

## THE DETERMINANTS OF OUTWARD FOREIGN DIRECT INVESTMENT FROM ASEAN

Alisa Ibrahim<sup>1</sup>, Nigel Driffield<sup>2</sup>, Keith Glaister<sup>3</sup>

<sup>1</sup>Business School, Universiti Kuala Lumpur, Malaysia, <sup>2</sup>Warwick Business School, University of Warwick, United Kingdom, <sup>3</sup>Centre for International Business, University of Leeds, United Kingdom  
alisa.zamri@gmail.com

**Article History: Received on 15<sup>th</sup> February 2019, Revised on 24<sup>th</sup> March 2019, Published on 19<sup>th</sup> August 2019**

### *Abstract*

**Purpose of Study:** This study investigates the determinants of ASEAN outward foreign direct investment (OFDI) and the extent to which the four general motives of OFDI (market seeking, efficiency-seeking, resource-seeking, strategic-assets-seeking) can explain the phenomenon in the four chosen ASEAN countries (Malaysia, Singapore, Thailand and Indonesia).

**Methodology:** We used panel data from 2001 – 2016 and the Tobit regression model to ascertain the results. We found that each country possibly has slightly different motives between each other although market seeking is seen as the general motive. As most of the previous studies focused on other developing countries such as BRICS, this study contributes to the small but growing literature of ASEAN economies. Furthermore, the usage of the Tobit regression Model helps us in explaining the variables with zero value, hence yielding a more informative result.

**Results:** We found that, in general, some determinants were consistent with findings in the literature, while others need further investigation. Lastly, based on the findings, we can conclude that the mainstream theory of outward FDI applies to ASEAN.

**Key words:** ASEAN, FDI, motives of FDI, outward FDI, Tobit Regression.

**JEL Classification:** M16 International Business Administration.

### INTRODUCTION

This paper investigates the determinants of outward foreign direct investment by four ASEAN countries namely Malaysia, Singapore, Thailand and Indonesia (henceforth known as “ASEAN-4”) over the period of 2001 to 2016. ASEAN-4 has become part of small developing countries whose relevance has continually increased in the global arena. The share of South, East and South-East Asia (SEA) in global outward FDI has increased tremendously in the past two decades. As one of the strongest regional economies, ASEAN has accelerated its pace in international expansion via outward FDI. Focusing on outward FDI has always been the agenda of developed countries. However, given the dynamic nature of international business, the climate of foreign direct investment has shifted. Starting from the late 1980s and early 1990s, emerging economies began to rise with significant contributions to the share of global FDI. China, being the major growing economy from Asia recorded an upsurge of outward FDI from USD 2.3 billion in the 1990s to USD 19.1 billion in the 2000s. The World Investment Report (2011) recorded an outward FDI from South, East and South-Asia increase from 2.8% in 1990 to 10.4% in 2010. The rising outward FDI’s trend from developing economies has inspired many scholars like (Liu *et al.*, 2005; Pantelidis and Kyrkilis, 2005; Buckley *et al.*, 2007; Salehizadeh, 2007; Cui and Jiang, 2010; Kalotay and Sulstarova, 2010; Tolentino, 2010; Kang and Jiang, 2012) to undertake studies concerning the phenomenon. Nevertheless, the focus of the prior studies mainly is China, Russia and India with less attention given to smaller emerging economies. Only a considerable amount of studies focused on South East Asian countries (see appendix 1). Furthermore, most of the studies were focused on specific countries. Generally, these studies have examined the patterns, motivations and determinants of the volume of FDI, location and entry mode choices by adopting several theoretical perspectives including the Eclectic Paradigm, internationalisation motives and Investment Development Path (IDP). One of the reasons why this situation occurred is due to the paucity of sufficiently disaggregated data that permit formal analysis on outward FDI. The present paper, therefore, attempts to identify the determinants of outward FDI from four ASEAN countries namely Malaysia, Thailand, Singapore and Indonesia

The paper is organised as follows. First is the overview of ASEAN outward FDI, which will give a general idea on the present situation. We then review the general theory of FDI and discuss the extent to which it is applicable to the emerging economy, particularly of ASEAN countries. Based on the literature, we describe a few variables that have had a significant influence to outward FDI and hypothesise its ability to explain within the context of ASEAN-4. We then proceed to use the Tobit Regression Model to analyse the panel data and ascertain the results. We found that even nested within the same regional block, the determinants of outward FDI from ASEAN-4 have slight differences, however, familiar explanations of outward FDI is relevant too. Lastly, we conclude by recommending future researches.

## THE OVERVIEW OF ASEAN OUTWARD FDI

Outward FDI from ASEAN gained momentum in the early 2000s with annual outward FDI soaring from USD 243 billion to USD 495.7 billion, which accounts for 10.6% of the world's outward FDI (ASEAN Secretariat, 2012). With a growth rate of about 22% per annum since 2006, ASEAN has evolved from a major FDI recipient into an important source of investment regionally and globally.

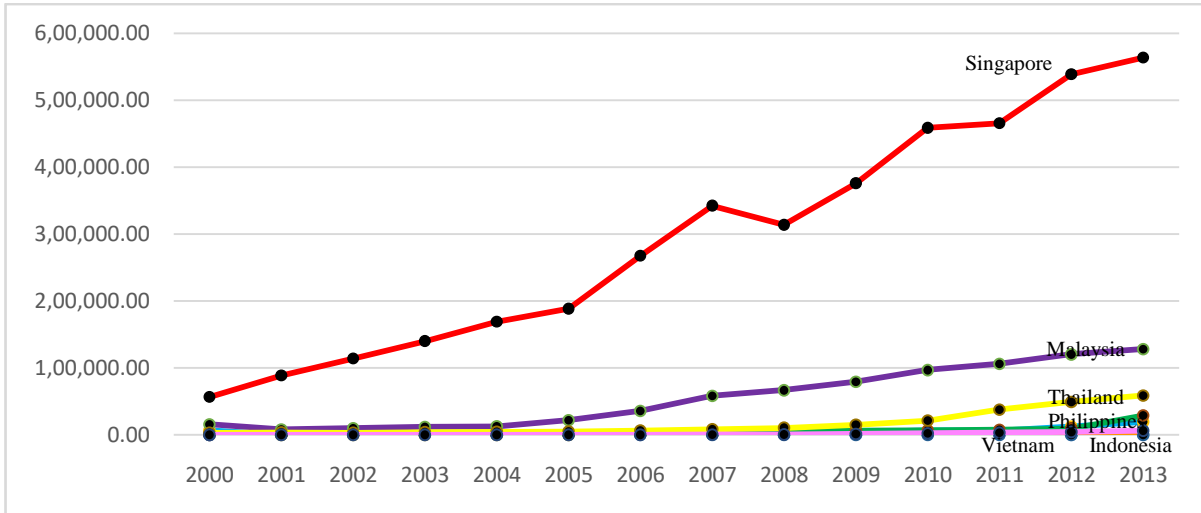


Figure 1: ASEAN outward FDI (stocks), 2000 - 2013

Source: UNCTAD, FDI database

The level of participation in outward FDI activities among ASEAN countries differs in terms of involvement and volume. Prominent participation comes from four countries namely Malaysia, Indonesia, Singapore, and Thailand (see Figure 1). Even though the Philippines and Vietnam have shown remarkable development in their outward FDI activities since 2006 onwards (ASEAN Secretariat, 2012), the availability of the relevant data is limited. Whereas for other ASEAN countries, the involvement in outward FDI is still insignificant due to the lack of a strong private sector (ASEAN Secretariat, 2012) and capable companies. Singapore remains the largest investor from ASEAN, followed by Malaysia and Thailand. A majority of ASEAN countries focused its international expansion within the region with some targeting knowledge-based advanced and developed market (Hiratsuka, 2006). Initially, ASEAN economies mostly depended on the agricultural and manufacturing sectors. However, countries like Malaysia, Thailand, and Indonesia are beginning to get involved in advance sectors such as resource extraction, services, finances and healthcare. Multinational corporations have become an important tool of spearheading ASEAN global investment. This region is known as the world's biggest exporter of electronic integrated circuits, transistors, computers, hard disks and many more electronics products. However, agriculture is still the major industry that supports the region's growth especially in palm oil, rubber and production of other agricultural crops.

