Does External Debt Affect Foreign Direct Investment in Southeast Asia? The Role of Exchange Rate, Interest Rate, and Economic Growth

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Abstract
The study intends to explore the relationship between external debt and foreign direct investment in six selected Southeast Asian countries, namely Indonesia, Lao PDR, Myanmar, the Philippines, Thailand, and Viet Nam in addition to the effect of exchange rate, interest rate, and economic growth between 1995 and 2024 using the panel regression model. In the short run, results revealed that the depreciation of exchange rate accelerates foreign direct investment in Indonesia, Lao PDR, and Thailand, but it leads to the decrease of foreign direct investment in Viet Nam. In addition, the rise of external debt may discourage foreign direct investment in Lao PDR, however it facilitates foreign direct investment in Myanmar. Foreign direct investment can be fostered by economic growth in Indonesia, Lao PDR, and Thailand. In the long run, the depreciation of exchange rate decelerates foreign direct investment, but the increase of external debt and economic growth may promote foreign direct investment in the region. The effect of the interest rate on foreign direct investment was insignificant both in the short and long run. Finally, policies were recommended to control external debt and encourage foreign direct investment into countries in the region.

Keywords: external debt, foreign direct investment, Southeast Asia

1. Introduction

External debt has been seen as an essential financial source for a country in terms of balancing budget deficits (Dawood *et al.*, 2021), smoothing consumption (Kharusi & Ada, 2018) as well as absorbing advanced production technology (Lin & Sosin, 2001). This dual reliance on both external debt and FDI raises a critical policy question for ASEAN nations: how can the former be managed to support, rather than undermine, the latter?

Foreign direct investment (FDI) plays a vital role in terms of accelerating economic growth by promoting local investment, transferring knowledge as well as generating employment (Cahyadin & Sarmidi, 2019; and Hordofa, 2023). A decrease of foreign exchange reserves has been seen as the result of a low level of savings and a deficit trade in ASEAN countries (Alhazimi & Supriyono, 2020). The abundance of exchange controls and the rise of FDI may lead to shocks to the economy and volatility of the real exchange rate (Corden, 2002; Reinhart & Smith, 2002; and Al-Abri & Baghestani, 2015). On the other hand, the development of FDI can reduce the volatility of real exchange rate through increasing liquidity, improving factor productivity as well as stabilizing domestic consumption and investment spending (Agenor, 2003). The natural interest rate has been viewed as an important instrument for implementing monetary policy. The natural interest rate of five selected Southeast Asian countries, namely Indonesia, Malaysia, the Philippines, Singapore, and Thailand tended to decline from 1990 to 2020 since the Asian financial crisis and the global financial crisis (Tanaka *et al.*, 2021).

The governments in ASEAN countries continue to carry out policies related to economic growth, inflation and unemployment control, and FDI encouragement to tackle poverty (Uttama, 2015; and ASEAN, 2019). The FDI inflows into ASEAN increased from US$129.9 billion in 2014 to US$234.0 billion in 2023. Singapore has become the leading recipient of FDI in the region between 2019 and 2023. By 2023, this country attracted US$159.6 billion, equivalent to 68.2 percent of total inward FDI flows to ASEAN. Viet Nam maintained annual FDI flows around US$16-18 billion, and the Philippines attracted US$9.1 billion in 2023. FDI inflows of Cambodia and Lao PDR presented a positive growth, accounting for US$4,0 billion and US$1.8 billion, respectively, at the same time (ASEAN, 2024).

By 2023, the ASEAN nominal gross domestic product (GDP) reached US$3.8 trillion, contributing 3.6 percent to global GDP, and this pushes ASEAN stood at the fifth-largest economy in the world. Output produced by the United States accounted for US$27.7 trillion, China (US$17.8 trillion), Germany (US$4.5 trillion), Japan (US$4.2 trillion), and ASEAN accounts for more than half of global economic output (ASEAN, 2024). Although ASEAN has been recorded as the fifth largest economy in the world., however, GDP growth has slowed down in recent years due to various external and internal obstacles, including uncertain global financial market (Nasution *et al.*, 2022).

In fact, the relationship between external debt, FDI, and economic growth in developing countries and emerging economies has been intensively researched by scholars all over the world (Mohsin *et al.*, 2021; Abina, 2022; Matsumoto, 2022; Thai & Lan, 2022; Roy, 2023; Hordofa, 2023; Dau *et al.*, 2024; Elkhalfi *et al.*, 2024; Epor *et al.*, 2024; Otieno, 2024; Mohammed, 2025; Odoom *et al.*, 2025; and Otieno & Daniel, 2025). In Southeast Asia, the association between external debt, FDI, exchange rate, and economic growth was explored by Sangare (2016), Cahyadin & Sarmidi (2019), Alhazimi & Supriyono (2020), Rasyid *et al.*, (2023), Triatmanto *et al.*, 2023, and Yuliana *et al.*, (2023). While external debt and FDI are both crucial sources of foreign capital for Southeast Asian economies, the dynamic interplay between them remains a significant puzzle. For policymakers, it is unclear whether efforts to attract FDI are undermined or supported by the accumulation of external debt. This study addresses a critical policy dilemma: Under what conditions does external debt shift from being a facilitator of economic development to an obstacle for foreign investment? We argue that the answer lies in the dynamic, heterogeneous effects across the short and long run, a dimension largely overlooked in previous literature. To address this gap, this paper employs a panel regression model to disentangle the complex short- and long-run relationships between external debt, FDI, and key macroeconomic variables (exchange rate, interest rate, and economic growth) in six major ASEAN economies from 1995 to 2024. More importantly, policies were recommended to control external debt, promote FDI, and achieve sustainable development for the region.

The structure of this study is organized as follows. Section 2 presents the literature review. Methods are discussed in section 3. In section 4, we present results and discussion. Finally, the conclusion and policy implications are summarized in section 5.

2. Literature review

2.1 Theoretical background

The capital inflows theory was invented by Macdougall (1958) and developed by Kemp (1964). The theory mentions a two-country model, in which a country is an investing country, and another one represents the host country. In this case, the capital freely transfers from a capital abundant country to a capital scarce country. Consequently, the use of capital is efficient, and this generates the increase of welfare for the people. The movement of capital from rich

countries to capital scarce country has been seen as the form of either debt instrument or FDI. Therefore, the influence of capital or FDI inflows into an economy should be on the financial systems and markets (Agyapong & Bedjabeng, 2020).

