

FDI Determinants in Asia: Financial Inclusion and Macroeconomic Stability—A First-Difference GMM Approach

Hopkins Henry Kawaye^{a,1}, Agustina Puji Rahayu^{b,2}, Firsty Ramadhona Amalia Lubis^{c,3*}, Nurul Azizah Az Zakiyyah^{d,4}, Selly Kudrati Ningsih^{e,5}, Happy Febrina Hariyani^{f,6}

^aThe Catholic of Malawi University, Chiradzulu, Malawi;

^bUniversitas Ahmad Dahlan, Yogyakarta, Indonesia;

^cUniversitas Ahmad Dahlan, Yogyakarta, Indonesia;

^dUniversitas Ahmad Dahlan, Yogyakarta, Indonesia;

^eUniversitas Negeri Makasar, Makasar, Indonesia;

^fCoventry University, Coventry, United Kingdom

Email : ¹hkawaye@cunima.ac.mw, ²agustina2100010024@webmail.uad.ac.id,

^{3*}firsty.ramadhona@ep.uad.ac.id, ⁴nurul.azzakiyyah@ep.uad.ac.id, ⁵selly.kudrati@unm.ac.id,

⁶hariyani@coventry.ac.uk

*Corresponding Author

Abstract

This study analyses the influence of financial inclusion and macroeconomic variables on Foreign Direct Investment (FDI) in nine Asian countries with the highest FDI performance during 2011–2023. Using secondary data from the World Bank, this research employs a dynamic panel-data approach with the First-Difference Generalised Method of Moments (FD-GMM) to address potential endogeneity issues. The variables examined include inflation, interest rates, trade openness, bank credit financing, and the number of bank branches as proxies for financial inclusion. The results indicate that all variables have a positive and significant effect on FDI inflows. The main contributions of this study lie in three areas. First, this study integrates financial inclusion indicators—specifically bank credit and branch availability—into the analysis of FDI determinants, an area that remains underexplored compared to traditional macroeconomic factors. Second, this study provides empirical evidence from a focused sample of top-performing Asian economies, offering more targeted regional insights into FDI dynamics. Third, by applying the FD-GMM approach, this study enhances methodological robustness by addressing endogeneity and dynamic relationships, which are often overlooked in conventional panel-data analyses. These findings suggest that strengthening financial inclusion alongside maintaining macroeconomic stability can significantly enhance a country's attractiveness to foreign investors. From a policy perspective, governments should improve access to financial services while maintaining macroeconomic stability to foster a more conducive investment climate. These findings also provide empirical evidence for

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policymakers in emerging Asian economies seeking to design strategies for attracting sustainable foreign direct investment.

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Introduction

Trade imbalances exist in most developing countries, where the quantity and quality of imported goods far exceeds exports. Resources that should be used to meet investment needs, particularly domestic savings, are allocated to cover this shortfall. To accelerate economic growth, developing countries need to find alternative sources of financing for development. Foreign investment, particularly through Foreign Direct Investment (FDI), is a key element of long-term development strategies (Hossain et al., 2024).

Foreign investment is a crucial element in supporting the economic development of Asian countries (Sasana & Fathoni, 2019). Significant differences exist between developed and developing countries, with developed countries still superior in attracting foreign investment due to economic stability and sound financial institutional systems (Sabir et al., 2019). The crucial role of financial sector development and a country's macroeconomic situation in attracting foreign capital flows has recently received serious attention from academics, practitioners, and investors. The development of the financial sector, consisting of capital markets and banking, can be reflected in financial inclusion, which is an important indicator in attracting foreign investment in a country. This is because financial inclusion acts as an incentive and signal of economic stability for foreign investors interested in direct investment, such as in the manufacturing sector and infrastructure development (Purwono, 2021). Furthermore, macroeconomic conditions such as inflation, interest rates, and GDP growth in a country also play a significant role in attracting FDI (Rasheed, 2019). Recent evidence from the East Asia and Pacific region further confirms that financial inclusion exerts a dynamic and persistent effect on FDI inflows once cross-sectional dependence is accounted for (Chen et al., 2023). Therefore, this research is important to examine the factors that can influence foreign investment.

