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The Impact of Banking Penetration on Foreign Direct Investment in ASEAN: Comparative Analysis of Indonesia, Malaysia, and Thailand

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Abstract: High banking penetration is considered an important indicator of the stability and maturity of a country's financial system, which can attract foreign direct investment (FDI). This phenomenon is becoming increasingly relevant in the ASEAN region, which continues to seek to increase its attractiveness for foreign investors amid global challenges. The study used secondary data from the International Monetary Fund covering the period from 2010 to 2021. The analysis was carried out using the regression of panel data of the Random Effect Model type. The results show that banking penetration has a significant positive impact on FDI in ASEAN. This confirms that foreign investors' confidence in the domestic financial system is very important. In Indonesia, strong banking penetration supports FDI growth despite regulatory and infrastructure challenges. In Malaysia, expanding access to digital financial services is important, while in Thailand, cooperation between the banking and telecommunications sectors is an example for other ASEAN countries. ASEAN countries need to focus on increasing banking penetration through policies that support digital financial services, improve corporate governance, and strengthen regional cooperation. The originality of this research lies in an in-depth comparative analysis of the impact of banking penetration in Indonesia, Malaysia, and Thailand, providing insights and policy strategies that can be adopted by other ASEAN countries to increase their FDI attractiveness.

Keywords: Banking Penetration, Foreign Direct Investment (FDI), Financial System Stability, ASEAN, Digital Financial Services, Corporate Governance, Regional Cooperation

1. Introduction

Foreign Direct Investment (FDI) in ASEAN is attractive to global investors due to its potential for rapid economic growth and other factors such as strategic geographical location, political stability, government support, pro-investment policies, regional integration through the ASEAN Economic Community (AEC), and rapid infrastructure development (West, 2018; Losari & Koesnaidi, 2014). Malaysia, Indonesia, and Thailand, which are trade and investment hubs in ASEAN, have the highest Gross Domestic Product (GDP) in the region and serve as gateways to a wider market in Southeast Asia.

With increasing awareness of the importance of financial inclusion as a mechanism to protect economies from economic shocks, measures to increase financial inclusion are having a significant impact. Especially after the global financial crisis in 2008, awareness of the importance of financial inclusion has increased in global economic policy discussions. Increasing financial inclusion reduces an economy's vulnerability to financial crises and creates a more stable environment for investment (José & García, 2016).

Global initiatives led by organizations such as the G-20 and the World Bank have shown awareness of the importance of financial inclusion (Sharma & Changkakati, 2022). Countries that succeed in increasing their financial inclusion levels can attract foreign investors seeking a stable and sustainable investment environment and facilitate the FDI process by providing easier access to required capital and financial resources (Arner et al., 2020).

Although financial inclusion is an important topic in the global economic literature, there is a research gap. According to Chatterjee (2020) and Hidayat et al. (2023), better access to financial services can improve a company's ability to access funds for investment, driving economic growth. However, there is still room to explore how access to financial services concretely affects corporate investment in ASEAN countries. Mader (2018) highlights that financial inclusion can facilitate efficient resource allocation and support long-term economic growth. However, further analysis is needed to understand how financial inclusion leads to efficient resource allocation within ASEAN, considering economic and regulatory differences in each country. Allen et al. (2021) point out that increased bank penetration provides better access to funds for investments, but it is also necessary to consider how external factors such as technological developments and

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government policies affect the effectiveness of increasing bank penetration in encouraging investment.

This study finds that increased banking penetration is positively and significantly related to increased FDI in ASEAN. Previous literature suggests that increased banking penetration and financial sector development can attract foreign investment. For example, Ahamed & Mallick (2019) found a positive relationship between banking sector development and FDI inflows, while Osano & Languitone (2015) emphasized the importance of affordable access to credit for business growth and innovation. However, there has been no discussion in ASEAN countries. The main contribution of this paper is the use of the Random Effect Model (REM) to analyze these relationships. The REM takes into account the variation between countries in data panel analysis, addressing the problem of heterogeneity and producing more accurate and consistent estimates. This provides a stronger foundation for sustainable economic policies in ASEAN.

In ASEAN, there is a push to increase financial inclusion to strengthen the investment climate. Van et al. (2021) underline that increased financial inclusion can help ASEAN countries attract foreign investment and promote sustainable economic growth. This research gap provides a basis for further studies relevant to ASEAN's economy and finance. Understanding the relationship between financial inclusion and investment can help formulate more effective policies for sustainable economic growth in the region.

