

The Impacts and Determinants of Inward Foreign Direct Investment on Economic Growth in Thailand

Sutana Boonlua¹ Bifeng Ren² Nasi Chuwiruch³

¹Maharakham Business School, Maharakham University, Thailand
corresponding author
sutana.t@acc.msu.ac.th

¹ Guangzhou Panyu Polytechnic College, China
78932592@qq.com

¹ Maharakham Business School, Maharakham University, Thailand
nasi.c@acc.msu.ac.th

DOI: 10.47750/pnr.2022.13.501.190

Abstract

Thailand has been productive in attracting FDI flows since the beginning of economic development in 1986. It is to continue to increase inward FDI, thus the objective of this research is to investigate the inward FDI on economic growth in Thailand. The main question is what determinants attract, promote, and sustain the inward FDI in Thailand. In addition, this research also adapts the concept of the eclectic paradigm to establish the research framework. The 22 independent variables which are grouped into 4 factors such as human capital, economic, infrastructure, and policy and related factors. The correlation result shows the positive relative strength and direction of a linear relationship among independent variables at the 1% level of significance. A total data collection between 1981 and 2021 were collected various sources such as worldbank, board of investment of Thailand, stock exchange of Thailand, bank of Thailand, International Monetary Fund, UNCTAD, and office of national economic and social development board.

The results show 11 variables are positive and significant, but 2 variables are negative and significant. This showed that the economic growth in Thailand is significant affected by human capital, economic, infrastructure, and policy related factors.

Introduction

Foreign Direct Investment (FDI)'s meaning has changed many times. The Organisation for Economic Co-Operation and Development (OECD, 1999) defined FDI as a purpose of acquiring long-term advantages in one economy other than investment (OECD, 1996). Later, OECD (2009) added meaning of FDI as a group of investment which made by one economy or direct investment with objectives to build up a long-term interest in permanent organisation. That means investors in an economy prefer to look for something other than only a direct investment. The purpose of the investment is a long-term relationship with a local organisation in another economy to assure a significant power degree by investors from other economies over local investors or organisations. Additionally, Kumari (2014) stated that FDI implies as an investment in other countries where investors keep power control over the government investment policy and production levels in another country. This can explain as the meaning in production based as of inward FDI and outward FDI and foreign portfolio based. This depends on the objectives to invest from home countries to host countries (Pazienza, 2014).

FDI can be determined in term of both a flow in quantity of production and stock to supports and subsidies across the borders (Pazienza, 2014). For supports and subsidies, the flows of FDI contain of the net shares and credits to parent organisation, including the belongings under the parent organisations such as incomes from reinvestment and total net loan amount within organisation (either short-term or long-term) offered by the parent organisation. Besides, FDI stocks are the number of portfolios and reserves to attribute the parent organisation, with the net responsibility of the association or subsidiary from the parent organisation (UNCTAD, 2018). However, this is excluded the amount of the parent organisation, less liabilities to the third parties. FDI is supporting the organisations in managing production international scales and scopes. FDI provides raw material labour, energy, technology, expertise, etc.

The determinants of FDI have been investigated generally. Also, the relationship about FDI and economic growth has been investigated worldwide, for example, researches from Kinuthia and Murshed (2015), Labes, 2015, Omri and Kahouli (2014), Srinivasan, Kalaivani, and Ibrahim (2010), etc. However, there is not many researches has been investigated about two-way connection between inward FDI and economic growth. Even Omri and Kahouli (2014) found a two-way connection between inward FDI and outward FDI with economic growth. There are very few researchers have been researched about the long-term relationship (Andraz & Rodrigues, 2010). The investigation of FDI determinants researcher found that, besides economic growth, there are many other factors considered as important forces boosting or delaying the FDI flow (Srinivasan et al., 2010). Although trade openness, network development, stable exchange rate, technological changes, market size and internal saving accounts have played positive and important factors in the FDI flow (Kinuthia & Murshed, 2015; Castiglione et al., 2012). Kumari (2014) suggested that the higher unemployment, declination of population, existence of poverty, higher economic risk and corruption rate, have an unfavourable results to the FDI flow. Hasan and Mahvash (2015) have investigated on the decision rules from investors

about where to set up the capital. Escobar (2013) includes significant factors such as politic system and higher educational levels, while Castiglione et al. (2012) include political security to analyse.

Thailand has been productive in attracting FDI flows since the beginning of economic development in 1986 (Thanyakhan, 2008). Following the Endaka phenomenon since 1985 towards a market economy, Thailand adopted an alien law that suggested the legal basis for FDI. The FDI licenses in Thailand increased promptly in 1985 to 1996. After the financial crisis in 1997, FDI in Thailand had recovered and approached to high-level in 2000s. This might be supported by the multilateral or agreements under the ASEAN Economic Community (AEC) and other FTAs. With significant development of the industry and investment law after 1997, FDI grew significantly from 2000 and dropped dramatically in 2008. Thailand's FDI has affected again during the world financial crisis in 2008. That level decreased to 2011 before it recovered in 2013 and 2014.