However, economic growth of the investing country may not decrease because the revenue receipt from FDI is higher than the output loss, and this encourages them continue to invest more into abroad. In terms of the host economy, GDP would be risen because of the FDI inflows. Thus, the rise of the national income is expected to facilitate all sectors of the economy. However, this classical view is challenged by the 'debt overhang' hypothesis (Krugman, 1988). This theory posits that an excessive external debt burden can act as a future tax on investment, discouraging foreign investors who fear that their returns will be used to service old debt. This provides a direct theoretical rationale for a potentially negative relationship between external debt and FDI.

Therefore, this study empirically investigates these competing theoretical perspectives by evaluating the effect of external debt on FDI, along with the role of exchange rate and interest rate, in the context of Southeast Asia.

2.2 Empirical studies

The empirical literature examining the nexus between external debt, FDI, and macroeconomic performance is extensive, yet it presents a complex and often contradictory picture. Al-Abri & Baghestani (2015) examined the nexus between FDI and exchange rate in 8 emerging Asian countries between 1980 and 2011, and they found that the rise of foreign liabilities may reduce real exchange rate volatility in China, India, Malaysia, Singapore, and South Korea, but increase real exchange rate volatility for Indonesia, the Philippines, and Thailand. Likewise, Agyapong & Bedjabeng (2020) evaluated the relationship between external debt, FDI, and financial development in Africa from 2002 to 2015, and their findings stated that African countries should ensure that FDI and external funds may support sectors in the economy. A study of Ale *et al.* (2023) estimated the effect of external debt on economic growth in South Asian countries for the period 1980-2020, and the results revealed that external debt may discourage economic growth in these countries both in the short and long run. Similarly, Elkhalfi *et al.* (2024) assessed the impact of external debt on economic growth in emerging economies between 1990 and 2022, and their findings demonstrated that the increase of external debt accelerated economic growth in the initial period, but excessive debt had a negative influence on the growth in these countries. Investigating the effect of external debt and economic vulnerability in 96 countries from 1990 to 2018, Dau *et al.* (2024) found that external debt can assist to reduce economic vulnerability in the short run, but it increases economic vulnerability in the long run.

According to Matsumoto (2022), reserve accumulation depreciates the real exchange rate and attracts FDI inflows, and as a result, this encourages economic growth. Likewise, Epor *et al.* (2024) investigated the relationship between FDI and economic growth in three developing countries from 1990 to 2021, and their results addressed that external debt has a positive effect on the growth, but the relationship between FDI and economic growth is insignificant. Otieno (2024) explored the nexus between public debt, investment, and economic growth in Eastern Africa between 1992 and 2019, and the result indicated that public debt has a negative impact on the growth in these countries. Sultana *et al.* (2024) estimated the association between external debt, exchange rate, and FDI in emerging economies between 1993 and 2020, and their findings revealed that exchange rate has a negative effect on FDI in the short run, but it may facilitate FDI in the long run; and the relationship between external debt and FDI was insignificant. Mohammed (2025) examined the relationship between external debt and economic growth of 10 African countries between 2000 and 2022, and he found that

external debt has a significant and positive relationship with economic growth, but inflation reduces the growth in these countries.

Mohsin *et al.* (2021) investigated the relationship between external debt and economic growth in 8 South Asian countries from 2000 to 2018, and they argued that external debt negatively affects the growth, while gross capital formation and trade openness have positive relationships with economic growth of these countries. A study by Thai & Lan (2022) showed that there is an inverse relationship between external debt ratios and economic growth in Asian countries between 2000 and 2019. Roy (2023) examined the nexus between economic growth, external debt, oil price, and remittances in India for the period 1990-2020, and the results revealed that external debt and remittances have negative effects on economic growth, but oil price fosters economic growth both in the short and long run. According to Khalid *et al.* (2024), the real exchange rate had asymmetric effects on the growth of Turkey. Odoom *et al.* (2025) investigated the association between public debt, exchange rate, inflation, monetary policy rate, and economic growth in Ghana between 2000 and 2022, and their findings addressed that public debt may decelerate the growth, but exchange rate has a positive relationship with public debt.

While these global and single-country studies provide a broad context, research focusing specifically on the ASEAN region reveals similarly inconclusive findings, highlighting the need for a more targeted analysis. Cahyadin & Sarmidi (2019) explored the relationship between FDI, labour force, external debt, and economic growth in Indonesia and Malaysia between 1980 and 2016, and they found that FDI supports the growth, while external debt may reduce economic growth of two countries. A study by Alhazimi & Supriyono (2020) concluded that foreign debt, FDI, exports, and imports had significant and positive impacts on economic growth in ASEAN-5 (Indonesia, Lao PDR, Myanmar, the Philippines, and Viet Nam) from 2000 to 2017. Rasyid *et al.* (2023) evaluated the relationship between FDI, exports, imports, foreign debt, and foreign exchange reserves of ASEAN-8, including Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand, and Viet Nam, for the period 2017-2022, and the results demonstrated that exports and foreign debt had positive effects on the economy, but imports negatively influenced economic growth, while the relationship between FDI and the growth was insignificant. According to Triatmanto *et al.* (2023), FDI may promote economic growth in Indonesia, the Philippines, Thailand, and Viet Nam, while the rise of external debt harmed the growth of these countries. Lastly, Yuliana *et al.* (2023) argued that FDI and inflation had significant and positive effects on economic growth in ASEAN-7 countries between 2012 and 2020. Collectively, this body of work confirms the importance of these variables for the ASEAN region but leaves the precise nature of their dynamic, long-term relationships unresolved. Specifically, a systematic investigation using a panel framework that can distinguish between short-run heterogeneity and long-run equilibrium is notably absent, a gap this study directly addresses.

2.3 Research hypotheses

Drawing from the theoretical discussion on capital inflows and debt overhang, the following hypotheses were constructed to examine the relationship between external debt and FDI along with the role of economic growth, exchange rate, and interest rate:

H_1: External debt negatively affects FDI

H_2: Economic growth positively affects FDI

H_3: Exchange rate and interest rate positively affect FDI.

