



LUT School of Business and Management

Bachelor's thesis

Financial Management

The impact of cross-border investments on economic growth in ASEAN
Kansainvälisten sijoitusmuotojen vaikutus talouskasvuun ASEAN -alueella

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TIIVISTELMÄ

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Tämän tutkielman tarkoituksena on selvittää, miten kaksi kansainvälistä sijoitusmuotoa ovat vaikuttaneet talouskasvuun ASEAN -alueella 24 vuoden tarkasteluajanjaksolla. ASEAN -alueella viitataan Kaakkois-Aasian maiden yhteistyöjärjestöön ja siihen kuuluu kymmenen jäsenvaltiota: Brunei, Filippiinit, Indonesia, Kambodža, Laos, Malesia, Myanmar, Singapore, Thaimaa ja Vietnam. Valitut sijoitusmuodot ovat suorat sijoitukset sekä portfoliosijoitukset.

Tutkielman teoriaosuus on jaettu kahteen osaan: ensimmäisessä keskustellaan talouskasvusta sekä siihen liittyvistä teorioista, joista esitetään kaksi kappaletta. Nämä teoriat ovat neoklassinen kasvuteoria sekä endogeeniset kasvuteoriat. Tämän lisäksi teoriaosuudessa keskustellaan sijoitusmuodoista ja niihin vaikuttavista tekijöistä, ja suoriin ulkomaansijoituksiin syvennyttään hieman enemmän ja keskustellaan, miten maat voivat houkuttaa näitä.

Tutkimus toteutetaan kvantitatiivisena tutkimuksena ja tutkimusaineistona käytetään paneelidataa, joka on kerätty 24 vuodelta jokaisen maan kohdalta. Tutkimus toteutetaan käyttäen paneelidatan regressioanalyysijä kiinteiden sekä satunnaisten vaikutusten muodossa. Tutkimustuloksista päätellen suorat ulkomaansijoitukset vaikuttavat tilastollisesti merkitsevästi talouskasvuun tarkasteluajanjaksolla, kun taas portfoliosijoitukset eivät ole vaikuttaneet kasvuun tulosten mukaan. Toisaalta on myönnettävä, että suorien ulkomaansijoitusten vaikutus ei ole suurenlaista: estimointeihin lisättyjen kontrollimuuttujien, kuten naisten työllisyyden sekä väestön määrän kasvulla on selvästi suurempi yhteys talouskasvuun.

ABSTRACT

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This study aims to inspect how cross-border investment inflows have impacted the economic growth in ASEAN during a 24-year period. ASEAN refers to the Association of Southeast Asian nations, which include ten member states: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, the Philippines, and Vietnam. The chosen forms of foreign investment are foreign direct investments (FDI) and foreign portfolio investments (FPI).

The theoretical chapters of the study are divided into two parts. In the first part, economic growth alongside growth theories are presented. The chosen growth theories are the neoclassical- and endogenous growth theories. Moreover, the theory chapters present the chosen cross-border investments.

The study conducts quantitative research and the use of panel data alongside panel data methods, the fixed- and random effect models. The study's data is collected country-by-country from the 24 years and pooled together. According to the results, the relationship between FDI and economic growth is both positive and significant whereas FPI does not get the same sought-after result. As a matter of fact, according to the results, FPI has not impacted growth at all in the region within the time period. However, other included variables such as female employment and population were statistically significant in explaining growth beside FDI.

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LIST OF ABBREVIATIONS

ASEAN	Association of the Southeast Asian nations
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investments
GDP	Gross Domestic Product
M&A	Mergers and Acquisitions
MNC	(a) Multinational Corporation
OECD	The Organization for Economic Co-operation and Development
R&D	Research and Development
UNCTAD	The United Nations Conference on Trade and Development

1. Introduction

In today's world, the co-operation and integration of economies are the usual as we see it, and cross-border investment has been seen as a vital element in international economics for a few decades now. These investments are seen as particularly important for developing countries since, through foreign investment, the countries may try to reach the development done by developed countries. Furthermore, developing countries provide a lucrative opportunity for investors to diversify their portfolios or, for instance, to move production to cheaper countries with skilled labor. The most significant forms of cross-border investment are called foreign direct investment (FDI) and foreign portfolio investment (FPI).

1.1 Background of the study

The purpose of this study is to test the impact of two cross-border investment methods – FDI and FPI – on economic growth in ASEAN, which refers to the association of Southeast Asian nations. ASEAN includes ten member countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, the Philippines, and Vietnam, which have an altogether population of over 654 million. (UNCTAD 2018) The region is still considered developing, although it includes larger economies such as Singapore and Malaysia. We could say that ASEAN is equally divided into emerging as well as developing markets.

Tiwari & Murascu (2011, 1-2) explain that economic growth has been an intriguing factor to study, primarily concerning developing countries. Economic growth is commonly reviewed by the growth or increase of real capita income in an economy. Economic growth in ASEAN has, in general, been quite phenomenal; however, it is argued that the significant increases in GDP per capita growth that a few of the countries have experienced may not be sustainable in the long run. All in all, economic growth in ASEAN was around 5,1 percent in 2018. However, many of the countries experienced growth around 7-8 percent, which is quite a fast pace since a 2-3 percent growth rate per annum is considered to be ideal. (Brueckner, Dabla-Norris, Gradstein & Lederman 2018, 48-49; Gnanasagaran, 2019)

Both FDI and FPI are seen as essential factors in the economic development of developing countries, notably in Asia, which is also one of the largest recipients of foreign investment. The purpose of FDI is to establish a business operation in the host country, which makes this form of financing a long-term relationship between the parties. According to Moran (2012, 3), this is generally either done by setting up a new company or by acquiring a local company. FDI inflows to ASEAN started to increase from the 1980s when multinational corporations (MNCs) realized the potential of investing cross-border, particularly to developing countries. (Diaconu 2014, 160)

It is visible to see from figure 1 that FDI has grown quite fast from 1995 and has bounced back quickly after crises such as the Asian Financial crisis of 1997 and the global financial crisis of 2008. This can be put down on the stability of FDI since it involves the long-term interest of the investor to the host country. Also, it is common that the investors commit significant amounts of capital and other involvement in the host entity, which makes it a more stable investment method. (Galeza & Chan 2015)

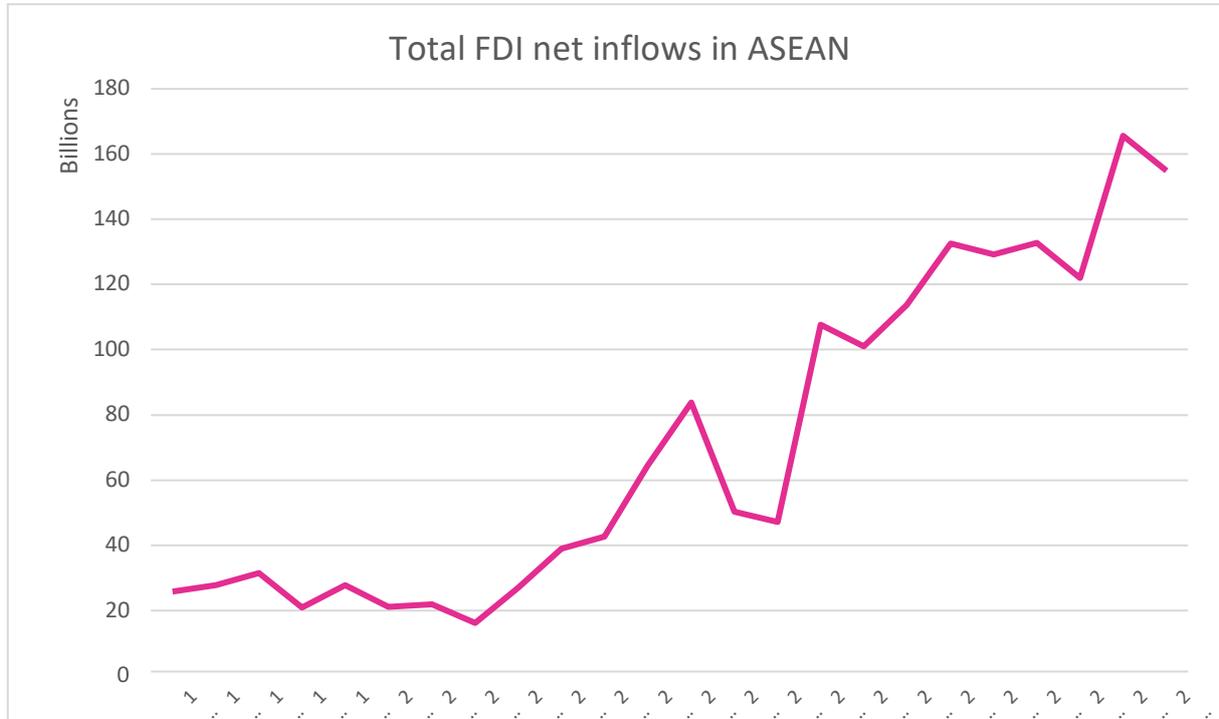


Figure 1: Total inflows of FDI in ASEAN 1995-2018 (Source: UNCTAD, FDI inflows)

