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Developmental state and FDI attraction: a cross-country perspective on China, Singapore, and Vietnam

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Abstract

This study investigates the role of the developmental state in attracting foreign direct investment (FDI) in three Asian countries over short-term and long-term periods. The analysis focuses on three key dimensions of the developmental state: infrastructure investment, economic freedom, and human development. Empirical research was conducted using a sample from China, Vietnam, and Singapore, employing the vector error correction model from 1990 to 2021. This study highlights the developmental state's role as a specific framework for economic planning and management, particularly in attracting FDI in these three countries. Furthermore, it underscores the strategic nature of FDI acquisition, advocating a long-term perspective and the implementation of a diverse range of policies. The research results indicate that the influence of the developmental state on FDI attraction in these countries varies across short- and long-term periods. Significantly, these variations are not correlated with the economic systems of each country. The evidence regarding the growth-enhancing effects of FDI has significant implications for policy design, emphasizing the need for policies focusing on economic liberalization and investments in infrastructure and human resources. Policies should concentrate on creating favorable conditions for attracting FDI.

Keywords: FDI, Developmental state, Economic freedom

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1. Introduction

The role of the developmental state in attracting foreign direct investment (FDI) is crucial in today's economic discourse. As the global community navigates the changing dynamics of economic globalization, governments have become key players in directing FDI inflows to promote national development and prosperity. Singapore, China, and Vietnam have effectively employed the developmental state to advance their economies. These three countries demonstrate the closely interwoven relationship between the developmental state model and FDI attraction.

The developmental states of China, Singapore, and Vietnam demonstrate several common characteristics despite their distinct economic models. These shared traits encompass active government intervention as all three nations centralize their governments in steering economic development to achieve distinct objectives (Adarkwah, 2021). Long-term planning is a distinguishing feature as these developmental states prioritize extended economic planning and strategy to meet growth objectives. Ownership of key industries is prominent in China and Vietnam, while in Singapore - where private ownership exists - the government actively invests in and supports critical sectors. Infrastructure development ranks highly on agendas, with significant investment in transportation networks and energy systems. Besides, education and human capital development are acknowledged, highlighting the significance of a proficient workforce (Dunning and Lundan, 2008). Foreign investment attraction is a mutual objective, albeit amidst distinct economic systems; all three nations incentivize FDI, specialize in economic zones, and streamline bureaucratic procedures. Export-oriented growth strategies are common, prioritizing international markets to generate revenue and foreign exchange. Consistency in political stability and strong governance create favorable business environments, and flexibility in economic policies allows for smooth responses to evolving global conditions. Furthermore, strong industrial policies promote the advancement of strategically important sectors to achieve their goal of economic development (Adarkwah, 2021; Mudambi *et al.*, 2013).

The study and quantification of the relationship between the developmental state model and FDI attraction are conducted by evaluating the influence of economic, political, and social variables on the FDI attraction of these countries. To examine the effects of economic freedom, human development, infrastructure, and government policies on FDI attraction, this study considers the ideologies of three Asian countries, including Singapore, China, and Vietnam. Using the vector error correction model framework and analyzing the period from 1990 to 2021, this paper aims to unravel the intricate connection between these factors.

The remainder of this paper is structured as follows. Section 2 reviews the literature on the topics of FDI and the developmental state. Section 3 describes the data and research methods. Sections 4 and 5 present and discuss the findings. Finally, section 6 concludes the study.

2. Literature review

2.1 Literature review on the developmental state

The "developmental state" concept was first introduced by Chalmers Johnson (1982) and subsequently adopted by the United Nations as a descriptor for states operating within a specific economic planning and management framework. The term was initially used to describe the post-1945 period in Japan, characterized by rapid modernization and growth. A developmental state can be defined as a state that prioritizes economic development through active government intervention and strategic industrial policies. Meier (2018) highlighted the significant impact of developmental state theory on the perception of economic progress among transitioning nations. As previously discussed, Johnson (1982) argued that the developmental state concept emphasizes the state's role in promoting economic advancement. Successful states, in their development efforts, exhibit a significant degree of state interventionism and provide substantial support to domestic enterprises, as noted by Amsden (1989). Wade's social learning theory emphasizes the role of social institutions in promoting economic development. Wade (1990) argued that a successful developmental state boasts robust social institutions that encourage collaboration and knowledge exchange between the government, private sector, and other economic entities. By integrating these principles, it is possible to create a theoretical structure that enables us to comprehend the complex mechanisms of economic progress in countries undergoing transition.