The empirical researches of FDI flow into Thailand have concentrated only on 5 main points which are the connection between FDI and economic growth (Srinivasan et al., 2010), FDI provincial competition (Boontem, 2016), policies' effects on FDI (Covali, 2015), laws' effects on FDI (Yu, Lee, & Han, 2015), and FDI location and industry selection (Tosompark, 2014; Hoang, Wiboonchutikula, & Tubtintong, 2010). Also, the impacts of FDI on economic growth or Gross Domestic Product (GDP) in Thailand was trendy to analyse. The two-way connection between FDI and the growth of economy was examined lately in Srinivasan et al.'s research (2010). This gives rise to question what this connection is effective and sustain to the scope of FDI which affects GDP growth rate in Thailand.

Thai government emphasizes that foreign investors move into emerging markets must make strategic determinations on where and how to establish their processes. These decisions must adapt institutional conditions that vary within the host economy conditions and environment. Thus, Thai government enacts Investment Incentive Policies (IIP) to subsidize and create the projects which attracts the location of investment to attract investors from domestic and overseas. The investment incentives may take in various forms, for example, permission, grants, allowances, tax preferences, free-hold property, etc. (BOI, 2020).

The impacts of regulations and treaties on FDI could be a further critical matter. That may because Thailand has commitments under the FTAs and the AEC with other nations. The commitments need national treatment to shade on the needs of foreign and domestic investors. Thus, the governing policies should come together. Therefore, a dramatically significant impact on inward FDI was stated after Thai economy crisis occurred in 1997 positively. The subjective decisions from domestic and foreign investors in selecting the investment location are important factors for Thailand's economic growth and sustainable development goals. However, only a few researchers (Tosompark, 2014; Srinivasan et al., 2010) has focused on topic for results of both investment from domestic and foreign investors in Thailand. Thus, a research about the impacts and determinants of inward FDI on economic growth in Thailand can offer a more comprehensive view of what impacts and forecasts an economic growth in Thai economy from the inward FDI (Hoang, Wiboonchutikula, & Tubtintong, 2010).

Determinants of FDI

The researches from Kinuthia & Murshed (2015), Labes (2015), and Thanyakhnan, (2008) are examples researches about the FDI determinants. Thus, the determinants of FDI have been analysed generally by researchers around the world. The researches show economic growth has been counted as a significant driver to foster or increase the FDI flow. Although some factors such as technology or national reserves are performed positive factors in the FDI flow, other factors still had an unfavorable result as well (Kinuthia & Murshed, 2015; Razmi & Behname, 2012).

Some latest researches found market size, trade openness, CPI, GDP per capita, exchange rate, inflation, infrastructure improvement, domestic saving account, technological development, location, good governance, and political system as positive factors in attracting FDI. Labes (2015) shows some examples about this main result such as trade openness, exchange rate, and GDP per capita, as major positive relationship with FDI in the emerging economies (BRICS) between 1992 and 2012. Consistent with Kinuthia and Murshed (2015) who state that a unfluctuating inflation and level of trade openness absolutely affect the FDI attraction to both Malaysia and Kenya between 1960 and 2009. The FDI flow in Kenya was clearly supported by trustworthy from foreign investor especially in development of infrastructure and democracy factors. While a major factor that increases in FDI in Malaysia are exchange rate and good governance. Castiglione et al. (2012) show the result about market size (GRP per capita, size of resident), coastline location, infrastructure development, and domestic investments are positive factors of FDI in 79 Russian states. Also, Pradhan (2012) finds electric and water supply indicating somewhat the development of public structure and investment in the country being 2 main significant points for FDI in 16 Indian regions during 2001 to 2010. The technological environment was also found as significant factors in FDI attractiveness to the United States (Haq, 2001). Haq (2001) also stated that whether the big ratio on research and development (R&D) in government expenditure under copyrights and patent projects, which establish the abilities of the countries' innovation. This presents a significant and positive factor in FDI of the United States during the Asian financial crisis (1997-1998).

The negative factors of FDI were found. For example, Kumari (2014) concludes that host countries with high unemployment rate, continuation of poverty, large size of resident, high economic risk, and instability politics and regulation (including corruption) as other negative factors of FDI. Haq (2001) shows the variation of exchange rate and socio-cultural confliction between host and home countries as an important negative effect of FDI in the United States, especially manufacturing industry. Later, Kinuthia and Murshed (2015) show wage rate and financial uncertainty significant negatively affect FDI in both Kenya and Malaysia. Consistent with the Pradhan's research (2012) which concluded that an instability and unpredictability income is another factor affecting negatively on FDI for 16 Indian regions. The rate of inflation and high oil price had influenced a negative effect on FDI in 8 Islamic economies between 1985 and 2009 which is suggested by Razmi and Behname (2012).