3. Methodology

3.1 Data and sources

A panel dataset for the causality between external debt, economic growth, exchange rate, interest rate, and FDI inflows in six Southeast Asian countries, namely Indonesia, Lao PDR, Myanmar, the Philippines, Thailand, and Viet Nam between 1995 and 2024 was gathered from the World Development Indicators (WDI). Other Southeast Asian countries were excluded in this research because of data shortage. The period was chosen for the study since it covers the Asian financial crisis in 1997, the global financial crisis in 2008, and the Covid-19 in 2021 that affect social and economic development in Southeast Asian countries. Thus, a total of 180 observations was entered for data analysis. The panel data is used for this research because of the following advantages: (1) it obtains a large sample, gives more degree of freedom, more information, and less multi-collinearity among variables; and (2) it may overcome constraints related to control individual or time heterogeneity faced by the cross-sectional data (Hsiao, 2014).

3.2 Model specification

A panel data regression was used to estimate the short and long run relationships between external debt, economic growth, exchange rate, interest rate, and FDI inflows in six Southeast Asian countries from 1995 to 2024. In this paper, the Pooled Mean Group (PMG) technique was employed because its estimator allows the intercepts, short-run coefficients, and error variances to differ freely across groups, but the long-run coefficients are constrained to be homogeneous. This is theoretically appropriate for the ASEAN region, given its economic integration efforts, while still allowing for country-specific short-run dynamics (Pesaran *et al*., 1999).

The procedure of the panel data regression includes four steps as follows. First, the panel unit root tests were performed by Levin-Lin-Chu (2002) and Breitung (2000) tests. Both techniques were begun with the null hypothesis of non-stationary. Second, Kao (1999) and Pedroni tests were used to examine the existence of the long-term relationship between variables. Both techniques were carried out with the null hypothesis of no cointegration. Third, the Pesaran (2007) CD test was used to examine the cross-sectional dependence of variables across six Southeast Asian countries in the study with a hypothesis of no cross-sectional dependence. Finally, the PMG technique was applied to estimate the relationship among variables in both short and long run.

The model was specified based on the work of Mugambi & Murunga (2017) and Sultana *et al.* (2024) as follows:

$$FDI_t = f(EX_t, ED_t, IR_{t,} GDP_t) \quad (1)$$

Where: The dependent variable is FDI_t which denotes net inflows of foreign direct investment (% of GDP); the explanatory variables include EX_t means the official exchange rate (LCU/US$); ED_t presents external debt (% of GNI); IR_t presents interest rate (lending rate minus deposit rate, %); and GDP was calculated by GDP per capita (current US$).

The functional form of Equation 1 was transformed as follows:

$$LnFDI_t = \beta_0 + \beta_1 lnEX_t + \beta_2 lnED_t + \beta_3 lnIR_t + \beta_4 lnGDP_t + \varepsilon_t \quad (2)$$

Where: $lnFDI_t$, $lnEX_t$, $lnED_t$, $lnIR_t$, and $lnGDP_t$ denote the natural logarithms of FDI net inflows, official exchange rate, external debt, interest rate, and GDP per capita; β_0 is the intercept; (β_1,…,β_4) are parameters to be estimated; and ε_t presents the error term.

Table 1. Covariates of the model

Variable definition	Unit	Source	Previous references
FDI	% of GDP	WDI	Al-Abri & Baghestani (2015); Cahyadin & Sarmidi (2019); Agyapong & Bedjabeng (2020); Alhazimi & Supriyono (2020); Matsumoto (2022); Rasyid *et al.* (2023); Triatmanto *et al.* (2023); Yuliana *et al.* (2023); Epor *et al.* (2024); and Sultana *et al.* (2024).
Official exchange rate	LCU/US$	WDI	Al-Abri & Baghestani (2015); Matsumoto (2022); Sultana *et al.* (2024); Khalid *et al*. (2024); and Odoom *et al*. (2025).
External debt	% of GNI	WDI	Agyapong & Bedjabeng (2020); Mohsin *et al*. (2021); Ale *et al*. (2023); Roy (2023); Elkhalfi *et al*. (2024); Dau *et al*. (2024); Sultana *et al*. (2024); and Mohammed (2025).
Interest rate	%	WDI	Own author.
GDP per capita	current US$	WDI	Roy (2023); Epor *et al*. (2024); and Mohammed (2025).

4. Results and discussion

4.1 Foreign direct investment, official exchange rate, external debt, interest rate, and economic growth in Southeast Asia: An overview

Table 2. Characteristics of foreign direct investment, official exchange rate, external debt, interest rate, and economic growth in Southeast Asia between 1995 and 2024

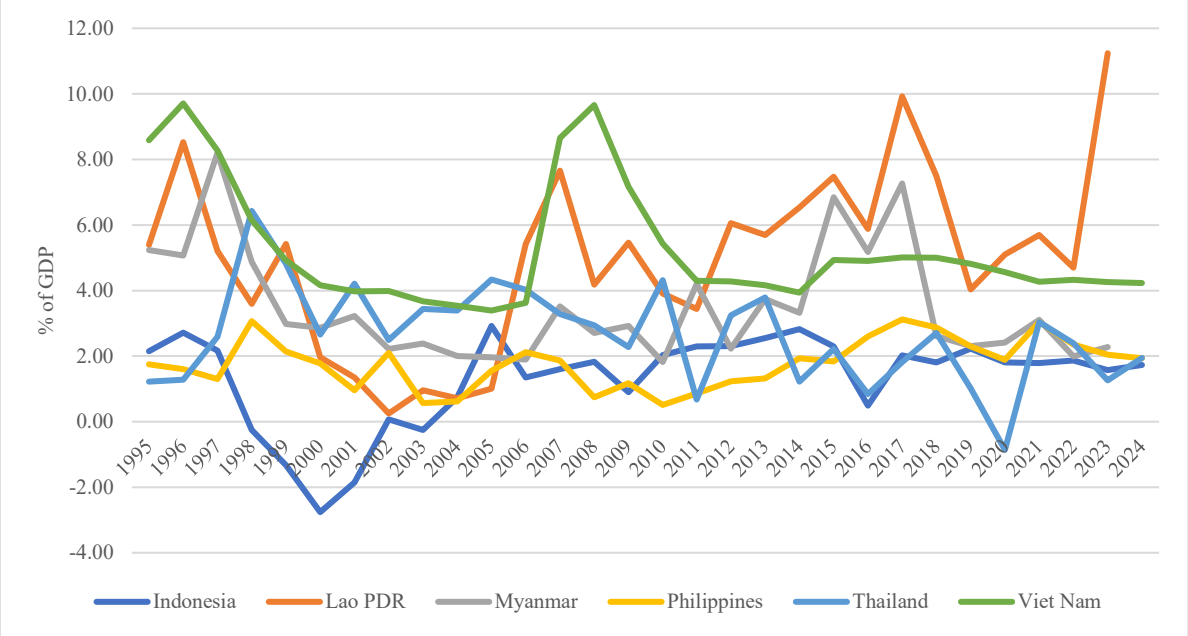
Variable	Mean	SD	Min	Max
FDI inflows	3.19	2.29	-2.76	11.24
Official exchange rate	6196.31	7333.12	0	24164.89
External debt	55.83	39.74	0	197.83
Interest rate	5.14	5.26	-6.91	25
GDP per capita	2197.74	1781.34	108.04	7605.7