Figure 1 shows the average foreign direct investment (FDI) in nine Asian countries from 2011 to 2023. According to the United Nations Conference on Trade and Development (UNCTAD), nine countries in Asia have the best FDI performance (top performers): Hong Kong, Singapore, Vietnam, Malaysia, Indonesia, China, Thailand, India, and South Korea. These countries are preferred by investors for their investments based on economic stability, market potential, and government support. According to the data, Hong Kong recorded the highest average FDI of 35.14% from 2011 to 2023, far exceeding other countries. Singapore recorded an average FDI of 24.16%. Vietnam recorded an average FDI of 4.52%, slightly higher than Malaysia's average FDI of 3.257%. Indonesia and China recorded average FDI of 1.99% and 1.902%, respectively. Thailand recorded an average FDI receipt of 1.798%, then India had an average FDI receipt slightly lower than Thailand at 1.652%, and South Korea was at the bottom with an average FDI of only 0.827%, because South Korean state-owned enterprises actively channel capital abroad, which makes FDI net outflow higher than FDI net inflow; nevertheless, South Korea attracted a significant amount of investment supported by advanced technology and industrial sectors (Lee et al., 2021).

The data shows that among the nine countries in Asia, Hong Kong is the most popular foreign investment destination and the largest recipient of FDI in the world. According to the 2022 United Nations Conference on Trade and Development (UNCTAD) report, Hong Kong encourages foreign investment and provides free guidance and services to support businesses from the planning stage through to establishment and growth. Companies from the United States and other countries can participate in government-supported and subsidized research and development programs on an

equal basis. Hong Kong does not discriminate against foreign investors by prohibiting, restricting, or requiring foreign investment in any economic sector. Hong Kong also has favourable tax policies and relaxed legislation. Foreign companies can freely establish and register their trademarks, and company directors do not have to be citizens or residents of Hong Kong (Arner et al., 2014).

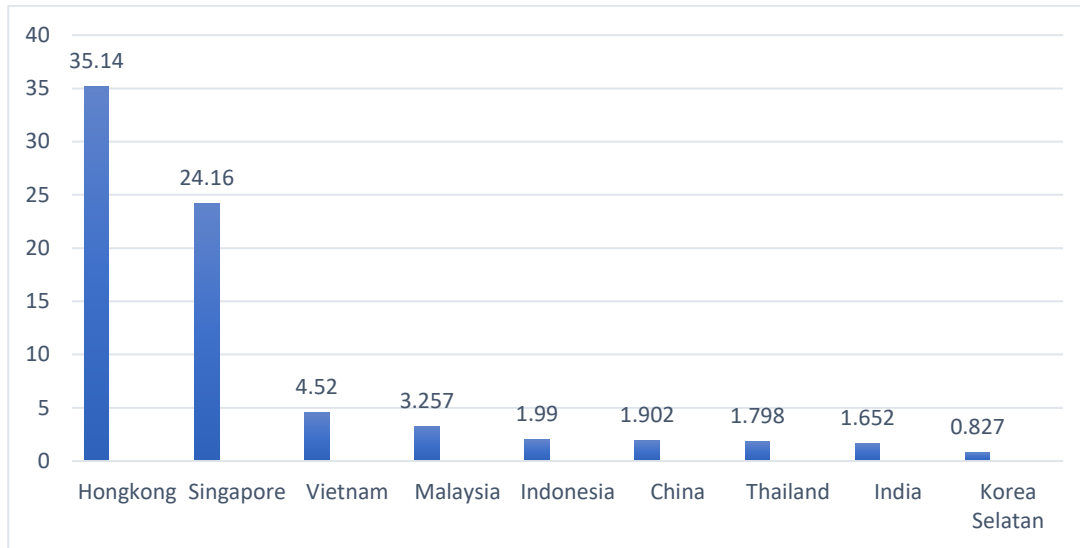


Fig 1. Average of Foreign Direct Investment in 9 ASEAN Countries 2011-2023
Source: World Bank Data, 2025