The significant factors can include government and politic system such as democracy. Hasan and Mahvash (2015) suggest that higher level of population’s education with lower delinquency rates related to the determinants of investors’ decisions. Castiglione et al. (2012) and Escobar (2013) have conducted the political stability and security in the research to investigate about where investors decide to locate capital. Based on data of 5 countries as Singapore, Thailand, Malaysia, the Philippines, and Turkey between 1990 and 2012. The research employed a four-step procedure to analyse. The result shows that lower corruption rate, stability inflation rate, higher trade openness, better infrastructure, and higher literacy rate significantly strengthen FDI in these 5 countries.

The impacts of factors of FDI have unchanged over long-term (Zhao & Xiang, 2012). There are 5 major factors which are politics and government policy, human capital, economic risk, trade openness, industrial structure, and the market size, are supposed to be significant influence the FDI attractiveness into China (Huang & Chai, 2006). By the way, the impacts of these 5 major factors present fundamental changes in terms of various phases of economic improvement. Previous researches about FDI improvement in China also suggest that key FDI factors such as costs of trade. financial subsidiaries, and infrastructure improvement plan, were performed more significant factors in FDI attractiveness when the tax incentives decreasing. While, Hasan and Mahvash (2015) agreed in the similar results that the impacts of FDI factors such as politic instability, exchange rate, trade openness, inflation, and corruption perception index. Consistent with Kinuthia and Murshed (2015) and Labes (2015) show positive effects of trade openness on FDI. Contradiction with Razmi and Behname’s research (2012) who found that trade openness reveals a negative force of FDI. Likewise, Hasan and Mahvash (2015) represent a negative relationship between inflation and net inward FDI. On the other hand, it is positive relationship between inflation and FDI inflow in Kinuthia and Murshed’s (2015) research. Lastly, the exchange rate impacts FDI positively in researche of Labes (2015), but negatively in researches of Kinuthia and Murshed’s (2015) research.

Eclectic Paradigm

The principle of the eclectic paradigm in international production is initiated by Ohlin in 1976 as a purpose offering a broad context. The eclectic paradigm was probable to categorise and assess the importance of necessary elements affecting the growth and performance of production in another economy (Dunning, 1998). Dunning (1980) had introduced the eclectic paradigm as an analytical principal for every international production and FDI. This uses concept of the internalisation theory by adding a location advantage in many economies. This helps to examine the foreign investment. The eclectic paradigm is an organisation’s FDI outcome is influenced by 3 elements which are ownership, location, and internalisation. The paradigm helps organisations to acknowledge the reasons for FDI to take place, in what way of strategically used by global companies to overcome the global competitive advantages, in what way of it affects the host economy’s competitiveness, in what way of governments in host economies and home economies point out, and in what way of home economies is used by industries of quick response to change in competing environment. However, the restriction of eclectic paradigm has described or expected certain quantity of globalisation (Dunning & Gray, 2003).

The eclectic paradigm presents as an organisation’s form of international production is examined by 3 elements as follows (Brewer, 1993; Dunning, 1988):

1. Ownership advantage is one nationality or associates of the similar form over another economy and this reason can indicate the beginning of investment.
2. Location advantages may encourage either home or host economies and this can indicate the direction of investment.
3. Internalisation advantages refer to the externalisation for a cross border investment. The multinational company has various choices of entry mode starting from export, followed by joint venture, mergers & acquisition, wholly owned subsidiary.

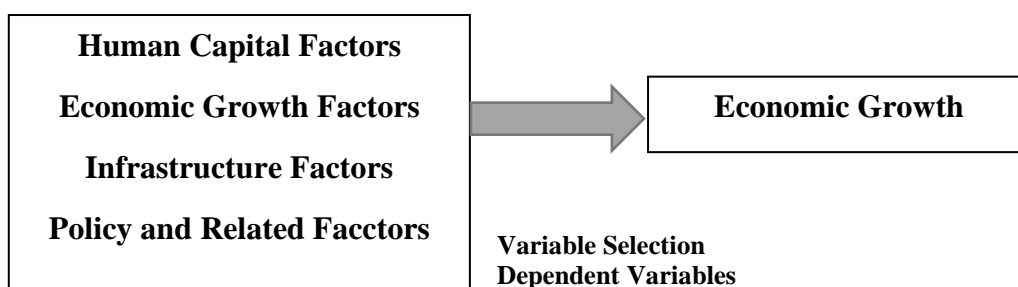
Many researches have employed the eclectic paradigm to discover the international strategic approaches, factors influencing FDI netflow, affect of FDI on economic growth to other countries (Agarwal & Ramaswami, 1992; Ismail & Yussuf, 2003).