Source: Author's calculation, 2025
Note: SD denotes standard deviation

As seen in Table 2, the average FDI inflows of six selected Southeast Asian countries accounts for 3.1 percent of GDP. The average official exchange rate reaches 6,196.3. External debt and interest rate of six countries account for 55.8 percent and 5.1 percent, on average,

respectively. GDP per capita of these countries accounts for about US$2,197 (Table 2). Notably, the high standard deviations for variables like external debt (39.74) and GDP per capita (1781.34) highlight the significant heterogeneity across these countries, justifying the use of a panel model that can account for such differences.

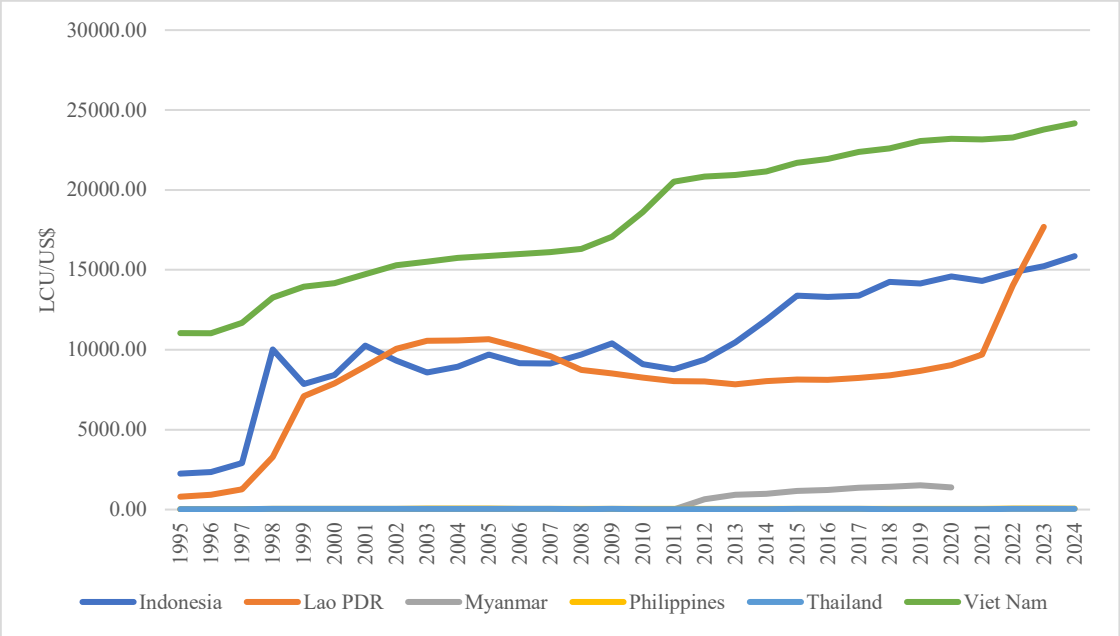
Figure 1. FDI inflows of six selected Southeast Asian countries between 1995 and 2024



Source: World Bank, 2025

As seen in Figure 1, FDI inflows of Indonesia, Myanmar, and Viet Nam tended to decline, while the rate of FDI inflows of Lao PDR, the Philippines, and Thailand increased for the last three decades. For instance, by 2024, FDI inflows of Indonesia and Viet Nam dropped 0.4 percent and 4.3 percent, respectively, compared to that in 1995. FDI inflows in Myanmar decreased by 2.9 percent from 5.24 percent in 1995 to 2.28 percent in 2023. In contrast, by 2024, FDI inflows of the Philippines and Thailand slightly increased by 0.1 percent and 0.7 percent, respectively, compared to that in 1995. FDI inflows in Lao PDR increased by 5.8 percent from 5.3 percent in 1995 to 11.2 percent in 2023 (Figure 1). These divergent FDI trajectories, even within the same region, motivate our central research question: what role do factors like external debt and exchange rate policy play in driving these different outcomes?