Singapore

The instrumental contribution of the Singaporean government has been pivotal to the nation's remarkable accomplishments. Kim and Li (2014) stated that the manufacturing industry underwent an establishment phase from 1965 to 1980, followed by an upgrade phase from 1980 to 1990, and introduced regionalization between 1990 and 2010. Institutional factors, including political stability, property rights, tax system, and infrastructure, are believed to be significant drivers of FDI. The government pursued a deliberate strategy to promote industrialization by encouraging multinational corporations to collaborate and participate in the initiative. The government understood that potential destinations would attract more investors who aimed to secure substantial profits from their business ventures. The Singaporean government has committed to providing favorable business conditions, including a duty-free export processing zone and tax benefits for foreign investors (Wonglimpiyarat, 2013). Consequently, Singapore established its economic bureaucracy during the 1970s to adjust investment incentives and attract new investments for industries that were less dependent on labor but had higher value-additions.

China

China has emerged as a developmental state since the late 1940s and early 1950s. When the economy stagnated, the government implemented policies and programs to accelerate economic growth and development, including state-owned firms, substantial investments in infrastructure and industry, a planned economy, and education and training initiatives. These

measures formed the basis of China's developmental state model, which continues to be employed today (Knight, 2014).

China has effectively built and maintained a developmental state, contributing to its economic prosperity and resilience towards worldwide challenges (Adarkwah, 2021; Knight, 2014). Despite adopting a market economy, China has implemented it under the supervision of the government (Bagchi, 2000). China's developmental orientation concerns public policy and the state's role at a broader level rather than focusing on any policies or bureaucratic agencies. China's experience highlights the influential role of the state in directing economic development and emphasizes the significance of a developmental approach in public policy (Bagchi, 2000; White, 1984).

Vietnam

In Vietnam, the features of a developmental state are frequently not described in a manner that is either complete or obvious. Many scholars have contributed to various themes of the developmental state in Vietnam: industrial policy, developmental leadership, management of other economic adjustments, and social and welfare policies. Vietnam's industrial policy has been characterized by state-led development of key industries, focusing on infrastructure, electricity, petrochemicals, and high-tech industries (Beeson, 2004; Beeson and Pham, 2012). The state's role in this process has been to manage economic globalization actively and transition from central planning to a market-oriented economy, with a conservative approach that seeks to slow the transition process rather than accelerate it. The leadership of the Vietnamese government has played a crucial role in this process, with decisions made through democratic centralism and consensus among the leadership (Anwar and Nguyen, 2010; Gentle, 2017).

2.2 Literature review on the FDI

The impacts of FDI on host countries are complex and depend on various factors, including the size, type, and length of the investment and the economic conditions of the host nation. Dunning and Lundan (2008) and Farole and Winkler (2014) suggested that the impact of long-term FDI can be perceived positively or negatively by investment recipients. The analysis is further complicated by introducing the conceptual distinction between horizontal and vertical FDI, as proposed by Caves (1971). Horizontal FDI denotes the strategic utilization of a country's industry advantages to augment profits in foreign markets. In contrast, vertical FDI involves utilizing resources in the host country to enhance both the growth and profitability of the host country (Caves, 1971; Dunning, 2000; Pavlínek, 2012).

Recent research has provided insightful observations into the different impacts of FDI spillovers on domestic enterprises. Ayyagari and Kosová (2010) suggested a temporary displacement of domestic firms by international firms due to FDI. The positive impact of long-term FDI spillovers on domestic business achievements and consumer demand is observable. Javorcik's (2004) research suggests that establishing vertical connections between foreign affiliates and domestic companies can facilitate the transmission of

positive spillover effects from FDI. Additionally, horizontal knowledge and technology spillovers can promote heightened competition, advancements in the nation's technological infrastructure, economic competitiveness, resource availability, and administrative proficiencies. Vertical spillovers comprise both backward and forward linkages, which lead to beneficial results like improved product quality standards and quicker delivery of goods from foreign clients to domestic suppliers. Although there is theoretical optimism regarding the potential positive impacts of FDI on a country's income, empirical studies have shown inconsistent findings. Several studies have reported different outcomes regarding the relationship between FDI and economic growth. While some suggest a positive correlation, others indicate negative effects, and some demonstrate no clear association (Herzer *et al.*, 2008; Nguyen and Yang, 2020).

