0.73	0.74	0.78	0.67

	Ease of Doing Business Score (Overall)					Ease of Doing Business Score (Trading Across Borders)					Quality of Roads Index					Telecommuniactons Infrastructure Index				
	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THL	VTM	IND	MLY	PHL	THA	VTM	IND	MLY	PHL	THA	VTM
2009	56.09	71.88	51.60	72.39	60.22	73.84	88.86	74.28	82.53	70.30	2.93	5.55	2.78	5.01	2.79	0.06	0.30	0.09	0.14	0.08
2010	58.72	74.56	55.22	73.76	59.51	74.91	89.18	74.73	82.73	72.62	3.46	5.66	2.80	5.12	2.75	0.07	0.31	0.10	0.15	0.12
2011	59.49	76.27	55.71	73.39	60.27	75.71	88.99	77.94	82.83	73.01	3.53	5.73	3.11	4.99	2.56	0.09	0.32	0.11	0.16	0.17
2012	60.40	78.70	57.51	74.56	60.46	76.13	89.17	78.14	83.16	73.44	3.41	5.45	3.43	4.99	2.73	0.12	0.35	0.13	0.18	0.23
2013	62.42	78.70	60.32	74.93	61.08	77.58	90.66	78.71	83.50	74.92	3.74	5.44	3.56	4.88	3.08	0.15	0.40	0.16	0.21	0.31
2014	61.64	80.89	62.23	75.32	61.34	77.90	90.43	78.79	83.50	75.37	3.93	5.59	3.57	4.47	3.20	0.20	0.43	0.20	0.23	0.37
2015	61.78	79.51	60.50	73.62	62.20	77.37	89.94	77.23	83.57	75.56	3.72	5.69	3.30	4.38	3.34	0.25	0.45	0.23	0.26	0.39
2016	62.26	78.61	58.23	71.94	62.60	64.18	83.74	70.60	84.10	65.61	3.72	5.69	3.30	4.38	3.34	0.29	0.45	0.26	0.30	0.38
2017	64.81	78.27	59.26	72.80	65.29	66.94	83.74	70.60	84.10	69.92	4.10	5.29	3.10	4.26	3.37	0.30	0.44	0.31	0.35	0.38
2018	67.06	78.77	59.33	78.45	66.98	68.30	84.11	70.60	84.10	70.83	4.10	5.29	3.10	4.26	3.37	0.31	0.46	0.35	0.41	0.38
2019	68.39	81.34	60.87	79.52	68.57	68.30	88.47	68.45	84.65	70.83	4.10	5.29	3.10	4.26	3.37	0.31	0.50	0.37	0.47	0.38

Appendix Table 4. Correlation of Sovereign Credit Ratings with other explanatory variables

	Fitch	S&P	Moody's
inflation	-0.70	-0.63	-0.64
corporate tax rate	-0.16	-0.19	-0.17
minimum wage	-0.22	-0.23	-0.21
human capital index	0.06	0.02	0.03
FDI equity restrictions	0.14	0.00	0.09
corruption perception index	0.83	0.85	0.83
rule of law	0.73	0.75	0.68
EDB-trading across borders	0.71	0.71	0.67
quality of roads	0.92	0.92	0.91
telecommunications infrastructure	0.42	0.48	0.43

Appendix Table 5. Correlation matrix of explanatory variables

	host gdp	tax rate	min. wage	human captl	FDI regultn	inflation	corruption	rule of law	edb-trding	road qlty	telco infr
host gdp	1.0000										
tax rate	-0.1097	1.0000									
min. wage	0.1709	0.0363	1.0000								
human captl	-0.1080	0.5072	-0.2758	1.0000							
FDI regultn	0.3041	0.6449	-0.0121	0.4906	1.0000						
inflation	-0.1378	0.1341	-0.0574	0.1440	-0.1939	1.0000					
corruption	-0.0077	-0.2061	-0.2399	-0.2784	-0.0064	-0.5610	1.0000				
rule of law	-0.2452	-0.3586	-0.3213	-0.2013	-0.2197	-0.5986	0.8691	1.0000			
edb-trding	-0.2266	-0.1300	-0.2726	0.2747	0.1322	-0.4473	0.6130	0.6602	1.0000		
road qlty	0.0790	-0.2205	-0.2900	0.0284	0.0299	-0.6332	0.8460	0.8379	0.7786	1.0000	
telco infra	-0.1545	-0.4923	-0.0898	-0.6606	-0.4107	-0.3335	0.6987	0.6643	0.2535	0.4130	1.0000

