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Bachelor Thesis [Economics and Business Economics]

The importance of foreign direct investment and absorptive capacity for economic growth in East Asia

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Abstract

This paper aims to shed light on the importance of Foreign Direct Investment and absorptive capacity on economic growth In East Asia. This will be done by examining both the individual effect of FDI on economic growth as well its dual effect when coupled with a country's level of human capital and development of financial markets. To provide an adequate analysis that answers the central question, a fixed effects regression was run, utilizing panel data across eight Asian countries between 1985 and 2010. Although my findings point to a significant positive impact of FDI on GDP per capita growth when controlling for several growth determinants, the presence of absorptive capacity seems to have non-significant and even adverse effects on the ability of FDI to raise economic growth.

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1. Introduction

Despite significant real-life evidence regarding the role of Foreign direct investment (FDI) in promoting economic growth, empirical evidence remains rather mixed. On the one hand, there are numerous studies pointing to the growth-enhancing effects of FDI i.e. (Li & Liu, 2005; Lensink & and Morrissey, 2006;**)**, however other findings are largely inconclusive i.e. (Alfaro et al., 2004; Lean, 2008; Herzer et al., 2006), and some studies actually find a negative relationship between FDI and economic growth i.e. (Griffin, 1978; Saqib et al., 2013). Such contradictory results could be the result of variance in the local conditions and capacities of countries being investigated, also known as their absorptive capacity. Differences in absorptive capacities across countries lead to differences in the way that they utilize and absorb the knowledge and technology spillovers associated with FDI. To gain further insight into the relationship between FDI, absorptive capacities, and economic growth, the following research question has been formulated: *What is the effect of FDI, as well as FDI's interaction with absorptive capacity, on economic growth in East Asia?*

To answer this question, this thesis aims to investigate the impact of FDI individually, as well as FDI's interaction with absorptive capacities, in driving economic growth. Two components of absorptive capacity that I will look into are the level of human capital within a country, as well as the development of its financial markets. The region of East Asia makes for an interesting case study given that there has been a tremendous surge in FDI inflows from developed countries into the area in recent decades, with Asian countries receiving billions of dollars worth of capital inflows. Countries in emerging and developing Asia were noted as the largest FDI recipients worldwide, making up roughly 40 percent of global inflows in 2018 (UNCTAD, 2020).

Foreign direct investment (FDI) refers to cross-border investments in which an investor resident in one economy establishes a long-term and significant degree of influence over an enterprise resident in another economy (Foreign direct investment (FDI), 2022). Throughout the 1990s, FDI dedicated to infrastructure and financing constituted one-third of private capital inflows to developing countries, and this has only been increasing as FDI has become a significant source of investment in Asia, South America, and Africa (Ramamurti & Doh, 2004). FDI is a catalyst for economic growth as a result of both direct capital accumulation and indirect technology and knowledge spillover effects which enhance the total factor productivity of a country and hence its growth. These positive spillover effects are the result of upstream multinational corporations (MNCs) transferring their technology and know-how to local suppliers in effort to improve their production quality and efficiency, along with the heightened

competition between MNCs and local firms, causing local firms to acquire technological and production- know-how (Mamingi & Martin, 2018). MNCs bringing FDI inflows into a host country tend to be larger than domestic ones, offer higher salaries, and are more capital intensive, which greatly contributes to the welfare of local firms and the economy as a whole (Haddad & Harrison, 1993, Aitken et al., 1997; Aitken & Harrison, 1999). Attracting FDI is a goal that policymakers greatly strive toward in developing countries to create more jobs, acquire advanced technology and upgrade the skills of their workforce, perceived as a crucial tool to promote economic development (UNCTAD, 2022).

The nature of the relationship between FDI and economic growth in a country has been largely attributed to its absorptive capacity, as it helps it reap the full benefits of FDI spillovers. The most common determinants of absorptive capacity in growth literature include human capital, development of financial markets, trade openness, quality of institutions, and economic and political stability (Baiashvili & Gattini, 2020). Mohamed & Isak (2017) and Zhang (2001) found that FDI contributed to economic growth in East Asia and Latin America, but that this effect depended on local factors like the level of education and trade openness of a country, which make up its absorptive capacity. The positive effects of FDI in East Asia could be attributed to the favorable macroeconomic conditions across the region, along with economic and political stability which has attracted foreign investors (Dinh, Vo, The Vo & Nguyen, 2019).

Figure 1: FDI inflows in East Asia

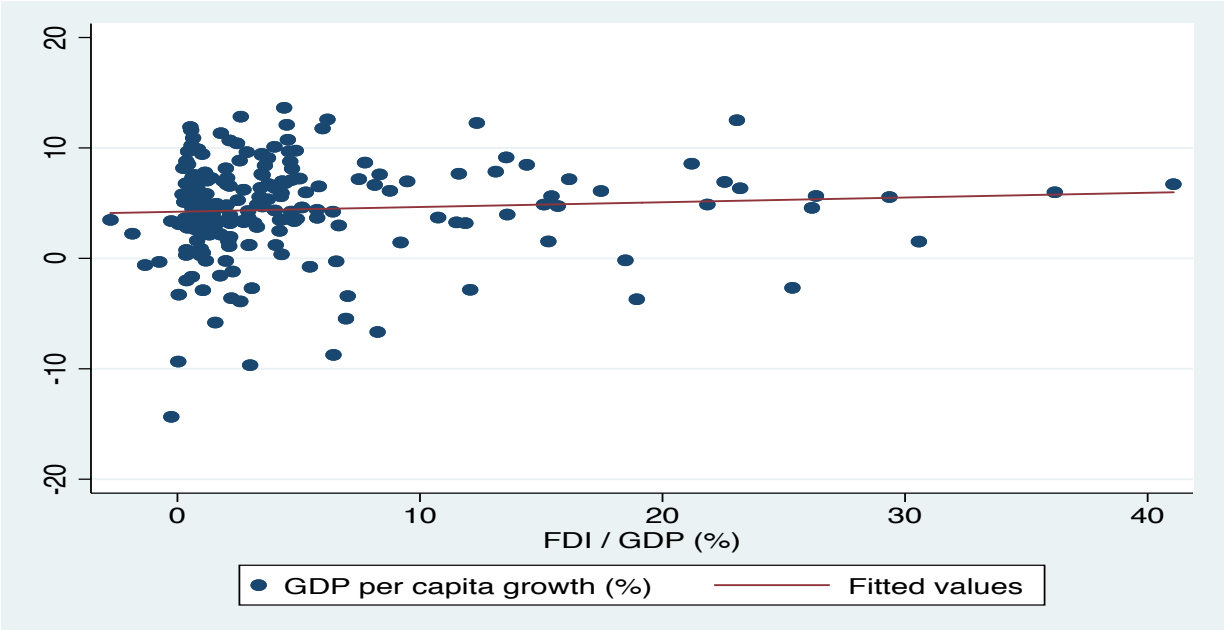

Figure 1 displays a scatter plot of Fitted values of GDP per capita growth to visually demonstrate the relationship between FDI and economic growth from 1985 to 2010 in the following countries: China, Singapore, Hong Kong, South Korea, Thailand, Philippines, Indonesia, Malaysia.

Plotting GDP growth per capita against FDI inflows across eight East Asian countries provides a clearer demonstration of the positive relationship between the two variables, as seen in Figure 1. Most of the points for GDP growth seem to aggregate at 0 to 10 percent values of FDI, as several countries in the dataset with the exclusion of Hong Kong and Singapore do not experience significantly high degrees of FDI inflows throughout the years. Upon further inspection of the dataset, it seems as though the trend line is partially driven upward due to the FDI inflows in Hong Kong and Singapore which far exceed other countries. This is expected as both countries were two of the four "Asian Tiger" economies who pursued FDI oriented industrial policies to promote economic growth between the 1960s and 1990s.

1.1 Hypotheses

To investigate the effect of FDI and its interdependence with absorptive capacity for promoting economic growth, and hence answer the central question, the following hypotheses have been derived.

Hypothesis I: FDI inflows will lead to economic growth in East Asian countries.

This hypothesis is derived from the works of De Gregorio (1992), De Mello (1997), Li Liu (2005), and Kohpaiboon (2003), who find that FDI has a positive causal effect on GDP. Hsiao & Hsiao (2006) and Baharumshah & Thanoon (2006) also find a significant positive effect of FDI on GDP across East Asian Countries. An increase in FDI inflows leads to greater economic growth owing to both an increase in capital inflows into the country which directly increases output, along with the effect of technology and knowledge spillovers which augment the GDP growth of East Asian countries. Given the evidence from numerous papers of a causal effect of FDI on economic growth in developing countries, I believe that an increase in FDI inflows into East Asian countries increases GDP growth.