Despite being one of the smallest countries in Asia, Singapore has experienced rapid industrialization, characterized by high economic growth rates, and is recognized as one of the four little dragons of Asia. Based on World Bank data from 2011–2023, which has an average of 24.16%, Foreign Direct Investment in 2020 fell to 6.83% from 28.33% in 2019. This was caused by the global pandemic, but it quickly recovered and exceeded pre-pandemic levels. Singapore experienced a peak in foreign direct investment in 2021, with total FDI reaching around 33.3%. Singapore implemented a very liberal trade openness policy, which significantly increased foreign investment inflows by facilitating market access and reducing trade barriers. In addition, the large market size in the regional context and competitive interest rates also encouraged global investors to choose Singapore as an investment base in Southeast Asia (Pratiwi, 2020).

The trade tension between the United States and China has benefited Vietnam, making it a preferred destination for investors relocating their businesses. This has resulted in stable foreign investment in Vietnam from year to year, with an average foreign investment of 4.52% and a peak of 5.01% in 2017. Although still relatively small compared to Hong Kong and Singapore, Vietnam is slightly superior compared to Malaysia, Indonesia, China, India, and South Korea. In 2017, the Vietnamese government attempted to improve the environment and attract foreign investment by implementing numerous investment and business facilitation measures, focusing on speed and efficiency. As a result, investors have invested in 19 sectors, including the processing and manufacturing industries, production, electricity distribution, and the property business, among others (Mùadzah & Sukarniati, 2024).

Several countries in Asia have seen an increase in the credit-to-private-sector ratio over the past 10 years. China and several ASEAN countries have relatively high credit availability, which supports domestic investment. In countries with high levels of domestic credit, foreign investors have easier access to joint financing and financial infrastructure for expansion. This tends to encourage foreign investment, while conversely, higher interest rates and tighter bank credit can discourage

investment. However, following the monetary crisis, many central banks began tightening policies by raising interest rates and lowering inflation to address this. Higher interest rates increase the cost of capital (borrowing) and can discourage investment, contributing to a slowdown in foreign investment. Foreign investment plays a crucial role in the economic growth of developing countries in Asia, and financial inclusion and macroeconomic factors are important considerations in selecting foreign investment locations (Ariyani & Firmansyah, 2023).

Research by Andiyansyah (2021) shows that financial inclusion has a positive and significant relationship with the growth of FDI inflows. This is because inclusion through the addition of bank branches can act as an incentive for foreign investors, especially in the production and infrastructure sectors, as the process of withdrawing money becomes easier. Furthermore, regarding macroeconomic variables closely related to foreign investment, interest rates have a positive and significant influence on FDI, as relatively low-interest loans can stimulate economic growth. Meanwhile, exchange rate movements have a negative and significant influence, because a weaker currency raises the price of imported inputs and triggers an increase in production costs, making the price of goods produced expensive and difficult to compete with those produced by other countries. Furthermore, slowing economic growth has a positive and significant impact on attracting FDI, echoing the findings of Shaari et al. (2023) who show that trade openness and market-related factors remain central determinants of FDI across ASEAN+3 economies even after accounting for structural factors such as environmental regulation.

Although numerous studies have examined the determinants of FDI, the role of financial inclusion remains relatively underexplored compared with conventional macroeconomic factors. Existing studies predominantly emphasize inflation, interest rates, exchange rates, and trade openness, while limited attention has been given to banking accessibility indicators such as bank credit and branch availability. Furthermore, evidence focusing specifically on the nine leading FDI recipient countries in Asia remains scarce. This study therefore contributes to the literature by integrating financial inclusion indicators with macroeconomic variables in a dynamic panel framework using the First-Difference GMM estimator, which effectively addresses endogeneity and dynamic persistence in FDI.