Appendix Table 6. Robustness Check - FDI from Top 15 Source Countries to ASEAN-5: Impact of Gravity Variables and Other Locational Factors (with Host Country FE)

Dependent variable: *FDI outward position*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
source market size	-0.592	-0.561	-0.562	-0.563	-0.552	-0.555	-0.556	-0.56	-0.548	-0.552
	0.257	*0.287*	*0.285*	*0.287*	*0.294*	*0.292*	*0.288*	*0.290*	*0.295*	*0.294*
host market size	1.555**	1.389**	1.488*	1.142	1.473*	1.261*	1.637**	1.400**	1.725**	1.504**
	0.042	*0.048*	*0.053*	*0.105*	*0.052*	*0.081*	*0.048*	*0.046*	*0.042*	*0.036*
distance	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***
	0.002	*0.002*	*0.002*	*0.002*	*0.002*	*0.002*	*0.002*	*0.002*	*0.002*	*0.002*
corporate tax	-0.858***	-0.703***	-0.655**	-0.673***	-0.696***	-0.652***	-0.649***	-0.755***	-0.632***	-0.706***
	0.004	*0.005*	*0.011*	*0.006*	*0.007*	*0.007*	*0.006*	*0.002*	*0.007*	*0.003*
minimum wage	-0.044**	-0.034*	-0.037**	-0.024	-0.038**	-0.030*	-0.039**	-0.026	-0.043***	-0.035**
	0.024	*0.067*	*0.013*	*0.164*	*0.011*	*0.061*	*0.011*	*0.131*	*0.003*	*0.036*
human capital	1.702***	1.431***	1.446***	1.180**	1.035**	0.833*	1.446***	1.312**	1.083**	1.008*
	0.003	*0.005*	*0.004*	*0.011*	*0.025*	*0.050*	*0.004*	*0.025*	*0.018*	*0.071*
FDI equity restrictions	-0.367	-0.081	-0.091	-0.008	-0.308	-0.226	-0.126	-0.135	-0.337	-0.324
	0.161	*0.754*	*0.718*	*0.976*	*0.219*	*0.360*	*0.627*	*0.585*	*0.200*	*0.172*
inflation		-0.026*	-0.026*	-0.019	-0.012	-0.006	-0.028*	-0.025*	-0.014	-0.012
		0.063	*0.065*	*0.191*	*0.378*	*0.655*	*0.057*	*0.071*	*0.303*	*0.374*
corruption			-0.17		0.058					
			0.618		*0.856*					
rule of law				0.602		0.571				
				0.113		*0.119*				
EDB-trading across borders					1.005**	0.928			0.934*	0.939*
					0.028	*0.103*			*0.079*	*0.091*
road infra							-0.22		-0.2	
							0.48		*0.515*	
telecomms infra								0.072		0.035
								0.616		*0.816*
R-squared	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
RESET (p-value)	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.25
No.of Observations	700	700	700	700	700	700	700	700	700	700