2.3 The linkage between developmental state and FDI

The correlation between the developmental state and FDI is a crucial factor in economic development. The developmental state concept involves proactive government intervention in economic policies to foster growth and development, and often plays a vital role in attracting FDI (Gentle, 2017). Singh and Gal (2020) contended that proactive strategies implemented by states, including infrastructure investment, sector prioritization, and human capital development, establish an advantageous environment that facilitates FDI inflow (Gentle, 2017; Pavlínek, 2012). The central role of the developmental state in achieving its developmental objectives through a skillful balance between government intervention and market forces is a crucial aspect of attracting FDI (Antalóczy *et al.*, 2022; Nguyen and Yang, 2020).

China

China strategically utilizes FDI as a crucial growth driver for its transformation from an agrarian society to a manufacturing giant. The government's proactive pursuit of FDI, backed by incentives such as tax breaks and infrastructure development, has established China as a leading destination for overseas investors. The decentralized FDI management structure empowers provinces and cities to oversee and endorse projects, creating a dynamic investment environment. China's regulatory framework incorporates laws that tackle FDI concerns, including transfer pricing activities and safeguarding intellectual property rights. The export-FDI link is significantly boosted through preferential policies and incentives offered by special economic zones (SEZs) (Csaba, 2020; Xu, 2011). China's dedication to comprehensive growth is demonstrated through involvement in infrastructure development, economic freedom, and human development, as seen in the Belt and Road Initiative (BRI) and Made in China 2025. Policies aimed at human development, such as those targeting education, healthcare, and poverty reduction, are in line with global sustainability objectives. Economic freedom is fostered through various means, such as implementing reforms, liberalizing trade, and facilitating foreign investment, creating a fiercely competitive business environment (Tang *et al.*, 2021; Zheng and Sheng, 2017).

Singapore

Singapore's ability to attract export-focused manufacturing FDI can be attributed to its expertly executed developmental state policies, spearheaded by the Economic Development Board (EDB) since the 1960s. These policies prioritize political and macroeconomic stability, educational reform, infrastructure development, and fiscal incentives, aligning with a capabilities-based approach and creating a favorable business environment for long-term objectives, particularly foreign investments. The nation's strategy for development, which consists of various phases such as import substitution, labor-intensive manufacturing for exports, initial attempts at economic improvement, economic restructuring, retrenchment, and further diversification, demonstrates specific policies and objectives, thereby securing continuous economic achievement (Wonglimpiyarat, 2013). Moreover, Singapore's focus on the infrastructure objective, human capital improvement, and economic liberty further strengthens its position in the global economy. Well-considered investments in modern residential areas, effective transport systems, and seamless global information connectivity, combined with a competitive taxation system, open trade policies, intellectual property safeguarding, and top-notch infrastructure, create an environment conducive to business success (Gentle, 2017; Korle *et al.*, 2020).

Vietnam

Vietnam's pursuit of economic freedom and a business-friendly environment is evident through strategic policies, agreements, and initiatives. The evolution of Vietnam's foreign investment law, including amendments in 1987, 1990, 1992, 1996, 2000, 2005, 2014, and 2020, demonstrates the nation's commitment to attracting and fostering foreign investments (Nguyen and Yang, 2020). This legal development introduced monetary incentives, simplified procedures, and protected intellectual property rights, promoting a favorable environment for international investors. The amendments aimed to liberalize investments, provide tax breaks and land ownership privileges, and prioritize technology transfer and local infrastructure. Vietnam strategically developed export processing zones and industrial parks, supported by policies such as Decree 322/ND-HDBT, Decree 192/ND-CP, and Decree 36/ND-CP, offering tax incentives, streamlined processes, and exclusive land-use privileges. Furthermore, Vietnam revised corporate income tax rates, reduced to 25% in 2009, and provided preferential rates for projects in industrial parks and export processing zones, contributing to its attractiveness as an investment destination (Anwar and Nguyen, 2010; Beeson and Pham, 2012).