ASEAN Investment Report (2012) outlined four main driving factors that encourage outward FDI from ASEAN. The factors are market seeking, efficiency seeking, strategic asset seeking and resource seeking. Market-seeking FDI relates to the ability of the companies in securing markets abroad, diversifying their revenue base, following customers and seeking a new market. Market-seeking FDI is the most common strategy adopted by multinationals from developing countries especially in the earliest stage of internationalisation (Unctad, 2006). Initially, the investment involved neighbouring countries or countries that possess similar characteristics in relation to physic distance. According to Johanson and Vahlne (1977), "physic distance is defined as the sum of factors preventing the flow of information from and to the market" including factors such as differences in language, culture, political systems and industrial developments. Based on the Uppsala Model (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977), the initial market entry strategy is to the foreign market that is closest in terms of psychic distance and subsequently to the greater distance. Some of the significant market seeking outward FDI from ASEAN is Axiata from Malaysia. Inspired by the low mobile telephone penetration in South and Southeast Asia and the basis that this industry had already reached its maturity, Axiata with the tagline Advancing Asia, has aggressively expanded its business to neighbouring countries such as Indonesia, Sri Lanka, Bangladesh, and Cambodia. Operating under a different brand in each host country (Celcom in Malaysia, XL in Indonesia, and Dialog in Sri Lanka), most of the subsidiaries are either a joint-venture firm or wholly owned subsidiaries by way of acquisition. Axiata exhibits an example of a firm that went abroad to look for an external market that possesses similar characteristics with its own and to protect their home market from robust foreign competition (Dunning and Lundan, 1993; Markusen, 1998). ASEAN's outward FDI has grown steadily

despite the volatility of the world's economy. The success of ASEAN-4 is partly contributed by the strong home government and institutional support and also solid regional integration.

### Theoretical Consideration

A large and growing body of literature in international business has focused on the importance of FDI and its pivotal roles in boosting economic development. Traditionally, the focus centred on defining the main theory, finding the reason for FDI development, outlining the relationship and identifying the effects and impacts on the nation. Much recent attention has identified a clear demarcation between inward FDI and outward FDI. However, prior studies have focused on investment from the perspective of developed economies. Arguably, previous studies have failed to capture the phenomenon of investment from emerging/less developed countries. In recent years, the emergence of international investment from emerging economies has become substantial and requires further attention. Until the 1980s, more than 90 per cent of global outward FDI originated from the developed countries. However, since the early 1990s, emerging countries and especially Asian emerging economies, have seen a rapid growth in their outward investments. The share of South, East and Southeast Asia in global outward FDI increased from less than one percent in 1980 to almost ten percent in 2004. South-South FDI now accounts for one third of all FDI going to emerging countries and territories. Furthermore, there is a new trend of rising outward FDI from South to North. This raises two important questions: (a) what triggers outward FDI from the emerging countries and territories; (b) can the existing theories of FDI explain this emergence of outward FDI from the emerging countries and territories? Therefore, it becomes necessary to explain the essence of outward investment behaviour from the perspective of emerging nations.

Based on the most cited taxonomy of outward FDI motives and building upon Dunning's Eclectic Paradigm (1977), the general aspect of outward FDI theory instigates three key FDI motivations: 1) foreign market-seeking, 2) efficiency (cost reduction)-seeking, and 3) resource-seeking (including strategic-asset-seeking). Even though most of the general theory of FDI was built based on the experience of developed western economies (Buckley *et al.*, 2007), some aspects of the theory are readily adaptable to the emerging economies including ASEAN economies.

Efficiency-seeking FDI occurs when the MNE seeks low-cost locations to increase cost competitiveness (Giroud and Mirza, 2010; Sundjo and Aziseh, 2018) particularly in the search for lower-cost labour (Buckley *et al.*, 2007; Song *et al.*, 2018). From the mid-1980s until the early 1990s, most of the ASEAN countries enjoyed strong economic growth and development. The region has emerged to become one of the major FDI recipients due to relatively low labour cost and easy access to natural resources. Many multinationals, especially from Japan and other developed Western Economies, moved their operations to this region especially from manufacturing and labour-intensive industries. For example, Honda opened its factory in Malaysia, and Toyota invested in Thailand. Singapore has also become the region's financial hub, and Indonesia hosted many companies such as Unilever, an Anglo-Dutch multinational firm. However, during the period following the Asian Financial Crisis (1997-1998), there has been a notable slowdown in FDI flow into the region. Malaysia was described as experiencing the "middle-income trap" (Athukorala and Waglé, 2011) while Thailand and Indonesia struggled with huge external debts. Besides the post-crisis conflict, intense competition from other low-wage and labour-intensive countries such as China and Vietnam also contributed to the sluggish inward FDI. Hence, to improve cost-competitiveness and seeking a low-cost environment, many companies gradually relocated their business to other countries such as Cambodia and Lao PDR, which has abundant low-cost labour.

ASEAN firms also expanded overseas via resource seeking FDI to gain competitiveness or increase their international presence. In the quest to exploit or acquire long-term supplies of natural resources and energy sources, companies from this region often established foreign subsidiaries by means of joint ventures or acquisition. Gaining access over raw materials is often cited as one of the reasons for ASEAN investments overseas. A good example is Felda Global Ventures Holdings Berhad (FGV) from Malaysia and its investment in Kalimantan, Indonesia. Since the possibility of finding new lands in Malaysia is limited, FGV, Malaysia's largest palm oil producer purchased 21 000 ha oil palm plantation in Kalimantan to cater for the increasing local and overseas demand of palm oil. Through its joint ventures with PT Citra Niaga Perkasa (Indonesia), the company purchased another 14 385 ha for the same purpose. Another example is Thailand's sugar refinery industry. Known as the world's primary sugar exporter, the country cultivates and refines sugarcane in Lao PDR before importing the product back to Thailand and distributing it worldwide.

Strategic asset seeking FDI is known as a strategic move to acquire new advantages that can augment the existing competitive advantage to maximize overall performance. Dunning (2009) argued that "the most significant change in the motives for FDI over the last two decades has been the rapid growth of strategic asset-seeking FDI, which is geared less to exploiting an existing [ownership]-specific advantage of an investing firm, and more toward protecting, or augmenting, that advantage by the acquisition of new assets, or by a partnering arrangement with a foreign firm." In the case of ASEAN, the investment abroad helps in fostering business networking, establishing brand names, developing strategic production facilities, including purchasing agricultural land, and oil and gas exploration. A number of examples show that ASEAN investment in a foreign market has enhanced their global presence such as The Development Bank of Singapore (DBS); with 100 branches located worldwide, is the largest bank in South-east Asia

and one of the largest in Asia. Another example is Pertamina, an energy company from Indonesia that expanded its business to Libya, Qatar and Sudan. Apparently, these multinationals engaged in overseas operation not only to acquire and exploit existing resources, they also accumulated new technology, managerial skills and involvement in collaborative research and development (R&D) programmes with their affiliates.