This research can significantly advance economic and financial science by exploring the relationship between financial inclusion, especially banking penetration and foreign investment in ASEAN. It can fill the knowledge gap in the academic literature and provide a detailed understanding of the economic mechanisms involved. Furthermore, this research can inform the development of effective policies to support sustainable economic growth in ASEAN. With a deeper understanding of how financial inclusion affects foreign investment, governments and institutions can design more impactful policies to expand access to financial systems, increase stability and confidence in the financial sector, and strengthen the attractiveness of foreign investment.

The rest of the research is described as follows. The second part presents the theoretical background. The third part explains the literature review. Part four explores data and methodologies. The fifth section discusses the results. The sixth part is a discussion. The seventh section presents conclusions and implications.

2. Theoretical Background

The relationship between banking penetration and foreign direct investment (FDI) in ASEAN has been the focus of attention in various academic literature. Within the framework of financial development theory, research by Levine (2018) and Durusu-Ciftci et al. (2017) shows that the development of the banking sector can increase investment and economic growth. Similar findings are supported by studies by Soumaré and Tchana (2015) and Nguyen and Lee (2021), which show a positive correlation between financial sector development and FDI inflows.

On the other hand, economic growth theory, as put forward by Desbordes and Wei (2017), highlights the important role of the financial sector in improving the efficiency of resource allocation and facilitating foreign investment. Meanwhile, research by Bailey (2018) supports the idea that the development of a strong financial sector can increase the attractiveness of FDI.

In economic structuralism theory, studies such as those conducted by Haini (2021) and Chen et al. (2021) highlight the importance of solid financial infrastructure in supporting good banking penetration and investment growth. Meanwhile, in regional integration theory, studies by Verico (2017) and Kawai and Naknoi (2015) show that regional integration efforts, such as the ASEAN Economic Community (AEC), can expand regional financial markets and increase FDI inflows.

Political economy theory also significantly contributes to understanding the relationship between banking penetration and FDI in ASEAN. Research by Bailey (2018) and Alharthi et al. (2024) highlights the important role of political factors, such as political stability and government policies, in determining the attractiveness of foreign investment. By considering the findings from these various literatures, a more comprehensive understanding of the dynamics affecting the relationship between banking penetration and FDI inflows in the ASEAN region can be obtained.

3. Literature Review

Financial inclusion has become an important topic in the global economic literature due to its critical role in promoting economic growth and poverty alleviation (Tabash et al., 2024). According to Sarma (2016), financial inclusion facilitates everyone in the economy to use, access, and utilize the formal financial system. The financial inclusion index (IFI) is a measure that shows how far a country's financial sector can expand access and participation of its people. IFI, as a multidimensional index, covers various aspects such as banking penetration, availability of banking services, and banking system usage activities. IFI values range between 0 and 1, with 0 indicating total financial exclusion and 1 indicating full financial inclusion. Sarma & Pais (2008) developed IFI calculation methods that take into account the accessibility, availability, and use of banking services. Accessibility is measured by the number of bank accounts per 1,000 inhabitants, while availability is measured by the number of bank branches and ATMs per 100,000 people.

Based on economic theory, strong financial inclusion can create an environment conducive to the flow of foreign capital into a country (Beck et al., 2015). Previous research by Desbordes & Wei (2017), Nasir et al. (2019), and Sethi & Sethy (2019) has provided evidence that financial inclusion can affect various aspects of the economy, including foreign direct investment (FDI). According to Fletschner & Kenney (2014), better access to financial services could boost investment in capital-intensive sectors, such as industry, infrastructure, and technology. Furthermore, the wide availability of financial services can increase investor confidence in a country's financial markets, which in turn drives an increase in FDI (Veeramani et al., 2020). In addition, the efficient use of financial services can help reduce transaction costs and financial risks, which are important for foreign investors in investment decision-making (Müllner, 2017).

Empirical research also supports the positive relationship between financial inclusion and FDI. Claessens (2017) found that countries with higher banking penetration tended to attract more FDI. Similarly, Koepke (2019) shows that countries with more stable and reliable financial systems have a tendency to attract more foreign investment. In addition, the results of research by Cleave et al. (2016) show that a high level of use of banking services is positively correlated with the amount of FDI entering a country (Martínez-Galán & Fontoura, 2019).

In the ASEAN context, financial inclusion also has significant implications for foreign direct investment in the region. With rapid economic growth and advancement in financial technology, ASEAN countries have great potential to attract more FDI by increasing financial inclusion (Vu, 2020).