Contrarily, FPI consists mostly of investments made in stocks and other financial instruments, and the most common way is to invest in the stock market or buy shares in companies. This form of investment has been discovered to positively influence countries by diminishing the costs of capital from the point-of-view of domestic companies and also by creating new jobs. These are naturally important factors that may contribute to great opportunities for economic growth in host countries. (Makoni, 253-254) FPI is commonly seen as a short-term fix to gain profit promptly, which also makes it a less stable form of investment. This is due to the investor being able to potentially sell, for instance, their bonds quickly and not being connected to the host country after this, whereas regarding FDI, the investor holds a vital interest in the host country. (Galez & Chan 2015; Parushev & Micheva, 2018).

In figure 2 below, it is evident to see that although FDI has grown significantly until the year 2015, it has varied a lot throughout the years. Furthermore, FPI has also been impacted more critically by crises, which can be seen in the drops after 1997 and 2008. The rapid increase of FPI to the region around 2011 can, according to Diaconu (2007, 163-164), be explained as the consequence of ASEAN countries wanting to boost the openness of their economies, which means that the investors noticed positive changes concerning regulations in the region and took advantage of them.

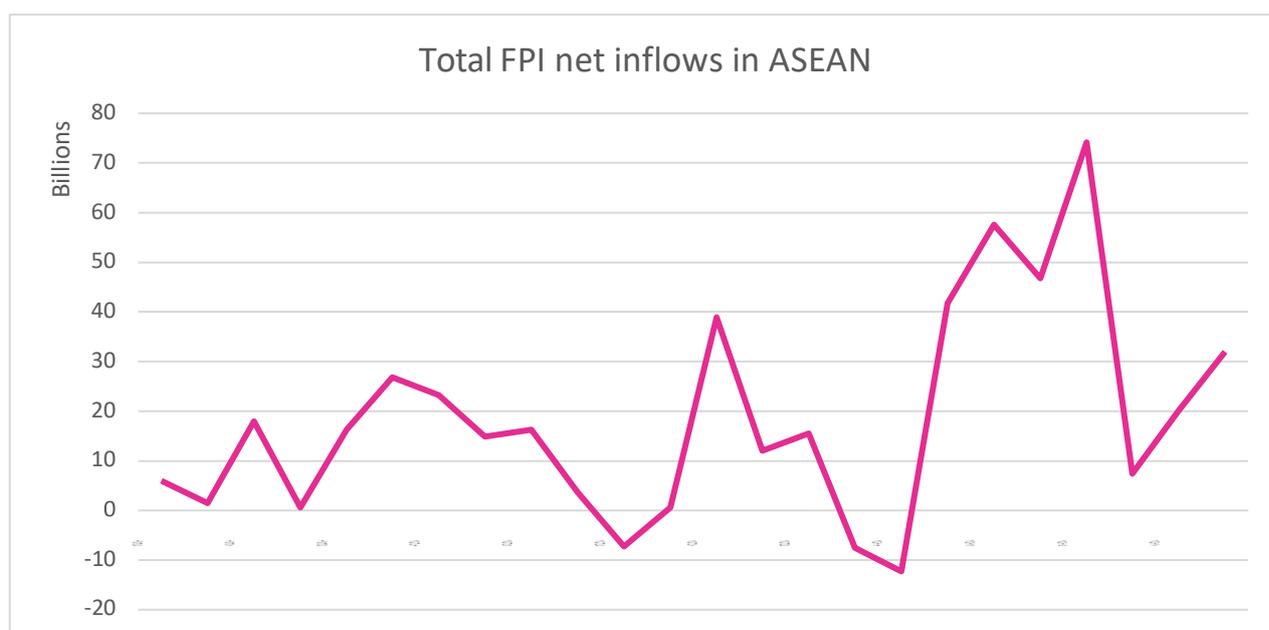


Figure 2: Foreign Portfolio Investments in ASEAN 1995-2018 (Source: World Bank database, portfolio investments net inflows)

FDI is considered to be the most prominent foreign investment method, and it has been studied quite widely from the point-of-view of different countries and periods. Regarding ASEAN, the common theme has been to inspect the four largest countries: Indonesia, Malaysia, the Philippines, and Thailand. Merican (2009, 50-51) conducted a study where FDI explained growth significantly only in the two initially mentioned countries. However, inspecting the region as a whole and taking into account two crucial cross-border investment methods and both of their impact on growth, is a newer perspective in this field of study. It will be intriguing to see how both of these investment methods may impact economic growth in a side-by-side inspection. Furthermore, what makes this study interesting is the inspection of additional variables that may affect growth and how they vary between the separate analysis of FDI and FPI in relation to growth.

ASEAN has been a large receiver of foreign investment for a couple of decades now, which is also a reason behind the decision to inspect it. ASEAN accounted for approximately 20 percent of FDI inflows directed toward developing countries back in 2017, and 34 percent of flows directed to both East and Southeast Asia. However, since China received approximately half of all the inflows directed to East Asia, ASEAN is more interesting to study as a region since the division of flows is more even between the countries. (Gnanasagaran 2018; Plecher 2019)

As of the earlier research findings, Merican (2009), who conducted a study of two larger economies in ASEAN, found out that in comparison to domestic investment, FDI was found to have a more critical role in generating growth. Earlier, Borensztein, De Gregorio & Lee (1998) came to the same findings that in relative terms, FDI does impact growth more than domestic investment. However, this also implies that whenever FDI decreases, growth levels also decrease for nations. As mentioned above, technology plays a crucial part in what kind of an impact FDI plays in economic growth in the end, which is why a key determinant is how well the host country can utilize advanced technologies in their production activities.

Duasa & Kassim (2009, 110-111) stated that "capital flows act as a catalyst to economic growth," where the duo referred to the capital flows of portfolio investments that provide an increase in financing in the domestic stock market, which has a positive influence on economic

growth. The theory lies in the wealth effect, which is the phenomenon that occurs when the assets of a person increase. The increase in assets likely leads to an increase in individual spending of the person. By adapting the wealth effect to FPI, when the capital flows increase, there may be seen an increase in spending in the host economy, which then affects the economic growth of the economy.

1.2 Research questions

The purpose of the study is to inspect foreign investment inflows and whether they have had an impact on the economic growth of countries in ASEAN from a 24-year inspection. This period has included two significant crises, but the period has still been lucrative for many countries in terms of GDP per capita growth. Due to the purpose of the study, the main research question will be the following:

Do the cross-border investment inflows impact the economic growth of ASEAN during the 1995-2018 period?

Since this study aims to inspect FDI and FPI in relation to growth separately with the same set of additional variables, the sub-question of the thesis concerns whether there can be found differences between the impact of the inspected investment methods concerning growth.

Are there differences in the impact of investment inflow types on the economic growth in ASEAN?

1.3 Limitations of the study and chosen methodology

The first limitation of the study is geographical since the study will only concern the region of ASEAN, which includes ten member countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. Southeast Asia is chosen for the study since the economic growth of the countries has increased for several years, and the region is a significant recipient of foreign investment in terms of developing countries around

the world. The second limitation concerns the period, which is 24 years, starting from 1995 to 2018. This specific period has been chosen to get enough observations for the analysis to accurately study the countries from a yearly perspective and get reliable results.