Hypothesis Development

This is to close the gap about inward FDI and economic growth in Thailand. Thus, this research focuses on the impacts between determinants of inward FDI and economic growth. Thus, a hypothesis should be:

Hypothesis : The economic growth in Thailand affected by the determinants of inward FDI in Thailand.

Figure 1 : Research Framework



To investigate the research question, the economic growth is employed in multivariate regression models.

Economic Growth

Many previous researches about FDI, the GDP growth rate is commonly used to represent economic growth. The GDP growth rate has been selected to investigate the relationship in this research. In FDI production concept, the GDP is very useful information to add in the model. That is GDP presents as a total of the sum values of all resident involved in production in the nation (OECD, 2009).

Explanatory Variables

Based on the factors of FDI' literature reviews, this research has divided into 4 groups which are human capital, economic, infrastructure, policy and related factors, are used to investigate.

Human Capital Factors

Population, labour force, life expectancy, government expenditure on deduction and unemployment rate, the human capital is a significant FDI factor. This factor can absorb the capacities that optimises the application of FDI and establish effects of FDI on economic growth (Kumari, 2014).

Economic Factors

GDP, consumer price index, net barter terms of trade index, goods trade, FDI net inflow, inflation rate, exports of goods and services are used as the determinant of inward FDI.

Infrastructure Factors

Infrastructure elements can contribute to the important driver of economic growth and the ability to promote FDI (Kumari, 2014). Access to electricity, electric power consumption, air transport, rail lines, container port traffic, and mobile subscriptions represent infrastructure development in Thailand.

Policy and Related Factors

Government debt, tax revenue, and government expenses (% of GDP) are included to investigate the significant factor of driving the economic growth in Thailand.

Results and Discussion

The model is supported by a one-way error component technique to estimate data. Palasak et al. (2022) suggest that whether F-test is rejected the null hypothesis of a common intercept, that dataset is reliability to analyse. Most of the estimated coefficients are statistically significant. Moreover, the relationship rate is 79% and the F-test for model is strong significant at the 1% level.

According to the results (see Table 1), an increase of year raises the associate activity of economic growth in Thailand. It may be the coefficient of Year is a strongly positive significance. Being an economic stability for a long time revolves around pain and how the country can handle it. The economic cycle deals out a lot of pain and the country will participants and needs to live with and handle that both positive and negative feedback. Even when returns are positive, trailing an index is devastating. Like Politis (2008) who suggests that most business with longer experience of doing business may gradually improve in the business better. This is to confirm that a higher performance business is further experiential doing business. Thus, an increase in experience encourages higher degree of economic growth in Thailand.

Table 1 : Determinants of Economic Growth in Thailand

Variables	Coefficients
Constant	9.438**
Year	4.881**
Population	-8.803
Labour Force	1.263
Life Expectancy	3.503*
Government Expenditure in Education	2.731**
Unemployment	2.302*
GDP	4.488***
Consumer Price Index	0.940**
Net Barter Terms of Trade Index	0.217**
Goods Trade	0.211*
FDI Net Inflow	-3.847
Inflation	-1.010***
Exports of Goods and Services	2.598***
Access to Electricity	0.367
Electric Power Consumption	0.077***

Air Transport	2.907**
Rail Lines	-0.005
Container Port Traffic	-1.571
Mobile Subscriptions	0.066
Government Debt	.449*
Tax Revenue	-1.975***
Expense	-0.432
R ²	0.902
R ² Adjusted	0.793
F-Statistic	8.296***
Durbin-Watson	2.299

Notes ***, **, and * represent significant levels of 1%, 5%, and 10%, respectively.

The increase in life expectancy variable drives positively on economic growth in Thailand. An improvement of productivity from available resources such as health of employees improving plan, and it may increase the incentives for long-term investments in human capital (Haruyama, Ashiya, & Hamori, 2013). However, higher life expectancy for labour may lead to an increase in population that is very importance for manufacturing. On the other hand, Boucekkine, de la Croix, and Licandro (2002) point that the incentives for long-term investments in human capital depends on the life expectancy. This view is on the consumer or demand side. When consumer lives longer, an investment and saving in the structure of schooling will be changed. If the consumers' choice of public investment or (another side) saving through fiscal strategy, the demographic changes affect the government policy on the increase of public investment. This shows the life expectancy has a positive impact the economic growth in both supply and demand sides in the economic system of the country.

The result also shows the elasticity of the government expenditure in education (% of GDP) is 2.731. Holding other variables constant, this means an increase 1% of government expenditure in education will increase the economic growth in Thailand 2.731%. The result supports many researches which states that expenses of government budget in education system has a positive impact on economic growth (Maneejuk & Yamaka, 2021; Vu et al., 2021; Muktdair-Al-Mukit, 2012). Muktdair-Al-Mukit (2012) states that an education structure is a significant element of growth in every nation's economy. Moreover, the result also suggests the government fiscal policy for spending on education or human capital sectors affects the long-term economic growth rate.