However, a number of studies highlight the possibility of a negative influence between banking penetration and Foreign Direct Investment (FDI), suggesting inconsistencies in the findings (Huynh, 2024; Alam et al., 2024; Radulović & Kostić, 2024). Although this research contribution provides substantial insight into the literature on the relationship between financial inclusion and foreign investment, a deepening of the analysis is needed to uncover the factors that may be responsible for the differences in outcomes between the studies. This requires in-depth consideration of the various aspects that are specific in the structure of the financial system as well as the underlying economic context of countries in the ASEAN region that can affect the dynamics of the relationship between banking penetration and FDI. Thus, these findings not only improve understanding related to economic complexity in ASEAN, but also highlight the importance of conducting further research to delve deeper into the phenomenon of financial inclusion and foreign investment that requires a comprehensive understanding.

4. Methodology

This study investigates the influence of banking penetration on Foreign Direct Investment (FDI) in ASEAN countries, particularly focusing on Indonesia, Malaysia, and Thailand. The data used is secondary data obtained from sources such as the International Monetary Fund (IMF), which provides economic data from various countries around the world. The data covers the annual period from 2010 to 2021, offering a broad time span to observe trends and patterns in the relationship between banking penetration and FDI in the ASEAN region.

The selection of Indonesia, Malaysia, and Thailand as samples in this study is based on several important considerations. First, these three countries are ASEAN members with sizable and diverse economies, representing various levels of banking and foreign direct investment development in the region. As the largest economies in ASEAN, Indonesia, Malaysia, and Thailand play a significant role in regional economic dynamics, including foreign investment absorption and financial sector development.

Additionally, Indonesia, Malaysia, and Thailand exhibit different economic and banking characteristics, making them a representative sample for understanding the relationship between banking penetration and FDI in ASEAN more broadly. Indonesia, with its large population and rapid economic growth, may have a different pattern of relationships with FDI compared to Malaysia, which has a more advanced and diversified economic structure. Meanwhile, Thailand, as a regional manufacturing industrial hub, may show a unique pattern of relationships between banking penetration and foreign direct investment.

The formula for calculating the financial inclusion index, especially banking penetration, is in equation (1). The operational definition of variables is described in Table 1.1.

$$\mathrm{Di} = \mathrm{Wi}\frac{\mathrm{Ai}-\mathrm{mi}}{\mathrm{M1}-\mathrm{mi}}; \mathrm{i} = 1,2,3 \qquad (1)$$

Explanation:

In: Value of Financial Inclusion Indicators; Wi: The weight of the value in the unit dimension; Ai: The actual value on the i-dimension; mi: Lower bound/minimum value of i-dimension; Mi: Upper bound/maximum value of i-dimension.

Based on the independent and dependent variables in this study, the research function formula was formed as follows:

$$\mathrm{FDI} = \mathrm{f(BP)} \qquad (2)$$

From equation 2, a regression equation can be formed as a model for this study as follows:

$$\mathrm{FDI} = \beta_0 + \beta_1 BP_{it} + \mathrm{e_{it}} \qquad (3)$$

Explanation:

FDI is Foreign Direct Investment, β is the coefficient of the independent variable, BP is banking penetration, i is a cross-section, t is time series, and e is the error term.

Table 1: Operational Definition of Variables

Variables	Variable Description	Unit	Data source
Foreign Direct Investment (FDI)	Net investment inflows to obtain long-term ownership or management control of an enterprise operating in an economy other than the investor's economy.	US Dollars	International Monetary Fund
Banking Penetration (BP)	The banking penetration index is calculated using data on the number of deposit accounts with commercial banks per 1,000 adults.	Index	International Monetary Fund

Source: Author Compilation, (2024)

The analysis technique applied in this study is panel data regression using a Random Effect Model. In conducting panel data regression, researchers have three different method options: common effect, fixed effect, and random effect. These methods have different approaches to treating variations between observation units.

The common effect method assumes that the regression coefficient is constant across the units of observation. This method ignores individual variations between units of observation, which can result in less accurate estimates in cases where there are significant differences between the units. The fixed effect method accounts for the variation between the units of observation by including a dummy variable for each unit. This way, fixed factors unique to each unit can be controlled in the analysis, but this method cannot handle independent variables that do not change over time. The random effect method assumes that each unit has a random regression coefficient, considered a random variable. This makes it possible to account for unobserved individual variations and can handle independent variables that do not change over time.

In testing the stability and durability of the model, this study uses a root test and a cointegration test. To determine the method that best suits the research data, several statistical tests are used. The Chow test, LM test, and Hausman test are used to test the significance of the differences between the methods and evaluate the assumptions underlying each one.