The study conducts the use of quantitative research, more specifically, linear regression. We use panel data estimation methods to get the results of the impact of cross-border investments on growth, and the study introduces additional control variables that may explain growth as well.

1.4 Structure of the thesis

The study is divided into five main chapters: Introduction, theory chapters, data and methodology, and empirical results. The theory is divided into two sections since it introduces both growth theories and theory about foreign investment in their separate chapters.

Economic growth is presented from the point-of-view of two chosen prominent theories: the neoclassical- and the endogenous growth theories. Chapter four introduces the data alongside the chosen methodology, and the fifth chapter concerns the empirical study where the results of the analytical tests are shown. The sixth and last chapter presents the conclusions of the study.

2. Review of growth theories and literature

Economic growth is defined as the continuous growth of produced goods and services in a country by Schutz (2001), and it involves the growth per capita income in an economy.

Economic growth is often explained through various growth theories, out of which this study presents two: the neoclassical growth theory and the endogenous growth theories.

2.1 Neoclassical growth theory

The neoclassical growth theory was primarily brought up by Robert Solow in the 1950s, and it explains economic growth through factors such as capital, labor, and technology. This theory was the first that stressed how the shifts in technology impact economic growth (Sredojević, Cvetanović, Bošković 2016, 178). Sengupta (2012, 2-3) explained the production function for the model, which is the following:

$$(Y = F(A, K, L))$$

Where (1)

Y Production (GDP)

K Capital

L Labor

A The level of technology.

The hypothesis concerns diminishing returns: when only one production factor increases, the overall production decreases when all of the other factors stay the same. Lakhera (2016, 25-26) adds that this model is often called exogenous since growth is explained through the growth rate of L (Labor) and technological progress. However, the model does not explain how changes in technology occur, which is also one of its biggest downfalls.

One of the positive sides of this theory is how it emphasized the co-operation between developing and developed countries. According to the theory, developing countries attract capital from the latter. Furthermore, this capital can be used to catch up on the development that

has been made in more developed regions in the world. (Carbonell & Werner, 2018). However, the theory has also gathered quite a lot of critic and is considered to be a sufficient model on a theoretical level, but the possibilities of implementation to real life are not great. For instance, the model assumes the following things: economies are entirely closed, employment in an economy is at its maximum, and that competition is perfect. As can be expected, this is not realistic for any country and does decrease the credibility and implementation of the model. (Lakhera 2016, 26)

Sredojević et al. (2016, 177-178) explain that although the neoclassical theory has its flaws, it has still been able to give insight into economic growth better than earlier growth theories. Furthermore, the model also had an impact in real life from the 1960s when governments decided to adapt findings from the theory, for example, through investing in research of how technology and its processes could be developed further.

2.2 Endogenous growth theories

The endogenous growth theories were presented in the 1980s to bridge the shortcomings of the neoclassical models, and they have primarily aimed to analyze the reasons for changes in technology. Furthermore, a set of new vital factors relating to economic growth were presented through these models, out of which technological spillover and international technology transfer were crucial ones. (Sredojević 2016, 178-179)

These theories predict that a key factor behind economic growth comes from endogenous factors rather than external ones and that spillovers from investments done in both technology and human capital will create returns that will translate into economic growth. As with the neoclassical model, technology is explained as a driving force behind economic growth. However, in the endogenous theories, this explanation goes further since technology is tied with an increase in returns of scale. This refers to the phenomenon where the increase of all inputs with a certain percentage leads to an increase in overall production. The theories explain that the increase in returns of the scale of technology is one of the forces behind long-term economic growth. (Petschko 2018, 181; Tiwari & Mutascu 2010, 2-3)

Another important finding of the endogenous growth theories is explained by Romer (1986, 1003), who stated that companies should invest in increasing the knowledge of their employees. This is due to the fact that investments in the physical capital of companies create externalities that can be seen as knowledge spillovers from one company to another. This should not be seen as an adverse event since knowledge spillovers mean that many companies may benefit positively from new information created in one place, which leads to knowledge spillovers working as a public service helping many different parties. According to endogenous theories, this spreading of positive knowledge is a crucial factor in creating economic growth in an economy. (Romer 1986, 1003-1004; Sredojević et al. 2016, 184-185)

Furthermore, Lakhera (2016, 27-28) adds that opposed to the neoclassical theory's assumption about markets being perfect, the endogenous theory was developed to acknowledge market failures. This is done while emphasizing the importance of institutional orderliness; if a country has institutions that are open and capable of accepting technological change, the better, according to these theories. Also, the endogenous theories assume that differences between institutions and policies in an economy result in the variation between countries in terms of long-term growth rates. However, a well-known endogenous growth model called the Schumpeterian theory challenges this assumption. The theory implies that a country's effort on its R&D (research and development) is further improved by other countries' innovations, which will eventually lead to long-term mutual growth in many different countries.

As with the neoclassical theory, the endogenous growth theories also present some short comings that decrease the credibility of the model. For instance, Sredojević et al. (2016, 185) mention that the explanation about knowledge spillover's beneficial impact from a company to another is, in fact, not very realistic. The reason behind this is because new knowledge is usually created through efforts on R&D, which means that companies do not exactly want their hard work to spread around to other companies, which often results in "monopoly rent."

Lakhera (2016, 27) added, that although the endogenous theories also come with their flaws, they are still closer to real-life than the neoclassical theories.

3. Cross border investments

International investments are commonly divided into two groups: foreign direct investments (FDI) and foreign portfolio investments (FPI). The latter is usually done by buying shares in a company outside the investor's home country. FDI differs from this and is considered a long-term investment since it commonly involves establishing a new production operation in the host country.

3.1 Foreign direct investment

De Mello (1999, 135) characterized FDI as a method of cross-border co-operation that occurs between two or more firms, which enables the investor to get a significant controlling stake or share in the foreign company. FDI is commonly done with a long-term interest in mind since it often involves substantial effort not only financially but also timewise. FDI is usually divided into, for example, equity capital and reinvested earnings. (UNCTAD 1999)

FDI has increased in popularity since the Second World War, mainly due to the remarkable increase in global competition. However, the discovery of FDI's full potential was realized in the 1980s when MNCs saw the lucrative benefits of investing beyond borders, notably to developing countries in terms of gaining good profits. (Sabir, Rafique & Abbas 2019)

According to Ahmeti & Kukaj (2016), when a company makes a cross-border investment, it is most likely done by a multinational corporation. As the word multinational implies, these corporations are based in their home country but have networks globally since they are made out of several business units that together form a global firm where one parent company controls the other groups. The purpose is to keep control of one parent company while spreading the reach of the firm around the world. Moosa (2002, 6) mentioned a few examples of known MNCs that include, for instance, McDonald's, Coca-Cola, IBM, and Toyo-ta.

Moran (2012) argued that a corporation could establish a business operation in the host country mainly through three scenarios, the first one being by setting up a new company which is

owned 100 percent by the corporation. This type of FDI is called a Greenfield investment. Greenfield investments are usually seen as positive from the host country's point-of-view since it contributes to the employment of the country's citizens. (Moosa 2002, 13-14) Furthermore, Neuhaus (2006, 43) discussed that Greenfield investments are particularly significant regarding economic growth since creating new production facilities most likely involves the use of modern technology, which relates to production. If the efficiency of production is increased through technology, it could potentially lead to a positive long-term impact on economic growth in the host economy.

Secondly, another investment method of FDI is Mergers and acquisitions, where the MNC either merges or acquires a local firm. Compared to Greenfield investments, M&A is both easier but also gives the investing company a more convenient access to the local market without the fuss of creating an entirely new establishment. This particular form of FDI is often chosen by larger and diversified MNCs that have a somewhat similar cultural and economic background to the host country. However, acquisitions of firms are not usually welcome when done by a foreign firm. This is because they typically entail handing out controlling rights to an outsider, which poses a risk of layoffs and other negative downsides to the host economy. (Ahmeti & Kukaj 2016; Moran 2012, 3; Moosa 2002, 13-15) Thirdly, FDI may also occur in the form of joint ventures, which refer to deals where both partners benefit from each other; for example, by sharing resources and capabilities between the partners. (Moosa 2002, 16) Although there are different forms of FDI, this thesis does not test them separately to examine the impact of FDI on economic growth.