Hypothesis II: The higher the level of human capital in East Asian countries, the greater the contribution of FDI to economic growth.

Although FDI impacts economic growth indirectly through technology and productivity spillovers, to absorb these spillovers and make use of their benefits most efficiently, a host country requires a certain level of human capital as it provides workers with the necessary skills and competence to utilize these new technologies. Cao and Jariyapan (2012) found that FDI enhances economic growth in China when coupled with a sufficient level of human capital. Given that human capital is a major component of a host country's absorptive capacity, it increases the intensity by which FDI contributes to economic growth (Borensztein et al. 1998). Li Liu (2005) and Xu (2000) also found a positive relationship between FDI and economic growth through the interaction of human capital and technology gaps. I believe therefore that the presence of human capital will, through its interaction with FDI, increase economic growth in East Asia.

Hypothesis III: The greater the development of financial markets in East Asia, the greater the contribution of FDI to economic growth

It is believed that the level of financial development in a country is a major component of its absorptive capacity given that well-developed financial markets make investments in backward and forward linkages easier between local firms and MNCs. It also helps to make use of the spillovers associated with inward FDI, by greatly lowering the risk of investing in new technology and lowering the upfront costs of new projects. As a result, the spillovers from FDI are transferred and absorbed by local firms more efficiently. In line with the findings of Abdul Bahri (2019), Adams (2009), and Alfaro et al. (2010), I believe that the interaction of well-developed financial markets with FDI will increase GDP growth in East Asian countries.

1.3 Contribution and motivation

The contribution of this thesis to literature comes from the fact that are few studies regarding the impact of FDI and absorptive capacities on economic growth in East Asian countries. There seems to be a lack of consensus regarding not only the impact of FDI on economic growth but

also the role played by human capital and the development of financial markets in promoting FDI -driven growth. Overall, this thesis aims to add to existing limited literature by highlighting the significance of absorptive capacity in enhancing the relationship between FDI and economic growth. Furthermore, its central motivation is to provide an explanation as to why FDI has benefited certain countries more than others in recent decades, which makes for insightful research.

2. Existing literature

The following section will provide further insight into the literature surrounding FDI, absorptive capacities, and economic growth. Firstly, I begin by presenting the significance of FDI in East Asia throughout recent decades. I then discuss the mechanisms by which FDI and absorptive capacities interact to drive economic growth. Finally, I discuss the specific roles of human capital and financial market development as absorptive capacities in promoting economic growth, with FDI.

2.1 Historical context

Large FDI inflows in East Asia began shortly after import substitution policies were adopted in the 1960s and 1970s to promote industrialization and economic growth in countries like South Korea, Taiwan, and Hong Kong (Goldar & Ishigami, 1999). Shortly after, this effect was magnified following the sharp appreciation of the Japanese yen in the 1980s, wherein Japan began to transfer much of its production to the Association of Southeast Asian nation countries (ASEAN), providing them with advanced technologies and managerial know-how (Thorbecke & Salike, 2011). Japanese FDI in Southeast Asia led to FDI a surge of capital inflows in which new technologies were introduced to the region, enabled by the presence of MNCs. Although Japanese firms initially in Asia began to shift labor-intensive activities to neighboring Asian countries with lower wages; other Asian countries did the same as China and Korea which shifted the production of their goods to countries with lowers manufacturing costs and wages across Asia. The adoption of technology led to a process of learning by doing for engineers and skilled workers which generated spillover effects across industries. Engineers and workers migrated among firms and sectors, bringing human capital and transferring it to the economy (Thorbecke & Salike, 2011).

Furthermore, after China joined the WTO in 2001, foreign investors gained confidence that it would maintain an FDI-friendly environment and thus transferred a lot of their production and manufacturing there. As a result, the nation received hundreds of billions of dollars worth of investment in the form of intermediate goods from the rest of East Asia and exported the final assembled goods across the world (Thorbecke & Salike, 2011). When the implementation of open-door policies began, China began to flourish and was in much competition with other nations to attract the largest amount of FDI, holding the world's fourth largest FDI stock since 2003 (Benoit Mercereau, 2005). From 1986 onward, FDI policies in Malaysia, Thailand, and Indonesia which were previously restricted to protect domestic economies became more open. In Thailand, FDI began to rise, supported by Japanese and Taiwanese investments in export-oriented electronic sectors. During the Asian economic crisis in 1997, inflows of FDI stagnated but began to increase again from 2003 onward. In Indonesia, the relaxed FDI policies drove up FDI inflows until a peak in the 1990s, and only after 2007 did FDI trends begin to rise again (Ishida M., 2012).

Today, numerous studies point to FDI inflows as one of the major determinants of economic growth in East Asian countries (Kang & Lee, 2022). Goh et al. (2020) found significant evidence of FDI inflows stimulating economic growth and reduction in FDI inflows being detrimental to economic growth in China, Singapore, South Korea, and Thailand. A study conducted by Richardson (1997) found that FDI was crucial in stimulating economic growth in South East Asian countries by raising total factor productivity from technological advancements along with higher exports and availability of skilled labor.

2.2 Endogenous growth model

The effect of FDI on economic growth in East Asian countries will be analyzed in an endogenous growth framework, which predicts that technological progress is the primary driver of long-run economic growth. Technological progress is endogenously determined by increases in the stock of knowledge and innovation in an economy. According to this model, technology spillovers associated with FDI can raise economic growth indefinitely by increasing returns to production in a host country. One important theory that has emerged as a result of the endogenous growth model is the modernization theory. This theory supports the fact that technological diffusion through FDI is crucial for growth in developing countries given that these countries tend to lack the necessary capacity in terms of human capital, trade openness,

and social and economic institutions that promote innovation and development (Calvo and Sanchez-Robles, 2002). This thesis takes the modernization viewpoint as it assumes that FDI is one of the main growth determinants in developing and formerly developing Asian economies, along with the fact FDI can contribute to economic growth through technology spillovers coupled with absorptive capacity.

2.3 Effect of FDI and absorptive capacities on economic growth

The universal impact of FDI on economic growth has been increasingly recognized over the years, with significant evidence of technology and knowledge spillovers accompanying FDI inflows into host countries (Blomstrom & Kokko, 1996). Generally, these positive spillovers are regarded as the most important long-term indirect effects of FDI on a country's output level as they expand its stock of knowledge and technological capabilities (Silajdzic & Mehic, 2013). FDI affects economic growth in a country directly and indirectly. It affects it directly by raising a country's capital stock which leads to greater household savings, raising the level of investment and productivity within an economy (Silajdzic & Mehic, 2013). It affects growth indirectly through the diffusion of technology and knowledge from developed to developing countries, also known as spillover effects. This is owing to the presence of MNCs who facilitate the transfer of technology and business know-how, raise productivity, and provide greater access to global markets in the host country. Both the direct and indirect effects of FDI will be investigated throughout the rest of this paper as I aim to look into both the individual effect of FDI on economic growth as well as its effect when coupled with absorptive capacity. The individual effect of FDI on economic growth, therefore, constitutes both the direct effect of capital accumulation and the indirect effects of FDI spillovers. The interaction effect on the other hand of FDI and absorptive capacity drives economic growth through the effect of positive FDI spillovers. These spillover effects can be decomposed into the four following components: The "imitation effect", "competition effect", "linkage effect" and "training effect" (Damijan et al., 2008), as summarized below:

Imitation effect: This effect refers to the imitation of advanced technologies of MNCs by domestic firms in the host country, arising from direct contact between the two. This takes place through direct contact with foreign firms, as well as through labour turnover from foreign to domestic firms. It is greatly beneficial for the host country as it greatly increases the productivity of domestic firms and develops the skills of the labour force. (Mohamed et al., 2021). The most important factor that determines the extent to which these spillovers

infiltrate the local economy is the difference in initial technology levels between MNCs and the host country (Kokko,1992)

Competition effect: This effect refers to heightened competition among domestic firms as a result of MNCs entering host countries. Domestic firms begin to modernize and improve their technology in effort to produce more efficiently and outcompete MNCs (Mohamed et., 2021). This is beneficial for the host country as the heightened competition can help domestic firms maintain their market shares while still improving their technology and operations. Nevertheless, this can also have adverse effects on the local economy as domestic firms may not be well-equipped to compete with MNCs, and thus are driven out of the market by them. (Kokko, 1992)

Training effect: The training effect refers to on-the-job training of local workers by both MNCs and domestic firms to become adapted to new technologies. This training is also carried out by domestic firms to provide their workers with the necessary skills to compete with MNCs. This channel in particular emphasizes the importance of human capital as an absorptive capacity when new advanced technology is brought to a host country as it helps workers adapt to and use this new technology through sufficient training (Mohamed et al., 2021).