Previous studies offered valuable insights into the correlation between developmental state and GDP growth. However, an analysis of the relationship between developmental state and FDI in three distinct countries, namely China, Singapore, and Vietnam, over an extensive period from 1990 to 2021, is yet to be conducted, creating a notable gap in the literature. These countries possess varied economic systems, developmental approaches, and political contexts. By studying their FDI attraction during a prolonged timeframe, the paper can generate valuable insights into how developmental state policies have evolved

and affected FDI trends in these nations over time. In addition, comparative analysis can provide valuable insights for policymakers and scholars interested in the development/FDI nexus in different national contexts, providing a nuanced understanding of the role of governance, infrastructure, and economic freedom in attracting foreign investment (Anwar and Nguyen, 2010; Beeson and Pham, 2012). Empirical literature suggests that economic freedom, high-quality human capital, robust infrastructure, and economic growth attract FDI.

While neoclassical models suggest that FDI boosts domestic investment and short-term growth (Borensztein *et al.*, 1998), endogenous growth models show that FDI affects GDP growth more broadly. Both studies suggest spillover effects could mitigate diminishing capital returns (Ahmad *et al.*, 2018; Chanegriha *et al.*, 2020). Empirical studies show that FDI causes economic growth. Economic growth is crucial for attracting FDI (Kamaly, 2002). Muhammad and Mohammad (2012) indicated that financial development, imports, and economic growth affect FDI in Pakistan. Morshed and Hossain (2022) implied that GDP growth influences FDI in Bangladesh.

Previous studies have suggested that economic independence attracts FDI. Better national economic freedom may attract more FDI (Azman-Saini *et al.*, 2010; Bengoa and Sanchez-Robles, 2003; Tang *et al.*, 2021); institutional quality affects economic freedom (Pearson *et al.*, 2012). Liu *et al.* (2021) indicated that a free-market economy and strong institutions can improve GDP and FDI. FDI may diminish if host countries adopt a more conservative economic policy since enterprises will pay more to do business there (Chanegriha *et al.*, 2020). Economic freedom affects FDI regionally in a different way. Singh and Gal (2020) found that economic freedom boosts FDI in North and West Europe, South and East Asia, and Latin America but not elsewhere.

Various empirical studies suggest that human capital development attracts FDI, which boosts economic growth. Understanding why foreign investment differs by country depends on human capital. Multinational companies (MNEs) choose host nations with robust infrastructures and skilled labor force (Bengoa and Sanchez-Robles, 2003). This shows that skilled labor significantly affects FDI. Fan and Hao (2020) also noted that effective tax and minimum wage laws affect FDI.

Kheng *et al.* (2017) found a strong two-way relationship between human capital and FDI. Developing nations can adopt FDI-driven economic growth models by increasing education and training spending (Ahmad *et al.*, 2018; Liu *et al.*, 2021). FDI is typically good for human capital development, but some believe it may delay economic growth and deepen socioeconomic disparities.

Research has highlighted hard and soft infrastructure as keys to the infrastructure-FDI link. Highways, airports, and communication networks are complex infrastructures. Market-oriented institutions and governance structures are soft infrastructures that attract FDI (Pavlínek *et al.*, 2017). A strong network of roads, connections, and basic facilities like

transit and communications attracts modern enterprises and entrepreneurs. Infrastructure facilitates market expansion and lowers operational costs (Tang *et al.*, 2021). This could create an FDI-friendly environment. Public goods include infrastructure improvement (Zheng and Sheng, 2017). The authors also noted that it greatly affects private enterprises' cost structures and productivity.

Previous studies have shown that economic growth, freedom, human development, and infrastructure affect FDI influx and attractiveness. Thus, the following hypotheses are suggested:

H0: Economic freedom, human development, infrastructure, and economic growth do not affect FDI.

H1: Economic freedom, human development, infrastructure, and growth affect FDI.

3. Research data and methods

3.1 Data

The data used in this study were obtained from secondary sources covering the period from 1990 to 2021. This study's primary data sources included official reports, publications, and databases. The data collected from the various sources underwent a systematic process of compilation, cleaning, and arrangement to produce a comprehensive dataset used for the analysis.