Previous studies have examined the relationship between financial inclusion and FDI in broader samples, such as OIC countries Andiyansyah (2021) and MENA countries (Al-Smadi & Al-Smadi, 2024). However, empirical evidence focusing specifically on the nine Asian economies with the highest FDI performance remains limited. Moreover, previous studies have largely relied on conventional panel estimation techniques, whereas this study employs the First-Difference GMM estimator to address dynamic persistence and potential endogeneity. Based on these research gaps, this study aims to examine the effects of financial inclusion and macroeconomic stability on FDI inflows in the nine Asian countries with the highest FDI performance during 2011–2023. Specifically, this study investigates whether inflation, interest rates, trade openness, bank credit, and bank branch availability significantly influence FDI using the First-Difference Generalized Method of Moments (FD-GMM) estimator.

Literature Review

Theoretically, Asian countries are implementing reforms to attract foreign investment as a recovery strategy. FDI is a key driver of economic growth, increased productivity, and employment opportunities in many developing and developed countries. Asia is one of the world's largest FDI destinations due to its high economic dynamism, diverse market structures, and the ongoing transformation of investment policies. FDI is a tool and medium within the global economic system; transactions are not conducted through stock exchanges because the investment is not in the form of shares, bonds, or other securities. Therefore, FDI can be defined as an investment effort physically realized in a country.

Empirical evidence in Asia shows mixed results regarding the drivers of FDI inflows into Asian countries. Several studies have found that financial inclusion, defined as ease of access, availability, and benefits of the formal financial system for all economic actors, is crucial (Rahman & Makableh, 2024). Two dimensions of financial inclusion are measured: the percentage of bank financing (credit/GDP) and the number of bank branches per 100,000 adult population, both of which have a positive and significant impact on FDI. The greater the number of bank branches, the easier it is for the public to access financial services and products, thus increasing financial stability. Furthermore, investors are also more flexible in allocating funds to the production sector because the process of withdrawing money from banks, as intermediary institutions, is easier. These results support the view that banking-sector development tends to precede and is closely related to foreign investment inflows (Andiyansyah, 2021). Comparable evidence outside Asia reinforces this pattern that Majeed et al. (2021) find a bidirectional cointegrating relationship between FDI and financial development, while Odugbesan et al. (2022) show that FDI mediates the link between financial inclusion and sustainable development in Sub-Saharan Africa, and Lestari et al. (2022) report that stronger financial development, together with lower corruption, raises FDI inflows in developing countries. In a related, Wen et al. (2025) revisited the finance-innovation nexus across Asian economies and found that financial development, mediated through bank lending, exerts a robust positive effect on technological innovation, underscoring the broader role of financial-system depth in shaping economic outcomes across the region.

Macroeconomic variables such as inflation, which is a continuous and significant increase in the price of goods and services over a certain period of time, have been reported to have a negative and significant impact on FDI, where an unstable economy caused by excessively high inflation has a negative impact on investment activities; when the inflation rate is too high, people's purchasing power decreases, reducing company income, causing a decline in economic growth, and creating a negative view among foreign investors toward long-term investment in the form of FDI (Zakiyyah et al., 2024). Although many empirical studies report a negative relationship between inflation and FDI because high inflation increases uncertainty and production costs, several studies argue that moderate inflation may instead reflect robust domestic demand and expanding economic activity. In countries experiencing stable and manageable inflation, foreign investors may interpret rising prices as an indication of stronger market potential rather than macroeconomic instability. Therefore, the expected direction of the inflation coefficient remains an empirical issue that warrants further investigation.

Interest rates are the fees charged for borrowing money for a specific period, usually expressed as a percentage. Interest rates have been found to have a positive and significant impact on FDI. This is because countries with generally low and stable interest rates encourage customers to borrow capital and divert it to the real sector, thus generating stable economic growth and being viewed favourably by foreign investors (Andiyansyah, 2021). Trade openness is the level of openness in international relations between countries. Trade openness has a positive and significant impact on FDI. Trade openness indicates a reduction in barriers to international economic activity, both trade and financial flows between countries. This reduction can be seen in tariff reductions, lower export-import taxes, and cooperative policies that facilitate the movement of goods, services, and capital between countries. Reducing trade barriers encourages foreign investors to invest in domestic markets because the returns tend to be greater (Hossain et al., 2024).