Linkage effect: This effect takes place through forward and backward linkages that occur between MNCs and domestic suppliers and buyers. Forward linkages happen when domestic firms choose to purchase intermediate goods from foreign suppliers, who generally tend to have better quality products. Backward linkages take place when foreign firms choose to purchase intermediate goods from local suppliers, along with providing training and managerial know-how to these local suppliers to help them produce more efficiently and at a higher quality (Mohamed et al., 2021). Both linkage effects encourage local firms to innovate their production and efficiency, leading to greater output in the economy.

Evidently, the direct and indirect impact of FDI on economic growth can be seen through greater capital investments, along with the four components of its associated technology and knowledge spillovers. Literature on FDI places great emphasis on the local conditions and capacities within a host country required to reap such spillover associated with FDI, as the absorptive capacity of a country is a vital determinant for long-term growth in an economy when coupled with spillovers. Makki & Somwaru (2004) found that FDI was largely a driver of economic growth while controlling for macroeconomic and institutional factors. Li Liu

(2005) also found a positive correlation between FDI and economic growth through the interaction of human capital and technology gaps. Evidence was also found of a positive effect of FDI on economic growth in developing countries while controlling for macroeconomic factors such as domestic investment, inflation, and human capital (Nair-Reichert & Weinhold, 2001). Blomstrom et al. (1992) found that higher income developing countries may benefit more from FDI spillover due to being better equipped to make use of them, which is largely dependent on economic and institutional factors like a sufficient level of human capital, development of financial markets, openness to trade, and the quality of political institutions. This is because a sufficient level of human capital implies that the host country is well equipped to make use of new technologies, skills, and production methods brought about by foreign firms. Farkas (2012) found that the contribution of FDI towards economic growth is positive and significant depending on the level of human capital and the development of financial markets. Durham (2004) also finds that the effect of FDI on economic growth depends on the financial and institutional framework and generally the absorptive capacity of a country.

2.4 Human capital and FDI

Human capital is one of the two components of absorptive capacity that will be investigated in this thesis. It is frequently mentioned in literature as one of the most important determinants of economic growth as there is a strong complementary relationship between FDI and human capital in promoting economic growth in a host country, as it determines how quickly and to what extent technology spillovers are absorbed in local firms. In a study where Borenzstein et al. (1998) examined the impact of FDI on economic growth in developing countries utilizing a model where economic growth is determined by FDI, human capital, government expenditure, domestic investment, inflation, and institutional quality, they found a positive and significant impact of FDI on economic growth. Sanchez-Robles & Bengoa-Calvo (2002) found that the impact of FDI on economic growth is positive given that host countries had a sufficient level of human capital, economic stability, and trade openness. Bende-Nabende et al. (2001) found that FDI had a significant positive influence on economic growth primarily through human capital and learning by doing effects in ASEAN-5 economies. Liu & Liu (2005) found that FDI leads to economic growth indirectly through its interaction with other variables such as human capital, and the technology gap between a host country and an MNC. Wang & Gu (2006) also found that FDI boosts economic growth when they contain a minimum threshold level of human capital.

In many Asian countries, great emphasis is placed on creating and maintaining a highly educated and skilled workforce. Human capital promotes economic growth through creating increasing returns by developing knowledge and skills among the population (Lucas, 1990). Cohen & Levinthal (1989) find that host countries should have a minimum level of development to efficiently make use of the knowledge and advanced technology coming in with FDI inflows. Balasubramanyan et al. (1999) also find a positive interaction between human capital and FDI on growth. On the other hand, some empirical evidence regarding the relationship between the effects of FDI positive spillovers and economic growth is rather inconclusive, depending on the type of sample used and the way in which results are obtained. (Ilhan, 2007; E. Lipsey, 2002).

2.5 Development of financial markets and FDI

Alongside human capital, financial market development is also a major component of a country's absorptive capacity and will thus be investigated throughout the rest of this paper. It is said to enhance economic growth, especially when coupled with FDI, by working as a channel in which foreign capital can finance domestic investments efficiently, along with providing sufficient financing and credit for domestic firms to acquire new technology and know-how from FDI spillovers (Adams, 2009; Alfaro et al., 2010). Herman & Lensink (2003) find that host countries with well-developed financial markets benefit much more from FDI-related growth relative to other countries. This is because developed financial markets provide easy access to finances that support the backward and forward linkages in the economy between MNCs and domestic firms. This is reaffirmed by Alfaro et al (2004), Durham (2004), and (Olofsdotter, 1998) who also find that an increase in FDI inflows leads to a larger growth effect of FDI in countries with better developed financial markets. Abdul Bahri et al. (2018) also found statistically significant effects of interaction terms between well-developed financial markets and FDI, implying that the linear direct effect of FDI has strong indirect effects on growth through absorptive capacities. Generally, the presence of well-developed financial markets greatly reduces the risk and upfront costs of investing in new technology for domestic firms, increasing the returns on their investments (Hanafy & Marktanner, 2018).

3. Data

This section addresses the data and sources compiled for my investigation, along with several figures and tables to demonstrate the distribution of variables in my dataset and the movement of FDI inflows across eight East Asian countries.

3.1 Data selection

For the following analysis, yearly data from 1985 to 2010 regarding Economic growth rates, FDI, human capital, financial market development, and other growth determinants was compiled across the following countries: Thailand, China, Vietnam, Hong Kong, Singapore, Malaysia, Indonesia, and the Philippines. Eight countries within the same region were chosen, consisting of developing or formerly developing economies to keep local conditions as similar as possible. They were chosen on no particular basis but have each received considerable FDI inflows across the past few decades, especially Singapore, and Hong Kong. Both countries were among the four Asian tigers whose success was greatly attributed to policies than encouraged export-oriented growth and FDI. The timespan chosen was due to the availability of data in each country across that time period, and the year 1985 was chosen as the starting point for my data given that this is approximately when FDI took off on a large scale in the region, following the appreciation of the Japanese Yen.

Figure 2

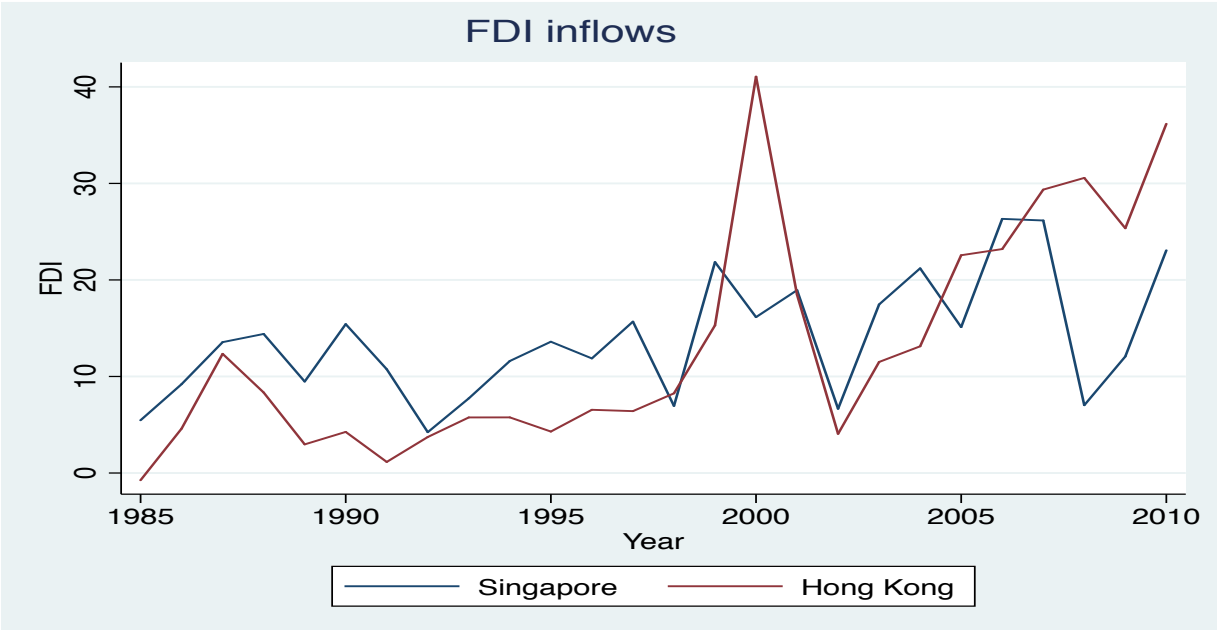

Figure 2 demonstrates the gradual progression of FDI inflows into two countries within the dataset from 1985 to 2010: Singapore and Hong Kong. FDI values are denoted as a percentage share of GDP.