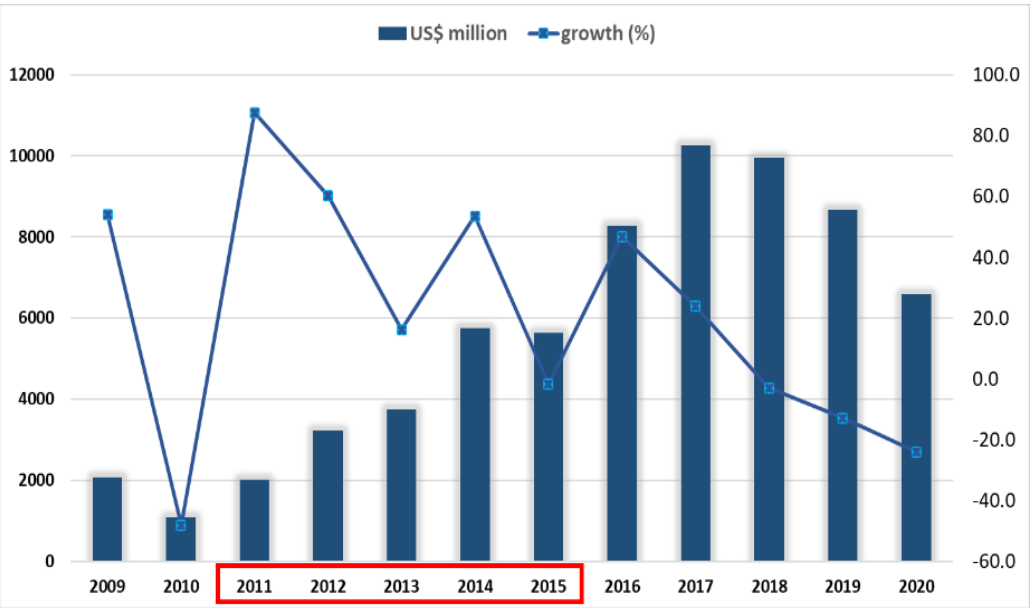
*Notes: (1) dependent variable: FDI outward position of source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) constant, and year, source, and host country dummies included, but not shown; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

Appendix Table 7. Robustness Check - FDI from Top 15 Source Countries to ASEAN-5: Impact of Gravity Variables and Other Locational Factors (using Outward Flows)

Dependent variable: *FDI outward flows*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
source market size	-1.983	-1.9	-1.899	-1.904	-1.753	-1.77	-1.938	-1.913	-1.804	-1.785
	0.194	*0.208*	*0.206*	*0.211*	*0.222*	*0.222*	*0.215*	*0.206*	*0.228*	*0.208*
host market size	6.988**	6.266**	6.727*	3.499	6.736*	4.694*	4.420	6.208**	5.137	7.477**
	0.020	*0.045*	*0.092*	*0.174*	*0.084*	*0.097*	*0.238*	*0.050*	*0.193*	*0.030*
distance	-0.234	-0.231	-0.232	-0.232	-0.233	-0.236	-0.231	-0.231	-0.235	-0.235
	0.141	*0.141*	*0.140*	*0.141*	*0.136*	*0.135*	*0.142*	*0.141*	*0.136*	*0.135*
corporate tax	-2.919***	-2.402**	-2.205**	-1.910**	-2.624**	-1.708*	-2.679***	-2.208	-2.578**	-1.72
	0.003	*0.019*	*0.039*	*0.034*	*0.019*	*0.084*	*0.006*	*0.101*	*0.012*	*0.216*
minimum wage	-0.107	-0.068	-0.082	0.018	-0.075	-0.014	-0.035	-0.096	-0.056	-0.173
	0.142	*0.347*	*0.182*	*0.849*	*0.224*	*0.870*	*0.582*	*0.480*	*0.349*	*0.193*
human capital	6.923*	5.918	5.908	3.813	2.127	0.579	5.746	6.355	2.061	3.547
	0.077	*0.111*	*0.112*	*0.263*	*0.553*	*0.868*	*0.117*	*0.126*	*0.560*	*0.380*
FDI equity restrictions	0.412	1.354	1.388	1.945	-0.141	0.662	1.456	1.504	0.185	0.476
	0.688	*0.195*	*0.208*	*0.112*	*0.897*	*0.487*	*0.140*	*0.214*	*0.821*	*0.653*
inflation		-0.085	-0.086	-0.032	0.038	0.066	-0.073	-0.088	0.042	0.019
		0.143	*0.141*	*0.566*	*0.54*	*0.249*	*0.242*	*0.157*	*0.478*	*0.753*
corruption			-0.662		1.316					
			0.792		*0.586*					
rule of law				5.388**		5.173***				
				0.012		*0.003*				
EDB-trading across borders					9.339***	8.085**			8.732**	8.767**
					0.007	*0.014*			*0.010*	*0.021*
Road infra							1.343		1.738	
							0.414		*0.271*	
Telecomms infra								-0.255		-0.688
								0.796		*0.489*
R-squared	0.41	0.41	0.41	0.42	0.42	0.44	0.40	0.41	0.42	0.43
RESET (p-value)	0.01	0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01
No.of Observations	700	700	700	700	700	700	700	700	700	700