Method

This study employs the First-Difference Generalized Method of Moments (FD-GMM), also known as the Arellano–Bond estimator, because the empirical model includes a lagged dependent variable and is likely to suffer from endogeneity. Compared with conventional panel estimators such as pooled OLS, fixed effects, and random effects, FD-GMM eliminates unobserved individual effects through first

differencing while simultaneously addressing endogeneity using internal instruments derived from lagged variables. This estimator is therefore appropriate for dynamic panel data with a relatively small cross-sectional dimension and a longer time dimension.

The basic equation of the dynamic panel regression model is as follows:

$$y_{i,t} = \delta y_{i,t-1} + x'_{i,t} \beta + u_{i,t} \quad (1)$$

In the context of this study, the First Difference GMM (FD-GMM) or Arellano Bond GMM (AB-GMM) approach was chosen because of its ability to address endogeneity issues by utilizing valid internal instruments (lag variables), address heterogeneity through differentiation, be well-suited to dynamic panel data models that include a time series dimension, control autocorrelation through AR(1) and AR(2) tests, and support instrument evaluation through the Hansen or Sargen test. These capabilities provide advantages over static models, such as fixed effects or random effects, which cannot effectively account for temporal dynamics. FD-GMM then uses differentiation to eliminate unobserved fixed effects that could bias the estimates. Therefore, the dynamic empirical models tested to determine the various impacts of FDI on macroeconomic variables and financial inclusion are identified as follows:

$$\Delta FDI_{it} = \delta \Delta FDI_{i,t-1} + \beta_1 \Delta ILF_{it} + \beta_2 \Delta IR_{it} + \beta_3 \Delta TO_{i,t-1} + \beta_4 \Delta USE_{i,t-1} + \beta_5 \Delta \ln Availability_{it} + \Delta \varepsilon_{it} \quad (2)$$

where, *FDI* refers to Foreign Direct Investment, *ILF* denotes inflation, *IR* represents the Interest Rate, *TO* refers to Trade Openness, *USE* is the Percentage of Bank Credit Financing to GDP, and *Availability* represents the Number of Bank Branches per 100,000 Adult Population. The subscripts *i* and *t* denote the cross-sectional unit (countries) and time period (years), respectively. The symbol Δ indicates the first-difference operator. Thus, ΔFDI_{it} represents the change in Foreign Direct Investment, while $\Delta FDI_{i,t-1}$ is its one period lag. Likewise, ΔILF_{it} , ΔIR_{it} , $\Delta TO_{i,t-1}$, $\Delta USE_{i,t-1}$, and $\Delta \ln Availability_{it}$ denote the first differences of inflation, interest rate, trade openness, bank credit financing to GDP, and the natural logarithm of bank branch availability, respectively. The $\beta_1 - \beta_5$ are the regression coefficients measuring the effect of each explanatory variable on FDI, while δ is the coefficient of the lagged dependent variable. Finally, $\Delta \varepsilon_{it}$ represents the error term, capturing the influence of unobserved factors affecting FDI across countries and over time.

The study employs one dependent variable and five explanatory variables. Foreign Direct Investment (FDI) is measured as the net inflow of investment to acquire a lasting management interest in an enterprise operating in another economy. Inflation (ILF) is proxied by the annual growth rate of the GDP deflator, while the Interest Rate (IR) is measured using the lending interest rate. Trade Openness (TO) is calculated as the ratio of total exports and imports of goods and services to Gross Domestic Product (GDP). Financial inclusion is represented by two indicators: Bank Credit Financing (USE), measured as domestic credit to the private sector provided by banks as a percentage of GDP, and Availability, measured by the number of commercial bank branches per 100,000 adult population. All variables are obtained from the World Development Indicators (WDI) database published by the World Bank.