Table 1. Variables

Variable	Definition	Source
GDP	GDP per capita (constant USD at 2010 prices)	World Development Indicators
FDI	Foreign direct investment (% GDP)	International Financial Statistics
HDI	Human Development Index	United Nations Development programme
Ecofree	Index of Economic Freedom (IEF)	The Heritage Foundation and Wall Street Journal
Infras	Individuals using the Internet (% population)	World Development Indicators

Source: Author's compilation

3.2 Research methods

The data were analyzed using the vector error correction model (VECM), originally introduced by Engle and Granger in 1987. The VECM is an appropriate selection for this study due to its suitability for time series analysis. VECM can effectively capture both short-term dynamics and long-term equilibrium relationships. VEC models are useful for analyzing the process of variables moving toward equilibrium in the presence of cointegration and shocks. The model's capacity to consider both immediate fluctuations and long-term stable states makes it a reliable option for revealing significant insights into the dynamics of FDI across several

countries over time. In line with Kurbanov's (2020) research and the stated objective of the study, the author formulated a model in the following manner:

$$\Delta FDI_t = \alpha_1 + \beta_1 \Delta GDP_t + \beta_2 \Delta infras_t + \beta_3 \Delta ecofree_t + \beta_4 \Delta HDI_t + \gamma_1 *(ECM_{t-1}) c_1 + \gamma_2 *(ECM_{t-1}) c_2 + \varepsilon_{1t},$$

where ΔGDP_t is the first difference of GDP at time t; ΔFDI_t is the first difference of FDI at time t; $\Delta infras_t$ is the first difference of infrastructure at time t; $\Delta ecofree_t$ is the first difference of economic freedom at time t; ΔHDI_t is the first difference of HDI at time t; $ECM_{t-1}c_1$ and $ECM_{t-1}c_2$ are the first lag of the error correction term for the first, and second cointegrating relationship, respectively; β_1, β_2, β_3, and β_4 are the coefficients of the respective independent variables; γ_1 and γ_2 are the coefficients of the error correction terms for the cointegrating relationships; ε_{1t} is the error term at time t.

Unit root tests. Unit root tests were carried out to determine the stationarity of the time series variables. The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were used as first steps. Stationarity is crucial for meaningful regression analysis, as non-stationary time series can lead to spurious regression results (Granger and Newbold, 2014).

Cointegration test. Two standard cointegration tests, the Johansen and Engle-Granger tests, were used. These tests help identify whether there is a cointegrating relationship between the model's variables and determine the number of cointegrating vectors, which is essential for specifying the VECM.

The error correction term (ECT). The ECT within the VECM framework indicates how the dependent variables respond to disturbances from their equilibrium state and converge to their long-run equilibrium relationship. A significant and negative error correction term indicates the presence of a cointegrated long-term relationship between variables.

Moderating effects. A moderation analysis was conducted using the Process Macro V4 statistical tool developed by Hayes and Bolin (2014). This analysis provides valuable insight into how moderating variables affect the relationship between independent and dependent variables by assessing the strength, direction, and statistical significance of moderating effects within a regression framework (Hayes and Bolin, 2014).

4. Results

4.1 Unit root test

Table 2 shows that the probability value of the t-statistic for the standard unit root process is statistically significant at the 10%, 5%, and 1% levels based on the given result. The ADF and PP are also statistically significant at the 10%, 5%, and 1% levels. This indicates that the variables are stationary and statistically valid for using the model and that no unit root exists.

Table 2. The unit roots test of variables

Country	Variables	ADF test results	PP test results	Conclusion
China	GDP	-4.730***	-4.132**	Stationary
	FDI	-3.655*	-4.928***	Stationary
	Infras	-3.692*	-3.692*	Stationary
	Ecofree	-5.080***	-5.196***	Stationary
	HDI	-3.005*	-7.265***	Stationary
Vietnam	GDP	-3.944**	-3.934**	Stationary
	FDI	-3.478*	-2.881*	Stationary
	Infras	-3.508*	-9.886***	Stationary
	Ecofree	-3.458*	-3.428*	Stationary
	HDI	-4.026**	12.795*	Stationary
Singapore	GDP	-4.038**	-8.471***	Stationary
	FDI	-4.263**	-13.589***	Stationary
	Infras	-6.298***	-13.118***	Stationary
	Ecofree	-4.100**	-5.108***	Stationary
	HDI	-4.711**	-18.330***	Stationary

Notes: *, **, and *** indicate statistical significance levels at 10%, 5%, and 1%, respectively.

Source: Author's calculation

4.2 Cointegration test

The results of the cointegration tests for Vietnam, Singapore, and China together indicate robust evidence of cointegration relationships between the variables in the models. The selected models yielded high eigenvalues in all three cases, well above the critical values at the 0.05 significance level.