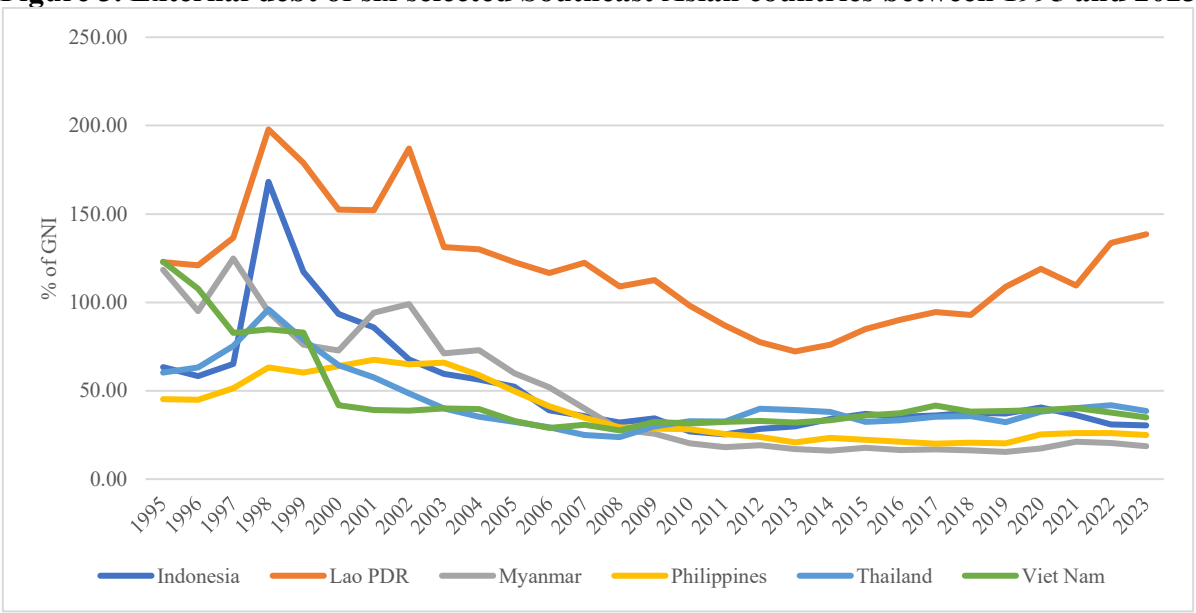
Figure 2. The official exchange rate of six selected Southeast Asian countries between 1995 and 2024



Source: World Bank, 2025

As seen in Figure 2, the official exchange rate of six Southeast Asian countries tended to go up between 1995 and 2024, and this reflects depreciation of the domestic currencies compared to US dollar (Figure 2).

Figure 3. External debt of six selected Southeast Asian countries between 1995 and 2023

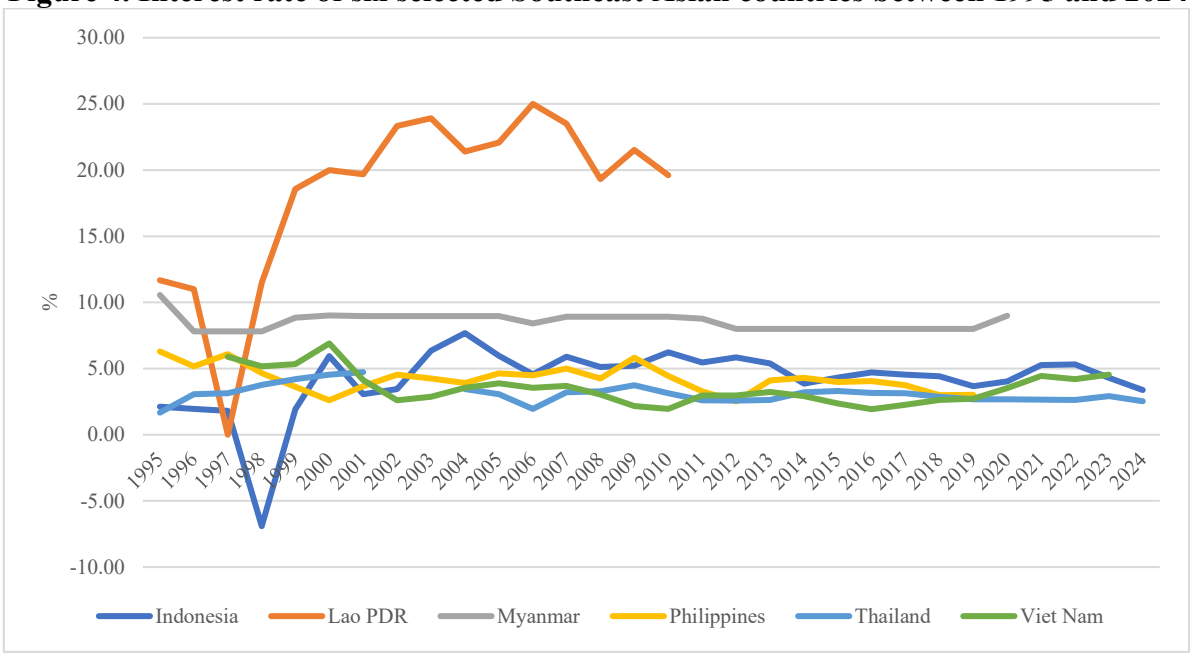


Source: World Bank, 2025

External debt of six Southeast Asian countries tended to decrease between 1995 and 2023. By 2023, the highest level of external debt belonged to Lao PDR with 138.5 percent of GNI, followed by Thailand (38.4 percent), Viet Nam (34.8 percent), Indonesia (30.4 percent), the Philippines (25 percent), and Myanmar (18.5 percent) (Figure 3). The wide variation in debt levels, with Lao PDR's debt ratio being particularly high, provides an ideal empirical setting to

test the ‘debt overhang’ hypothesis, which suggests that such high debt levels may deter foreign investment.

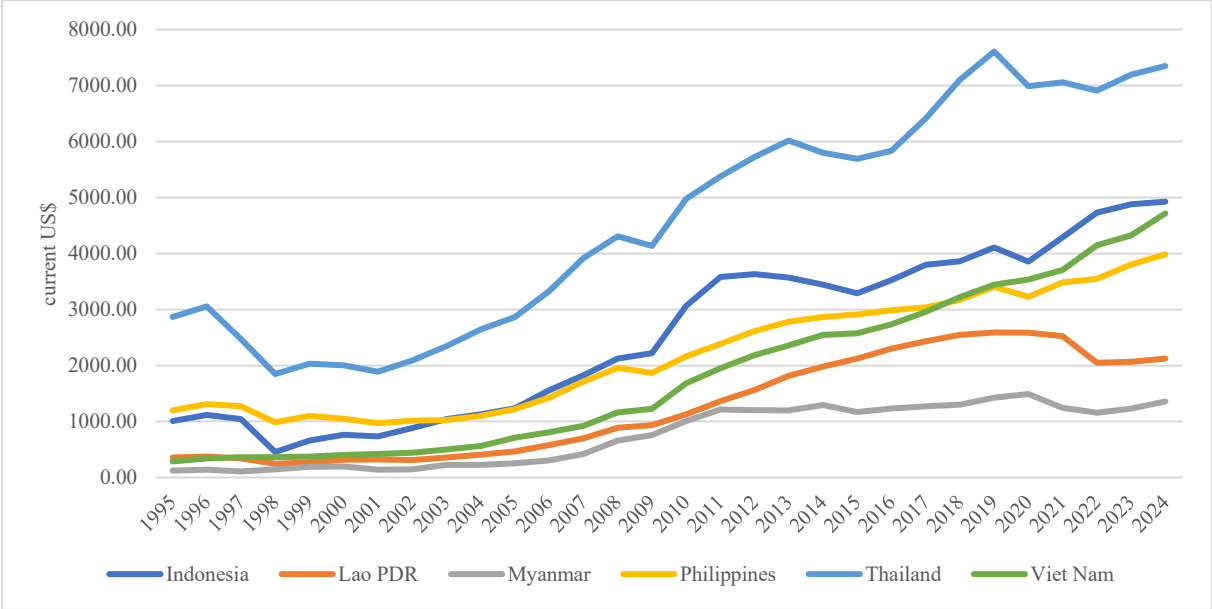
Figure 4. Interest rate of six selected Southeast Asian countries between 1995 and 2024