### The determinants of outward FDI: hypotheses

Prominent empirical studies demonstrate an array of variables based on the motivation for FDI including market size (and growth), trade barriers, wages, production, patent, transportation (and other relevant costs), political stability, psychic distance, host governments' trade and taxation regulations (Dunning and Lundan, 1993) as the main determinants of outward FDI from any nation. However, none of the prior studies identified and included all variables in a single project. The methodologies and focus of these studies also differ accordingly. This paradigm is not only applicable to research from developed nations, it is also extended to emerging and less developed nations. The study of ASEAN outward FDI is no exception. As mentioned earlier, the literature on ASEAN outward FDI is sparse and normally confined to either one member country or a combination of two or three. Therefore, based on the study by Buckley *et al.* (2007) and the consideration of the mainstream theory, the determinants of outward FDI from ASEAN-4 are hypothesised as follows:

#### Market Size

Many studies on FDI have used GDP as the main variable to indicate the market size. GDP has been accepted as the most used variable in determining FDI (Chakrabarti, 2001; Buckley *et al.*, 2007). A large market is portrayed as a potential attraction to MNEs to expand in the host country, and it is positively related to FDI. As it is hypothesized, the larger the market size, the higher are the chances of obtaining more profit (Buckley *et al.*, 2007; Saad *et al.*, 2018). While Azam and Lukman (2010) reported that market size was an important determinant of Indonesian FDI. Several scholars have used GDP per capita (GDPP) to further understand the market-seeking motives among MNEs (Buckley *et al.*, 2007; Duanmu and Guney, 2009; Kim and Rhe, 2009; Kang and Jiang, 2012; Ramasamy *et al.*, 2012; Demir, 2015; Rismayadi and Maemunah, 2018). Many companies from this region are targeting foreign markets in order to sell their products. The formation of the ASEAN Free Trade Area (AFTA) in 1992, boosted intra-regional trade and reduced barriers among ASEAN members, hence making intra-trade investments more attractive. Many investments from ASEAN are to access markets in less developed countries that are normally characterised by labour-intensive products and the production of undifferentiated and low-value added goods. This region possesses a competitive edge in some industries such as textiles and clothing, small electrical alliances, microchip components, and telecommunications. The players in this industry are competing to increase their competitive advantages by exploiting countries with a similar or lower level of economic development. For example, Axiata from Malaysia has operations in many countries including Indonesia, Thailand, Cambodia, and Sri Lanka, and is one of the largest ASEAN telecommunication companies. The internationalisation strategy of Axiata is focused on high-growth-low penetration emerging markets and as of 2011, the group has over 200 million mobile subscribers based in Asia and generated total revenue of \$5.4 billion, employing over 20,000 employees in the Asian region. Another significant trend of market seeking investment from this region is the establishment of foreign affiliates as a result of following the main customers, especially in banking and service sectors. Banking firms such as CIMB and Maybank from Malaysia, Bangkok Bank (Thailand), OUB and OCBC from Singapore have been actively investing and expanding regionally and globally to follow their main investors to better serve their customers.

#### Export / Trade Openness

The intensity of trade relations between home and host countries is proxied by total exports from the home country. Exporting could be a precursor to investment abroad and helps investors to generate foreign commerce. Most of the ASEAN countries started their internationalisation activities with exports. Through foreign exporting, knowledge and technology know-how can be transferred between countries and will subsequently contribute to ownership advantages and outward FDI (Dunning *et al.*, 2001). In many ways, exports complement outward FDI, especially when exports are used as a platform to establish production facilities and as a means to expand business networks which are essential to subsequent exporting (Yeung, 1998). This complementary relationship between FDI and exports was emphasised in the HelpmanModel which suggests that this relationship gives the home country positive welfare effects.

Likewise, trade openness measures the readiness of any economy to attract or refuse a trade. Trade openness will either promote or deter economic development or growth in a country. According to Chakrabarti (2001), a country that opens to international investment is likely to attract more FDI. Nevertheless, the importance of trade openness in determining outward FDI is still debatable (Tolentino, 2010). On one side, studies found strong positive effects between trade openness and FDI (Pantelidis and Kyrkilis, 2005) while others established that the effects of trade openness and FDI were divergent (Tolentino, 2010). Correspondingly,

Therefore, the following hypotheses are formulated to understand the market-seeking motives of ASEAN-4 by incorporating few variables that influence market factors.

**Hypothesis 1a: ASEAN-4 outward FDI is associated positively with the host country's market size.**

**Hypothesis 1b: ASEAN outward FDI is led by export activities in the host countries as the companies build trust and knowledge of the markets.**

**Hypothesis 1c: Investor-friendly trade liberalisation policies are positively associated with market-seeking motives of ASEAN-4 investment.**

### Patents

Technology seeking investment stems from a desire to seek technological advancement, management know-how, brand recognition and advanced marketing strategy through FDI. In recent years, many companies have been engaged in joint ventures or mergers and acquisitions (M&A) to strengthen their business networks, leveraging brand names and reputations as well as accessing new skills and technology. Normally, firms from a country with greater technological endowments will have access to the latest technology and use it to leverage competitive advantages when internationalising and at the same time encourage FDI. Some other researchers have argued that the role of technology in encouraging outward FDI is overstated and highlighted that investors from emerging economies are motivated by price and brand name rather than technology (Riaz and Riaz, 2018).

Therefore, from one perspective, we can argue that similar to investors from developed countries, ASEAN-4 investors also direct their technology asset seeking investment towards developed economies with substantial levels of human and intellectual capital (Dunning, 2006) in an effort to seek the newest technology (Banga, 2006). While from a different angle, some investors from emerging markets have access to lower technologies and management practices that may be better suited for another emerging economy (Salehizadeh, 2007) this motivates inventors to share the similar technology or transfer it to another location with similar or less technology capabilities. ASEAN-4 firms, except for Singapore, usually operate in traditional industries characterised by mature technology, such as agriculture, textile and food manufacturing. In this case, we noticed that outward FDI from ASEAN-4 may follow the pattern of Chinese MNEs when they targeted companies that had difficulty surviving or are on the brink of insolvency (Buckley *et al.*, 2007) or more on transferring their current technology to less developed countries. Proxied by the total annual patent registrations in the host country (patent), we postulate the hypothesis for technology asset-seeking as follows:

**Hypothesis 2: ASEAN-4 outward FDI is associated positively with the host country's endowments of ownership advantages.**

### Natural Resources

One of the main motives for internationalisation is acquiring specific types of resources that are scarce or not available in the home country (Dunning and Lundan, 1993) such as raw materials or low cost resources such as labour (Franco *et al.*, 2008). The search for natural resources by different key sectors such as natural gas, oil, minerals and timber is not restricted to neighbouring countries but can go beyond the region. For instance, Petronas, the largest oil and gas company in Malaysia, has expanded its business to as far as Sudan and Canada in the quest for resources. Equity-based control in the exploitation of scarce resources is salient in internationalisation theory (Buckley and Casson, 1976). Therefore, firms pursue various strategies to collaborate, acquire or take over another firm in the process. For the purpose of this study, we use the ratio of ore and metal exports in GDP, natural gas reserves and oil reserves as the proxy for natural resources. Based on previous studies, the choice of variables adopted as a proxy for natural resources can be either export shares. This argument is supported by scholars such as Brunnschweiler and Bulte (2008) and who asserted that indices of natural resources (what is in the ground) should be a proxy of resource-seeking motives. The World Investment Report (UNCTAD, 2006) indicated that resource-seeking is the main motive for ASEAN outward FDI. Many ASEAN multinationals are either in manufacturing, agri-business or operating in the oil and gas industry (ASEAN Secretariat, 2012). Therefore, the survival of the companies relies heavily on their ability to internalise their core competencies and comparative advantages. Evidently, ASEAN-4 countries are blessed with abundant factor of endowments, such as natural gas (Malaysia, Indonesia, Thailand), huge land areas (Indonesia and Thailand), strong financial conditions (Singapore and Malaysia) and fisheries. Nevertheless, domestic pressure and the need to exploit the business opportunities have inspired investors to look for new ventures where cheap natural resources are abundant, together with a lower cost of production. In addition, the benefits of being in ASEAN, motivate ASEAN-4 to employ their capability of being the pioneer in technology and international business by capitalising the advantages in another member state. For that reason, the following hypothesis is applied to gauge the resource seeking motives of ASEAN-4.