5. Results

5.1. Analysis of Foreign Direct Investment Movements

Foreign Direct Investment (FDI) in the three ASEAN countries showed an upward trend (Figure 1), with Thailand and Indonesia exhibiting the highest growth. Both countries have made significant efforts to increase FDI inflows, reaching notable levels within ASEAN. The economic literature highlights the substantial increase in FDI inflows into Thailand. The country's shift in economic strategy from agriculture to export support, FDI, and industrialization has been a key driver behind this surge (Anuchitworawong & Thampanishvong, 2015). FDI growth in Thailand is influenced by its status as a newly industrialized country in Asia, attracting capital from developed regions such as Europe, America, and Asia.

Thailand benefits from FDI-driven exports, especially in the automotive, computer, and electronic circuit industries (Rasiah, 2018). Additionally, the country receives technology and knowledge transfers from donor countries, leading to increased employment and productivity. FDI has also played a crucial role in the development of Thailand's financial markets and overall economic growth, aligning with East Asian economic trends in the late 20th century.

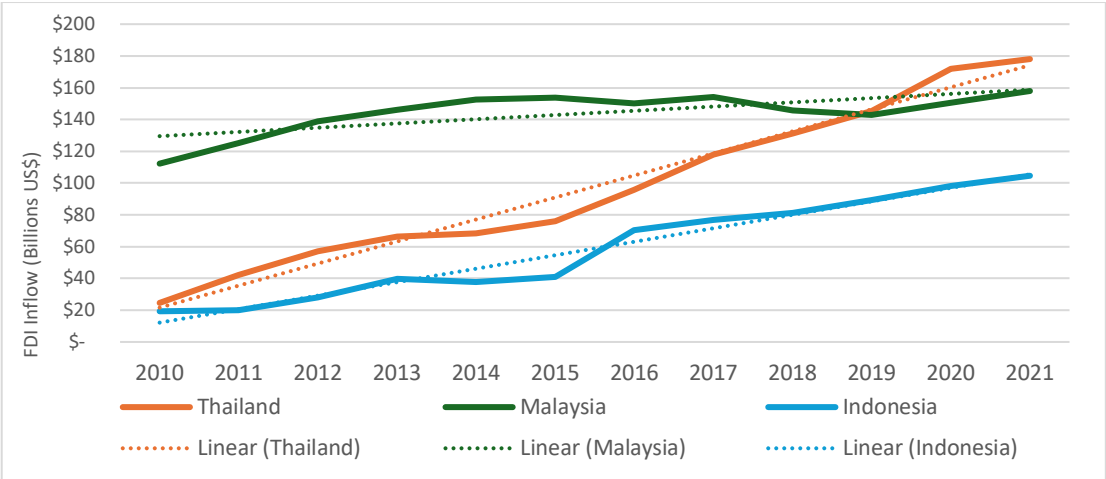

Figure 1: Foreign Direct Investment (FDI) Trends in ASEAN Countries Source: International Monetary Fund, data processed, (2024)

Indonesia's FDI is experiencing rapid growth due to its abundant natural resources, large labor supply, and growing domestic market (Lindblad, 2015). Indonesia attracted significant FDI inflows due to its stable and strong economic growth, even during the global financial crisis of 2008-2009. Despite a decline in growth rates since 2012, the political stability following the 2014 Presidential election increased global interest in the country. However, the biggest challenge faced is the stagnation of domestic investment, impacting investment levels compared to China and India (Gopalan et al., 2016). Therefore, Indonesia seeks to attract more FDI to meet its investment demand.

Malaysia has shown a fairly high level of FDI. Economic policy reforms undertaken in the 1970s and 1980s created an environment conducive to FDI inflows. The open and export-oriented policies adopted during that period encouraged rapid economic growth and attracted foreign investors to Malaysia (Kinuthia & Murshed, 2015). Additionally, the success of the Malaysian industry in attracting FDI is supported by strong ties with other countries, such as Kenya, which strengthen cooperation in economy, trade, and investment. Although Malaysia has a relatively high FDI rate, its growth is lower compared to Indonesia. This may be due to several factors. First, while Malaysia has relatively good political stability, historical political uncertainty, especially related to racial differences, may cause concern for foreign investors. Second, Malaysia's economic transformation program, which aims to become a high-income economy, relies on significant FDI inflows (Kamaruddin & Rogers, 2020). However, to date, Malaysia has only managed to attract a relatively small amount of FDI (Awad, 2020; Nazeer & Still, 2017).