Furthermore, guidelines have been defined considering a direct investment enterprise: the foreign investor should not own less than 10 percent of either ordinary shared or voting rights in the integrated unit. However, these guidelines should not be seen as this strict, since studies have shown that many enterprises may own more than ten percent of a unit in the host country but are not necessarily exercising significant control over it. (Chaudhuri & Mukhopadhyay 2014, 1-3)

Foreign direct investments consist of many different benefits for the host country. Alongside financial capital, it concerns other necessary capital, such as capital related to intellect, management, and technology. Especially technology is a crucial one when talking about economic growth. Considering the long-term aspect of FDI, it is thought that FDI is quite a stable investment opposed to others such as FPI, which is discussed later. However, this does not mean that direct investments manage to get away unscathed from international problems such as financial crises. These inevitably spread around the globe due to the integration of economies around the world. (UNCTAD 1998)

Although some argue that FDI may have a negative impact in developing countries, others have focused on the positive effects, which account for many. For instance, Hasli, Ibrahim & Ho (2017) pointed out in their study, that FDI has a crucial role in improving different, not only economic but also social and political factors in a developing country and may also be essential in promoting the social welfare of a nation.

The ones who argue about the toxic repercussions of FDI have discussed how the inevitable increase in foreign ownership that comes along with foreign investment, may end up impacting the activities of the country negatively. Moreover, Moosa (2002, 6-8) adds that FDI could contribute to the creation of a monopolistic environment in the host economy.

3.1.1 Attracting FDI

Although some researchers have argued that FDI does not affect economic growth, or at least not in the scale that many have thought, FDI still influences the host economy positively overall. This is why, especially, developing countries are more than willing to accept investments and alter their policies to fit the requirements of the MNCs.

As reported by Valli & Masih (2014), to attract FDI, developing countries have aimed to implement different policies that foreign investors could be intrigued by. John H. Dunning presented the OLI paradigm back in the 1970s that sought to dig into the determinants of FDI from the view from the MNC's decision to invest. The OLI paradigm consists of three different factors: O for ownership, L for locational advantages, and I for the benefits of internalization. (Neuhaus

2006, 142) The elements of ownership are associated with particular assets in firms, which may include trademarks and patents and other assets of that sort. The advantages of internalization refer to benefits the firm can gain from if it utilizes its own production opposed to other agreements as the earlier mentioned joint venture. (Bilgili, Tülüce & Doğan 2012, 1162).

Although both the O and I are vital factors of the paradigm, in terms of developing countries, the locational advantages play a particularly significant role in the attraction of FDI. They include several different elements that should be taken into consideration.

One of the main reasons for establishing new production facilities in a developed country is connected with lower labor, energy, and raw material costs the MNC may benefit from. These costs are all included in input costs. If these are significantly lower than in the home country of the investing company, it is more lucrative to move production cross-border, particularly to developing countries that offer these low-cost opportunities rather than developing countries. From the possible host economy's point-of-view, the lower the costs are concerning neighboring countries, the better the chance is to attract FDI inflows. (Bilgili et al. 2012, 1162; Neuhaus 2006, 146)

Besides, a logical finding is that larger market size is connected with a better chance to attract FDI. The reason is mainly that a larger market size means that the host economy may benefit from economies of scale, which refers to cost advantages an economy may benefit from if its production is efficient. In concrete terms, the host economy benefits from a large market size through decreases in costs and a rise in demand. The GDP of the country is a common way to present and measure market size. (Bilgili, et al. 2012, 1162).

Another critical finding to highlight is related to the stability of the economy, as this study concerns developing countries. For instance, the level of both macroeconomic- and political stability are essential to consider in terms of FDI attraction. Neuhaus (2006, 147-148) discusses that the more macroeconomic instability the country possesses, the riskier the investment will be from the investor's point-of-view.

Also, keeping inflation rates relatively low has proven to be beneficial in terms of FDI attraction, since a high inflation rate diminishes real investment returns, which does not translate to a lucrative deal for the investor. (Valli & Masih 2014, 35)

3.2 Foreign portfolio investments

Since today's capital markets are very much integrated, investing cross-border in search of new interesting markets have been made relatively easy. Improvements in both competition and technology have been made, which has resulted in lower transaction costs that are associated with foreign investment, as is the case with FPI. This has made investing in this sort of investment more lucrative to investors in the last few years. (DePamphilis 2015, 659-692)

Foreign portfolio investment consists of securities transactions, which are usually divided into two groups: equity and debt securities. Commonly, the latter consists of bonds and money market instruments and the former often includes different shares in companies. (Tilastokeskus 2019)

Levine & Zervos (1996) discuss that from the point-of-view of developing countries, FPI has different ways of positively impacting a host economy, for instance, through the expansion in liquidity that affects the capital market of the economy. Furthermore, the host country may use FPI to finance the current account deficit. For the investor, portfolio investments may offer lucrative opportunities to invest in these markets since they provide excellent growth potential.

Moreover, FPI is a great way of diversifying one's portfolio, and the fact that the investor does not have to be directly involved in the business may be seen as intriguing, opposed to in the situation of direct investments. (Garg & Dua 2014; Meyer 2015). However, this could also be seen as a downside since the investor does not have any rights to acquire significant control, nor is the investor given a voice in the decision-making processes. (Ahmeti & Kukaj 2016) Regardless, the investors are more in control over their assets through FPI since it is quite easy

for the investor to withdraw their money if things are going down south, whereas in the case of FDI, investing is usually significantly more binding.

Since FPI is by its nature, a short-term investment method, investors commonly look for fast profits, which can be associated with an increase in volatility. Thus, FPI is quite easily impacted by different macroeconomic factors, such as changes in interest rates and risks associated with politics. (Makoni 2018, 253-254) Volatility makes FPI a riskier form of investment compared to FDI, which is a relatively stable investment method. FPI's volatile nature has proven to impact financial markets severely, as was seen back in the 90s during the Asian financial crisis when the volatility caused by FPI aggravated the crisis further due to investors' abrupt withdrawals of investments. However, although portfolio investments are commonly short-term by their nature, studies have shown that they still benefit the financial markets of the host country in a long-term aspect. This eliminates a great deal of the adverse effects the short-term may bring along. (Duasa and Kassim (2009, 109-113)

Pal (2010, 121-122) characterized FPI's most crucial role as the following: "one of the most important benefits from FPI is that it gives upward thrust to the domestic stock market prices." The reason behind this can be seen in the P/E ratios of the host economy, since FPI may give them a boost. This leads to a high P/E ratio, which, in turn, may result in different advantages, such as reduced cost of finance. What is important to remember is the fact that the lower the price of the investment is, the more willing the investors are of investing in a country.

4. Research methodology and data

The study conducts the use of quantitative methodology, which refers to statistical research. This type of research studies the differences and interdependencies of a phenomenon where the numbers present the results. Additionally, the purpose is to interpret and explain the information. Moreover, the goal is to show the relationship behind the phenomenon, and a quantitative methodology requires a sample that is sufficiently large and representative. (Heikkilä 2014; Vilkkä 2007)

4.1 Estimation technique

This study uses linear regression in the analyzing of the relationship between economic growth and the explanatory variables. In regression analysis, we are interested in the correlation of a dependent variable y and the dependable variables x . The relationship can be either positive or negative: in the former situation, whenever x increases, so does y .

This study includes the use of panel data methods. Panel data concludes both cross-sectional and time-series data, and it enables the inspection of how the relationships of variables have progressed over time. (Brooks 2014, 526-527) Baltagi (2008, 5-6) listed several different benefits of the use of panel data, which include the increase in informative data for the estimation and the reduced risk of collinearity among the variables, which refers to the situation where the dependable variables have a high correlation amongst each other. Also, the use of panel data increases the capability of estimating more complicated equations.