From table 1, the unemployment rate is positive significant at the 10% level. This means that a high rate of unemployment can affect positively influence on the economic growth in Thailand. Because it reflects availability of number of labour. This is consistent with the researches of Seth, John, and Dalhatu (2018) who present that the abundance of labour has affected on country's economy where high unemployment region has a greater attraction to invest or build up new plants. Therefore, foreign investors try to avoid shortage of workers problem. A higher unemployed labour makes Thailand more potentially attract foreign investors. However, Suleiman, Kassim, and Hemed (2017) and Azmi (2017) suggest that government should take immediate action against the rising unemployment in the country. This is because unemployment is a main hurdle to country development and results in waste of unskilled workforce. Thus, the results also give recommendations towards enhancing economic growth and reducing unemployment in this time economic challenges.

The GDP coefficient estimation is positive significant at the 1% level of significance. The importance of Thailand's production capacities highlights in encouraging the economic growth in Thailand. As expected, the economic growth increases with GDP in Thailand. This shows that the strong economy of a country increases the growth of economy. It is consistent with Azmi (2017) who argued that the strong in economy is positive to the growth of market demand in the country. The result suggests that a steady GDP is a major reason for economic growth in Thailand. In addition, this consistent with the results of Alam and Murad (2020) and Cuevas et al. (2005) where the GDP caught on the economic environment such as stability of all macroeconomic indicators and economic policy.

Even the government uses the consumer price index to indicate the economy of the country. The result shows the impact of CPI has positively significant influence on economic growth in Thailand. This is different from Lamah, Yanto and Setyadharma (2021) who found that CPI has no significant influence in Indonesian economy at all. However, the result suggests that CPI can speed up the economic growth via gross domestic saving (GDS) (Aboobucker & Jahufer, 2018).

Net barter terms of trade index were computed in proportion of the value export to the value of import unit. The base year is measured relative to 2000 (Worldbank, 2022). The estimated coefficients of net barter terms of trade index and goods trade are positive at the 5% level of significance. This implies the value of net trade (export-import) that a more prosperous in net trade, a higher rate of economy in Thailand. This is consistent with Boonlua (2014b; 2019) that a trade surplus occurs when a country is importing less goods than it is exporting. This implies that net trade surplus promotes income distribution, employment rate, wage, etc. This can increase the rate of domestic demand and push the economy growth in the country (Alam & Murad, 2020).

The coefficients of Inflation and tax revenue are negative and significant at the 1% level of significance. Even Azmi (2017) concludes that inflation has no significant affect on economic growth, but this research suggests in another direction. The reduction of inflation in the country can drive the economic growth of the country. Thanyakhan (2008) defines inflation as a change in CPI. A high inflation reflects the inability of the government. It also shows the instability and insecurity of the economy. Thus,

this may state as an inflation risk, in turn, high inflation will decrease the economic growth. Thus, to urge economic growth, the stability and lower of the inflation is concerned.

Most developing countries attempt to achieve economic growth through tax revenue (Babatunde, Ibukum, & Oyeyemi, 2017). The result also implies that an effectiveness of taxes as a tool to promote the growth and development of the economy. However, the result show tax revenue in a negative direction, that may conclude in the opposite side of view. This may because government collects less tax, the more government must push for more economic development projects. Government must work harder to increase economic growth by forming numerous mega projects to run the country economy. Thanyakhan (2008) suggests that government attempts to establish project to push an economic growth through taxation. Like Ofoegbu, Akwu, and Oliver (2016) stated that when the government treasury gets less revenue (especially tax) as a result; government policy should be used to encourage people to pay tax to develop the economy. Later, the economic growth will be increased.

Strong economy can be indicated from the exports of goods and services. Results shows the coefficient in a positive and statistically significant at the 1% level of significance. This shows a positive effect of exports on economic growth consistent with Usman et al. (2012). Exports can lead to increase investment and technology of which contribute to economic growth. The degree of exports positively affects an economic growth as a result, the expansion of imports will be expanded.

The infrastructure is generally meant to stimulate economic development. Many countries try to improve the infrastructure to attract investor and expand the manufacturing throughout the country. Railways, port, and mobile subscription are commonly significant in every country. However, the additional advantages are air transport and electric power consumption are significant reasons for investors to consider. Boonlua (2014a; 2019) and Magazzino and Mele (2021) agree that the infrastructure forces supply and access the transport networks. Moreover, government should develop the transport infrastructure. The infrastructure in the country is the result which has been influenced by various elements related to the culture, tradition, politic, and financial situation from a long ago. Dynamic economic growth affecting infrastructure are generated by modifications in socio-economic structures such as infrastructure (Magazzino & Mele, 2021; Donnithorne, 2013).