Figure 3

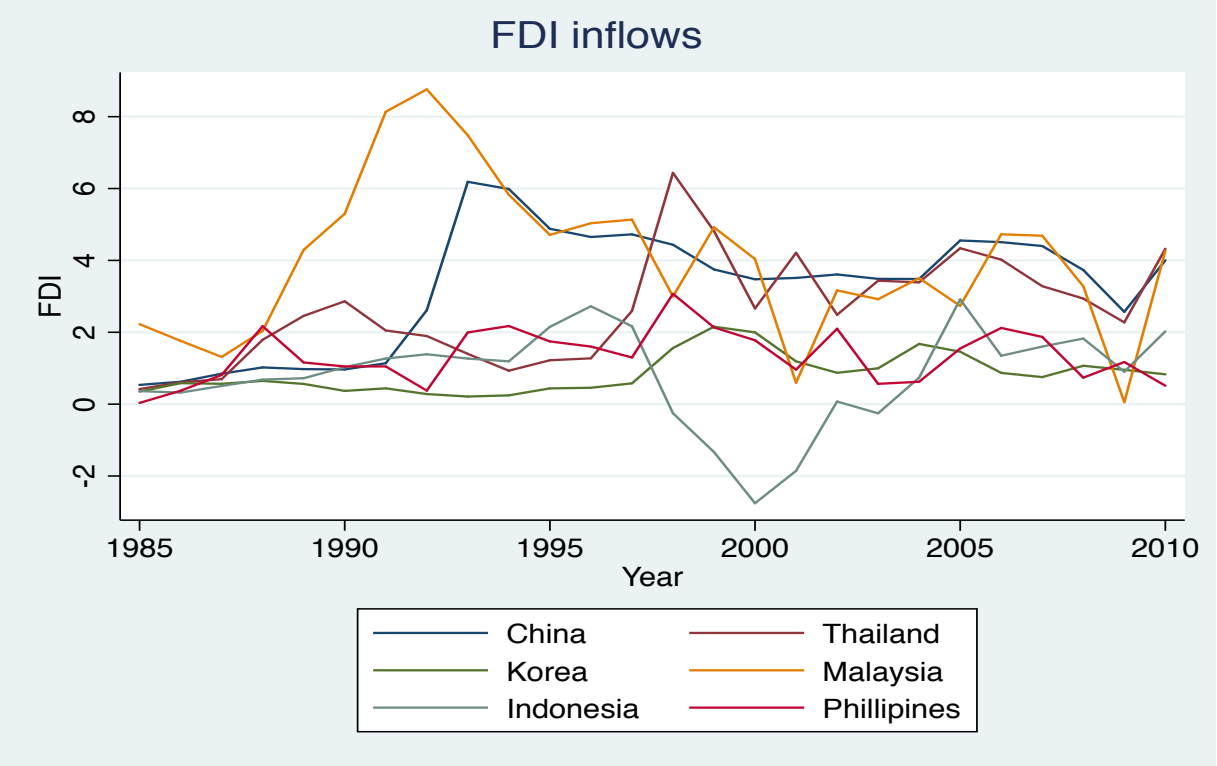

Figure 3 demonstrates the gradual progression of FDI inflows into the six remaining countries in the dataset from 1985 to 2010: China, Thailand, Korea, Malaysia, Indonesia, and the Philippines. FDI values are denoted as a percentage share of GDP.

Although the region as a whole attracted substantial amounts of FDI from the 1980s, Singapore and Hong Kong were recipients of the largest proportion of FDI inflows, as seen in Figure 2. Shortly after 1985, both countries experienced positive FDI inflows that hovered around 10 percent, with Hong Kong attaining the highest share of FDI inflows in the dataset, at 41 percent in 2000, and Singapore coming second with 26.33 percent in 2006. The impact of both the Asian Financial crisis in 1997 and the Global financial crisis in 2008 can be seen in both time periods in the graph and both countries briefly experience significant reductions in FDI inflows. In Figure 3, FDI inflows across the remaining six countries in the dataset can be seen, including China, Thailand, Korea, Malaysia, Indonesia, and the Philippines. Shortly after 1985, the countries began experiencing increasing FDI inflows, with Malaysia attaining the highest peak in the dataset at 7.175 percent in 1992. There seems to be significant variability within the countries, with Indonesia bearing the lowest value of inflows at -2.757 percent in 2000, implying that its outflows of FDI exceeded its inflows. Once again as seen in figure 1, The impact of the Asian financial crisis of 1997 and the Global financial crisis of 2008 can be seen as the majority of countries seem to experience downward trends in FDI inflows around these time periods. This can be explained by the fact that investment

opportunities in the region became far less attractive during times of Financial crises (Diaconu, 2014).

3.2 Data sources

One of the main variables of interest in this dataset used to represent economic growth is *Gross domestic product (GDP) per capita annual growth rate*. The use of per capita values was done to control for differences in population sizes across countries in my dataset. Another variable of interest is *FDI*, represented by annual FDI inflows as a percentage of GDP. The use of FDI inflows in the place of FDI stocks is more consistent with FDI-related theory as growth-enhancing spillover effects encompass FDI received in previous periods and not only recent FDI inflows (Hanafy & Marktanner, 2018). *Human capital* was proxied by the initial-year level of average years of male secondary schooling constructed by Barro and Lee, which is significantly correlated with growth (Barro & Lee, 1993). The *development of financial markets* was proxied by a financial development index which summarizes the development of financial markets in a country in terms of their depth, access, and efficiency (FDID, 2022). The following factors were included as control variables in the model, as they are frequently identified in growth literature as the main determinants of economic growth: *Initial GDP per capita*, which is a measure of GDP per capita measured in constant US dollars, this indicator is important as it controls for preexisting economic conditions across countries in the dataset (Baklouti and Boujelbene, 2016). *Government expenditure*, measured by the annual average share of government consumption as a percentage of real GDP, as there is a seemingly strong relationship between government expenditure and economic growth (Levine & Zervos, 1996). *Inflation*, used to represent macroeconomic stability and is controlled for as it tends to slow down economic growth by reducing the purchasing power of citizens and making domestic goods and services less competitive internationally (Baklouti & Boujelbene, 2016). The level of *trade openness* within a country, measured as a ratio of the imports and exports to GDP, as economic growth is expected to increase when a country exports goods in which they hold a comparative advantage (Grossman & Helpman, 1993). The level of *domestic investment* within a country, as that as it is one of the main components of GDP and is thus expected to have a positive impact on GDP growth. Figures for GDP growth per capita, FDI inflows, initial GDP per capita, inflation, trade openness, government expenditure, and domestic investment were all retrieved from the World Bank database of development indicators, and values for financial market development were taken from the International Monetary Fund database.

3.3 Descriptive statistics and correlation matrix

Table 1: Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min. Value	Max. Value
GDP per capita growth	208	4.437	4.341	-14.351	13.636
FDI	208	5.008	6.934	-2.757	41.065
Human capital	208	2.668	1.365	0.579	5.412
Initial GDP per capita	208	11134.970	12207.950	667.127	48668.580
Trade openness	208	138.707	112.758	19.135	437.327
Inflation	208	5.427	6.828	-8.717	75.27117
Financial market development	208	0.479	0.165	0.179	0.815
Government expenditure	208	10.966	2.478	5.694	16.939
Domestic investment	208	29.519	7.432	14.166	46.556

Table 1 displays descriptive statistics for the panel data of East Asian countries throughout the period 1985-2010. FDI, Domestic investment, government expenditure, and trade openness are denoted as a % of GDP, while GDP per capita growth is simply denoted as a %. Human capital represents a score ranging from 0 to 5 while Financial market development represents a score ranging from 0 to 1.