**Hypothesis 3: Even though ASEAN-4 have abundant factor endowments, the need to leverage business capacity by minimising production costs motivates them to invest in countries with plentiful resources.**

### Political/Government Stability/Conflict/Corruption

In determining which strategies to use when dealing with outward investments, consideration should be given not only to traditional strategies such as industry conditions and firm-specific resources (Porter, 1990; Barney, 1991) but also to

other factors. Institutional factors play an important role in shaping firms' FDI behaviour. The institution-based view argues that in the process of internationalisation, firms are accommodated or curtailed by some institutional forces (Wang *et al.*, 2012) which include internal and external elements. Internal elements may include (but are not restricted to) support given by local government to facilitate or encourage firms to engage in the overseas expansion (Buckley *et al.*, 2007). Luo *et al.* (2010) asserted that the home government is instrumental in boosting internationalization activities by firms especially if the firms are government-linked companies. Conversely, escape from local institutional conditions such as high corruption, political instability, quotas and a poor regulatory environment will also push firms to seek for external opportunities (Luo *et al.*, 2010). Therefore, the institution-based view suggests that the institutional framework will shape firms' FDI strategies (Peng, 2005; Peng *et al.*, 2008). With the exception of Singapore, all ASEAN countries are listed towards the bottom of the World's Corruption Index. Among the 138 countries listed in the index, Malaysia has been consistently placed around 50<sup>th</sup> to 60<sup>th</sup>, whereas Indonesia and Thailand are at the 70<sup>th</sup> to 90<sup>th</sup> place respectively. While many ASEAN multinationals are public-owned or partly public-owned companies, it is important to understand whether institutions play an important role in determining outward FDI. To discover whether ASEAN companies have the same institutional preference, we test the following hypothesis:

**Hypothesis 4: A stable and transparent institutional context in the host country, insofar as this fosters a long-term relationship, underpins the motivation of ASEAN outward FDI.**

The determinants of ASEAN outward FDI can be summarised as follows:

**Table 1: Summary of the Determinants of Outward FDI**

Hypotheses and number	Proxy	Data Source
OFDI (DV)	Annual outflow of ASEAN FDI – in stock	UNCTAD Bilateral statistics
Host Market Characteristics: I) Absolute Market Size (H1a) II) Relative market size (H1a)	GDP: Host country GDP GDPP: Host Country GDP per capita	UNCTAD UNCTAD
Strategic Asset-seeking FDI (H2)	Patent: Total annual patent registrations in host country	World Intellectual Property
Exports (H1b)	ASEAN Exports to the host country	UNCTAD
Openness to FDI (H1c)	Trade openness in the host country	UNCTAD
Institutional Factors: 1) Political Risk (H4) 2) Government stability (H4) 3) Internal Conflict (H4) 4) Risk of corruption (H4)	Host Country political risk  Host country government stability index Host country internal conflict Host country risk of corruption	International Country Risk Guide (ICRG) ICRG ICRG ICRG
Natural Resource endowment (H3) 1) ore	the ratio of ore and metal exports to merchandise exports of the host country	UNCTAD

## EMPIRICAL MODEL SPECIFICATION AND DATA DESCRIPTION

The scope of this study is limited to four ASEAN countries namely Malaysia, Singapore, Thailand and Indonesia focusing on the period from 2001 to 2016. The choice of this scope is viable for two reasons; time frame and country selections. As for the time frame, it is acknowledged that ASEAN countries had suffered from the Asian Financial Crisis (AFC) from 1997-1998. The crisis that originated in Southeast Asia caused severe economic turbulence in the region and to some extent, ceased economic growth of the region. Even though Singapore is well known to have the strongest economy in the region, surprisingly it was also strongly affected by the crisis followed by Malaysia and Thailand (Ikuo and Hiroshi, 2010) while Indonesia was hit the hardest. After the recession, the majority of the Southeast Asia countries gradually rebounded by reinforcing certain regulations or implementing new policies. Nevertheless, economic disturbance did not go away. The global financial crisis (GFC) 2007-2008 impeded ASEAN economic recovery. Despite the fact that the origin of the GFC is extra-regional and the impact on ASEAN was far less severe than AFC 1997, nevertheless, it still caused economic disruption. The decline in demand for ASEAN goods in world markets with exports from ASEAN falling in value, dampened the region's growth. Therefore, it is interesting to know the determinants and directions of outward FDI from this group of countries after the AFC and GFC. The choice of only

four countries, from all ten South East Asian countries, lies in the difficulty of obtaining sufficient data from the other countries. As reported by the ASEAN Investment Report (ASEAN Secretariat, 2012) in this region, only the ASEAN-4 have shown prominent participation in outward FDI. Hence, by completing this study, we hope to contribute to the limited but growing literature in the area.

Besides the ASEAN-4 as home countries, another 71 countries were taken as host countries, which are further divided into seven regions as per the guidelines by UNCTAD. All these countries have either bilateral trade with any one or all the four home countries (ASEAN-4). The host countries are listed in Table 2.

**Table 2: List of host countries**

Region	Region ID	List of countries
East Asia and Pacific	1	Australia, New Zealand, China, Hong Kong, Taiwan, Japan, Brunei, Cambodia, Indonesia*, Laos, Malaysia*, Myanmar, Philippines, Singapore*, South Korea, Thailand*, Vietnam *also the home country
Europe and Central Asia	2	Austria, Belgium, Bulgaria, Czech Rep, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, United Kingdom and Turkey
Latin America and Caribbean	3	Argentina, Brazil, Costa Rica, El-Salvador, Ecuador, Mexico, Panama, Peru, Venezuela
Middle East and North Africa	4	Algeria, Egypt, Israel, Morocco, Saudi Arabia, Tunisia, United Arab Emirates
North America	5	United States of America, Canada
South Asia	6	Bangladesh, India, Pakistan
Sub-Saharan	7	Malawi, Mauritius, Nigeria, Uganda, Zambia

With sixteen years' observations for each host country, the use of panel data methods, as compared to cross-section or time-series models, is the most appropriate to obtain the best estimation. Hsiao (2003) lists several advantages of panel data estimation, among others, are: 1) the model parameter yields more accurate inference because panel data have more sample variability and degrees of freedom, 2) the mixture of inter-individual and intra-individual dynamics of longitudinal data will allow for a more informative and realistic analysis, and 3) panel data helps to simplify computation and statistical inference. Since these data involve 71 countries, there will be issues on individual country heterogeneity, hence panel specification with help to estimate better regression parameters. Generally, solving unobserved country specific effects would be more complicated in panel data estimation than cross sectional or time series data (Wooldridge, 2005). However, with the application of the Tobit Model, the problem can be simplified by focusing on the subsample in which previous realised values are observed (Arellano *et al.*, 1997). Based on the above justification and using (0,1) as limits, the application of the Tobit Model is the most appropriate (Banga, 2006; Bhaumik *et al.*, 2010; Bhaumik and Driffield, 2011).

The dependent variable for this study is the total amount of outward FDI stocks. The reason why FDI stocks is used is because stocks are a clear proxy of multilateral investment activity, that can illustrate the activity of the multinational enterprise. All data were taken from the UNCTAD database, unless it is stated otherwise. FDI stocks are in USD millions and a non-negligible portion of the observations is zeros. Working on such large amounts requires that all data be converted to logarithm and imposed to drop the negative-observations with a potential selection bias. In order to circumvent the problem, a relatively small constant *a* is used to replace 0 and working with  $\ln(a + \text{FDI})$  instead of  $\ln(\text{FDI})$ . In this case, we used  $a = 1$ , which allows for a positive result after logarithm, hence, yielding robust and reliable results.