Yusuf and Mohd (2021) state that external debt considered as a barrier to long-term economic growth, though a short-term effect was boosting economic growth. However, the result show government debt has a significant positive impact on economic growth at the 1% level of significance. On the other hand, Salmon (2021) shows that a 1% increase in government debt reduces economic growth. That means a 1% increase in government expenditure to GDP leads to a decline in an economic growth. The result suggest that the government should provide funds to the expansion of the productive of the economy. This will expand economic growth of the country. Fiscal policy improvements that support domestic resource deployment.

In summary, this research examines the impacts and determinants of inward FDI on economic growth in Thailand. The year, life expectancy, government expenditure in education, unemployment, GDP, CPI, net barter terms of trade index, goods trade, inflation, exports of goods and services, electric power consumption, air transport, government debt, and tax revenue have significant impacts on the economic growth in Thailand. However, population, labour force, FDI net inflow, access to electricity, rail lines, container port traffic, and mobile subscriptions do not result in a loss of the significant determinants. These 7 variables have not impacted of inward FDI in Thailand.

Therefore, the hypothesis is thereby supported.

Contribution

Human capital, economic factors, infrastructure, and related policy factors play a significant role in every country in terms of developing the economy. Thus, the results attempt to extend the literature in discussion issues about the relationship among human resource management, economic growth, the level of competition, determinants, and impacts of politics and government regulations on economic growth. Moreover, the research could enhance economic growth in Thailand by

1. presenting a reference for the government to better understanding of the relationship between human capital, economic, infrastructure, and related policy factors and economic growth.
2. identifying the factors affecting the competition to increase value of foreign investment.
3. understanding decisions related to economic growth to develop the economy in the future.
4. providing suggestions to government to establish development projects as to enact regulations to boost economy.

The economic growth in Thailand relies more on export investment in efficiency-seeking manufacturing. The results show that economic growth in Thailand is considerably influenced by human capital, economic, infrastructure, and related policy factors, thus economic growth in Thailand is supply driven by the production endowment. Definitely, Thailand is a labour-abundant country, when economy remains the production process internationally, economic growth can take advantage of lower labour cost. The most critical reason for foreign investment to decide to invest in Thailand is to produce and export in assembly and/or final goods to other economies. This is to serve within the region better and to be resold to respective home economies (Thanyakhan, 2008). Additionally, Thailand should offer investment promotion campaigns which comparable to the neighbour countries such as Vietnam and Laos PDR. to attract more investors. This is to increase the economic growth in a long-term.

Limitation and Suggestion

The model in this research does not consider investment risks, and technological measurement. This research focused only on determinants of inward FDI on the total economic growth. However, some macroeconomic variables such as infrastructure can be influenced by technological measurement. It is challenging to define a political risk due to the lack of accessible information in some countries.

To improve the research models, hypotheses, and results, the recommendations for further researches could be accepted in understanding the factors in deeper results. The proposed appropriated measurement can use various statistical methods such as factor/cluster analysis or nonparametric analysis. The different analysed techniques such as STATA or AMOS or LISREL can be used to analyse data. Consequently, the further results may be present in different points of view.

Acknowledgements

This research was financially supported by Mahasarakham Business School, Mahasarakham University.