Before moving on to the methodology, descriptive statistics are presented in table 1 to gain more information on the distribution of each variable across countries in the dataset. The figures suggest that there is considerable variation across countries in FDI inflows ranging from a minimum of -2.757 percent in Indonesia to a maximum of 41.065 percent in Hong Kong, where the share of FDI as a percentage of GDP was highest in the dataset. GDP per capita growth rate ranged from 14.351 percent in Indonesia during the 1997 Asian financial crisis, to 13.636 percent in China in 2007.

Table 2: Correlation matrix

	GDP per capita growth	FDI	I.GDP per capita	Trade	Inflation	Dom. Inv.	Gov. exp.	Human cap.	Finan.
GDP per capita growth	1.000								
FDI	0.069	1.000							
I. GDP per capita	-0.052	0.733	1.000						
Trade	-0.123	0.773	0.854	1.000					
Inflation	-0.159	-0.305	-0.339	-0.321	1.000				
Dom. Inv.	0.505	-0.093	-0.050	-0.148	0.001	1.000			
Gov. exp.	0.198	-0.155	-0.273	-0.271	-0.329	0.310	1.000		
Human cap.	0.104	0.388	0.589	0.339	-0.294	0.053	0.115	1.000	
Finan.	-0.003	0.529	0.804	0.616	-0.392	0.019	0.023	0.7378	1.000

Table 2 displays a correlation matrix between the different variables in the dataset. Domestic investment, government expenditure, and trade openness are denoted as a percentage of GDP, while GDP per capita growth is simply denoted as a percentage. Human capital represents a score ranging from 0 to 5 while Financial market development represents a score ranging from 0 to 1.

As shown in Table 2, correlation values range from -0.392 to 0.854. FDI, domestic investment, government expenditure, and human capital have a positive relationship with per capita GDP growth which already hints at a potential positive relationship between the variables. The dependent variable of interest, GDP per capita growth, has the highest positive correlation with domestic investment (0.505), a positive yet small correlation with FDI inflows (0.0686), and a negative one (-0.003) with financial development, which contradicts growth theory that development is positively correlated with economic growth. Nonetheless, the value is small in magnitude and we cannot infer anything about the significance of the relationships or causal pathways from independent variables to economic growth.

4. Methodology

To analyze the effects of FDI and its interaction with absorptive capacities on economic growth utilizing panel data, an OLS regression with country and time fixed effects will be applied, utilizing yearly panel data from all countries in the dataset, with a total of 208 observations. Country fixed effects aim to control for variables that differ across countries in the sample but not across time periods, and time fixed effects aim to control for variables that are constant across countries but do not change over time. For this study, the use of fixed effects is important to control for time-specific effects such as the 1997 Asian financial crisis

and country-specific effects of certain countries such as Hong Kong and Singapore whose characteristics deviate significantly from other countries in the dataset, as these factors may bias the outcome of the regression. The use of fixed effects is also convenient to reduce collinearity amongst variables, given that some pairs of variables in the dataset tend to have high correlation values, as well as to ensure higher degrees of freedom which will lead to more reliable econometric analysis (Torres-Reyna, 2007). To find the complementary effects of FDI, human capital, and financial market development on economic growth, GDP growth will not only be regressed on FDI as a main explanatory variable but also on FDI's interaction with human capital and financial market development. An alternative to the fixed effects model could be the random effects model which assumes that the country-specific effects (α) are uncorrelated with the independent variables. To decide between both, a Hausman test can be carried out to test for random fixed effects to ensure which mode is more suitable. (Torres-Reyna, 2007). If there is no correlation between α and the error term, then the null hypothesis cannot be rejected, and the random effects model should be used. If there is enough evidence to reject the null hypothesis, then the fixed effects model should be used. The following hypothesis was tested:

H_0: $\alpha = 0$ and H_a $\alpha \neq 0$

The P-value of the Chi squared distribution derived from the Hausman test is 0.009, therefore there is enough evidence to reject the null hypothesis at a 5 percent level, and the fixed effects model should be applied.

The first step in this analysis will be to directly measure the effect of FDI on economic growth while controlling for the standard growth determinants. The fixed effects regression model for the panel data across the 8 countries can be represented by the following:

$$Y_{it} = \beta_0 + \beta * X_{it} + \beta * C_{it} + \alpha_i + \gamma_t + \varepsilon_{it}$$

Where Y = GDP per capita growth α = Country fixed effects

X = Set of explanatory variables γ_t = Year fixed effects

C = Set of control variables

The subscript i denotes country and t denotes the year, each β coefficient denotes how a one-unit change in the explanatory variable influences a change in economic growth. The model is derived from the works of Borensztein et al. (1998) and Alfaro et al. (2004) in which

the productivity of a country is dependent on FDI, trade openness, domestic investment, human capital, initial GDP, government expenditure, and development of financial markets.

5. Robustness

Before moving on to the results section, sources of endogeneity, heteroskedasticity, and autocorrelation must be taken into account to ensure the robustness of the panel model.

5.1 Heteroskedasticity and autocorrelation

Heteroskedasticity happens when the error term is serially correlated due to the correlation between factors that affect the dependent variable (GDP growth per capita) which are not included in the regression. When these factors aren't correlated with the regressors in the model, autocorrelated errors do not violate the assumption of exogeneity such that the OLS estimator remains unbiased and consistent (Stock and Watson, 2015). However, when omitted variables are correlated with the independent variables, autocorrelated standard errors imply that conventional OLS standard errors are biased and can thus lead to incorrect statistical inference (Stock and Watson, 2015). Furthermore, given that I will be running a regression with time series data, autocorrelation is expected as error terms are correlated over time for several reasons including economic shocks, events, seasonality, and similarities between variables. Testing for heteroskedasticity in a panel dataset can be done by the modified Wald test which tests the null hypothesis that the variance of the error term is equal across all cross-sectional observations. One method to detect autocorrelation is to make use of the Woolridge test for autocorrelation on panel data This test regresses the residual errors from the regression with first differences variables on their lags and tests that the coefficient of the lagged residuals is equal to 0.5 (Drukker, 2003).

Upon running both the modified Wald test and the Wooldridge test, the probability values of both tests come out at 0.0000 and 0.0003, respectively. Both values are smaller than 0.05 which implies that there is enough evidence to reject both null hypotheses and that it is plausible to assume heteroskedasticity and autocorrelation within the panel model. To control for this, White's heteroskedasticity - consistent standard errors will be used when estimating the regression models. Finally, to further control for heteroskedasticity, a logarithmic transformation will be applied to independent variables that are highly skewed and contain outliers, to ensure that residuals are as normally distributed as possible.

5.2 Reverse causality and omitted variable bias

One recurring problem within existing growth literature on the FDI and economic growth relationship is the endogeneity effect. Endogeneity when analyzing the relationship between FDI inflows and GDP growth can occur when there is an omitted variable correlated with one of the explanatory variables, that also affects the dependent variable. This implies that the error term is correlated with the dependent variable. An example of this is how for instance, FDI inflows may be influenced by growth determinants not included in the regression which also impact the dependent variable. For instance, any omitted factors that could raise domestic investment would also raise the rate of economic growth. It can also occur as a result of reverse causality between FDI and economic growth as higher economic growth in a country can make investment opportunities more attractive for foreign companies and hence lead to higher FDI inflows. The presence of both omitted variables and reverse causality in our estimated model implies there is a correlation between FDI and the error term in the regression model, which would bias the estimated coefficients. By employing Durbin-Wu-Hausman and Granger causality tests with data from developing countries, Li and Liu (2005), De Gregorio (1992), and de Mello (1997) find there exists a strong unidirectional causality from FDI to GDP. Nonetheless, Li and Liu (2005) and Choe (2003) still find evidence that in particular cases causation can also run from GDP growth to FDI. Although it is not possible to completely eliminate the possibility of endogeneity, the use of time and country fixed effects eliminates bias from unobserved factors that vary across the years but are constant across countries, as well as factors that differ across countries but stay the same across years. Furthermore, I control for a range of country characteristics by including eight determinants of economic growth, and a dummy variable to represent the Asian financial crisis.

6. Results

The following section illustrates the results of the fixed effects regression, with GDP per capita growth as a dependent variable, FDI, and the interaction of FDI with human capital and financial market development as explanatory variables, along with several control variables.