Therefore, we postulated the following Tobit panel data model, with variables as per the discussion in section 2 to explain the determinants of outward FDI from ASEAN-4 to the host countries:

$$OFDI = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GPP_{it} + \beta_3 \ln PATENT_{it} + \beta_4 \ln EXP_{it} + \beta_5 \ln OPEN_{it} + \beta_6 \ln POLI_{it} + \beta_7 \ln GS_{it} + \beta_8 \ln CONFLICT_{it} + \beta_9 \ln CORRUPT_{it} + \beta_{10} \ln MORE_{it} + \epsilon_{it} + \sum_{it} (1)$$

where  $i = 1, 2, 3, \dots, N$ ;  $t = 1, 2, 3, \dots, T$

Outward FDI is annual outward FDI stock from ASEAN-4 to host countries, and subscripts *i* and *t* are the index cross section units of a specific host country varying from 1 to 71, and time starting from the year 2001 to 2016 respectively. *GDP* and *GPP* are the measures for market size, *PATENT* is the number of patents registered in the host countries and

used to capture technology involvement, export (*EXP*) indicates the total export from ASEAN-4 to host countries, trade openness (*OPEN*) shows the degree of openness to trade, whereas political stability (*POLI*), government stability (*GS*), *CONFLICT* and *CORRUPT* implies the institutional risk of each host country, with a bigger value donating a better outcome. *ORE* represents the availability of natural resources of each country,  $\hat{\mu}_i$  is the firm-specific fixed-effect and  $\Sigma_{it}$  is the error term.

## RESULTS AND DISCUSSION

Two statistical models were used to estimate the determinants of outward FDI from ASEAN-4. The models are (1) Tobit Regression based on [Bhaumik and Driffield \(2011\)](#) and (2) Random Effect (RE) based on [Buckley et al. \(2007\)](#). The Fixed Effect (FE) is not a plausible option because of the inclusion of the time variance variable. Later, the data is further divided into two-time frames (before and after the Global Financial Crisis - GFC) to investigate if there are any significant changes happen to the outward FDI during the stipulated time. The changes might influence investors' decision making across the variables, thus affecting investment trends.

In preliminary regression, two of the alternative measures of host market size (*GDP* and *GDPP*) never attained significance and therefore *GDPP* is not included in the final specification, which is reported in Table 4. The variable *GDP* is retained to capture the market-seeking motives of ASEAN-4 as per hypothesis 1a. Both models (Tobit and RE) display almost similar empirical results, thus indicating the robustness of the model and the variables used are appropriate in explaining the determinants of outward FDI. Table 3 presents the correlation matrix which indicates that multicollinearity is not a problem with the data.

Based on the Tobit Analysis (column 1, Table 4), the results for host countries' market characteristics (measured by *GDP*, *EXP* and *OPEN*) vary across the ASEAN-4. Generally, taking ASEAN-4 as a unit, all market characteristic variables are found to be significant with the correct sign. For example, a 1% rise in the *GDP* increases ASEAN outward FDI by 8.1%. The host country export and trade liberalisation is significant in attracting outward FDI from the ASEAN-4. This finding supports the fact that ASEAN-4 internationalisation starts with establishing knowledge of the market prior to direct investment. This conforms with the findings of [Duran and Ubeda \(2001\)](#) that explain exporting as having become the platform of investment abroad. With exporting, ASEAN-4 established its market presence, augmented market knowledge and expanded its business contacts before finalising the decision to invest in the host country. The positive value of export variables confirms that export-led investment is an important character that defines outward investment from this region. Trade openness, on the other hand, reflects the host country readiness to accept foreign investments, has a positive and significant sign for ASEAN-4. A similar result is also obtained by Model 2, therefore hypothesis 1a-1c are supported, hence, market-seeking was a key motive of ASEAN-4 outward FDI in the study period. This result supports the findings by [Unctad \(2006\)](#) that suggested market-seeking FDI was the most common strategy undertaken by emerging countries.

The same model is used to test the determinants of outward FDI for the individual ASEAN-4 countries. In all cases, the common market characteristic that defines all countries is trade openness. In terms of market size, only Singapore seeks for larger markets, perhaps because it is smaller when compared to other countries in ASEAN. Malaysia and Thailand display export-led investment as a transition before the involvement in outward FDI. Overall, all four countries exhibit the importance of the host country having a flexible investment policy that promotes trade liberalisation and encourages direct investment.

Another important finding is the variable ore, associated with resource-seeking FDI (Hypothesis 3). The result is positive and significant except for Indonesia. This confirms that despite having abundant natural endowments, ASEAN-4 are still looking for those host countries that can supply them with cheap and abundant resources. Having a large population and a large amount of valuable land could explain why natural resources seeking does not apply to Indonesia. In conclusion, this result implies that, besides market-seeking, resource-seeking also motivates outward FDI from ASEAN-4. Therefore, hypothesis 3 is supported.

With regard to hypothesis 2, the efficiency/strategic asset-seeking variable is not significant in both models across all units of analysis. This finding suggests that ASEAN-4 outward FDI has not been motivated to acquire strategic intellectual capital assets over the period of study, but rather are more interested in transferring its current technology to other emerging countries. This is because the variable patent is measured by the number of patent registrations in the host country, and since transferring current technology did not require the investors to do so, thus this variable is not significant. Nevertheless, efficiency/strategic-asset seeking FDI is motivated to rationalise the structure of the established resource-based or market-seeking FDI by enhancing the value-added activities geographically. The two types of efficiency-seeking investment which are, firstly to exploit resources in order to achieve efficiency in production and secondly to obtain the economies of scales, are able to explain hypothesis 2. Since the finding established that variables patent is not significant, we can infer that in seeking for efficiency, ASEAN MNEs are more inclined towards exploiting host country's natural resources and cheap labour. This is characterised by firms involved in labour intensive industries including manufacturing and agriculture based industry. MNEs that fall in this category mostly are from



Malaysia, Thailand and Indonesia. Whereas, characterised by big and more technologically competent companies and representing advanced industry such as information technology (IT), the second type of efficiency-seeking investment is more likely applicable to explain Singaporean MNEs.

Considering the institutional factors (host country political risk, government stability, internal conflict and corruption index) the results display a mixture of findings. None of the variables used to proxy institutional factors is significant for all countries. This implies that, ASEAN-4 responds differently to institutional factors based on home country characteristics. Out of the four variables, political risk is negative and significant for all countries except for Indonesia. This suggests that a decrease in the host country risk index (i.e., increase in risk) is associated with an increase in outward FDI. Conversely, government stability is not important for ASEAN-4 when choosing its host country. If we relate to the earlier finding, this may be the result of export-led investment that encourages investors to establish a prior relationship before deciding on a direct investment. Therefore, the risk of dealing with an unstable government can be mitigated.

An interesting finding is indicated by the significance of internal conflict only to Malaysia's investors. This indicates an inverse relationship between conflict and outward FDI. A possible explanation for this scenario is the sensitivity of the Malaysian government towards the conflicts experienced by other countries. For example, during the period of study, countries such as Myanmar and Thailand were having intense internal conflicts. Since Malaysia is known to be a prominent member of the Organisation of Islamic Conference (OIC), which has been vocal in opposing countries involved in ethnic oppression, such as the ethnic cleansing of the Rohingya people (Myanmar), India-Pakistan's long-term conflict and South-Thai insurgency, this may cause the government to exercise caution when dealing with these economies.

Another significant finding is the corruption index. The variable shows a positive and significant relationship with outward FDI from Malaysia and Singapore. This suggests that a 1% increase in the host country corruption index (i.e. an increase in corruption) is associated with a 1.4% and 3.7% increase in outward FDI from Malaysia and Singapore. Being consistently listed in the bottom half of the corruption index, this result indicates that, while Malaysia itself is corrupt, dealing with other corrupt countries has not deterred FDI. However, this is not the case for Singapore. Singapore is constantly ranked among the top countries with low levels of corruption. Therefore, the prior explanation for Malaysia is not applicable to Singapore and this requires further examination.