Result and Discussion

Inflation averages 2.89%, while the average interest rate reaches 3.49%. Financial inclusion indicators also vary considerably, with average domestic credit amounting to 128.39% of GDP and an average of 11.91 commercial bank branches per 100,000 adults. These variations indicate heterogeneous macroeconomic conditions and financial sector development across the observed countries, supporting the use of a dynamic panel estimation approach. Table 1 presents the

descriptive statistics of the variables used in this study. The sample consists of 117 observations from nine Asian countries during 2011–2023. FDI records an average value of 8.36% with considerable variation across countries, as indicated by a standard deviation of 12.32. Likewise, trade openness exhibits the largest dispersion among the explanatory variables, suggesting substantial differences in economic openness across the sample.

Table 1. Descriptive Variables

Variable	Obs	Max	Min	Mean	St. Dev
FDI	117	58.51	-0.85	8.360256	12.32072
Inflation	117	21.4	-5.01	2.892991	3.283941
Interest Rate	114	9.98	-5.11	3.498421	2.65582
Trade Openness	117	442.62	32.97	150.6747	123.0425
Percentage of Bank Credit Financing/GDP	111	264.44	26.87	128.3915	56.40986
Number of Bank Branches/100,000 Adult Population	116	23.89	2.91	11.90879	5.156058

Inflation based on observational data has an average of 2.89% and a standard deviation of 3.28%, with the lowest figure of -5.01% in Singapore in 2023 due to several factors that led to weakening price pressures from both external and domestic sides. The highest inflation was in Vietnam in 2011 at 21.5%, which was triggered by a combination of monetary, external, and structural factors. The trade openness variable has an average of 150.67% with a standard deviation of 123.04%. The highest number of trade openness variables is 442.62% in Hong Kong, due to consistent free market policies and Hong Kong's strategic position as a gateway to China making Hong Kong an international distribution center with a very large trade volume. Indonesia recorded the lowest level of trade openness, at 32.97% in 2020. This was due to the significant impact of the COVID-19 pandemic, as well as long-term structural factors such as protectionist policies and non-tariff barriers that tend to restrict the flow of free trade.

Another variable, interest rates, had a minimum value of -5.11% in Singapore in 2021 and a maximum value of 9.98% in Indonesia in 2020. The average interest rate increase was 3.49% with a standard deviation of 2.65%, indicating that Singapore does not use a benchmark interest rate like Indonesia. The overall percentage of bank credit financing had an average of 128.39% with a standard deviation of 56.40%. The highest value for this variable, 264.44% in Hong Kong in 2022, was due to Hong Kong's high credit-to-private sector ratio.

Hong Kong is a global financial and banking center, where banks provide large-scale loans to both large international corporations and household mortgages. Hong Kong's domestic GDP is relatively small compared to the scale of credit flows, resulting in a high credit-to-GDP ratio. In contrast to Indonesia, which was relatively low at 26.7% in 2011. Then the number of bank branches had a minimum value of 2.91% and a maximum of 23.89% in Hong Kong in 2011. With an average of 11.9% and a standard deviation of 5.15. The low value of the number of bank branches in Vietnam in 2021 was caused by structural factors such as geography, population distribution, operational costs, bank choice, and the shift to digital services, so that physical banking penetration is still limited.

In panel data regression (see Table 2), there are three main approaches: the General Effects Model or Pooled Least Squares (PLS), the Fixed Effects Model, and the Random Effects Model. These three models will then be further analyzed by comparing them using the Dynamic First Difference GMM (FD-GMM) panel data regression estimation approach to obtain more accurate results. The Common Effects Model (CEM) indicates that inflation, trade openness, and the number of bank branches significantly influence foreign investment, as their probability values are below 0.05. The Fixed Effects Model (FEM) indicates that only the percentage of bank credit financing significantly

influences foreign investment ($p < 0.10$). The Random Effects Model (REM) indicates that trade openness, the percentage of bank credit financing, and the number of bank branches significantly influence foreign investment, while inflation and interest rates do not, as their probability values exceed 0.05.