5.2. Analysis of Banking Penetration Movements in ASEAN

Figure 2 shows that Indonesia experienced the highest increase in banking penetration trends during the period from 2010 to 2021 compared to other countries studied. Indonesia's steady and rapid economic growth has increased people's incomes and purchasing power, thereby boosting demand for financial services. The Indonesian government's efforts in promoting financial inclusion, such as through programs like the National Non-Cash Movement, have raised awareness of the importance of having a bank account and access to financial products (Maghsoudi et al., 2023). The level of financial inclusion in Indonesia is high due to wide internet penetration. Although the number of internet users is lower than the rate of penetration, the majority of internet users are digitally active and tend to have high financial inclusion. While internet penetration is higher among high-income people, the majority of internet users come from low-income communities. This shows that although internet access is uneven in terms of income, internet users from different walks of life are digitally active and utilize online financial services (Nuryakin et al., 2019).

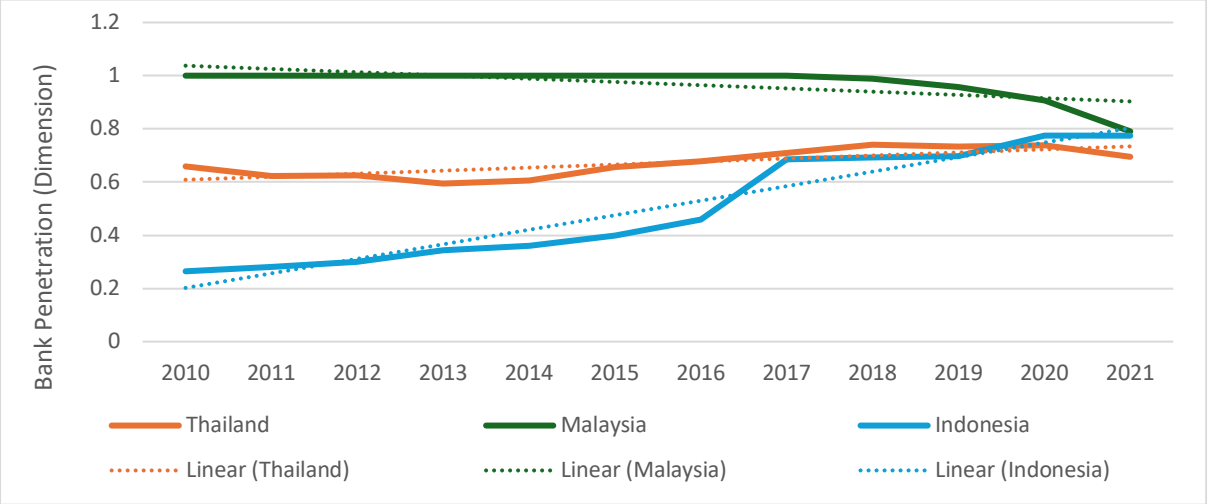

Figure 2: Trends in Bank Penetration Dimensions in ASEAN Countries Source: International Monetary Fund (IMF), data processed, (2024)

The high penetration of banks in Malaysia is due to high economic activity and the centralized economy due to the area's manageable size. Malaysia has a good banking infrastructure, with an extensive network of bank branches and advanced banking technology, making banking services more accessible and efficient. Financial education and awareness in Malaysia are very high (Ahmad et al., 2016). The Malaysian government has policies that support the banking sector, such as fiscal and monetary incentives, which increase the attractiveness of the banking sector for investors. However, the trend of Malaysian banking penetration decreased during the study period due to changes in consumer behaviour shifting to digital banking services. Technological advancements have allowed people to access banking services online, which is faster, easier, and more convenient.

In 2020, the coronavirus (COVID-19) pandemic caused major changes to various global economic indicators (Habib & Kayani, 2024). The emergence and spread of COVID-19 prompted many countries worldwide to implement strict restrictive measures (Yaala & Henchiri, 2024). The pandemic significantly impacted global economic activity, including the banking sector, as seen from the decline in banking penetration

in Figure 2. Lockdown measures and other restrictions implemented to control the virus's spread caused many people to lose their jobs or experience a decrease in income, affecting their ability to open or maintain bank accounts.

In ASEAN, macroeconomic health and good corporate governance are essential for developing the financial services sector, including banking penetration (Habib, 2024). Economic stability creates an environment that supports the growth of banks and their services, while good governance protects the interests of shareholders and reduces the risk of bankruptcy. This condition, in turn, could increase foreign investor confidence and attract more foreign direct investment (FDI) to the region. The COVID-19 pandemic underscored the importance of these two factors, as economic uncertainty and rising bankruptcy risks require a strong response from the financial sector to maintain stability and attract FDI.