### Changes over time

In order to investigate whether or not ASEAN-4 outward FDI has changed in character over the study period, especially before and after the GFC, the data is divided into two time periods, which are 2001 – 2006 (before the GFC) and 2007 – 2016 (after GFC). Since the result between the Tobit and RE models is similar, we only report the results for the Tobit analysis.

This estimation is presented in Table 5, which exhibits some contrast among the variables. This indicates that motivation determinants of outward FDI from ASEAN-4 may experience changes over time. Of all the variables, it appears that *CORRUPT* (corruption) and *ORE* (natural resources) shows distinctive character. In the earlier discussion, the significant variable *ORE* exhibited resource-seeking as one of the motivators for ASEAN-4 outward FDI. However, *ORE* is only significant for Singapore after the GFC. This development signifies the view that only Singapore is motivated by resource-seeking investment. Interestingly, the variable *CORRUPT* is no longer significant for Singapore after the consideration of the time period. This may be the possible explanation to earlier finding that Singapore is moved by investment in corrupt countries. The fact that *CORRUPT* is no longer significant shows that corruption did not deter nor motivate investment from Singapore.

On the contrary, there are not many differences denoted by all other variables. The finding reinforces the view that market characteristics were still the important determinants of ASEAN-4 outward FDI despite the involvement in GFC.

### CONCLUSION

This paper seeks to analyse the determinants of outward FDI from ASEAN. We are motivated to test whether the determinants are consistent with the mainstream theory of FDI. The hypotheses are developed largely based on the prior studies of outward FDI from developed countries or other bigger emerging economies. Two econometrics models are used to ascertain robust findings and explain the determinants of outward FDI from this region.

Several determinants were consistent with findings in the literature. In terms of the market characteristics, the result is conventional and consistent with most of the mainstream literature. Even though market size did not appear to be significant to all countries in question, other characteristics imply that market-seeking is a principal motivation for outward FDI from ASEAN-4. Despite the limited previous research that incorporates all four ASEAN member states in one study, the findings on individual countries confirmed the importance of market-seeking in fostering ASEAN investment.

Although the findings on resource seeking can be refined further by incorporating other variables that may produce a more reliable result, the current study affirms that resource seeking is also important to this region. This is in line with some prior research on individual countries with similar findings.

For institutional variables, the present study demonstrates that the host country individual character is context specific. Therefore, there is no uniform pattern of institutional variables that can explain the motivation of outward FDI from this region. Nevertheless, this is open for further investigation. The inclusion of additional institutional characteristics such as government intervention may generate different findings. Overall, this study offers the opportunity to examine how a group of small emerging countries from a large region fits with the growing body of theoretical and empirical literature of outward FDI that was previously dominated by developed and larger emerging countries.

From a different perspective, this study also highlighted an issue requiring further investigation. One important issue is the reliability of the corruption index as the variable that denotes the corruption level in the host country. Other than that, we are quite confident with the robustness of these results as they are generally similar across the two models. Likewise, given more time, an extensive effort should be made to include and test as many variables as possible for solid findings and inference of the results.

## REFERENCES

- Arellano, M., O. Bover and J. Azcona, 1997. Autoregressive models with sample selectivity for panel data. *Centro de Estudios Monetarios Y Financieros* (March), 1992.
- ASEAN Secretariat, 2012. *Asean investment report: The changing FDI landscape*.
- Athukorala, P. and S. Waglé, 2011. Foreign direct investment in Southeast Asia : Is Malaysia falling behind? *Foreign direct investment in Southeast Asia: Is Malaysia falling behind? ASEAN Economic Bulletin*, 28(2): 115–133.
- Azam, M. and L. Lukman, 2010. Determinants of foreign direct investment in India, Indonesia and Pakistan: A quantitative approach. *Journal of Managerial Sciences*, 4(1): 31–44.
- Banga, R., 2006. The export-diversifying impact of Japanese and US foreign direct investments in the Indian manufacturing sector. *Journal of International Business Studies*, 37(4): 558–568.
- Barney, J., 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99–120.
- Bhaumik, S.K. and N. Driffield, 2011. Direction of outward FDI of EMNEs: Evidence from the Indian pharmaceutical sector. *Thunderbird International Business Review*, 53(5): 615–628.
- Bhaumik, S.K., N. Driffield and S. Pal, 2010. Does ownership structure of emerging market firms affect their outward FDI? The case of Indian automotive and pharmaceutical sectors. *Journal of International Business Studies*, 41: 437–450.
- Brunnschweiler, C.N. and E.H. Bulte, 2008. The resource curse revisited and revised: A tale of paradoxes and red herrings. *Journal of Environmental Economics and Management*, 55(3): 248–264.
- Buckley, P. and M. Casson, 1976. *The future of the multinational enterprise*.
- Buckley, P.J., L.J. Clegg, A.R. Cross, X. Liu, H. Voss and P. Zheng, 2007. The determinants of chinese outward foreign direct investment. *Journal of international business studies*. 38(4): 499–518.
- Chakrabarti, A., 2001. The determinants of foreign direct investment : Sensitivity analyses of cross-country regressions. *Kyklos*, 54(1): 89–114.
- Cui, L. and F. Jiang, 2010. Behind ownership decision of Chinese outward FDI: Resources and institutions. *Asia Pacific Journal of Management*, 27(4): 751–774.
- Demir, F., 2015. Effects of FDI flows on institutional development in the South: Does it matter where the investors are from?, 1: 1689–1699.
- Deng, P., 2004. Outward investment by Chinese MNCs : Motivations and implications. *Business Horizons*, 47(3): 8–16.
- Duanmu, J. and Y. Guney, 2009. A panel data analysis of locational determinants of Chinese and Indian outward foreign direct investment. *Journal of Asia Business Studies*, 3(2): 1–15.
- Dunning, J.H., 2006. Comment on dragon multinationals: New players in 21st century globalization. *Asia Pacific Journal of Management*, 23(2): 139–141.
- Dunning, J.H., 2009. Location and the multinational enterprise: A neglected factor? *Journal of International Business Studies*, 40(1): 5–19.