Table 2. Best Model Selection Test Results

Variabel	CEM	FEM	REM	FD-GMM
FDI L1				0.534 (0.000)***
Inflation	0.444 (0.023)**	-0.050 (0.863)	0.199 (0.396)	0.577 (0.021)**
Interest Rate	0.325 (0.145)	-0.196 (0.581)	0.078 (0.780)	0.472 (0.046)**
Trade Openness	0.914 (0.000)***	0.019 (0.423)	0.087 (0.000)***	0.039 (0.000)***
Percentage of Bank Credit Financing/GDP	0.005 (0.355)	-0.007 (0.084)*	-0.009 (0.061)*	0.022 (0.059)*
Number of Bank Branches/100,000	4.475 (0.000)***	0.502 (0.888)	3.713 (0.015)**	1.690 (0.030)**
Adult Population				-2.08
Arellano-Bond Specification Test AR (1) and AR(2)				(0.038) -0.68 (0.496)
Sargan Test				107.58 (0.160)
Wald Test				1628.01 (0.000)

The Arellano–Bond test indicates that the AR(1) statistic is significant while the AR(2) statistic is insignificant, suggesting that the model satisfies the assumption of no second-order serial correlation. Furthermore, the insignificant Sargan test indicates that the instruments used in the estimation are valid. These diagnostic results confirm the reliability of the FD-GMM estimator, consistent with the diagnostic practice recommended by Al-Smadi & Al-Smadi, (2024) in their GMM-based analysis of FDI and financial inclusion in MENA countries.

Based on estimates using the FD-GMM approach, all independent variables inflation, interest rates, trade openness, the percentage of bank credit financing, and the number of bank branches collectively have a positive and significant effect on FDI, as their probability values are below 0.05. Although CEM, FEM, and REM are estimated for comparison purposes, this study relies on the FD-GMM estimator as the primary model because it appropriately addresses the dynamic nature of FDI, controls for unobserved heterogeneity, and mitigates potential endogeneity through internal instruments.

The lagged FDI term (FDI L1) has a significant positive effect on Foreign Direct Investment in the nine Asian countries studied. This finding illustrates the persistence of foreign investment flows, where investment decisions in a given year are not independent but are strongly influenced by experience and investment realization in the previous period. This is consistent with Ng et al. (2022), who confirm that FDI tends to exhibit an autoregressive pattern, especially in countries with good institutional quality, adequate transparency, and a relatively stable investment climate. The presence of FDI in the past provides additional information and confidence for other investors, thereby encouraging reinvestment and further expansion a persistence pattern that Tsaurai (2022) similarly documents for FDI's cumulative effect on domestic investment in the BRICS economies.

Inflation has a positive and significant impact on FDI in the nine Asian countries studied. Investors appear to view moderate inflation as a signal of economic growth and potential investment opportunities; rising inflation, within a manageable range, tends to be associated with increased inflows of direct investment (Abdurrahmani & Tmava, 2024; Abor et al., 2024; Islam & Islam, 2023). Inflation that occurs alongside growing domestic demand such as in a developing economy with rising public consumption encourages foreign investors to invest. Foreign investors tend to seek markets with high consumption-growth potential because these are perceived as more promising, offering broad market opportunities and greater financial prospects. Furthermore, maintained inflation stability can provide a positive signal that economic risks are being managed effectively, thus boosting investor confidence (Mahadiansar et al., 2021).

This positive relationship between inflation and FDI should not be interpreted as evidence that inflation is universally beneficial for investment. Rather, in the context of the selected Asian economies, moderate inflation may reflect expanding domestic demand, stronger economic activity, and favorable business prospects. Investors may therefore perceive moderate inflation as a signal of growing market opportunities rather than macroeconomic instability. This interpretation is particularly relevant for emerging Asian economies that have maintained inflation within manageable ranges through credible monetary policy.

The interest-rate variable has a positive and significant relationship with FDI, indicating that rising interest rates are associated with increased FDI. Higher interest rates offer better returns to investors, making investment more attractive. However, while the coefficient is positive, this result should serve as a caution to economic policymakers: increased foreign capital inflows driven by rising real interest rates may also signal tighter domestic borrowing conditions. High interest rates are typically seen as a signal of macroeconomic stability and monetary-policy credibility, thereby boosting foreign investor confidence (Hossain et al., 2024).