Table 3. The cointegration test for variables

Hypothesized	Eigenvalue	Trace statistic	Critical value 0.05	P-value
Vietnam				
None	0.928	112.037	69.818	0.000
At most 1	0.709	51.511	47.856	0.021
At most 2	0.456	23.070	29.797	0.042
Singapore				
None	0.913	102.329	69.818	0.000
China				
None	0.761	80.748	79.341	0.039

Source: Author's calculation

4.3 Model estimation

In the short run, FDI in Singapore is influenced by positive factors. These factors go beyond the four independent variables. In particular, the main factors are GDP and infrastructure, while economic freedom and HDI have a minimal impact. The impact of lagged FDI on the current level of FDI is found to be statistically insignificant. Moreover, past levels of FDI do not affect current levels of FDI in Singapore. The short-term results for Vietnam show a remarkable and favorable starting point, as FDI inflows in the short run have both direct benefits for the country and a positive correlation with the HDI. In the context of China, the main factors influencing FDI in the short run are the country's GDP, economic freedom, and infrastructure quality. However, lagged FDI and HDI are found to have limited immediate impacts on FDI inflows.

In the context of Singapore's long-term economic performance, there is a negative correlation between the intercept and FDI. In addition, the lagged value of GDP at time -1 has a statistically significant negative impact, while the lagged value of ecofree has a positive impact. The presence of infras(-1) is correlated with a significant decrease in FDI. The residuals are consistent with the assumptions of the model. The results indicate that as economic freedom and HDI increase, there is a corresponding decrease in FDI, highlighting Vietnam's remarkable error correction coefficient and the negative impact of Ecofree(-1) and HDI on FDI. The appropriateness of the model is confirmed by residual tests. China has a long-run equilibrium correction rate of 54%, with a positive correlation between FDI and GDP and economic freedom. Conversely, there is a negative long-run correlation between FDI and infrastructure. The residuals do not show serial correlation, heteroskedasticity, or non-normality.

Table 4. The results of the model

Hypothesis	GDP → FDI	Infras → FDI	Ecofree → FDI	HDI → FDI	Infras GDP → FDI	Ecofree GDP → FDI	HDI* GDP → FDI	χ^2 sc	χ^2 het	χ^2 nor
	H1	**H2**	**H3**	**H4**	**H5**	**H6**	**H7**			
Short run										
Singapore	0.612*	1.252*	0.243	-342.298	0.000	0.000	0.008			
	[2.134]	[4.068]	[0.174]	[-1.965]	[0.304]	[0.222]	[0.157]			
	Accepted	**Accepted**	Rejected	Rejected	Rejected	Rejected	Rejected			
Vietnam	-0.672	-0.087	-0.120	1068.384*	-0.005**	0.000	0.320			
	[-1.418]	[-0.573]	[-0.431]	[2.249]	[-2.096]	[-0.176]	[1.527]			
	Rejected	Rejected	Rejected	**Accepted**	**Accepted**	Rejected	Rejected			
China	-0.318*	-0.266*	-0.346*	-96.282	0.000	0.000	-0.007			
	[-2.153]	[-3.726]	[-4.28]	[-1.017]	[0.601]	[-0.441]	[-0.249]			
	Accepted	**Accepted**	**Accepted**	Rejected	Rejected	Rejected	Rejected			
Long run										
Singapore	-0.969*	-1.616*	4.494*	882.029*						
	[-4.154]	[-9.647]	[8.368]	[5.336]				0.388	0.805	0.313
	Accepted	**Accepted**	**Accepted**	**Accepted**						
Vietnam	-0.650	0.729*	-0.346*	-1055.93*						
	[-0.909]	[3.068]	[2.043]	[-2.420]				0.211	0.408	0.246
	Rejected	**Accepted**	**Accepted**	**Accepted**						
China	0.823*	-0.367*	0.714*	230.305						
	[5.351]	[-6.726]	[8.292]	[1.451]				0.169	0.308	0.548
	Accepted	**Accepted**	**Accepted**	**Accepted**						

Notes: t-statistics are in brackets; *, ** indicate statistical significance levels at 10% and 5%, respectively; sc, nor, and het represent serial correlation, normality, and heteroscedasticity, respectively.