There are different approaches to panel data that one can use in financial estimations. In this study, both the fixed- and random effects models will be tested, and the results will be presented in the next chapter. The fixed effects model (FE) is presented below.

$$y_{it} = \beta_1 + \beta_2 x_{2it} + \beta_3 x_{3it} + \varepsilon_{it} \quad (2)$$

where,

y is the dependent variable

x is the dependable variable

β is the independent intercept

ε_{it} is the remainder disturbance

In the fixed model, only the intercepts β varies between the entities, also capturing the differences between them. According to Hill, Griffiths & Lim (2012, 543-544), the reason to add these intercepts into the model is that they “control for individual-specific, time-invariant characteristics.” An F-test tests fixed effects where the null hypothesis is that there are no fixed effects present in the model. If this is the case, the use of OLS (ordinary least squares) is a plausible solution. However, in the situation of a rejected null hypothesis, the model includes fixed effects. In this situation, the use of OLS is not recommended.

In addition to the fixed effects model, we test the random effects model (RE), which is similar to the former model in the sense that it makes an assumption according to which the intercept yet again captures the differences between the individuals. However, the difference is that the model sees the individuals to be random that are constant over time but may change in a cross-sectional inspection. (Brooks 2014, 536; Hill et al. 2012, 551).

$$\beta_{1i} = \beta_1 + u_i \quad (3)$$

Here β_{1i} is divided into two parts: the population average β_1 and the random individual differences u_i . The equation for the random effects model is the following:

$$y_{it} = \beta_1 + \beta_2 x_{2it} + \beta_3 x_{3it} + \dots + v_{it} \quad (4)$$

Here v_{it} is the combination of both the earlier mentioned u_i that expresses the random effects but also ε_{it} , which is the remainder disturbance.

As mentioned above, the F-test determines if the chosen model has fixed effects, and if the null hypothesis is rejected, the model includes them, and OLS is not a good way to measure the results. However, in order to determine whether the fixed or random model should be used, we need to do an additional test called the Hausman test. This test is particularly important since there is a considerable problem relating to the RE model since it is not consistent if the residual correlates with one of the dependable variables. If the model is not consistent, it presents an endogeneity problem, which leads to biased results. The Hausman test can capture the correlation between the residual and dependable variables, and it compares the coefficients of both the fixed- and random effects models. The hypothesis of the test is the following:

H0: the coefficients present no differences amongst each other

H1: the coefficients vary amongst each other

If the null hypothesis is accepted, there is no endogeneity problem, and the random effects model may be used. However, if the null hypothesis is rejected, the residual does correlate with one of the dependable variables meaning that the model is not consistent. In this situation, the fixed model should rather be used; otherwise, the estimates will be biased, which lead to skewed results. The fixed model does not include a risk for endogeneity. (Baltagi 2001, 15; Brooks 2014 537; Hill et al. 2012, 551-552)

4.2 The models

Both FDI and FPI are naturally the pinpoints of our interests in the tests; however, additional variables that may influence economic growth are added. Thus, equation 5 and 6 showcase the econometric models for the regressions:

$$\text{Growth} = \alpha + \beta_1 \text{FDI} + \beta_2 \text{pop} + \beta_3 \text{infl} + \beta_4 \text{ind} + \beta_5 \text{empl} + \beta_6 \text{intr} + \beta_7 \text{exch} + \beta_8 \text{open} + \beta_9 \text{FDI}_{t-1} + \varepsilon \quad (5)$$

Here growth is the dependable variable we are interested in and FDI, population, inflation, industry, female employment, interest rate, exchange rates and openness are used as explanatory variables. Furthermore, a lag of one year is added to both of the models. Here α is the intercept and ε is the stochastic error term. Equation six shows the same model with FPI as the main explanatory variable.

$$\text{Growth} = \alpha + \beta_1 \text{FPI} + \beta_2 \text{pop} + \beta_3 \text{infl} + \beta_4 \text{ind} + \beta_5 \text{empl} + \beta_6 \text{intr} + \beta_7 \text{exch} + \beta_8 \text{open} + \beta_9 \text{FPI}_{t-1} + \varepsilon \quad (6)$$

4.3 Data and descriptive analysis

The data is mostly obtained from the World Bank alongside the United Nations Conference on Trade and Development (UNCTAD) databases.

The purpose of the study is to inspect cross-border investments on economic growth both in the forms of FDI and FPI. Growth is typically measured as GDP per capita or GDP annual growth. However, since the latter included several negative values, the former is used as a proxy for the measurement of growth. Both FDI and FPI are measured in net inflows of current USD, and the total logarithmic inflows are used in the study. Other control variables were chosen for the study were collected from the World bank database and are the following: total population, industry, female employment, exchange rates, and openness. Furthermore, real interest rates for the region were collected from the Amadeus -database.

FDI net inflows are expected to influence growth positively, especially if the neoclassical growth theories are taken into consideration. These growth theories emphasize how technology is crucial in determining growth, and they predict that, especially, technology has a significant impact on growth. This is why it is assumed that FDI also impacts growth significantly since this form of investment includes mainly the transformation of new technologies to host countries besides other contributions. Furthermore, a lag of one year concerning FDI will be added to the analysis. This is done since, as mentioned earlier, FDI does not only include financial capital, but also managerial- and technological know-how. This is why we expect that

efforts put into these factors during a certain year would not necessarily be seen right away, but perhaps a year later.

FPI net inflows are hard to determine since studies have shown that they may not necessarily impact growth at least as much as the former cross-border investment method. However, since throughout FPI, investors may contribute to the financial instruments in the region, we could expect that the coefficients of the variable would remain positive since we can assume that an increase in these would have positive impacts for the region. However, it could be that the positive effect does not reach economic growth. As well as with FDI, a one-year lag of FPI is added into the analysis.

Openness is measured as the sum of exports and imports and divided by the current GDP in a country. This variable is thought to impact economic growth positively since it is usually agreed that the more a country supports and promotes international trade, the faster it may grow and become more efficient throughout new technologies. Contrary, if an economy has strict policies regarding its trade openness, it often leads to higher tariffs and taxing, which leads to higher entry barriers for the MNCs. (Lakhera 2016, 27-28; Tiwari & Murascu, 2011) This means that positive coefficients are expected for the variable.

Female employment is added as a control variable. It has not been added to similar studies before; however, it is included since it is highly likely that it has a positive correlation with economic growth. This assumption is made since, in general, women rarely work mainly in developing countries, and nearly half of the countries belonging to the ASEAN are considered developing countries and the other half emerging economies. If women are working outside the household, it could lead to a positive impact on economic growth; for instance, since this way, more people are paying taxes and getting more buying power with their wages. Moreover, labor is included to have a crucial role in the neoclassical growth theories, which would back up the claim of female employment impacting economic growth positively. Furthermore, the endogenous growth theories brought up positive spillovers, which may spread around from a person to another. This way the more skilled the workforce is, the more spillover is generated that influences economic growth. These skills can, in general, be attained at work, which is why it would be crucial for also women be employed. Additionally, it could be argued

that countries that do not appreciate women's rights and have strict rules over a women's place in the society, are not especially lucrative for MNCs or other investors to invest. That being said, a positive coefficient for female employment is expected.

The total population is added since the more extensive the community is, the larger the market size is. This, on the other hand, should be intriguing for investors since this indicates a more extensive potential customer base for MNCs, especially in the case of FDI. Furthermore, the earlier introduced locational advantages in chapter 3.1.2 explained that the larger the market size is, the more the economy may benefit from decreases in costs and a surge in demand. (Bilgili, et al. 2012, 1162). It is expected that the population will have positive coefficients in the case of FDI and FPI.

Real interest rates refer to the actual rate that, for instance, an investor may get after inflation has been subtracted. This variable is included since the information on the stock market for all of the countries were not, unfortunately, available. According to Moyo & Le Roux (2018, 1-2), real interest rates may influence growth positively through two factors: savings and investments, and the rates should not be kept very low since this could end up impacting growth decreasingly. It could be assumed that real interest rates would particularly impact FPI since this form of foreign investments is more volatile and is impacted by different macroeconomic factors. This means that interest rates and their changes could end up having a significant effect on this investment form. However, as FDI is more stable and is not impacted by macroeconomic factors as FPI, it is more difficult to assume the coefficient for the variable in these regressions.

