FDI TRENDS IN SINGAPORE: THE IMPACT OF COVID-19 AND KEY LESSONS FOR ASEAN NATIONS

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ABSTRACT

This paper analyzes the factors influencing foreign direct investment (FDI) inflows into Singapore from 2010 to 2023, focusing on socioeconomic and institutional determinants. The study employed panel data regression to analyze the combined impact of independent variables on FDI. The results showed that GDP per capita, market capitalization, and government effectiveness are the most significant factors in attracting FDI, with GDP per capita having the strongest effect. These findings suggested that strong economic development, a well-capitalized stock market, and effective institutions are critical in shaping investment decisions and fostering a favorable business environment both before and after COVID-19. ASEAN countries, through investment implementation agencies, should focus on enhancing growth factors and strengthening institutions to boost FDI attraction. This paper contributes to a broader understanding of the evolving FDI patterns in Singapore and policy strategies for ASEAN nations.

Keywords: Foreign Direct Investment (FDI), Singapore, Institutions, COVID-19, ASEAN

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INTRODUCTION

Trade liberalization and FDI policies have enabled Singapore to attract huge international subsidiaries, facilitate technology transfer, and expand market development, all of which have contributed to the nation's prosperity (Ei Ei, 2015; Lee & Tan, 2006; Nguyen, 2022). The country's competitive corporate tax rate of 17% further incentivizes multinational corporations (MNCs) to establish regional headquarters in this small city-state (Chia, 2015; Government of Singapore, 2024). In 2023, Singapore recorded a net FDI inflow of $175.24 billion, marking the highest level in the decade and positioning it as the leading FDI hub in the ASEAN region. (Statista, 2024a). It maintains an open economy, playing a key role in the global supply chain with business-friendly laws and strong intellectual property protection, making it an attractive investment destination (The U.S. Department of State, 2024).

Nevertheless, the COVID-19 pandemic vastly disrupted the traditional economic landscape and determinants of FDI, creating a need to reassess the underlining factors in the post-pandemic period. Focusing on cross-country studies on FDI in the ASEAN market, much research has concentrated on analyzing conventional socioeconomic factors in particular, including Bhatt (2008), Gopalan et al. (2019), and Ismail (2009). Despite differences in market, development, and institutional performances, many studies often categorize Singapore as part of ASEAN. This approach creates a gap in the literature by overlooking Singapore's unique characteristics and neglecting other factors driving FDI in modern society.

Thus, this study seeks to fill this gap by analyzing Singapore as a single unit of analysis, separate from other ASEAN countries, as done in previous studies. It combines new socioeconomic and institutional factors to further explore FDI dynamics from 2010 to 2023, covering key events such as the post-2008 recovery, the Smart Nation initiative (2014), and the COVID-19 disruption (2019). This timeframe provides fresh insights, supported by new data from the World Bank and Worldwide Governance Indicators. To this end, the paper aims to examine institutional determinants influencing the FDI dynamics in Singapore and offer lessons learned from the Singaporean perspectives to other ASEAN countries.

Determinants of FDI: theory and theoretical framework

1) FDI in Singapore

FDI is crucial for Singapore's economic development. Through the years, the country has attracted a large-scale FDI due to its strategic location, pro-business policies, and strong infrastructure. In 2020, Singapore's total FDI inflows reached $92.6 billion, accounting for nearly 14% of the entire FDI in the ASEAN region (UNCTAD, 2021). Its attractive FDI sectors include financial services, manufacturing, and information technology.

According to the Singapore Economic Development Board (2020), FDI stock in Singapore amounted to $1.6 trillion, with the majority coming from the United States, the Netherlands, and Japan. This includes the Smart Nation initiative, launched in 2014, which has further boosted FDI by promoting innovation-driven industries, positioning Singapore as one of the leading investment destinations in the ASEAN region.

In 2022, FDI remained a vital factor in driving Singapore's economic recovery from the COVID-19 outbreak. The inflows reached $98.8 billion, with sectors like financial services, electronics, and biotechnology attracting the largest investments (UNCTAD, 2023). FDI stock in Singapore grew to $1.7 trillion in 2021, up from $1.6 trillion in 2020, underscoring its strategic importance as a regional investment hub. This increase reflects not only Singapore's stable and robust economic environment but also the nation's attractiveness to global investors.