Source: Author's calculation

5. Discussion

The main objective of this study is to evaluate the feasibility of using economic freedom, HDI, and infrastructure as tools for government entities to enhance their ability to attract FDI. The results reveal that economic freedom has a detrimental effect on FDI in the short run yet yields favorable outcomes in the long run. Empirical evidence from the study by Singh and Gal (2020) supports the positive impact of economic freedom on FDI. Higher levels of economic freedom provide a protective measure, leading to a greater influx of FDI during periods of economic instability. Avoiding subjective evaluations, the findings suggest that economic freedom acts as a buffer against economic instability. Adequate economic freedom is, thus, a crucial component in attracting FDI. Empirical studies by Ciftci and Durusu-Ciftci (2022) and Lu *et al.* (2020) support a negative relationship between economic freedom and FDI. Inadequate regulatory frameworks and insufficient protection of property rights and the rule of law can weaken the security of investment environments. This is applicable even when a country actively seeks economic independence. Inadequate legal protection may cause potential investors to exercise caution when investing their financial resources (Kim and Li, 2014; Knight, 2014).

The importance of enhanced infrastructure in attracting FDI is more pronounced in developing countries with inadequate infrastructure. This is because improved infrastructure, including communication, transport, and energy provision, can lower operational costs, increase market access, and enhance the investment climate's appeal. However, in countries with well-established infrastructure, the impact of additional infrastructure development on FDI may be relatively less significant. This can be traced back to the constraints investors face in these countries regarding cost-cutting and efficiency improvements (Colen *et al.*, 2008).

Numerous elements contribute to the differing impacts of the HDI on FDI in various nations. One crucial aspect to consider is the educational accomplishment and level of human development within the host country. Countries with lower HDI ratings and less developed human capital may potentially benefit more from an increase in HDI in the context of FDI. This is due to the significant appeal of a competent and knowledgeable workforce among global stakeholders, particularly within sectors heavily relying on intellectual capital and specialized know-how. However, in nations where human development has already achieved a significant level, further enhancements to the HDI may not significantly boost the attraction of the workforce to foreign investors as these individuals might already possess the necessary qualifications and skills (Kheng *et al.*, 2017; Korle *et al.*, 2020).

The VECM model meets the conventional assumptions related to the normality of the error term, serial correlation, autoregressive conditional heteroscedasticity, white heteroscedasticity, and the model's functional form. The diagnostic test results are presented in the lower section of Table 4. The findings reveal that the error term conforms to a normal distribution, and there is no evidence of any serial correlation among the variables. The analysis showed no evidence of autoregressive conditional heteroscedasticity or white heteroscedasticity. The Ramsey RESET statistics provide evidence that the model has been suitably specified.

6. Conclusions

This paper presents a detailed empirical analysis of the factors affecting the developmental state and FDI in three nations: Singapore, Vietnam, and China. The research intends to scrutinize a conceptual framework that elaborates on the determinants of FDI and to investigate the direct and moderating effects of GDP, economic freedom, infrastructure, and HDI. This study compares various countries and enhances comprehension of contextual factors influencing FDI attraction and economic growth. The longitudinal perspective between 1990 and 2021 highlights the dynamic interdependencies between the variables over time, improving understanding of their multifaceted interactions.

The analysis offers insights into the short-term and long-term correlations of different factors with FDI across diverse countries. Research findings reveal a positive correlation between GDP and FDI for China and Singapore in the short term, while Vietnam exhibits a statistically insignificant correlation. Although infrastructure development initially had an adverse effect on FDI in Vietnam, it showed a positive correlation in the long run for all three countries. Moreover, the immediate impact of economic freedom on FDI varies across nations but consistently becomes positive over time. HDI consistently impacts FDI across all countries, as demonstrated in both short-term and long-term analyses. This study highlights the complexity and temporal dynamics of the factors influencing FDI in diverse economic and policy contexts.

The results carry vital policy implications for all three countries. The emergence of economic freedom as a crucial catalyst in fostering economic growth and drawing foreign investment necessitates governments to execute policies targeting improvement in economic liberty by decreasing regulatory hurdles and elevating the overall business environment. Specific recommendations are offered for China, Vietnam, and Singapore, advocating for economic liberalization, infrastructure investment, workforce development, market-oriented reforms, and innovation.

The limitations of this study should be addressed in future studies. Generalizability could be restricted to the studied countries, highlighting the need for broader geographical inclusion. The selection of variables might not cover all influencing factors, requiring further exploration of additional variables in future studies. The nonlinear relationships between economic freedom and FDI could be further investigated through advanced econometric methods, enhancing the comprehension of their intricate dynamics.

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