5.3. Descriptive Statistics

Table 2 shows descriptive statistics to determine the minimum, maximum, mean, median and standard deviation values of each of the independent and dependent variables used in this

Table 2: Descriptive Statistics

	FDI	**BP**
Mean	1.00E+11	0.714767
Median	1.01E+11	0.703406
Maximum	1.78E+11	1.000000
Minimum	1.93E+10	0.264401
Std. Dev.	4.92E+10	0.231851
Skewness	-0.182951	-0.384180
Curtosis	1.686323	2.232370
Jarque-Bera	2.789447	1.769450
Probability	0.247902	0.412828
Sum	3.61E+12	25.73160
Sum Sq. Dev.	8.46E+22	1.881416
Observations	36	36

Source: Processed data, (2024)

In investment variables using FDI instruments, the average size in 2010-2021 was 24.63% and for the highest value was 27.92% while the minimum value was 19.67%. And for the variable BP (Banking Penetration) has the same maximum value of 1.000 and a minimum value of 0.052128. while the average value of the BP variable has a value of 0.645575.

5.4. Estimated Results

The results of the root unit test for Foreign Direct Investment (FDI) and banking penetration show that both variables are not stationary at the level but become stationary after the first differencing. At the level level, the probabilities for all tests (Levin, Lin & Chu, Im, Pesaran and Shin, ADF - Fisher Chi-square, and PP - Fisher Chi-square) show high values, indicating non-stationery (Table 2). However, after the first differencing, the probability becomes significant, indicating the stationarity of the data. This root unit test is important to ensure the stability of the panel data regression model used, as regression analyses using non-stationary data can produce invalid results. By ensuring that the data are stationary after differencing, this study ensures that the relationship between banking penetration and FDI in ASEAN countries is analyzed with a stable and reliable model.

Table 2: Unit Root Test

	Unit Root Test FDI			
	Level		**First Diff**	
Method	Statistics	Prob.**	Statistics	Prob.**
Levin, Lin & Zhou*	-1.28480	0.0994	-2.81191	0.0025
Im, Pesaran and Shin W-stat	-0.27265	0.3926	-2.01769	0.0218
ADF - Fisher Chi-square	6.43457	0.3763	15.3410	0.0178
PP - Fisher Chi-square	19.1008	0.0040	26.5775	0.0002
Unit Root Test Banking Penetration				
Levin, Lin & Zhou*	4.01320	1.0000	5.59852	0.0478
Im, Pesaran and Shin W-stat	2.33134	0.9901	2.24756	0.0877
ADF - Fisher Chi-square	1.66134	0.9481	4.22014	0.0069
PP - Fisher Chi-square	0.88538	0.9896	8.68190	0.0023

Source: Processed data, (2024)

The cointegration test was carried out to determine whether there was a long-term relationship between the variables in the model, the results of which are explained in the following Table 3:

Table 3: Cointegration Test

Alternative hypothesis: common AR coefs. (within-dimension)				
			Weighted	
Test	**Statistics**	**Prob.**	**Statistics**	**Prob.**
V-Statistic Panel	1.621769	0.0524	1.630698	0.0415
rho-Statistic Panel	-0.440532	0.0298	-0.462957	0.0217
Panel PP-Statistic	-0.459422	0.0230	-0.415786	0.0388
Panel ADF-Statistic	-0.138857	0.0448	0.047730	0.0190

Note: ***,**,* represent statistical significance of 1%, 5%, and 10% respectively Source: Processed data, (2024)

The results of the cointegration test with the alternative hypothesis of common AR coefficients (within-dimension) show some important findings regarding the long-term relationship between the variables in the model. The v-Statistic panel shows a statistical value of 1.621769 with a probability of 0.0524, and a weighted statistic of 1.630698 with a probability of 0.0415. Although the unweighted statistic was slightly above the significance threshold of 0.05, the weighted value showed significance at the level of 5%, indicating evidence of cointegration. Furthermore, the rho-Statistic panel shows a statistical value of -0.440532 with a probability of 0.0298, and a weighted statistic of -0.462957 with a probability of 0.0217, both of which are significantly below 0.05, in favor of the existence of cointegration. The PP-Statistic and ADF-Statistic panels also provide significant evidence for cointegration with probabilities below 0.05, respectively, for both unweighted and weighted statistical values. All of these results show that there is strong evidence of cointegration between the variables in the model, which means that there is a stable long-term relationship between these variables in the context of the panel data used.