Trade openness has a positive and significant effect on FDI in the nine Asian countries, with a coefficient of 0.039 and a probability value below $\alpha = 0.01$. Therefore, every 1% increase in trade openness is associated with roughly a 3.9% increase in foreign direct investment. This result aligns with New Trade Theory, which posits a positive relationship between trade openness and FDI, and supports the importance of economies of scale, product differentiation, and the role of multinational corporations in international trade a pattern also documented by (Shaari et al., 2023) across the broader ASEAN+3 region. At the country level, this is consistent with Kurniawan and A'yun (2022), who found that in the long run, real exports in Indonesia positively affect FDI inflows, reinforcing the role of trade openness as a determinant of foreign investment within the region. Trade openness provides opportunities for foreign companies to capitalize on existing market opportunities.

The bank-credit-financing variable has a positive and significant effect on FDI. An efficiently managed credit system plays a vital role in supporting the private sector's business activities by transferring surplus funds from individuals and institutions to those experiencing deficits, thereby encouraging savings and foreign investment. The greater the credit offered by banks to the private sector, the stronger the financial system's support in facilitating foreign investment. Credit availability can reduce financing constraints, increase market efficiency, strengthen investor confidence in the stability of the financial sector, and encourage FDI by reducing the cost of capital Nisar (2025), a channel that is also emphasized by Lestari et al. (2022) and Majeed et al. (2021) in their respective panel studies on financial development and FDI.

The number of bank branches has a positive and significant influence on FDI, because a denser bank-branch network makes it easier for the public to access financial services and products, thereby increasing the stability of the financial system. Investors are also more flexible in allocating funds to the production sector because the process of withdrawing money from banks as intermediaries is easier. An expanding bank-branch network reflects better financial access that is, the ease with which the public and businesses can obtain financial services. The IMF accordingly includes the

number of bank branches as a key component in measuring a country's financial access. Wider financial access increases transaction efficiency, lowers financial costs, and strengthens investor confidence in the stability of the banking system (Andiyansyah, 2021), a mechanism that parallels the mediating role of financial inclusion in attracting FDI documented by Odugbesan et al. (2022) for Sub-Saharan African economies.

Conclusion

Foreign Direct Investment (FDI) is a crucial factor in sustainable economic development, particularly for developing and developed countries in Asia. Nine Asian countries have the best FDI performance among top-performing economies. Recently, the rapid development of the financial sector and macroeconomic stability have become a serious concern for foreign investors, and financial inclusion together with macroeconomic conditions play a crucial role in attracting FDI flows. The best-performing model in this study is the First-Difference Generalized Method of Moments (FD-GMM), and the results show that, overall, inflation, interest rates, trade openness, the percentage of bank credit financing, and the number of bank branches all play a significant role in encouraging FDI. All variables used in this study have a positive and significant influence on FDI. Therefore, governments must not only attract investors through macroeconomic stability and financial inclusion but also implement policy consistency, improve regulatory quality, and maintain trust with investors to ensure long-term investment sustainability. Despite these findings, this study has several limitations. First, the analysis covers only nine Asian countries with the highest FDI performance, which limits the generalizability of the results to other regions. Second, the study relies on banking indicators as proxies for financial inclusion, while broader dimensions such as digital financial services and financial literacy which Al-Smadi (2023) shows to be closely linked to financial inclusion outcomes in emerging markets are not considered. Future studies are therefore encouraged to incorporate additional digital-finance indicators and broader country coverage to obtain more comprehensive evidence.

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Declarations

- Author contribution** : Hopkins Henry Kawaye led the research design and manuscript development. Agustina Tri Rahayu contributed to manuscript drafting, data collection, and preliminary data processing. Firsty Ramadhona Amalia acted as oversaw the submission and publication process. Nurul Azizah Az Zakiyyah, Selly Kudrati Ningsih, and Happy Febrina Hariyani contributed to data analysis and critical revision of the manuscript
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were used responsibly and that the research was conducted in accordance with academic integrity and ethical research standards.

No additional information is available for this paper

Additional information

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