6.1

Table 3

Effect of FDI on economic growth

Determinants of GDP per capita growth	1.1	1.2	1.3	1.4
FDI	0.119*** (0.067)	0.119*** (0.067)	0.110*** (0.066)	0.110 (0.067)
Log. Initial GDP	- 0.262 (0.349)	- 0.262 (0.349)	- 0.846** (0.379)	- 0.965** (1.416)
Log. Trade openness	-1.209*** (0.699)	-1.209*** (0.699)	- 0.725 (0.665)	- 0.682 (0.601)
Inflation	- 0.094** (0.046)	- 0.094** (0.046)	- 0.100** (0.044)	-0.101** (0.044)
Domestic investment	0.300* (0.058)	0.300* (0.058)	0.316* (0.053)	0.317* (0.051)
Government expenditure	- 0.108 (0.112)	- 0.108 (0.112)	- 0.150 (0.105)	- 0.161 (0.109)
Asian financial crisis		-5.314** (2.167)	-5.559* (2.144)	-5.63** (2.315)
Human capital			0.468** (0.206)	0.468** (0.208)
Financial market development				0.775 (3.238)
Intercept	1.241	3.152	3.763	3.763
Observations	208	208	208	208
R-squared	0.582	0.582	0.585	0.585

*Table 3 illustrates the results of the regression using time and country fixed effects measuring the direct impact of FDI on economic growth in East Asia. It includes a dummy variable representing the Asian financial crisis, as well as coefficients of the independent variables with their standard errors in brackets, and R-squared values. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.*

Model 1.1 tests the effect of FDI on economic growth controlling for only initial GDP, trade openness, Domestic investment, and Government expenditure. This model excludes the dummy variable for the Asian financial crisis, along with two variables representing a country's absorptive capacity: human capital and financial market development. We can see that FDI has a positive and significant effect on economic growth at a 10 percent level, although its effect FDI may be overstated due to the exclusion of human capital and Financial market development as determinants of economic growth. The coefficient of domestic investment is significant at a 1 percent level, demonstrating that higher capital accumulation in a country promotes economic growth as a result of greater factor productivity. The effect of trade openness, inflation, and domestic investment are also significant at a 10, 5 and 1 percent level respectively, although the coefficients of trade openness and inflation are in greater magnitude than FDI, as they may have greater explanatory power than FDI with regards to the effect on economic growth. Although the negative coefficient of inflation is in line with the general theory that a higher level of macroeconomic instability generally lowers economic growth, the negative coefficient of trade openness implies certain countries in the dataset may experience more trade diversion than trade creation. This lowers the overall welfare of the country. Coefficients of initial GDP and government expenditure go against findings of growth literature that both variables lead to greater economic growth, however, it may be that a higher level of government spending drains out labour and capital that could have been used for private sector purposes, along with raising of taxes and debt. Overall, although not strongly significant, the positive coefficient of FDI is in line with the aforementioned findings of De Gregorio (1992), Blomstrom et al. (1994), Li Liu (2005), and others who find that FDI has a positive causal effect on GDP.

In model 1.2, The dummy representing Asian financial crisis is included in the regression as another determinant of economic growth. Evidently, all other coefficient values remain the same as in the previous model, however, the strongly adverse effect of the financial crisis that took place in 1997 is evident by the significant and negative coefficient of the dummy variable (-5.314). This can be attributed to rapid financial capital outflows that took place at the time, causing East Asian currencies to deteriorate which negatively affected economic growth (Corsetti et al., 1999).

In model 1.3, the coefficient of human capital is incorporated, and the coefficient of FDI remains positive and significant at a 10 percent level (0.110) but slightly smaller than in model 1.1, indicating that human capital may have taken away some of its explanatory power.

The coefficient of initial GDP becomes significant and negative at a 5 percent level, which is in line with previous expectations as countries with a lower level of income and hence development is more likely to experience faster growth, to eventually catch up with more developed countries. The coefficients of inflation, domestic investment and the financial crisis remain significant. The effect of human capital is also positive and significant, indicating that human capital does have a direct positive effect on economic growth. Human capital is a fundamental component of a country's economic development as it increases productivity and hence earnings for the economy. It also constitutes a country's absorptive capacity which enhances economic growth through the positive spillovers that it generates into an economy, especially spillovers that come from foreign investment.

In model 1.4, financial market development is incorporated as a variable into the regression model, however, its coefficient, along with that of FDI, becomes insignificant. This contradicts previous expectations and findings that highlight the joint role of both variables given that financial markets provide more credit flow which encourages capital accumulation, promoting economic growth. Nevertheless, the impact of both absorptive capacities may differ once they interact with FDI, seen as both FDI and absorptive capacities work hand in hand to promote economic growth. Overall, the results of models 1.1, 1.2 and 1.3 are consistent with theory and the hypothesis I that FDI has had a significant positive impact on economic growth, in line with the findings of Li Liu (2005), Borensztein et al. (2013), Blomstrom et al. (1992), De Gregorio (1992) and Silajdzic & Mehic (2013). FDI promotes growth in East Asian countries due to increased capital inflows which raise the stock of capital, technology, and knowledge, expanding the production function of their economies and leading to higher growth.

6.2

Table 4

Effect of interaction between FDI and absorptive capacity on economic growth

Determinants of GDP per capita growth	*2.1*	*2.2*	*2.3*
FDI	0.381** (0.167)	0.813** (0.348)	0.819** (0.361)
Log. Initial GDP	-1.616** (0.651)	-1.435** (0.581)	-1.418** (0.618)
Log. Trade openness	0.666 (0.647)	0.991 (0.704)	-1.000 (0.707)
Domestic investment	0.313* (0.056)	0.296* (0.059)	0.296* (0.057)
Inflation	-0.107* (0.038)	-0.104* (0.039)	-0.104* (0.038)
Government expenditure	-0.273** (0.135)	-0.315* (0.119)	-0.314** (0.127)
Asian financial crisis	-6.194** (2.589)	-0.429 (2.606)	-6.535** (2.608)
Human capital	0.826** (0.377)	0.520** (0.241)	0.505 (0.389)
Financial market development	2.970 (3.842)	5.846 (4.771)	5.878 (4.797)
*FDI * Human capital*	-0.062*** (0.036)		0.003 (0.034)
*FDI*Financial market development*		-0.985** (0.475)	-1.010*** (0.579)
Intercept	8.848	9.110	9.019
Observations	208	208	208
R-squared	0.598	0.603	0.603

*Table 4 illustrates the results of the regression using time and country fixed effects including the interaction of FDI with both measures of absorptive capacity: human capital and financial market development. It includes a dummy variable representing the Asian financial crisis, as well as the coefficients of the independent variables with their standard error in brackets, and R-squared values. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.*

Across models 2.1, 2.2, and 2.3, the coefficients of FDI and both absorptive capacities were included individually in order to not overstate the effect of the two interaction terms. In model 2.1 after including the coefficient of the interaction term between FDI and human capital, the coefficient of FDI is positive and significant at a 5 percent level (0.381). The coefficient of the interaction term however is negative (-0.101) and significant at a 10 percent level. This goes against theory and hypothesis II that the interaction of human capital and FDI should have a positive and significant impact on economic growth. It also goes against the findings of Li Liu (2005), Wang & Gu (2010), Borensztein et al. (1998), and Balasubramanyam et al. (1996) that FDI enhances economic growth when coupled with a sufficient level of human capital in a country. These contrasting results could be explained by the fact that technology is already developed when human capital is higher in a country, leaving little room for additional technological diffusion by foreign investors, and hence the effect of FDI on growth is mitigated. This adverse effect of FDI's interaction with human capital on economic growth is also found by Carkovic and Levine (2002).

Model 2.2 introduces the interaction term of FDI with financial market development. The coefficient of FDI remains positive and significant and almost three times as large as in model 2.1. All of the determinants of economic growth are significant at either a 1 or 5 percent level with the exception of human capital and financial market development. The interaction of FDI with financial market development is negative (-1.132) and significant suggesting that the lower the level of financial development in East- Asian countries, the higher the contribution of FDI to economic growth. These results are contradictory to hypothesis III, theory, and findings which emphasize that the level of a country's financial development is crucial for it to absorb positive FDI spillovers and thus raise its economic growth (Durham 2004, Adams 2009, Alfaro et al.,2010). The negative sign of the interaction term may be explained by the fact that countries with well-developed financial markets do not benefit from positive technology and knowledge of FDI spillovers. This could be because the financial development of a country indicates its overall development and hence there is less of a technology gap between the local and foreign technology brought by MNCs. As a result, there is less capacity for the country to benefit from technological advancements introduced.