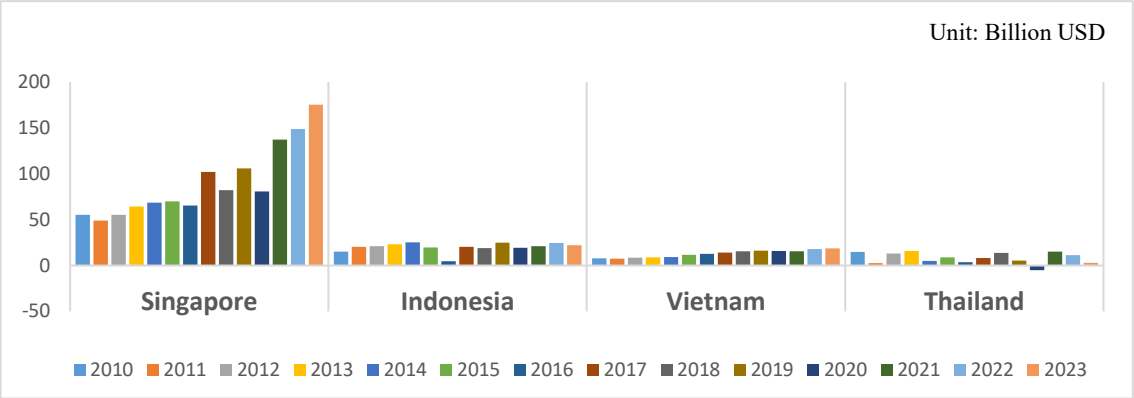


Figure 1 FDI Inflows to Singapore compared to other key ASEAN countries
Source: The World Bank (modified by authors)

2) Neoclassical Growth Theory

Neoclassical Growth Theory, developed by Solow and Swan in 1956, hypothesizes that long-term economic growth is primarily driven by the accumulation of capital, the gr of the labor force, and technological advancements. In this framework, technological progress is considered an exogenous factor, as it originates outside the model, but it plays a crucial role in driving productivity outputs (Solow, 1956). These improvements result in a higher GDP per capita, which grows further with more capital and new technology.

This notion is widely used to study growth patterns across regions, highlighting the role of wealth accumulation and GDP development in economic progress. Many studies have examined how the growth rate of real per capita GDP is linked to capital accumulation and the prosperity of a nation, contributing to overall economic well-being. These studies have also found a robust correlation between long-run average growth rates and the share of investment in GDP (Barro, 1991; Levine & Renelt, 1992; Lucas, 1988; Mankiw et al., 1992).

3) Endogenous Growth Theory

Endogenous Growth Theory underscores the substantial role of knowledge, human capital, and innovation as key drivers of sustained economic expansion. Introduced by Paul Romer in the 1980s, the theory argues that growth is largely propelled by internal factors, such as innovation, knowledge accumulation, and human capital (Romer, 1994). Romer's conception contends that investment in human capital, research and development (R&D), and innovation would lead to increasing returns and growth of an economy.

Several pieces of cross-country research, including Borensztein et al. (1998) and Bende-Nabende et al. (2001), applied this concept and found that attracting FDI is most effective when it is driven by these factors contributing to significant investment flows. This includes the study of Blaug (1966) highlights the implications of educational planning and suggests that improving literacy rates could contribute to the economic growth targets. This is because when firms invest in R&D and human capital, they can potentially improve efficiency, reduce operational costs, and strengthen their competitive advantage. These advancements create opportunities for higher profits, leading to growth in market capitalization and enabling firms to expand their business presence and improve efficiency.