Industry is added as an additional variable to control for the impact of industrial production on economic growth in the region. The variable measures the industrial output of an industry in a country to its overall GDP. According to Obioma, Kalu & Uchenna 2015, 160), it is important to note that without investments in industries, it is rather hard to accumulate growth in a country. Thus, the industrial output could potentially impact the economic growth of a country. We could expect that the industry variable would be positive, but it is hard to determine whether it will be statistically significant in the analysis. In the statistical analysis of Obioma et al. (2015, 168-169) on the impact of industrial output on growth in Nigeria, the results

were not statistically significant although industrial output had a positive relationship with GDP.

Another essential variable to take into account is inflation. A high inflation rate may result in the diminishing of real investment returns and signals that the government of the host country is incapable of adjusting its growth in money supply, which will eventually lead to an increase in prices. This is why it can be assumed that a low inflation rate could positively correlate with the investment inflows and thus perhaps have an increased impact on economic growth. Inflation is expected to have a negative coefficient since when it goes up, it is likely that the economic growth rate goes down. (Valli & Masih 2014, 35)

Table 1. Description of data

Variable	Definition
<i>lnGDPcap</i>	The logarithm of GDP per capita, which measures economic growth (expressed in current USD)
<i>lnFDI</i>	The logarithm of inflows of foreign direct investment (USD).
<i>lnFPI</i>	The logarithm of net inflows of foreign portfolio investments (USD)
<i>lnPop</i>	The logarithm of total population
<i>Industry</i>	Industry (including construction), value added (% of GDP)
<i>Employfem</i>	Employment in industry, female (% of female employment)
<i>Tradeopen</i>	The sum of exports and imports divided by the current year's GDP.
<i>Infl</i>	Inflation, consumer prices (annual %)
<i>Exchange</i>	Official exchange rates (per USD). Calculated by dividing the current year's value with last year's value.
<i>Intrate</i>	The real interest rates of the countries
<i>FDI_L1</i>	One-year lag of FDI.
<i>FPI_L1</i>	One-year lag of FPI.

5. Research findings

Chapter 5 introduces the results of the study. This study conducts the use of linear regression through the software Stata SE16. The purpose is to study whether cross-border investments impact economic growth in ASEAN throughout 1995-2018. Cross-border investments are classified as foreign direct investment and foreign portfolio investments, which are tested separately with the same set of explanatory variables. The study focuses on the relationships between both FDI and FPI on economic growth, which the fixed- and random effects models test. A Hausman test determines which of the models – fixed or random – is the best for the analysis. Appendix 1 presents the summary of the statistics and it is found at the end of the thesis.

Firstly, a basic OLS regression was estimated, which can be used if the model does not present any fixed effects. However, after running through an f-test, which measured the fixed effects, the results indicated that the model does indeed include fixed effects since the null hypothesis was rejected, which is seen in table 2. This means that the basic OLS model was not compatible for the analysis.

Table 2. The p-values of both the F-test and Hausman test

Test	P-value
F-test	0.000
Hausman test	0.000

Table 2 shows the p-value of the f-test which test fixed effects and since it received the value of 0.000 the test rejects the null hypothesis. Furthermore, the Hausman test evaluates whether the fixed or random effects model is better for the analysis and since the p-value is under the significance level yet again, the fixed effects model should be used over the random effects model.

After running through both the fixed and random effects models, a Hausman test was generated to see which model would be the most fitting for this study. The Hausman test's null hypothesis states that there are no differences between the models, and if this is the case, the

use of random effects model is favourable over the fixed effects estimation. However, as the Hausman test's p-value was 0.000, the null hypothesis was rejected, and we can assume that there are differences between the models. Furthermore, the rejection implied that the random effects model is not consistent and could present an endogeneity problem. Thus, the use of the fixed effects model is better in the analysis since it does not display the same kind of issues as the previous estimation. The results for the f-test and Hausman tests were the same for FDI and FPI.

Since panel data takes into account observations throughout many periods, different problems may occur in the analysis. In order to minimize these, robust standard errors have been estimated, which take into account the fact that the panel data contains data from the same units from several periods. Furthermore, the robust standard errors also take into account that these observations often include some type of correlation.

The fixed effects estimation with robust standard errors got the same results as the previous FE-estimation since all of the same variables were statistically significant. However, the f-test related to the FE-estimation was not available as in the previous case since it was proven to be too difficult to estimate with the robust standard errors. In the case of FPI, all of the other variables were statistically significant as in earlier estimations, however, inflation and exchange -variables also became statistically significant on a 10%-level. Both of the estimations with robust standard errors are added in the abbreviations at the end of the thesis.

5.1 Fixed effects estimation and FDI

This chapter presents the results of the fixed effects estimation with foreign direct investment and the additional variables. The purpose was to test the impact of FDI on economic growth first, and after that, by adding the additional variables a few at a time. The purpose of this is to inspect what the inclusion of several control variables may have on the impact of FDI on growth. The last model includes the lagged values of FDI.

Table 3: The results of the fixed effects estimation, FDI and economic growth

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<i>InFDI</i>	0.207*** (0.017)	0.988*** (0.015)	0.044*** (0.011)	0.044*** (0.011)	0.044*** (0.015)
<i>InPop</i>		2.104*** (0.164)	2.058*** (0.109)	2.074*** (0.112)	2.071*** (0.131)
<i>Industry</i>			1.478*** (0.231)	1.381*** (0.249)	1.451*** (0.258)
<i>Inf</i>			-0.114 (0.081)	0.003 (0.128)	-0.0247 (0.128)
<i>Employfem</i>			1.805 (0.307)	1.581*** (0.363)	1.523*** (0.422)
<i>Intrate</i>				0.252 (0.187)	0.176 (0.190)
<i>Openness</i>				7.626 (5.277)	6.244 (6.234)
<i>Exchange</i>				0.001 (0.001)	0.001 (0.001)
<i>FDI_L1</i>					0.0122 (0.0114)
<i>Constant</i>	9.027** (0.352)	-24.442*** (0.076)	-23.265*** (1.757)	-23.800*** (1.823)	-23.897*** (2.103)
<i>Observations</i>	210	210	203	174	174
<i>R-Squared</i>	0.4350	0.6912	0.8397	0.8231	0.8370
<i>Prob > F</i>	0.0000	0.0000	0.0000	0.0000	0.0000

The * after the coefficient refer to the significance of the results. *** refers to a significance level of 1%, ** refers to a level of 5% and * refers to a significance level of 10%. Corresponding standard errors are shown in brackets.

We can inspect the explanatory power of the model throughout the value of R-squared. The values between the different models indicate that the inclusion of more explanatory variables has increased the explanatory power of the models. However, the strongest explanatory power is at 83.97%, which is slightly better than model 5, which included all of the variables, with an explanatory power of 83.70%. However, model 5 has a better explanatory power than model 4.

The models show that FDI net inflows to the region have had a positive impact on economic growth in all of the regressions. However, in model 5 with all of the additional variables, FDI is not on a 1% significance level anymore, but a 5% significance level is still acceptable. Thus,

we can assume that FDI has a positive impact on growth. Moreover, the one-year lagged variable of FDI is also positive, which is why we can expect that the previous year's FDI inflows have an impact on economic growth of the current year. The coefficient is minimal, though, however, the coefficients of the other models are not huge either.

Model two adds the log of total population alongside FDI to the inspection, and we can see that both of the variables are positive and significant. If we take a look into the other estimated models, we can conclude that the variables that are significant in terms of growth are, alongside FDI, population, industry, female employment, and the lagged FDI of one year. This is quite an interesting result and also resonates with the assumptions made in the previous chapter.

According to the results, an increase in one unit of the openness -variable should increase growth by seven units. This is predicted by the endogenous growth theories since they predict that the more open an economy is, the more it should benefit from international trade thus impacting growth. However, as table 3 shows, openness is still not statistically significant.