*Notes: (1) dependent variable: FDI outward flows from source to host country; (2) coefficient p-value in italics; (3) *, **, and *** - significant at 10%; 5%, and 1%, respectively; (4) constant, and year and source country dummies included, but not shown; (5) RESET null hypothesis: model is correctly specified*
Source: Authors' estimates

Appendix Figure 1. FDI Inflows in the Philippines, 2009-2020



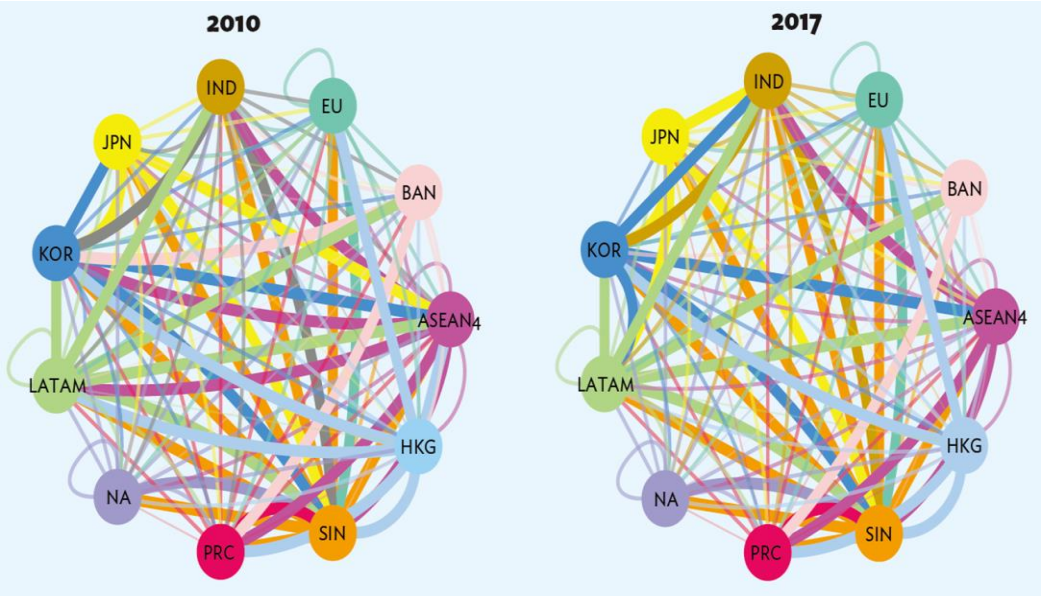
Notes: boxed years correspond to years with sovereign credit rating upgrades
Sources: Balance of Payments Statistics (BPM6), Refinitiv, and Standard and Poor's

Appendix Figure 2. Locational Factors, end-2019

Factor	*IND*	*MYS*	*PHL*	*THA*	*VTM*
Sovereign Credit Ratings					
Real GDP (market size)					
Corporate Tax Rate					
Minimum Wage					
Human Capital Index					
FDI Restrictiveness Index					
Inflation					
Corruption Perception Index					
Rule of Law Index					
Ease of Doing Business Score (overall)					
EDB - Trading across borders					
Road Quality Index					
Telecommunications Infrastructure Index					

Legend: Best score ⟷ Worst score

Appendix Figure 3. Production Networks of Selected Asian Economies



Source: Asian Economic Integration Report 2018