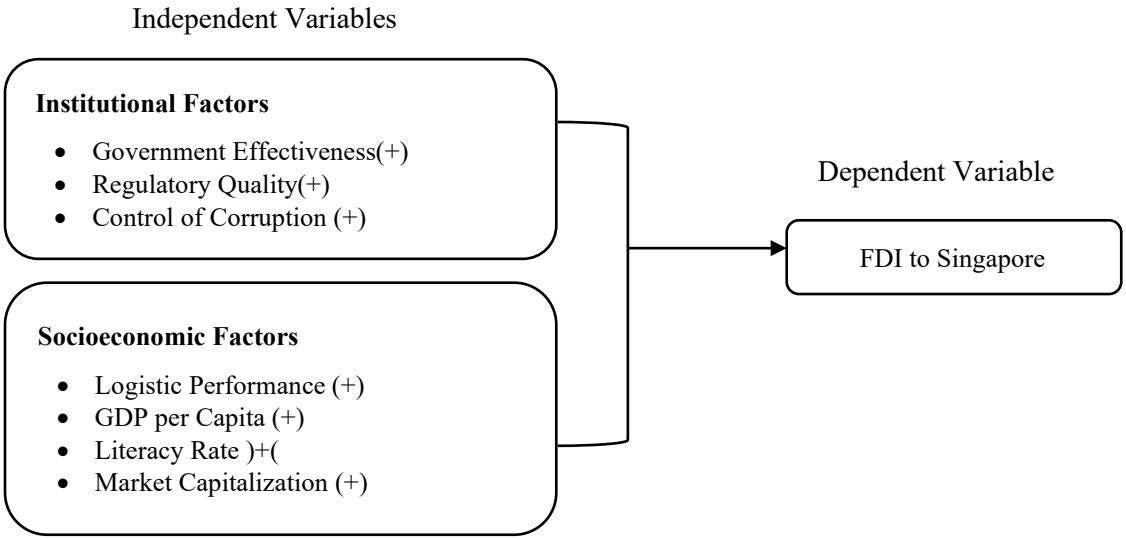
4) Institutional Theory

Institutions are human-created rules that shape political, economic, and social interactions. They include informal constraints such as customs, traditions, and codes of conduct, as well as formal rules like constitutions, laws, and property rights (North, 1991). In macroeconomics, institutions play a key role in shaping economic outcomes by influencing how businesses operate and how individuals, firms, and governments interact in markets. They have become a

part of the economic domain known as "Institutional Economics," being defined as a field of economics that analyzes how institutions influence the economy (Lubart & Getz, 2011). Acemoglu and Robinson (2015), Nobel laureates in the field of economic sciences in 2024, argued that the primary cause of inequality and underdevelopment across the world is the absence of "inclusive institutions," which promote equality of opportunity and allow individuals to engage freely in economic activities.

In the market system, institutions can influence logistics performance and conditions by establishing essential regulatory frameworks and improving infrastructure through development initiatives, specifically in the global value chains (Nasser & Ouerghi, 2024). By focusing on infrastructure efficiency and high-quality control standards for logistics services, these efforts could facilitate smooth transportation for FDI activities. At this stage, it can be assumed that institutions are essential for smoother logistics and creating a more reliable business environment, which is key to attracting FDI.

5) Theoretical Framework



RESEARCH METHODOLOGY

1) Research Structure

This study adopted the panel data regression to test the relationships between independent variables (regulatory quality, control of corruption, logistic performance, government effectiveness, GDP per capita, literacy rate, and market capitalization of listed domestic companies) affecting the dependent variable (FDI inflows) in Singapore. It is important to acknowledge that FDI decisions may also be influenced by other factors not covered in this study, such as the firm's specific strategy, domestic cost pressures, and government incentive policies aimed at facilitating foreign market entry. Recognizing these factors provides a broader understanding of the complexities involved in FDI decision-making paving the way for future research.

2) Data Collection and Analysis

Data collection relies on the online database from the World Bank (WB) and the Worldwide Governance Indicators (WGI) between 2010 and 2023. The timeframe was chosen to align with significant events that have shaped regional economic trends and FDI dynamics. These include the post-global financial crisis recovery of 2008-2009, the initiation of the Regional Comprehensive Economic Partnership (RCEP) in 2012, Singapore's Smart Nation in 2014, the ASEAN Economic Community (AEC) in 2015, and the global impact of the COVID-19 pandemic since 2019, followed by the ongoing economic recovery.

This timeframe provides a broad overview of how Singapore's FDI direction has been shaped during periods of turbulence and crisis. Analyzing these determinants offers valuable insights into Singapore's strategies and understanding of its FDI landscape. However, it is important to note that other factors, such as GDP growth rate, GDP size, inflation, urbanization, and political stability, were intentionally excluded from the equation due to the undesirable effects of multicollinearity and high VIF values, which undermine the predictive power of the empirical model. Table 1 shows the variables used in the multiple regression analysis after data cleansing.

Table 1 Sign, Symbol, and Underlining Theories

Sign	Variables	Symbol	Theory & Concept	Data Source
Y	FDI to Singapore	FDI	-	WB
X1	Government Effectiveness	GOVE	Institutional Theory	WGI
X2	Regulatory Quality	REGQ	Institutional Theory	WGI
X3	Control of Corruption	CONT	Institutional Theory	WGI
X4	Logistic Performance	LOGI	Institutional Theory	WB
X5	GDP per Capita	GDPC	Neoclassical Growth Theory	WB
X6	Literacy Rate	LITR	Endogenous Growth Theory	WB
X7	Market Capitalization	MARC	Endogenous Growth Theory	WB

The multiple regression equation for data analysis is:
$FDI = a_1 + \beta_1 GOVE + \beta_2 REGQ + \beta_3 CONT + \beta_4 LOGI + \beta_5 GDPC + \beta_6 LITR + \beta_7 MARC$

RESEARCH RESULTS

The descriptive statistics presented below summarize key data from 2010 to 2023. This overview offers descriptive insights into both independent and dependent variables, providing a bird's-eye view of the variations under investigation.