To test the robustness of the measures of absorptive capacity relative to each other, the two pairs of interaction terms are regressed simultaneously with FDI, as seen in model 2.3. The interaction term of human capital becomes positive but insignificant and that of financial market development remains negative and significant. FDI remains significant but at a 5

percent level, with a larger coefficient (0.847) than in model 2.1. This could imply that positive FDI spillovers can also coexist with a low level of human capital and development of financial markets within a host country, as there may be other factors that drive its absorptive capacity such as the concentration of Research and development activities or level of trade openness.

7. Conclusion

Overall, the findings of this thesis reveal that although FDI can directly enhance economic growth in East Asian countries, its effects are mitigated in presence of human capital and financial market development. My results also suggest a positive effect of domestic investment on economic growth, while trade openness, initial GDP per capita, inflation, and the Asian financial crisis seem to harm long-term economic growth in East Asia. According to the results, a one percent increase in FDI inflows into East Asian countries can stimulate GDP per capita growth ranging from 0.119 to 0.819 percentage points. The positive relationship between FDI and GDP growth confirms several findings, including those of De Gregorio (1992), De Mello (1997), Li Liu (2005) and Kohpaiboon (2003). On the basis of the results, both absorptive capacities seem to have either adverse or insignificant impacts on the growth-enhancing effect of FDI. Both variables do not appear to be an effective channel to translate positive FDI spillovers into economic growth, which is consistent with what Alfaro (2003), Saqib et al. (2013), Lean (2008), and Herzer et al. (2006) find but contradictory to vast literature within this field. Nonetheless, the results obtained should be interpreted with caution as they are not entirely conclusive of the relationship between FDI and economic growth. This is because there are large variations between countries in the dataset in terms of FDI inflows and economic growth rate which bias the results. Other factors such as the technology gap between foreign investors and a host country should also be taken into account, as they also determine the extent to which technology spillovers can diffuse and benefit an economy. Also, there are potential sources of endogeneity within the model which would imply that economic growth may be explained by omitted factors influencing both FDI and economic growth, including the potential for a reverse causality from GDP growth per capita to FDI inflows.

8. Limitations

There are some potential points of improvement for this investigation, especially given that some of my findings go against theory and other empirical research. Firstly, this study could benefit from a dataset that constitutes two separate samples of countries divided into high- and low-income levels given that the effect of FDI is dependent on the level of development of a country. In addition, seen as the effect of FDI is not immediate and FDI inflows, as well as technology and knowledge spillovers, take time to translate into economic growth, the model could also benefit from the inclusion of lagged explanatory variables to capture this effect. To capture the pure growth effect of FDI spillovers on productivity as opposed to its total effect of both spillovers and higher capital stock, it might be interesting to test for the effect of FDI on the total factor productivity growth in host countries (Borenzstein et al.,1993). Further research could also include looking into the effect of FDI on human capital or financial development to pin down the nature of the relationship between all three variables, as opposed to a single causal pathway.

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10. Appendix

Figure 1

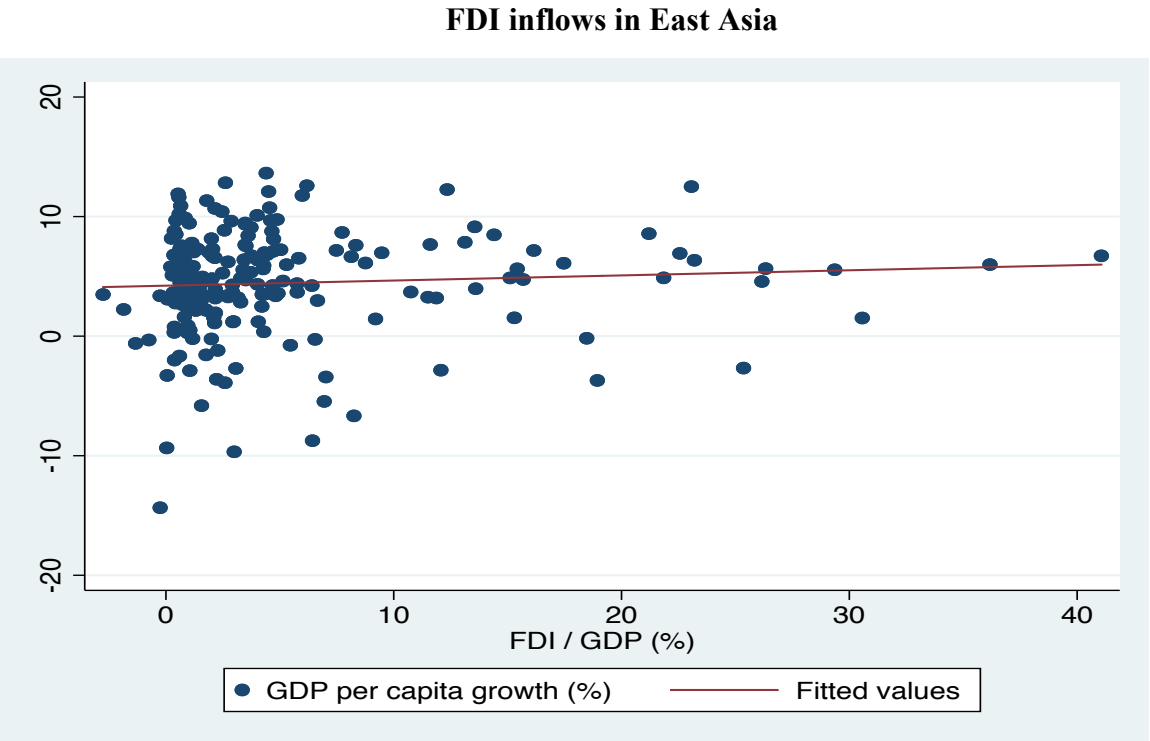

Figure 1 displays a scatter plot of Fitted values of GDP per capita growth to visually demonstrate the relationship between FDI and economic growth from 1985 to 2010 in the following countries: China, Singapore, Hong Kong, South Korea, Thailand, Philippines, Indonesia, Malaysia.

Figure 2

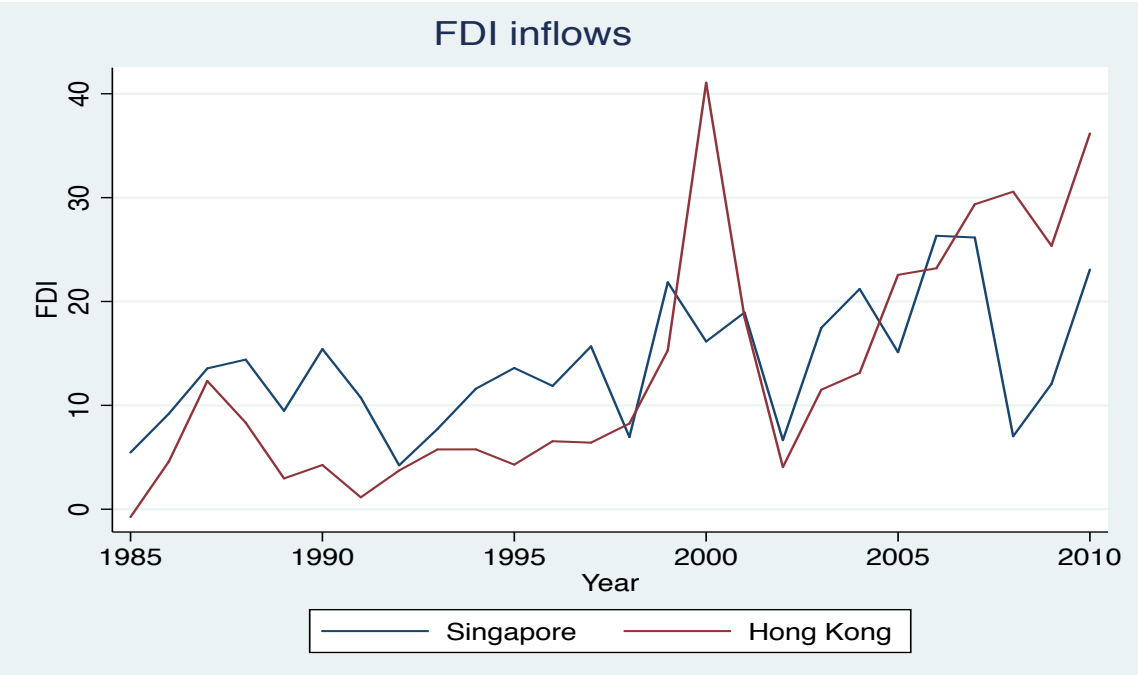

Figure 2 demonstrates the gradual progression of FDI inflows into two countries within the dataset from 1985 to 2010: Singapore and Hong Kong. FDI values are denoted as a percentage share of GDP.