References

1. Aboobucker, H., & Jahufer, A. (2018). Impact of Consumer Price Index and Gross Domestic Saving on Economic Growth in Sri Lanka: An Econometric Analysis Using Johansen Co-Integration Approach. *International Journal of Innovative Research & Development*, 7(8), 184-191.
2. Agarwal, S., & Ramaswami, S. (1992). Choice of Foreign Entry Mode: Impact of Ownership, Location and Internalization Factors. *Journal of International Business Studies*, 23(1), 1-27.
3. Alam, M., & Murad, W. (2020). The impacts of economic growth, trade openness and technological progress on renewable energy use in organization for economic co-operation and development countries. *Renewable Energy*, 145(January), 382-390.
4. Andraz, J. M., & Rodrigues, P. M. M. (2010). What causes economic growth in Portugal: Exports or inward FDI? *Journal of Economic Studies* 37(3), 267-287.
5. Azmi, R. (2017). Factor Affecting Gross Domestic Product (GDP) Growth in Malaysia. *International Journal of Real Estate Studies*, 11(4), 61-67.
6. Babatunde, O., Ibukun, A., & Oyeyemi, O. (2017). Taxation revenue and economic growth in Africa. *Journal of Accounting and Taxation*, 9(2), 11-22.
7. BOI. (2020). How to do business in Thailand. Retrieved from https://www.boi.go.th/index.php?page=doing_biz_non_boi
8. Boonlua, S. (2014a). Factors Influencing the SMEs in Agribusiness in Thailand. *Journal of Academy of Business and Economics*, 14(2), 7-18.
9. Boonlua, S. (2014b). FDI, Knowledge and Technological Spillovers, and Business Growth in Thailand. *Journal of American Business Review*, 22(1), 198-210.
10. Boonlua, S. (2019). Learning and Growth for Sustainable Development of Logistics Companies in Thailand. *Polish of Management Studies*, 20(1), 92-102.
11. Boontem, K. (2016). The impact of pollution control enforcements on FDI inflow to Thailand. *International Journal of Business and Economic Development*, 4(2), 25-41.
12. Brewer, T. L. (1993). Government Policies, Market Imperfections, and Foreign Direct Investment. *Journal of International Business Studies*, 24(1), 101-115.
13. Boucekkin, R., de la Croix, D., & Licandro, O. (2002). Vintage Human Capital, Demographic Trends, and Endogenous Growth. *Journal of Economic Theory*, 104, 340-375.
14. Castiglione, C., Gorbunova, Y., Infante, D., & Smirnova, J. (2012). FDI determinants in an idiosyncratic country. A reappraisal over the Russian regions during transition years. *Communist and Post-Communist Studies*, 45(1-2), 1-10.
15. Covali, T. (2015). FDI inflows; how do they interact with non-FDI inflows during crises? Some evidence from Asia. *Applied Economics Letters*, 22(7), 572-575.
16. Cuevas, A., Messmacher, M., & Werner, A. (2005). Foreign Direct Investment in Mexico since the Approval of NAFTA. *The World Bank Economic Review*, 19(3), 473.
17. Donnithorne, A. (2013). China's Economic System. London: Routledge.
18. Dunning, J. H. (1980). Toward an Eclectic Theory of International Production: Some Empirical Tests. *Journal of International Business Studies*, 11(1), 9-13.
19. Dunning, J. H. (1988). *Explaining International Production*. Boston: Unwin Hyman.
20. Dunning, J. H. (1998). Location and the Multinational Enterprise: A Neglected Factor? *Journal of International Business Studies*, 29(1), 45-55.
21. Dunning, J. H., & Gray, H. P. (2003). *Extending the Eclectic Paradigm in International Business: Essays in Honor of John Dunning*. Northampton, MA: Edward Elgar.
22. Escobar, G. O. R. (2013). Foreign direct investment (FDI) determinants and spatial spillovers across Mexico's states. *The Journal of International Trade & Economic Development*, 22(7), 993-1012.
23. Haq, K. (2001). *An analysis of the determinants of United States direct investment abroad in the manufacturing sector* (PhD thesis). State University of New York at Buffalo, Ann Arbor. Retrieved from <http://search.proquest.com/docview/251038131?accountid=27890>.
24. Haruyama, T., Ashiya, M., & Hamori, S. (2013). Demographic changes, fiscal policy and economic growth: theory and evidence. *Kobe University Economic Review*, 59, 1-23.
25. Hasan, F., & Mahvash, M. (2015). Determinants of FDI: Does democracy matter? *Journal of Business Systems, Governance and Ethics*, (2).
26. Hoang, H. H., & Goujon, M. (2014). Determinants of Foreign Direct Investment in Vietnamese provinces: A spatial econometric analysis. *Post-Communist Economics*, 26(1), 103-121.
27. Huang, X. Q., & Chai, M. (2006). The selection of FDI regions according to the new economic geography: A case study based on China's inter-provincial panel data. *Management World*, 22(10), 7-13.
28. Ismail, R., & Yusoff, I. (2003). Labour Market Competitiveness and Foreign Direct Investment: The Case of Malaysia, Thailand and the Philippines. *Papers in Regional Science*, 82(3), 389-420.
29. Kinuthia, B. K., & Murshed, S. M. (2015). FDI determinants: Kenya and Malaysia compared. *Journal of Policy Modeling*, 37(2), 388-400.
30. Kumari, J. (2014). Foreign Direct Investment and economic growth: A literature survey. *BVIMSR's Journal of Management Research*, 6(2), 118-127.
31. Labes, S. A. (2015). FDI determinants in BRICS. *CES Working Papers*, 7(2), 296-308.
32. Lamah, A., Yanto, H., & Setyadharma, A. (2021). The Impact of Consumer Price Index, Foreign Direct Investment, Bank Credit and Labour Force on Economic Growth in Indonesia. *Business and Economic Analysis Journal*, 1(2), 79-91.
33. Magazzino, C., & Mele, M. (2021). On the relationship between transportation infrastructure and economic development in China. *Research in Transportation Economics*, 88, 1-8.
34. Maneejuk, P., & Yamaka, W. (2021). The Impact of Higher Education on Economic Growth in ASEAN-5 Countries. *Sustainability*, 13(2), 1-28.
35. Muktdair-Al-Mukit, D. (2012). Public Expenditure on Education and Economic Growth: The Case of Bangladesh. *International Journal of Applied Research in Business Administration & Economics*, 1(4), 10-18.
36. OECD. (1996). *OECD Benchmark Definition of Foreign Direct Investment* (3rd ed.). Paris: OECD Publishing. Retrieved from <https://www.oecd-ilibrary.org/content/publication/9789264064805-en>.
37. OECD. (2009). *OECD Benchmark Definition of Foreign Direct Investment 2008* (4th ed.). Paris: OECD Publishing. Retrieved from <https://www.oecd-ilibrary.org/content/publication/9789264045743-en>.
38. Ofoegbu, G., Akwu, D., & Oliver, O. (2016). Empirical analysis of effect of tax revenue on economic development of Nigeria. *International Journal of Asian Social Science*, 6(10), 604-613.