- Dunning, J.H., C.S. Kim and J.D. Lin, 2001. Incorporating trade into the investment development path: A case study of Korea and Taiwan. *Oxford Development Studies*, 29(2): 145–154.
- Dunning, J.H. and S.M. Lundan, 1993. *Multinational enterprises and the global economy*. Edward Elgar Publishing.
- Franco, C., F. Rentocchini and G.V. Marzetti, 2008. Why do firms invest abroad? An analysis of the motives underlying foreign direct investments. *Electronic Copy*: 1–29.
- Giroud, A. and H. Mirza, 2010. MNE linkages in ASEAN. In *Competitiveness of the ASEAN Countries Corporate and Regulatory Drivers*: 82–102.
- Hiratsuka, D., 2006. Outward FDI from and intraregional FDI in ASEAN : Trends and drivers. *IDED Discussion Paper*.
- Hsiao, C., 2003. *Analysis of panel data*. Cambridge: Cambridge University Press.
- Ikuo, K. and K. Hiroshi, 2010. Shock transmission mechanism of the economic crisis in East Asia: An application of international input-output analysis. *IDE Discussion Paper*, 1(220): 1–32.
- Johanson, J. and J.E. Vahlne, 1977. The internationalization process of the firm—a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8(1): 23–32.
- Johanson, J. and F. Wiedersheim-Paul, 1975. The internationalization of the firm: Four Swedish cases. *Journal of Management Studies*, 12(3): 305–322.
- Kalotay, K. and A. Sulstarova, 2010. Modelling Russian outward FDI. *Journal of International Management*, 16(2): 131–142.
- Kang, Y. and F. Jiang, 2012. FDI location choice of Chinese multinationals in East and Southeast Asia: Traditional economic factors and institutional perspective. *Journal of World Business*, 47(1): 45–53.
- Kim, J.M. and D.K. Rhe, 2009. Trends and determinants of South Korean outward foreign direct investment. *The Copenhagen Journal of Asian Studies*, 27(1): 126–154.
- Liu, X., T. Buck and C. Shu, 2005. Chinese economic development, the next stage: Outward FDI? *International Business Review*, 14(1): 97–115.
- Luo, Y., Q. Xue and B. Han, 2010. How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, 45(1): 68–79.
- Markusen, J.R., 1998. Multinational firms, location and trade. *World Economy*, 21(6): 733–756.
- Pantelidis, P. and D. Kyrkilis, 2005. A cross country analysis of outward foreign direct investment patterns. *International Journal of Social Economics*, 32(6): 510–519.
- Peng, M.W., 2002. Towards an institution-based view of business strategy. *Asia Pacific Journal of Management*, 19(2): 251–267.
- Peng, M.W., 2005. Perspectives—from China strategy to global strategy. *Asia Pacific Journal of Management*, 22(2): 123–141.
- Peng, M.W., D.Y.L. Wang and Y. Jiang, 2008. An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39(5): 920–936.
- Porter, M., 1990. The competitive advantage of nations. 65: 43–59.
- Ramasamy, B., M. Yeung and S. Laforet, 2012. China's outward foreign direct investment: Location choice and firm ownership. *Journal of World Business*, 47: 17–25.
- Riaz, N. and S. Riaz, 2018. Investment and economic growth: A panel data analysis. *Asian Development Policy Review*, 6(1): 20–31.
- Rismayadi, B. and M. Maemunah, 2018. Creative economy to increase community revenue based on tourism object, Medalsari Village, Pangkalan District Karawang regency. *Journal of Accounting, Business and Finance Research*, 3(1): 28–35.
- Saad, S., I. Umer and F. Ahmed, 2018. An empirical evidence of over reaction hypothesis on Karachi Stock Exchange (KSE). *Asian Economic and Financial Review*, 8(4): 449–465.
- Salehizadeh, M., 2007. Emerging economies' multinationals: Current status and future prospects. *Third World Quarterly*, 28(6): 1151–1166.



- Song, Z.H., Q. Jia and D.M. Lee, 2018. Network positions, similarities, prior collaboration experiences and the evolution of co-authorship networks. *International Journal of Emerging Trends in Social Sciences*, 2(2): 34-40.
- Sundjo, F. and F. Aziseh, 2018. An empirical investigation into the key drivers of economic performance in the CEMAC zone: A panel corrected standard errors approach. *International Journal of Business, Economics and Management*, 5(6): 189-200.
- Taylor, R., 2002. Globalization strategies of Chinese companies: Current developments and future prospects. *Asian Bus Manage*, 1(2): 209–225.
- Tolentino, P.E., 2010. Home country macroeconomic factors and outward FDI of China and India. *Journal of International Management*, 16(2): 102–120.
- Unctad, 2006. Transnational corporations. 15.
- Wang, C., J. Hong, M. Kafourous and A. Boateng, 2012. What drives outward FDI of Chinese firms? Testing the explanatory power of three theoretical frameworks. *International Business Review*, 21(3): 425–438.
- Wooldridge, J.M., 2005. Simple solutions to the initial conditions problem in dynamic, nonlinear panel data models with unobserved heterogeneity. *Journal of Applied Econometrics*, 20(1): 39–54.
- Yeung, H.W.C., 1998. Transnational economic synergy and business networks: The case of two-way investment between Malaysia and Singapore. *Regional Studies*, 32(8): 687–706.

**Table 3: Correlation Matrix**

	ofdi	lgdp	patent	lexp	lopen	lpoli	lgs	lconflict	lcorrup	lore
<i>Ofdi</i>	1.000									
<i>lgdp</i>	0.192	1.000								
<i>lpatent</i>	0.194	0.847	1.000							
<i>lexp</i>	0.237	0.683	0.637	1.000						
<i>lopen</i>	-0.020	-0.404	-0.407	-0.136	1.000					
<i>lpoli</i>	0.041	0.558	0.372	0.344	-0.242	1.000				
<i>lgs</i>	0.017	-0.059	0.007	0.034	0.092	-0.241	1.000			
<i>lconflict</i>	-0.017	-0.003	-0.001	-0.018	0.390	0.019	0.197	1.000		
<i>lcorrup</i>	0.036	0.246	0.140	0.078	0.172	0.290	-0.019	0.483	1.000	
<i>lore</i>	0.029	0.022	0.049	-0.140	-0.115	0.177	-0.166	0.202	0.205	1.000

**Table 4: Results for the Determinants of ASEAN-4 Outward FDI from 2001-2016**

	ASEAN-4 (overall)		Malaysia		Singapore		Thailand		Indonesia	
	Tobit (1)	RE (2)	Tobit (1)	RE (2)	Tobit (1)	RE (2)	Tobit (1)	RE (2)	Tobit (1)	RE (2)
lgdp	8.091 (3.013)** *	8.001 (2.910)** *	4.487 (3.432)	3.883 (3.236)	3.447 (9.837)** *	3.461 (9.636)** *	5.067 (1.033)	7.146 (9.178)	-2.370 (1.153)	-2.923 (1.137)
lpatent	4.478 (1.502)	4.278 (1.463)	4.891 (1.603)	7.131 (1.543)	1.085 (5.273)	9.768 (5.197)	4.485 (4.723)	5.181 (4.361)	4.339 (5.694)	4.829 (5.594)
lexp	3.286 (8.989)** *	3.310 (8.765)** *	3.107 (1.147)** *	3.243 (1.055)** *	2.632 (2.227)	2.562 (2.207)	2.183 (5.281)** *	2.272 (4.781)** *	3.124 (3.596)	3.686 (3.512)
lopen	1.171 (4.842)**	1.175 (4.632)**	1.553 (5.019)** *	1.553 (4.796)** *	3.184 (1.663)*	3.166 (2.653)*	2.854 (1.453)**	2.854 (1.297)**	4.428 (1.994)* *	4.736 (1.897)* *
poli	-2.980 (1.224)**	-3.104 (1.185)** *	-3.042 (1.287)**	-3.092 (1.243)**	-9.611 (4.186)**	-9.811 (4.097)**	-5.784 (3.732)	-5.993 (3.417)*	6.926 (4.801)	6.115 (4.615)
lgs	-1.351 (7.423)*	-1.253 (7.373)*	-7.551 (8.512)	-6.286 (8.352)	-3.375 (2.673)	-3.155 (2.654)	-2.235 (2.805)	-9.824 (2.591)	2.700 (2.423)	2.881 (2.447)
lconflict	-1.397 (1.173)	-1.440 (1.156)	-3.059 (1.324)**	-3.320 (1.264)** *	-2.142 (4.083)	-2.030 (4.056)	4.152 (3.937)	2.393 (3.675)	-3.581 (4.123)	-3.814 (4.123)
lcorrup	1.439 (6.107)**	1.409 (5.990)**	1.413 (6.543)**	1.411 (6.446)**	3.798 (2.096)*	3.750 (2.076)*	2.535 (2.034)	2.122 (1.907)	-9.663 (2.287)	-8.489 (2.278)
lore	3.540 (1.739)**	3.688 (1.667)**	2.973 (1.756)*	3.102 (1.687)*	1.054 (5.713)*	1.071 (5.553)*	7.004 (5.053)	7.719 (4.549)*	-4.751 (7.155)	-4.409 (6.981)
Obs	2404	2404	597	597	605	605	600	600	602	602
R-sq: Within Between overall		0.027 0.141 0.072		0.037 0.398 0.171		0.059 0.341 0.158		0.018 0.485 0.152		0.007 0.190 0.142
Log likelihood	-51754.35		-12518.75		-13389.94		-11934.68		-	11860.98