Figure 3

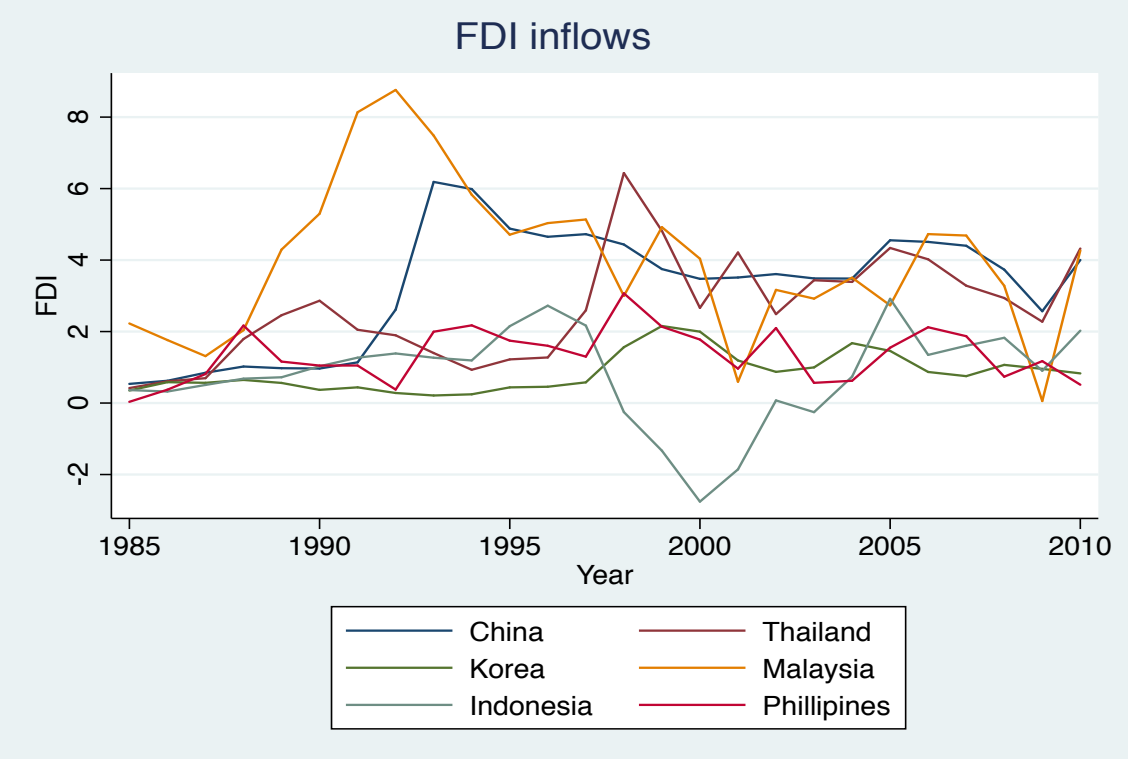

Figure 3 demonstrates the gradual progression of FDI inflows into the six remaining countries in the dataset from 1985 to 2010: China, Thailand, Korea, Malaysia, Indonesia, and the Philippines. FDI values are denoted as a percentage share of GDP.

Table 1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min. Value	Max. Value
GDP per capita growth	208	4.437	4.341	-14.351	13.636
FDI	208	5.008	6.934	-2.757	41.065
Human capital	208	2.668	1.365	0.579	5.412
Initial GDP per capita	208	11134.970	12207.950	667.127	48668.580
Trade openness	208	138.707	112.758	19.135	437.327
Inflation	208	5.427	6.828	-8.717	75.27117
Financial market development	208	0.479	0.165	0.179	0.815
Government expenditure	208	10.966	2.478	5.694	16.939
Domestic investment	208	29.519	7.432	14.166	46.556

Table 1 displays descriptive statistics for the panel data of East Asian countries throughout the period 1985-2010. FDI, Domestic investment, government expenditure, and trade openness are denoted as a % of GDP, while GDP per capita growth is simply denoted as a %. Human capital represents a score ranging from 0 to 5 while Financial market development represents a score ranging from 0 to 1.

Table 2: Correlation matrix

	GDP per capita growth	FDI	I.GDP per capita	Trade	Inflation	Dom. Inv.	Gov. exp.	Human cap.	Finan.
GDP per capita growth	1.000								
FDI	0.069	1.000							
I. GDP per capita	-0.052	0.733	1.000						
Trade	-0.123	0.773	0.854	1.000					
Inflation	-0.159	-0.305	-0.339	-0.321	1.000				
Dom. Inv.	0.505	-0.093	-0.050	-0.148	0.001	1.000			
Gov. exp.	0.198	-0.155	-0.273	-0.271	-0.329	0.310	1.000		
Human cap.	0.104	0.388	0.589	0.339	-0.294	0.053	0.115	1.000	
Finan.	-0.003	0.529	0.804	0.616	-0.392	0.019	0.023	0.7378	1.000

Table 2 displays a correlation matrix between the different variables in the dataset. Domestic investment, government expenditure, and trade openness are denoted as a percentage of GDP, while GDP per capita growth is simply denoted as a percentage. Human capital represents a score ranging from 0 to 5 while Financial market development represents a score ranging from 0 to 1.

Table 3

Effect of FDI on economic growth

Determinants of GDP per capita growth	1.1	1.2	1.3	1.4
FDI	0.119*** (0.067)	0.119*** (0.067)	0.110*** (0.066)	0.110 (0.067)
Log. Initial GDP	- 0.262 (0.349)	- 0.262 (0.349)	- 0.846** (0.379)	- 0.965** (1.416)
Log. Trade openness	-1.209*** (0.699)	-1.209*** (0.699)	- 0.725 (0.665)	- 0.682 (0.601)
Inflation	- 0.094** (0.046)	- 0.094** (0.046)	- 0.100** (0.044)	-0.101** (0.044)
Domestic investment	0.300* (0.058)	0.300* (0.058)	0.316* (0.053)	0.317* (0.051)
Government expenditure	- 0.108 (0.112)	- 0.108 (0.112)	- 0.150 (0.105)	- 0.161 (0.109)
Asian financial crisis		-5.314** (2.167)	-5.559* (2.144)	-5.63** (2.315)
Human capital			0.468** (0.206)	0.468** (0.208)
Financial market development				0.775 (3.238)
Intercept	1.241	3.152	3.763	3.763
Observations	208	208	208	208
R-squared	0.582	0.582	0.585	0.585

*Table 3 illustrates the results of the regression using time and country fixed effects, measuring the direct impact of FDI on economic growth in East Asia. It includes a dummy variable representing the Asian financial crisis, as well as coefficients of the independent variables with their standard error in brackets, and R-squared values. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.*

Table 4

Effect of interaction between FDI and absorptive capacity on economic growth

Determinants of GDP per capita growth	*2.1*	*2.2*	*2.3*
FDI	0.381** (0.167)	0.813** (0.348)	0.819** (0.361)
Log. Initial GDP	-1.616** (0.651)	-1.435** (0.581)	-1.418** (0.618)
Log. Trade openness	0.666 (0.647)	0.991 (0.704)	-1.000 (0.707)
Domestic investment	0.313* (0.056)	0.296* (0.059)	0.296* (0.057)
Inflation	-0.107* (0.038)	-0.104* (0.039)	-0.104* (0.038)
Government expenditure	-0.273** (0.135)	-0.315* (0.119)	-0.314** (0.127)
Asian financial crisis	-6.194** (2.589)	-0.429 (2.606)	-6.535** (2.608)
Human capital	0.826** (0.377)	0.520** (0.241)	0.505 (0.389)
Financial market development	2.970 (3.842)	5.846 (4.771)	5.878 (4.797)
*FDI * Human capital*	-0.062*** (0.036)		0.003 (0.034)
*FDI*Financial market development*		-0.985** (0.475)	-1.010*** (0.579)
Intercept	8.848	9.110	9.019
Observations	208	208	208
R-squared	0.598	0.603	0.603

*Table 4 illustrates the results of the regression using time and country fixed effects measuring the effect of the interaction of FDI with both measures of absorptive capacity: human capital and financial market development. It includes a dummy variable representing the Asian financial crisis, as well as the coefficients of the independent variables with their standard error in brackets, and R-squared values. ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.*