39. Omri, A., & Kahouli, B. (2014). The nexus among foreign investment, domestic capital and economic growth: Empirical evidence from the MENA region. *Research in Economics*, 68(3), 257-263.
40. Palasak, S., Boonlua, S., & Jirawuttinunt, S. (2021). Organizational Strategic Agility And Goal Achievement: an Empirical Study In Electronic Commerce. *Natural Volatiles & Essential Oils*, 8(5), 8383-8409.
41. Paziienza, P. (2014). *The relationship between FDI and the natural environment: Facts, evidence, and prospects*. The Netherlands: Springer International Publishing AG.
42. Politis, D. (2008). Does prior start-up experience matter for entrepreneurs' learning? A comparison between novice and habitual entrepreneurs. *Journal of Small Business and Enterprise Development*, 15(3), 472-489.
43. Pradhan, R. P. (2012). Dynamic panel data model and FDI determinants in India. *IUP Journal of Financial Economics*, 10(1), 33-41.
44. Razmi, M. J., & Behname, M. (2012). FDI determinants and oil effects on foreign direct investment: evidence from Islamic countries. *Advances in Management and Applied Economics*, 2(4), 261-270.
45. Salmon, J. (2021). The Impact of Public Debt on Economic Growth. *Cato Journal*, 41(3), 487-509.
46. Seth, A., John, M., & Dalhatu, Y. (2018). The Impact of Unemployment on Economic Growth in Nigeria: An Application of Autoregressive Distributed Lag (ARDL) Bound Testing. *Sumerianz Journal of Business Management and Marketing*, 1(2), 37-46.
47. Suleiman, S., Kassim, S., & Hemed, I. (2017). Unemployment and Economic Growth in Tanzania. *Journal of Economics, Management and Trade*, 20(2), 1-8.
48. Srinivasan, P., Kalaivani, M., & Ibrahim, P. (2010). FDI and economic growth in the ASEAN countries: Evidence from cointegration approach and causality test. *IUP Journal of Management Research*, 9(1), 38-63.
49. Thanyakhan, S. (2008). *The determinants of FDI and FPI in Thailand: a Gravity model analysis* (PhD thesis). Lincoln University, Lincoln, New Zealand. Retrieved from https://researcharchive.lincoln.ac.nz/bitstream/handle/10182/443/thanyakhan_phd.pdf?sequence=1&isAllowed=y
50. Tosompark, C. (2014). FDI development in Thailand: Past to Present. 4th Annual International Conference on Qualitative and Quantitative Economics Research (QQE 2014), 62-77.
51. UNCTAD. (2018). *World Investment Report 2018: Methodological note*. United Nations, Geneva. Retrieved from https://unctad.org/en/PublicationChapters/wir2018chMethodNote_en.pdf
52. Usman, M., Ali, M., Kamran, H., & Khalid, H. (2012). Impact of Exports on Economic Growth- A Case of Luxemburg. *Information Management and Business Review*, 4(1), 1-7.
53. Vu, T., Huong, L., Huy, D., Nuong, L., & Thach, N. (2021). Human Education And Educational Issues For Society And Economy – Case In Emerging Markets Including Vietnam. *Ilkogretim Online - Elementary Education Online*, 20(2), 216-221.
54. Worldbank. (2022). Retrieved on July 1st, 2022 from <https://data.worldbank.org/indicator/TT.PRI.MRCH.XD.WD>
55. Yu, J., Lee, S-H, & Han, K. (2015). FDI motives, market governance, and ownership choice of MNEs: A study of Malaysia and Thailand from an incomplete contracting perspective. *Asia Pacific Journal Management*, 32, 335-362.
56. Zhao, W., & Xiang, Y. H. (2012). Location advantage, agglomeration economies and competition for FDI among Chinese regions. *Journal of Zhejiang University (Humanities and Social Sciences)*, 42(6), 111-124.