Inflation is the only variable that does not seem to have any impact on economic growth; its negative coefficient indicates a decrease in growth when the variable increases one unit. However, the negative coefficients of inflation are correctly specified if we look at the theory according to which inflation should impact investment flows negatively since a high inflation rate diminishes the real investment returns and leads to other problems. This may lead to the country being non-lucrative to invest in from the point-of-view of investors. (Valli & Masih 2014, 35).

We can also see that the variable measuring the exchange rates is positive, although slightly so. We can look at the exchange rate variable from two point-of-views: firstly, we could think that an increase in the exchange rate of a country would lead to economic growth. This can be backed up by the earlier discussed wealth effect, which referred to the phenomenon that occurs when the assets of a person increase since this is likely to lead to an increase in individual spending of a person. Hence, when the currency is revaluated, the people have more purchasing power, which would likely lead to a rise in the purchases made in the economy,

thus, impacting economic growth. (Duasa & Kassim 2009, 110-111) However, this would also mean that it would be more expensive for investors and other people from abroad to buy from this country or, as the study is about foreign investment inflows, invest cross-border. This would mean that the increase in the exchange rates would negatively influence the decisions of investors and other people to spend in the country, which would likely lead to a decrease in economic growth. In the case of economic growth and FDI, the exchange rates remain positive, however, so we could assume that the increase in the currency of the countries in the region leads to at least a small and contemporary increase in economic growth.

As was stated above, female employment- and the industry variables were also statistically significant. According to the results, an increase in the industry, which was measured as value-added of GDP, economic growth would increase nearly two units. This is quite a consistent finding since the variable indicates the value-added through, for instance, taxes and also employees. However, we were uncertain about whether this variable would be statistically significant, which is why it is interesting that it received such a role whereas, for instance, openness did not.

Moreover, female employment should also increase economic growth by nearly 1,6 units. This was expected since this way, more females are working and contributing to the economy thus impacting growth in the region. Both the neoclassical- and endogenous growth theories may be seen to advocate these results.

Perhaps what is the most contradicting result is the one of the population -variable: according to model 5, a one-unit increase in population would lead to approximately a 2.1 unit's increase in growth. This is impressive since studies have shown that the increase in population may harm economic growth, depending on which point-of-view is taken into inspection. If the country is classified as a developing one, a rapid increase in population could end up negatively impacting economic growth since, for instance, an increase in births would lead to more dependent children to look after. However, this is the case in a short-term inspection, and in the longer run, these children could become tax-paying and productive young adults, and their contributions would likely impact growth positively. (Peterson 2017) Thereby the results are

in-line with this way of thinking. What could also have been appealing to inspect is instead the growth in population rather than the total population.

5.2 Fixed effects estimation and FPI

Since the purpose was to separately inspect FDI and FPI in terms of economic growth with the same set of variables, the results of FPI are presented down below.

What stands out from the results is that FPI seems to only be statistically significant with a positive coefficient when it is tested alone in regard to economic growth but is not statistically significant in any of the other regressions. Furthermore, its coefficient is only positive in model 1 where no additional variables were included, and the lag of FPI does not appear to be significant either. This is interesting since in a study made by Makoni (2018) on FPI determinant in African countries, FPI was not either found to be positive according to the coefficients nor statistically significant, however, the one-year lagged version of it did receive positive values. The writer's hypothesis was that this could indicate the investors decision to invest since they want to inspect the past trends of investments into the country before investing. It could have been expected that as with FDI, the lagged version would have been positive, which indicates that positive earlier inflows of investment would influence the future inflows positively. However, a study conducted by Albulescu (2015, 508-511) on FPI and FDI's long-term impact in central Europe, found a positive relationship between growth and FPI, but only in the case of equity instruments, which refer to the right of ownership to a firm. All in all, the results indicate that FPI does not have a connection with growth in ASEAN during the inspected period and most of the growth is explained by other variables.

The variables that were significant in these regressions were population, female employment, and interest rates. This means that both population and female employment were significant for both FDI and FPI in relation to growth. Thus, we can conclude that both the relationship between population and growth alongside female employment and growth is stable as the statistically significant relationship can be seen throughout both of the fe-estimations.

Contrary to before, interest rates are also significant on a 1% level, which backs the research made by Moyo & Le Roux who explained that a low real interest rate could negatively influence economic growth and that FPI is largely impacted by macroeconomical factors. According to the estimation, an increase of one unit of real interest rates would increase economic growth by approximately 0,7 units. While this is not much, we can conclude that it should be taken into consideration regarding economic growth. However, as interest rates were not significant in the earlier estimations with FDI, we can conclude that the interest rate -variable is not stable. Moreover, industry was significant in the earlier estimations but did not receive the same impact on the estimations with FPI making it an unstable variable in terms of explaining growth.

Table 4. Fixed effects estimation for FPI

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
<i>InFPI</i>	0.081 *** (0.022)	-0.002 (0.014)	-0.001 (0.011)	-0.012 (0.011)	-0.003 (0.010)
<i>InPop</i>		1.859 (0.131)	2.137 (0.106)	2.098 (0.099)	2.138*** (0.101)
<i>Industry</i>			0.427 (0.383)	-0.495 (0.434)	0.125 (0.453)
<i>Inf</i>			-0.166 (0.174)	-0.275 (0.229)	0.359 (0.229)
<i>Employfem</i>			2.092 (0.314)	2.189 (0.301)	2.046*** (0.254)
<i>Intrate</i>				-0.739 (0.222)	-0.628*** (0.233)
<i>Openness</i>				7.684 (4.971)	3.706 (4.409)
<i>Exchange</i>				-0.027 (0.058)	-0.131** (0.056)
<i>FPI_L1</i>					0.006 (0.010)
<i>Constant</i>	10.536 (0.456)	-18.536 (2.071)	-23.711 (1.719)	-22.539 (1.635)	-23.321*** (1.596)
<i>Observations</i>	102	102	101	99	73
<i>R-Squared</i>	0.2194	0.2776	0.2751	0.2736	0.2821
<i>Prob > F</i>	0.0005	0.0000	0.0000	0.0000	0.0000

*** refers to a significance level of 1%, ** refers to a level of 5% and * refers to a significance level of 10%. Corresponding standard errors are shown in brackets.

The variables with negative values for coefficients are inflation and exchange rates. The former is not a surprise and reprises the same results from the earlier regressions with FDI, however, the latter was not negative in the earlier estimations.

Nevertheless, now even the exchange variable received negative coefficients, which indicate that an increase in this variable would lead to approximately a one-unit decrease in economic growth. As was discussed in chapter 5.1, the rise in exchange rates may have adverse effects on the willingness for investors to direct money into the country since it is now more expensive. Thus, according to these results, whenever the currency devaluates, the more it impacts economic growth in a bad light. The results are a tad contradicting though considering that in the earlier estimations in chapter 5.1, an increase in the exchange rate promoted economic growth by a definite amount. Nonetheless, results indicate that neither of the estimations was significant, and the increase in the case of growth and FDI is not very large. Khondker, Bidisha & Razzaque (2012, 36-37) studied the impact of exchange rates concerning economic growth in Bangladesh and concluded that in a short-run inspection, the devaluations of exchange rates decrease GDP slightly whereas, in the longer run, the effects of depreciation are positive. Furthermore, it is logical that if inflation impacts economic growth negatively, so would exchange rates since we can assume that the more the currency devaluates in a country, the more significant is the risk for inflation to rise, which brings along its own set of problems.

We can see that the model's explanatory power increases from the model 1 to model 5. However, a decrease in the explanatory power is visible throughout model 2 to model 4, but it seems that the inclusion of the one-year lagged version of FPI increased the explanatory power in model 5. The explanatory power of the estimations with FPI are significantly lower, however, as opposed to the fe-estimations with FDI. In model 5, the r-squared value, which indicates the explanatory power, is at 28.21 %. In the estimations in chapter 5.1, the explanatory power of model 5 was at 83.70 %.

6. Conclusions

The purpose of the study was to inspect how cross-border investments – foreign direct investments and foreign portfolio investments – have impacted the economic growth in ASEAN in a 24-year inspection starting from 1995 to 2018. This was tested through running different regressions on the relationships between growth and the cross-border investment methods separately, and by including additional variables total population, female employment, inflation, exchange rates, interest rates, industry, and lagged variables of FDI and FPI.