Notes: Standard errors are in parenthesis

\*\*\*, \*\*, \* indicates that the coefficient is significant at the 1, 5 and 10% levels, respectively

**Table 5: Results for the Determinants of ASEAN-4 Outward FDI from 2001 - 2006 and 2007 - 2016 (Tobit Model)**

	ASEAN-4 (overall)		Malaysia		Singapore		Thailand		Indonesia	
	Tobit 2001-2006 (3)	Tobit 2007-2012 (4)	Tobit 2001-2006 (3)	Tobit 2007-2012 (4)	Tobit 2001-2006 (3)	Tobit 2007-2012 (4)	Tobit 2001-2006 (3)	Tobit 2007-2012 (4)	Tobit 2001-2006 (3)	Tobit 2007-2012 (4)
lgdp	3.179 (1.201) ***	9.395 (7.013)	2.625 (1.439) *	1.094 (7.477)	1.420 (4.177) ***	4.739 (1.902) **	1.096 (3.097)	-2.727 (2.138)	-4.619 (5.884)	-5.563 (2.434)
lpatent	5.242 (6.023)	1.252 (3.858)	6.165 (6.333)	3.208 (3.872)	1.260 (2.201)	3.028 (1.267)	9.027 (1.391)	1.369 (1.203)	3.394 (2.825)	4.423 (1.292)
lexp	1.387 (3.418)	5.705 (2.132)	8.699 (5.019)	5.766 (2.103)	1.402 (7.483)	3.730 (5.521)	4.819 (1.688)	4.842 (1.144)	3.022 (2.420)	1.166 (7.338)

	***	***	*	***	*		***	***		
lopen	6.203 (2.229) ***	1.194 (1.002)	8.285 (2.209) ***	2.199 (1.032) **	1.761 (7.929) **	2.901 (3.221)	7.675 (4.411) *	4.813 (2.921) *	2.711 (1.037) ***	4.767 (3.433)
poli	-1.169 (5.167) **	-6.841 (3.273) **	-1.842 (5.142) ***	-6.594 (3.387) *	-3.277 (1.865) *	-1.915 (9.311) **	-2.022 (1.028) **	-1.105 (9.822)	3.593 (2.543)	-9.199 (1.038)
lgs	-1.570 (2.946)	2.184 (1.478)	7.743 (3.477)	3.944 (1.641)	-4.186 (1.068)	2.736 (5.222)	4.583 (9.762)	4.652 (5.411)	1.245 (1.447)	1.908 (3.278)
lconflict	1.878 (3.956)	-2.234 (3.074)	-3.273 (4.588)	-7.553 (3.312) **	4.909 (1.431)	-7.130 (9.604)	5.562 (1.188)	2.221 (9.378)	-1.294 (1.968)	-9.636 (9.089)
lcorrup	2.319 (2.212)	1.013 (1.446)	4.266 (2.508) *	2.151 (1.487)	5.079 (8.021)	3.349 (4.543)	8.357 (6.716)	3.528 (4.473)	-6.228 (1.103)	6.585 (4.721)
lore	9.861 (7.650)	6.883 (3.732) *	3.551 (7.337)	5.560 (3.863)	3.210 (2.648)	2.009 (1.187) *	1.611 (1.517)	1.535 (1.146)	-1.789 (3.580)	-1.444 (1.289)
Obs	1322	1082	329	268	331	274	331	269	331	271
Log likelihood	-26702.275	-23655.462	-6468.650	-5697.753	-6881.695	-6152.065	-6143.787	-5428.940	-6215.740	-5338.727

Notes: Standard errors are in parenthesis

\*\*\*, \*\*, \* indicates that the coefficient is significant at the 1, 5 and 10% levels, respectively

#### APPENDIX 1

Authors	Research theme	Theoretical Foundation	Setting	Findings
Ariff and Lopez (2008)	Patterns and determinants of outward FDI	Push and Pull factors, OFDI strategic reasons	Malaysian companies	Main factors that motivated FDI from Malaysia are similar to those that motivated FDI from developed countries with additional factors which are brands and technology, strategic assets and decentralization of operations.
Masron and Shahbudin (2010)	Determinants	Push Factors Pull Factors	Malaysia and Thailand – country level data 1980 - 2006	Domestic market, inward FDI, ownership advantages, increasing cost of domestic operation and home country trade openness are important in boosting OFDI. Malaysia and Thailand are more into resource-seeking FDI rather than market-seeking FDI
Hiratsuku (2006)	Trends and drivers of OFDI from ASEAN	Combination of traditional trade theory and modern theory in explaining OFDI	Conceptual paper	ASEAN has extended its FDI capabilities regionally and globally. ASEAN FDI started with neighboring countries before being a global player. Most adopted motives are efficiency seeking where they sought after cheap labour and land. The typical industry is communication equipment followed by agro-based industry.
Masron and Abdullah (2013)	Implication	Eclectic paradigm	ASEAN Free Trade Agreement (AFTA), ASEAN Investment Area (AIA)	AIA and AFTA have positive implication to ASEAN's FDI.
(Goh and Wong 2011)	Determinants	Motives of FDI	Malaysian OFDI	Foreign market size, international reserves, real effective exchange rate and trade openness are the determinants of Malaysian

				OFDI.
(Ging 2010)	Implication	Impact of FDI on economic growth	Singapore (1972 – 2006)	Increased outward FDI leads to higher GDP per capita, but higher GDP per capita leads to a decline in outward FDI
(Blomqvist 2002)	Determinants	Eclectic paradigm	Singapore	Protected market and ASEAN membership do not seem to be important to Singapore investors, but labour cost is.
(Goh et al. 2013)	Relationship between trade and FDI	Hausman-Taylor Method (Econometrics)	Malaysia - Panel data by pooling the time series (1991 to 2009) with cross-sectional (59 countries) data.	OFDI and trade linkages are not significant as OFDI is dominated by the services sector, which generally is non-tradable.
(Ratiphokhin 2011)	Determinants	Eclectic Paradigm	Singapore's OFDI to Thailand (1981-2009)	Singapore's FDI in Thailand were stimulated by Thailand's market size expansions and Baht depreciation.
(Kueh et al. 2012)	Determinants	Econometrics	Malaysia (1991 – 2005)	Real income, exchange rate, trade openness and interest rate are positively affected Malaysia's OFDI
(Hashim 2012)	Motives	Locational factors	Case study – Eng Technology Co Ltd (Malaysia)	Domestic and global competition push the company to venture abroad.
(Chen and Zulkifli 2012)	Implication	General production function (Econometrics)	Malaysia (1980-2010)	OFDI significantly affect growth.
(Gaute et al. 2006)	Motives	Vertical and horizontal FDI	Singapore	Singapore OFDI, which focused on manufacturing sectors, is attracted to larger market especially low-income ASEAN countries. Strong host country financial institutions
(Saad et al. 2014)	Determinants	Eclectic Paradigm	Malaysia OFDI using time series data from 1981 - 2011	Major push factors of OFDI from Malaysia are; GDP, level of IFDI stock, productivity level, exchange rate, export level and patent.
(Lecraw 1993)	Implication	IDP	Indonesia (1986 – 1990)	Indonesian multinationals have gone abroad not only to exploit their ownership advantages but also to access and develop ownership advantages they did not previously possess.
(Darmawan and Azzahra 2013)	Determinants	Eclectic paradigm and Gravity Approach	Indonesia	Economic growth, labour costs, infrastructure, exchange rate and political stability are the significant FDI determinants.