Source: World Bank, 2025

The interest rate of Lao PDR presented a significant increase by nearly 8 percent from 11.6 percent in 1995 to 19.6 percent in 2010, while the rate of Myanmar remained stable around 8 percent. The interest rate in Indonesia, the Philippines, Thailand, and Viet Nam slightly fluctuated over the last three decades (Figure 4).

Figure 5. GDP per capita of six selected Southeast Asian countries



Source: World Bank, 2025

GDP per capita of six Southeast Asian countries tended to increase from 1995 to 2024, and this implies the achievement of these countries in social and economic development for the

last three decades. By 2024, GDP per capita was dominated by Thailand with more than US$7,345, Indonesia was stood at the second position with more than US$4,925, followed by Viet Nam (about US$4,717), the Philippines (about US$3,984), Lao PDR (about US$2,123), and Myanmar (about US$1,359) (Figure 5).

4.2 The relationship between exchange rate, external debt, interest rate, GDP per capita, and foreign direct investment in Southeast Asia

4.2.1 The panel unit root test

The Levin-Lin-Chu (LLC) and Breitung tests were employed to examine the unit root of all variables in the model with the hypotheses as follows:

Null hypothesis (H_o): Panels contain unit roots

Alternative hypothesis (H_a): Panels are stationary

Table 3. The unit root test of variables in the model

Variables	LLC test		Breitung test	
	Level	1st difference	Level	1st difference
FDI inflows	-2.71***	-5.69***	-3.33***	-8.72***
Official exchange rate	-3.30***	-3.51***	2.09	-6.49***
External debt	10.24	39.72	2.37	-2.50***
Interest rate	-0.97	-8.09***	-1.49*	-7.53***
GDP per capita	0.05	-4.07***	4.21	-7.06***

Notes: Both LLC and Breitung tests were carried out with the intercept
**** and * denote statistical significance at 1% and 10%, respectively*
Source: Author's calculation, 2025

Results in Table 3 show that external debt and GDP per capita are not stationary for both the LLC and Breitung tests at the level, and therefore both tests were performed in the 1st differences. Results of both tests demonstrated that all variables are statistically significant at 1%, except external debt in the LLC test, and the null hypothesis should be rejected, and we can conclude that all variables are stationary at the 1st difference. This confirms that the variables are integrated of order one, I(1), which is a critical precondition for proceeding with a cointegration test.

4.2.2 The cointegration test

The Kao and Pedroni tests were employed to check the existence of the long-term relationship between the official exchange rate, external debt, interest rate, GDP per capita, and FDI inflows of six Southeast Asian countries with the following hypotheses:

Null hypothesis (H_o): No cointegration

Alternative hypothesis (H_a): All panels are cointegrated

Table 4. Results of Kao and Pedroni cointegration tests

Types of cointegration tests	Criteria	F-Statistics	P-value
Kao test	Modified Dickey-Fuller t	-8.41	0.000
	Dickey-Fuller t	-6.36	0.000
	Augmented Dickey-Fuller t	-3.61	0.000
	Unadjusted modified Dickey-Fuller t	-11.63	0.000
	Unadjusted Dickey-Fuller t	-6.85	0.000
Pedroni test	Modified Phillips-Perron t	0.03	0.486
	Phillips-Perron t	-7.79	0.000

Augmented Dickey-Fuller t	-5.01	0.000

Source: Author's calculation, 2025

P-values of both Kao and Pedroni tests are less than 0.05, except P-value of Modified Phillips-Perron t in the Pedroni test, and this implies that the null hypothesis should be rejected, and therefore we can conclude that all panels are cointegrated. The existence of cointegration is crucial, as it implies that a stable long-run equilibrium relationship exists among the variables, making the estimation of this relationship meaningful.

4.2.3 The cross-sectional dependence test

The Pesaran (2007) CD test was used to examine the cross-sectional dependence of variables across six Southeast Asian countries in the study with the hypotheses as follows:

Null hypothesis (H_o): No cross-sectional dependence

Alternative hypothesis (H_a): Cross-sectional dependence

Pesaran's test of cross-sectional independence is equal to 2.79 and P-value is equal to 0.005 which less than 0.05, and therefore the null hypothesis should be rejected reflecting that cross-sectional dependence exists across six Southeast Asian countries in the study.

4.2.4 Estimation of the relationship between variables both in the short and long run

This stage aims to estimate the nexus between the official exchange rate, external debt, interest rate, GDP per capita, and FDI inflows of six Southeast Asian countries both in the short and long run. Hence, both the overall and specific models were run for all countries and each country in the region.

Results of the PMG regression for all countries are illustrated in Table 5.