The continuous growth of foreign investment into ASEAN will likely not come to a halt in the next few years, especially considering how investment inflows have been prominent and have continued to do so even after financial crises. The studies made about foreign investment inflows impact on economic growth are contradicting; some believe that inflows do indeed impact growth while others do not share the same beliefs. After conducting the estimations in this study, we can see that FDI was significant in determining economic growth, although the coefficients did not indicate an unusually substantial increase in growth that is caused by FDI.

The study's theoretical chapters aimed to present both growth theories and theory about the chosen cross-border investment methods in order to gain a deeper understanding of the concepts. The research questions were the following:

Do the cross-border investment inflows impact the economic growth of ASEAN during the 1995-2018 period?

Are there differences in the impact of investment inflow types on the economic growth in ASEAN?

The answer to the first question was yes and no. This is since FDI was significant in all of the regressions, and the estimations also implied that an increase in this form of investment would increase growth, although quite modestly. This was backed up by the growth theories, which suggest that one of the most important driving forces of economic growth is technology.

Through FDI, the host country may receive new technologies, which will make production more efficient, which will likely lead to positive developments and, lastly, economic growth.

Nonetheless, FPI did not seem to have any significance in explaining economic growth in ASEAN from the inspected period; even more so, the coefficients indicated that an increase in FPI would impact growth slightly negatively. This also sums up the other research question: there were visible differences between the investment methods. Furthermore, similarities were found in both of the estimations since population and female employment were seen to impact growth significantly in all of the regressions.

The amount of FPI flowing to the region did increase substantially during the period, however, perhaps due to its volatility, it was not able to impact economic growth in the region significantly. Regardless, FPI may have benefits that this study did not take into account. Thus, for future research, FPI could be an interesting field to study more in-depth since the majority of the studies and literature available concern FDI. However, we can conclude that FDI, population, and female employment explained mostly economic growth in ASEAN during the inspected period.

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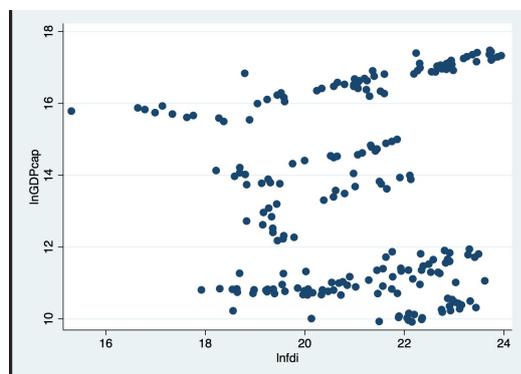
APPENDICES

Appendix 1. Summary of the statistics

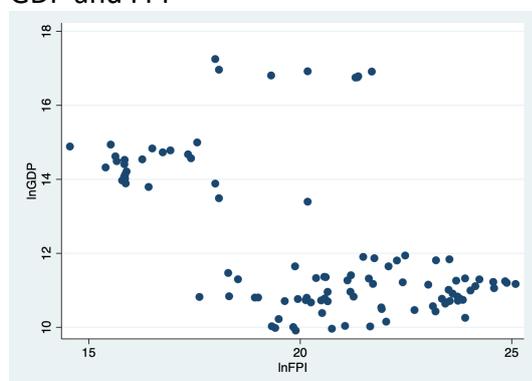
Variable	Mean	Std. Dev.	Minimum	Maximun	N
<i>InGDP</i>	13.196	2.573	9.914	17.478	240
<i>InFDI</i>	21.036	1.729	15.309	23.947	210
<i>InFPI</i>	20.410	2.823	14.555	25.091	102
<i>Inpop</i>	16.874	1.804	12.602	19.405	240
<i>Industry</i>	0.359	0.127	0.097	0.741	235
<i>Inflation</i>	0.066	0.127	-0.023	1.253	238
<i>Employfem</i>	0.150	0.060	0.027	0.313	240
<i>Intrate</i>	0.037	0.079	-0.421	0.354	225
<i>Openess</i>	0.013	0.009	0.001	0.044	226
<i>Exchange</i>	0.530	7.532	-0.216	116.678	240
<i>FDI_L1</i>	21.024	1.725	15.309	23.947	209
<i>FPI_L1</i>	20.410	2.823	14.555	25.091	102

Appendix 2: scatter plots of GDP and both FDI and FPI

GDP and FDI



GDP and FPI



Appendix 3: Parameter estimates for the fixed effects model, FDI

Variable	Coefficient	Standard error	t-value	Pr > t
FDI	0.043	0.145	2.92	0.004
Inpop	2.071	0.131	15.78	0.000
Industry	1.451	0.258	5.62	0.000
Inf	-0.025	0.128	-0.19	0.848
employfem	1.522	0.422	3.61	0.000
Intrate	0.176	0.190	0.93	0.355
Openness	6.244	6.234	1.00	0.318
Exchange	0.001	0.001	0.79	0.431
FDI_L1	0.012	0.114	1.07	0.284
Constant	-23.897	2.103	-11.36	0.000

Appendix 4: Parameter estimates for the fixed effects estimation, FPI

Variable	Coefficient	Standard error	t-value	Pr > t
FPI	-0.003	0.010	-0.29	0.771
Inpop	2.138	0.101	21.27	0.000
Industry	0.125	0.453	0.28	0.783
Inf	0.359	0.229	1.57	0.123
employfem	2.046	0.254	8.06	0.000
Intrate	-0.628	0.233	-2.69	0.009
Openness	3.706	4.409	0.84	0.303
Exchange	-0.131	0.559	-2.34	0.023
FPI_L1	0.006	0.010	0.65	0.516
Constant	-23.321	1.596	-14.61	0.000

Appendix 5: Parameter estimates for the random effects estimation, FDI

Variable	Coefficient	Standard error	t-value	Pr > t
FDI	0.178	0.220	0.81	0.418
Inpop	0.407	0.182	2.24	0.025
Industry	-3.122	1.777	-1.76	0.079
Inf	3.566	1.861	1.91	0.056
employfem	-17.185	3.909	-4.40	0.000
Intrate	4.647	2.876	1.62	0.106
Openness	-34.566	31.502	-1.10	0.273
Exchange	-0.001	0.018	-0.43	0.670
FDI_L1	0.236	0.187	1.25	0.210
Constant	1.522	2.490	0.61	0.541

Appendix 6. Parameter estimates for the random effects estimation, FPI

Variable	Coefficient	Standard error	t-value	Pr > t
FPI	-0.357	0.120	-2.98	0.003
Inpop	0.383	0.182	2.10	0.036
Industry	-1.409	1.926	-0.73	0.465
Inf	12.053	3.433	3.51	0.000
employfem	-6.886	3.070	-2.24	0.025
Intrate	-2.930	3.222	-0.91	0.363
Openness	24.830	31.996	0.78	0.438
Exchange	-1.458	0.922	-1.58	0.114
FPI_L1	-0.071	0.127	-0.56	0.576
Constant	15.775	2.622	6.02	0.000

Appendix 7. Fixed effects estimation with robust standard errors

FDI

Variable	FE-estimation, robust standard errors
InFDI	0.044 (0.197) ***
InPop	2.071 (0.232) ***
Industry	1.451 (1.146)
Inf	-0.025 (0.236)
Employfem	1.523 (0.620) **
Intrate	9.176 (0.392)
Tradeop	6.244 (14.11)
Exchange	0.001 (0.001)
FDI_L1	0.012 (0.013)
Constant	-23.897 (4.041) ***

FPI

Variable	FE-estimation, robust standard errors
lnFPI	-0.003 (0.149)
lnPop	2.138 (0.098) ***
Industry	0.125 (0.531)
lnf	0.359 (0.109) *
Employfem	2.046 (0.208) ***
Intrate	-0.628 (0.298) **
Tradeop	3.706 (6.62)
Exchange	-0.131 (0.463) *
FPI_L1	0.006 (0.021)
Constant	-23.321 (1.237) ***