Based on the chow, hausman, and LM tests show that the best estimate uses the Random Effect Model (REM). The results of the REM model estimation are described in Table 4.

Table 4: Estimated Results

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	23.44435	0.207787	112.8285	0.0000
BP	2.406287	0.275883	8.722117	0.0000
Random Effects (Cross)				
_Thailand		0.021917		
_Malaysia		-0.019404		
_Indonesian		-0.002513		
Cross-section fixed (dummy variables)				
R-squared		0.6894		
Adjusted R-squared		0.6803		
F-statistic		75.4878		
Prob(F-statistic)		0.0000		
Test Chow		0.2811		
Hausman test		0.2608		
LM test		0.2311		
Normality Test		0.0566		

Note: ***,**,* represent statistical significance of 1%, 5%, and 10% respectively. Source: Processed data, (2024)

$$\widehat{FDI} = 23.4443 + 2.4062\ BP_{it} + e_{it} \quad (4)$$

Based on the estimation results with an independent variable consisting of bank penetration simultaneously affecting the dependent variable, namely direct investment, shown by the results of the f-test which is worth 0.0000 with a significance level of 10%. The result of the coefficient of determination of 0.6894, showed that 68.94% of banking penetration variables were able to increase FDI. Based on partial tests, it shows that the variable of bank penetration has a positive and significant effect on FDI with a confidence level of 99%. The results of the F test showed an F-statistic value of 75.4878 with a p-value of 0.0000. This indicates that the regression model used is statistically significant at a significance level of 1%. Thus, the null hypothesis stating that all regression coefficients (except intercepts) are equal to zero is rejected. This means that the independent variables in the model together have a significant influence on the dependent variables, indicating that the model as a whole explains the variability in the dependent variables very well. With a p-value of 0.0566, the results of the normality test show that it cannot reject the hypothesis that the data is normally distributed. This means that the data is considered to be normally distributed at a significance level of 5%.

6. Discussion

This study shows that there is a positive and significant relationship between bank penetration, measured by the number of deposit accounts, and Foreign Direct Investment (FDI). This phenomenon is reflected in numerous studies conducted in economics and finance. The concept of bank penetration reflects how far banks in a country can reach and influence society and businesses, both domestically and abroad. Bank penetration is

often measured using various metrics, one of which is the number of deposit accounts, indicating how much funds are deposited by individuals and companies in a country's banking system. Foreign Direct Investment (FDI) is an investment made by an individual or company from one country to another, involving significant control or interest in the invested company in the destination country. FDI plays an important role in a country's economic development by providing new capital, technology, and management, as well as creating job opportunities and increasing economic growth.

Numerous studies have highlighted a positive correlation between bank penetration, measured by the number of deposit accounts, and FDI. Research by Villalvazo (2024) and Contractor et al. (2021) found that a strong and developing banking system can increase FDI flows to developing countries. They point out that efficient and inclusive financial institutions, reflected in high bank penetration, can provide guarantees for foreign investors regarding the stability of the financial system and the protection of their investments.

Additionally, research by Islam et al. (2020) and Dellis (2024) emphasizes the importance of a strong financial system in attracting FDI. They note that a well-developed financial system, including a high bank penetration rate, can provide easier access to capital for local companies, which in turn increases foreign investors' interest in investing. Scientifically, the relationship between bank penetration and FDI can be explained through several mechanisms. First, high bank penetration reflects the existence of a strong banking infrastructure, providing confidence to foreign investors regarding financial security and stability. Second, high bank penetration allows local companies to gain easier access to financial resources, thereby increasing the attractiveness of foreign investment.

In Indonesia, stronger bank penetration can have a positive and significant influence on FDI due to the rapid growth of the banking sector in recent years (Setyowati et al., 2021). In such a situation, banks have more funds capable of being placed in investment instruments, including in infrastructure and business projects. Indonesian banks can also provide easier financing for companies planning to invest, boosting economic growth. Indonesia's efforts in financial inclusion have yielded positive results, despite challenges such as geography and a difficult regulatory environment. Programs such as TabunganKu and Kredit Usaha Rakyat have been successful, as have other initiatives such as mobile banking and microfinance. Bank Rakyat Indonesia has also proven the important role of the private sector in this regard. The Indonesian government has adopted financial inclusion as an important part of its national strategy to reduce income inequality. Programs have been implemented to improve access to financial services for MSMEs and poor households through financial deregulation, education, and other initiatives. However, constraints such as rigid financial regulations and inadequate infrastructure limit the development of the electronic money (e-money) market in Indonesia (Jae-Ha & Kouqing, 2014).