Table 5. The PMG regression for all countries

Variables	Coefficient	Std. Error	z	P-value
Short run				
Error correction term (ECT)	-0.46**	0.19	-2.43	0.015
LnOfficial exchange rate D1	1.97	1.94	1.02	0.309
LnExternal debt D1	-0.40	0.25	-1.58	0.113
LnInterest rate D1	0.06	0.09	0.74	0.461
LnGDP per capita D1	1.64	1.23	1.33	0.184
Constant	-2.65***	0.96	-2.76	0.006
Long run				
LnOfficial exchange rate	-0.91***	0.19	-4.67	0.000
LnExternal debt	0.68*	0.37	1.81	0.070
LnInterest rate	0.07	0.12	0.58	0.563
LnGDP per capita	1.35***	0.29	4.63	0.000
Number of obs.	174			
Number of groups	6			
Observations per groups:				
Min	29			
Average	29.0			
Max	29			
Log Likelihood	-86.35			

*Note: ***, ** and * denotes statistical significance at 1%, 5%, and 10%, respectively*
Source: Author's calculation, 2025

As seen in Table 5, the error correction term is negative and statistically significant (ECT = -0.46) implying that although the effect of shocks and uncertainties in the short run, the speed of convergence of FDI inflows in the long run equilibrium accounts for 46 percent (Table 5).

In the long run, the results indicate that while currency depreciation significantly decreases FDI inflows, higher economic growth (LnGDP per capita) promotes them, consistent with Hypothesis 2. Notably, the coefficient for external debt is positive and significant (0.68), leading us to reject Hypothesis 1 in the long-run context. This suggests that over the long term, the productive use of external debt outweighs potential 'debt overhang' concerns in the region. However, the effect of interest rate on FDI inflows is insignificant (Table 5).

The PMG regression for each country was illustrated in Table 6.

Table 6. The PMG regression for each country

Variables	Coefficient	Std. Error	z	P-value
Short run				
Indonesia				
Error correction term (ECT)	-1.21***	0.17	-7.16	0.000
LnOfficial exchange rate D1	4.61**	1.82	2.53	0.011
LnExternal debt D1	-0.78	0.49	-1.60	0.109
LnInterest rate D1	-0.31	0.36	-0.89	0.375
LnGDP per capita D1	3.70*	2.00	1.85	0.064
Constant	-5.65	3.69	-1.53	0.126
Lao PDR				
Error correction term (ECT)	-0.70***	0.15	-4.65	0.000
LnOfficial exchange rate D1	1.29***	0.35	3.67	0.000
LnExternal debt D1	-1.41**	0.69	-2.03	0.042
LnInterest rate D1	0.12	0.11	1.07	0.287
LnGDP per capita D1	1.98**	0.85	2.32	0.020
Constant	-2.38	2.12	-1.12	0.262
Myanmar				
Error correction term (ECT)	-0.02	0.03	-0.77	0.441
LnOfficial exchange rate D1	-0.10	0.07	-1.31	0.189
LnExternal debt D1	0.30**	0.14	2.17	0.030
LnInterest rate D1	0.33	0.31	1.06	0.291
LnGDP per capita D1	-0.28	0.44	-0.64	0.522
Constant	-0.15	0.25	-0.60	0.547
Philippines				
Error correction term (ECT)	-0.57***	0.15	-3.61	0.000
LnOfficial exchange rate D1	-0.31	2.50	-0.13	0.899
LnExternal debt D1	-0.35	0.28	-1.23	0.220
LnInterest rate D1	0.21	0.31	0.68	0.497
LnGDP per capita D1	-2.15	2.35	-0.91	0.362
Constant	-4.90**	2.35	-2.09	0.037
Thailand				
Error correction term (ECT)	-0.26**	0.11	-2.24	0.025
LnOfficial exchange rate D1	10.01**	4.05	2.47	0.013
LnExternal debt D1	-0.20	0.19	-1.02	0.308
LnInterest rate D1	0.09	0.27	0.34	0.733
LnGDP per capita D1	6.28**	3.16	1.99	0.047
Constant	-2.89**	1.38	-2.08	0.037

Viet Nam				
Error correction term (ECT)	0.00	0.03	0.14	0.887
LnOfficial exchange rate D1	-3.65***	1.20	-3.03	0.002
LnExternal debt D1	0.04	0.06	0.69	0.492
LnInterest rate D1	-0.03	0.08	-0.46	0.649
LnGDP per capita D1	0.31	0.48	0.66	0.509
Constant	0.05	0.10	0.55	0.582
Long run				
LnOfficial exchange rate	-0.91***	0.19	-4.67	0.000
LnExternal debt	0.68*	0.37	1.81	0.070
LnInterest rate	0.07	0.12	0.58	0.563
LnGDP per capita	1.35***	0.29	4.63	0.000

*Note: *** , ** and * denote statistical significance at 1%, 5%, and 10%, respectively*
Source: Author's calculation, 2025

The results in Table 6 show that the error correction terms in Indonesia, Lao PDR, the Philippines, and Thailand are negative and statistically significant, and these imply that although the effect of shocks and uncertainties in the short run, the speed of convergence of FDI inflows in the long run equilibrium of Indonesia is 121 percent; 70 percent for Lao PDR; 57 percent for the Philippines; and 26 percent for Thailand. The increase of exchange rate accelerates FDI inflows in Indonesia, Lao PDR, and Thailand, but it may discourage FDI inflows in Viet Nam for the short run. Further, the increase of external debt supports FDI inflows in Myanmar, however it reduces FDI inflows in Lao PDR. Economic growth had a significant and positive relationship with FDI inflows in Indonesia, Lao PDR, and Thailand.

In the long run, the increase of the official exchange rate may decrease FDI inflows, but the rise of external debt and economic growth promote FDI inflows, while the effect of the interest rate on FDI inflows is insignificant (Table 6).

4.3 Discussion

Our findings reveal that the increase of exchange rate facilitates FDI inflows into Indonesia, Lao PDR, and Thailand, but it discourages FDI inflows into Viet Nam. In addition, the rise of external debt may encourage FDI inflows into Myanmar, however it reduces FDI inflows into Lao PDR in the short run. In the long run, the rise of exchange rate decreases FDI inflows, while the increase of external debt and economic growth may accelerate FDI inflows into six Southeast Asian countries. Our results are consistent to conclusion of Mugambi & Murunga (2017) and Sultana *et al.* (2024). Mugambi & Murunga (2017) found that the rise of external debt may decrease FDI inflows into Kenya between 1980 and 2014, while a study by Sultana *et al.* (2024) concluded that the rise of exchange rate decelerates FDI inflows into 11 developing and emerging countries in the short run. However, our findings demonstrated that exchange rate had a significant and negative relationship with FDI inflows in the long run, while Sultana *et al.* (2024) found that exchange rate promotes FDI inflows into 11 developing and emerging countries in the long run, a difference that may be attributable to their broader, more heterogeneous sample of countries compared to our specific focus on the more economically integrated ASEAN region. Moreover, the increase of external debt and economic growth supports FDI inflows into these countries.