Table 2 Descriptive Statistics

Sign	N	Minimum	Maximum	Mean	S.D.
FDI	14	49155657316.29	175241466623.63	90006242662.87	38931647650.96
GOVE	14	99.52	100.00	99.89	.201
REGQ	14	96.68	100.00	99.55	.976
CONT	14	96.15	99.04	97.79	.96
LOGI	8	4.00	4.30	4.12	.095
GDPC	14	47236.68	88428.70	63719.21	12283.68
LITR	12	96	98	96.83	.577
MARC	13	124.25	269.89	207.18	41.65

The panel data regression analysis (Table 3), with an adjusted R-squared of 0.961, showed that the model can explain up to 96% of the variation in the dependent variable. The Variance Inflation Factor (VIF), typically below 10, indicated no multicollinearity issues, reaffirming the model's strong predictive power. The results found that key factors influencing FDI in this context include GDP per capita, market capitalization of listed companies, government effectiveness, literacy rate, and logistics performance. Among these, GDP per capita, market capitalization, and government effectiveness have the most significant effect on FDI, with a confidence level of 0.05. Meanwhile, literacy rate and logistics performance show a positive influence on FDI, though at a slightly lower confidence level of 0.1. It can be inferred that GDP per capita, with the highest coefficient value of 1.146, has the greatest impact on FDI in the case of Singapore, followed by market capitalization of the listed companies (0.567), and institutions represented by government effectiveness (0.208).

Table 3 Empirical Results of Regression on Singapore's FDI

Independent Variable	Dependent Variable :FDI Inflows to Singapore				
	Coefficients (β)	T	Sig.	Collinearity Statistics	
				Tolerance	VIF
GOVE	.208	2.827	.030**	.560	1.785
REGQ	-.158	-1.942	.100	.458	2.183
CONT	.059	.803	.453	.568	1.761
LOGI	.187	2.378	.055*	.490	2.040
GDPC	1.146	12.130	.000**	.338	2.957
LITR	.238	2.308	.060*	.284	3.521
MARC	.567	4.661	.003**	.204	4.904
R . =991; adjusted R-squared. = 961; F =46.46; p-value . =000					

*Statistically significant at 0.1 level
**Statistically significant at 0.05 level

DISCUSSION

Empirical evidence suggests that strong economic performance is crucial for FDI decisions both before and after COVID-19, particularly when a country's GDP per capita surpasses those of other nations in the same region. Strong institutions can build investor trust, making it easier to attract investment and enhance business confidence. A higher share of the market capitalization of listed companies signals a more developed, stable, and attractive economy. Investors tend to invest in these markets, as it suggests strong growth potential, and Singapore's success on the global stage is a clear example of this.

A key lesson for most ASEAN countries is the importance of prioritizing higher GDP per capita, supporting the growth of firms in the stock market, and strengthening institutions. This is exemplified by Singapore, which had the highest GDP per capita among ASEAN nations at approximately $84,734.28 in 2023, with projections estimating it will reach $109,058.28 by 2029 (Statista, 2024b). In Singapore, the government has also been recognized as the least corrupt in Asia, showcasing strong governance and creating a favorable investment climate (Quah, 2016). This ensures that businesses will not burdened by hidden operational costs related to bribery or unfair practices. While, the construction of a seamless logistics infrastructure can reduce transaction costs and enhance competitiveness, making the economy more attractive to foreign investors. These factors collectively create a favorable environment for Singaporean FDI inflows.

CONCLUSION

This study examines the key socioeconomic and institutional factors influencing FDI in Singapore, providing insights and lessons learned for other ASEAN countries. Using panel data regression analysis, the findings revealed that GDP per capita, market capitalization of listed companies, and government effectiveness are the primary drivers of FDI inflows in Singapore. These factors significantly influence investor decisions, with GDP per capita having the greatest impact. Strong economic performance, reflected in a high GDP and a well-capitalized stock market, entails a stable and attractive investment environment. Furthermore, the Singaporean government's effectiveness fosters investor confidence by ensuring smooth business operations without any hidden costs. The study emphasizes that ASEAN countries should prioritize increasing GDP per capita, supporting the growth of listed companies, and strengthening institutional frameworks to enhance their investment climate.

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