Malaysia has become a hub for financial inclusion on a global scale with the establishment of a permanent Alliance for Financial Inclusion office in its capital city, Kuala Lumpur, since October 2014. The Central Bank of Malaysia, or Bank Negara Malaysia (BNM), along with major banks and the country's largest mobile network operator (MNO), launched the "MyMobile" service, enabling customers to conduct banking transactions without needing to own a smartphone, expanding access to digital financial services and promoting interoperability. In Thailand, there are two main business models in the realm of mobile banking. The first model, driven by MNOs, involves services such as "Advanced MPay" and "TrueMoney," which use the retail networks of their main companies for bill payments and transactions. Meanwhile, the other model is the partnership between MNOs and banks, exemplified by the cooperation between DTAC and K-Bank, providing a SIM card associated with a bank account, enabling basic financial services such as funds transfers and bill payments. Financial institutions in Thailand recently introduced mobile banking after making large investments in branch networks and ATMs (Koh et al., 2018).

The theoretical implications of these findings strengthen the understanding of the relationship between banking penetration and Foreign Direct Investment (FDI) within the framework of various economic theories. This emphasizes the importance of a strong financial sector in supporting economic growth and foreign investment. These findings provide empirical support for theories such as financial development, economic growth, and economic structuralism. Additionally, these implications contribute to a theoretical understanding of the political and regional integration factors that influence FDI inflows.

In terms of managerial or policy implications, these findings suggest the need for policies that support the development of the banking sector to increase foreign investment. Governments and related institutions need to pay attention to the importance of solid financial infrastructure and political stability as determining factors in attracting foreign investors. Policy measures that encourage banking inclusivity and expand access to regional financial markets, such as through ASEAN economic integration, can be an effective strategy in attracting FDI and strengthening economic growth.

However, it is important to acknowledge that there are still limitations in this study. One limitation is that it focuses on the relationship between banking penetration and FDI without considering other factors that may affect those dynamics, such as macroeconomic conditions or trade policy. Therefore, future research can further expand the scope of variables and consider other relevant aspects. Further research agendas may also include studies on the impact of new financial technologies, the role of the informal sector, and the influence of regulatory changes on the relationship between banking penetration and FDI. To deepen understanding of the

relationship between financial inclusion and investment, future research may expand geographic and temporal coverage and consider other factors that may influence the relationship. As such, future research may provide deeper insights into the complexity of these relationships and provide stronger guidance for economic policy.

7. Conclusions

Bank penetration, as measured through the number of deposit accounts, has a positive and significant impact on Foreign Direct Investment (FDI). This suggests that the higher the level of deposit account ownership in a country, the more likely the country is to attract direct investment from outside. Foreign investors' confidence in the domestic financial system may influence their decision to invest directly in the country. In Indonesia, stronger bank penetration can positively influence FDI, especially as the banking sector has grown rapidly in recent years. Financial inclusion programs such as TabunganKu and Kredit Usaha Rakyat have proven successful, despite challenges such as rigid financial regulations and inadequate infrastructure, especially in the development of the electronic money market. In Malaysia, the establishment of an Alliance for Financial Inclusion office in Kuala Lumpur and the launch of the "MyMobile" service by Bank Negara Malaysia have expanded access to digital financial services, while in Thailand, there are two main business models in the mobile banking space involving cooperation between MNOs and banks. This shows the importance of cooperation between the banking and telecommunications sectors in promoting financial inclusion in ASEAN.

The implication for ASEAN of increased banking penetration and financial inclusion in countries such as Indonesia, Malaysia, and Thailand is the increased potential to attract foreign direct investment (FDI) across the region. With increased access to financial services and domestic financial system stability, foreign investors can feel more confident to invest directly in ASEAN countries. This has the potential to boost economic growth across the region, strengthen economic integration between ASEAN countries, and enhance regional competitiveness. In addition, successful financial inclusion initiatives in ASEAN member states can also spur the exchange of knowledge and best practices between countries within the region. By sharing experiences and cross-border cooperation, ASEAN countries can support each other in efforts to improve access to financial services for people, particularly those in remote or low-income areas. However, challenges such as rigid financial regulations and inadequate infrastructure also need to be addressed jointly by ASEAN countries. With regional cooperation and inter-governmental coordination, ASEAN can create an environment conducive to the growth of financial inclusion across the region, which in turn will support inclusive and sustainable economic development in ASEAN as a whole.

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