Our results can be interpreted by the following reasons. First, the depreciation of domestic currencies may facilitate FDI inflows into Indonesia, Lao PDR, and Thailand in the short run because it enhances the wealth of foreign investors, allows the investment costs lower, and therefore it promotes investment. The domestic currencies depreciation can reduce production costs and asset prices for foreign investors, and this attracts more FDI inflows into Indonesia, Lao PDR, and Thailand. Further, the domestic currency depreciation allows exported

goods from these countries to become cheaper for oversea customers, and this encourages FDI enterprises to invest much more in the exported orientation. Exports were identified as a crucial driver to foster economic growth in Indonesia, Lao PDR, the Philippines, Thailand, and Viet Nam (Rasyid *et al.*, 2023; and Yuliana *et al.*, 2023). In Viet Nam, by 2023, the total export turnover of goods was US$354.7 billion, in which the exports from the FDI sector accounted for US$259.1 billion, contributing about 73 percent to the total export turnover of goods. However, the exchange rate regime in Viet Nam was implemented by the State Bank of Vietnam to ensure the target in macroeconomic stability, economic growth, inflation control, and export enforcement. Thus, the appreciation of the Vietnamese currency assists to stabilize inflation and livelihood of inhabitants in the domestic market. Second, the increase of external debt may accelerate FDI inflows into Myanmar, but it discourages FDI inflows into Lao PDR in the short run. Myanmar implemented favorable policies to attract FDI inflows. The Myanmar government has implemented the Foreign Investment Law in 2012 which allow 100% foreign equity ownership for foreign investors, with a minimum amount of foreign capital of US$500,000 for the industry sector investment and US$300,000 for service sector investments, a tax holiday of three years and exemption from customs duty and other internal taxes have been granted on imported capital, equipment and materials among others. However, due to economic sanctions by Western countries and domestic mismanagement issues, FDI in Myanmar was mainly invested into the sectors of extracting natural resources (Hein, 2014). Hence, the rise of external debt has been seen as a positive chance to encourage FDI inflows into the natural resources extraction sectors of Myanmar. By contrast, Lao PDR's high debt-to-GNI ratio appears to have triggered the 'debt overhang' effect discussed in our theoretical framework, where the perceived risk of future repayment problems actively discourages new foreign investment (Cajano *et al.*, 2021; Mugambi & Murunga, 2017). Third, the increase of GDP per capita may create favorable environments to encourage FDI inflows into developing and emerging countries such as Indonesia, Lao PDR, and Thailand. These findings were found in previous studies by Triatmanto *et al.* (2023), Yuliana *et al.* (2023), and Sultana *et al.* (2024).

In the long run, the rise of external debt and economic growth enhances FDI inflows into six selected Southeast Asian countries, but the increase of exchange rate reduces FDI inflows into these countries. The exchange rate regime in six selected Southeast Asian countries plays an essential role in terms of stabilizing macroeconomics, controlling inflation, enforcing exports, and enhancing the growth. The depreciation of exchange rate has negative effects on the entrepreneur's net worth in the latter case (Sangare, 2016). Moreover, the depreciation of domestic currencies can make the sale of locally produced goods and services more attractive than exports, and consequently, it decelerates FDI inflows into oversea countries. Second, the positive long-run relationship suggests that, over time, the productive investment of this external debt, used to foster financial development and ultimately boost economic growth, outweighs the short-run 'debt overhang' concerns within the ASEAN countries. These results were found in studies by Rasyid *et al.* (2023) and Minh (2023). Finally, the increase of GDP per capita has been seen as a significant potential to attract more FDI inflows because it creates a favorable environment for foreign investors to invest in the oversea market.

5. Conclusion and policy implications

The article intends to investigate the relationship between external debt and foreign direct investment in six selected Southeast Asian countries, namely Indonesia, Lao PDR, Myanmar, the Philippines, Thailand, and Viet Nam in addition to the effect of exchange rate, interest rate, and economic growth between 1995 and 2024 using the panel regression model. In the short run, our findings showed that the depreciation of exchange rate accelerates foreign direct investment in Indonesia, Lao PDR, and Thailand, but it reduces foreign direct investment

in Viet Nam. In addition, the rise of external debt may discourage foreign direct investment in Lao PDR, however it fosters foreign direct investment in Myanmar. Foreign direct investment can be fostered by economic growth in Indonesia, Lao PDR, and Thailand. In the long run, the depreciation of exchange rate decelerates foreign direct investment, but the increase of external debt and economic growth may promote foreign direct investment in the region. The effect of the interest rate on foreign direct investment was insignificant both in the short and long run. Finally, policies were recommended to control external debt and encourage foreign direct investment for countries in the region.

Policies are recommended to control external debt and accelerate FDI inflows for countries in the region. First, a 'one-size-fits-all' exchange rate policy for attracting FDI is ill-advised. Given our finding that currency depreciation attracts short-run FDI in Indonesia and Thailand but harms it in Viet Nam, policymakers must tailor their strategies to national economic structures, such as the import-dependency of their FDI sectors. Second, the management of external debt requires a nuanced, two-horizon approach. While our results show a positive long-run link between debt and FDI, the negative short-run effect in Lao PDR serves as a cautionary tale against excessive debt accumulation. Governments should therefore focus on channeling borrowed funds into productive investments that enhance long-term growth potential, thereby mitigating short-run 'debt overhang' risks. Lastly, as economic growth was the most consistent and robust positive determinant of FDI in our analysis, pro-growth policies should be the cornerstone of any strategy to attract sustainable foreign investment.

The paper was unable to avoid the following limitations. First, the study sample only comprised Indonesia, Lao PDR, Myanmar, the Philippines, Thailand, and Viet Nam between 1995 and 2024 because of data shortage, and therefore, it was very difficult to mention all aspects of the Southeast Asia region. Second, the study model was unable to include all variables affecting FDI inflows. Therefore, further studies should be implemented to overcome these limitations.

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