EMPIRICAL INSIGHTS INTO THE INFLUENCE OF FINANCIAL DEVELOPMENT ON CAPITAL MARKETS IN SOUTHEAST ASIA

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Article Info

ABSTRACT

The rise of capital markets around the world has paved the way for new research on the relationship between financial development and capital market performance. This becomes relevant as capital markets are now more accessible to foreign capital flows as a result of economic liberalization and globalization. Therefore, this study intends to provide empirical evidence of the impact of financial development proxied by three parts, namely financial access, financial efficiency and financial stability based on critical mass theory. Operationally, this study uses a sample of 6 countries in ASEAN with an annual observation period from 2007 to 2022. With the characteristics and structure of panel data, this study uses panel regression analysis with a total data of 672 observations (country-years). The analysis used also applies a fixed-effects model (FEM) at the country (Country-FE) and year (Year-FE) levels. The results show that there is a positive association between financial access and capital market performance, a negative association between financial efficiency and capital market performance, and a positive association between financial stability and capital market performance.

INTRODUCTION

Based on research by Charity et al., (2017) , the role of capital markets on economic development and growth has existed at a global level. The capital market provides long-term resources for various sectors of the economy. It consists of an establishment that helps with the issuance and trading of long-term financial instruments. The study conducted by Okpara (2010), says that the capital market is the cornerstone of financial development in any economy because the capital market plays an important role in providing funds for the expansion of micro and macro firms, as well as funding significant government work programs. In other words, capital markets serve as a link between funders and beneficiaries, making capital accessible for innovative and entrepreneurial activities that promote economic growth. According to this perspective, the capital market serves as more than just a way to store and transfer funds; it also serves as a means to foster innovation and economic growth, both of which have the potential to have a long-term positive impact on society and the economy.

The rise of capital markets around the world paved the way for new research on the relationship between financial development and capital markets (Arestis et al., 2001). This fact is evident through the growth of global stock market capitalization, which increased from $2 trillion in 1982 to $4.7 trillion in 1986, $10 trillion in 1993, and reached $15.2 trillion in 1996. In this context, the average annual growth was 15 percent. In addition, market capitalization in developing countries has also increased significantly, rising from less than 4 percent to 13 percent of total world market capitalization (Dermiguc-Kunt & Levine, 1996).

Capital markets are now more accessible to foreign capital flows as a result of economic liberalization and

globalization. The way capital markets work has also evolved as a result of advances in information and communication technology, allowing trading to be faster and more effective. Financial development has also received more attention in this dynamic. Efforts to strengthen the financial sector, including banking, capital markets, and other financial institutions are referred to as financial development. Research on the impact of financial development on capital market performance is an important step in understanding the dynamics of the relationship between the financial sector and capital markets. Several previous studies have been conducted on the impact of financial development. Zhan et al., (2023) examined the impact of digital financial development on cross-regional capital flows, (Islam & Alhamad (2022) examined the impact of financial development and institutional quality on remittance growth. However, there is a lack of research detailing the direct and indirect effects of financial development on capital market performance.

Therefore, this study specifically aims to highlight and provide empirical evidence of the impact of financial development on capital market performance in ASEAN and identify factors that may influence this relationship. Economically, ASEAN is a fairly diversified region. There are countries in the region with diverse economic development, ranging from advanced industrialized countries like Singapore to emerging economies like Indonesia. By centering our research on ASEAN, we are able to examine the impact of financial development from different economic perspectives. This provides an opportunity to understand the impact of variations in capital market size, economic growth rate, and financial regulation on the correlation between financial development and capital market performance.

In addition, ASEAN is a region that is becoming increasingly significant globally. As economic and investment interest in Southeast Asia increases, the importance of the region's capital markets to the global economy also increases. By understanding the impact and moderating factors, we can provide a better view on how financial development policies can support capital market growth and stability.

LITERATURE REVIEW

Theoretical and Conceptual Background

In the context of this study, critical mass theory (Schelling, 1971, 1974, 1978) is employed, typically utilized to comprehend social dynamics. The fundamental concept underlying critical mass theory in an economic framework pertains to a substantial number of market participants embracing specific financial changes within a system. In this instance, the adoption of financial changes attains a critical level within the capital market community. Consequently, the level of self-adoption by investors and market participants generates momentum, anticipating a further increase in the adoption of financial innovations (Nurazi & Usman, 2019).

Drawing on the essence of critical mass theory, the notion of critical mass can be associated with the majority in political and economic contexts. Indeed, minor shifts in the majority's perspective within the capital market can instigate changes in the economic landscape. These changes are often initiated by the reliance of the majority of market participants on specific concepts and ideas originating from the public context, subsequently taking precedence in economic analysis and discourse. Thus, in this study, we scrutinize how the adoption of financial innovation reaches a critical threshold and its repercussions on capital market performance. Furthermore, we examine how alterations in the majority's perception in the market may influence investor behavior and overall market conditions. Through this approach, we aim to provide a deeper insight into how financial development can impact capital market performance.

Empirical Review and Hypothesis Development

Relationship between Financial Access and Capital Market Performance

Financial access refers to the level of accessibility of individuals and companies to financial products and services, such as bank accounts, loans, and investment instruments. The provision of affordable and sustainable financial services intended to attract the poor to the formal economy is also defined as financial inclusion (United Nation, 2016) . Financial inclusion will affect savings, investment, and consumption (Yiadom et al., 2021) . So it can be said that access to finance can lead to increased economic activity (Yiadom et al., 2023), one of which is investment, which will be directly correlated to the capital market.

Having access to financial services allows the poor to save and invest in worthwhile endeavors such as entrepreneurship and education that help people escape the cycle of poverty (Dermiguc-Kunt & Levine, 1996). When individuals and firms have more access to financial instruments, they are more likely to participate in the capital market by investing in stocks, bonds, or other instruments. With this increased participation, capital markets can become more liquid and have more sources of capital available. This can result in increased trading activity and drive capital market growth.

Meanwhile, Klagge & Martin (2005) point out that while a geographically decentralized financial system with a large and well-integrated group of regional/local institutions, networks, agents and markets can be beneficial in many ways, regional/local capital markets face a number of significant difficulties and problems. It is important to remember that in the context of regional/local capital markets, some constraints such as lack of asset

diversification and exposure to local risks can also be a serious problem. In addition, regulatory constraints and differences in legal frameworks between states or territories may have an additional impact on investors. This means that while there is potential for significant growth and development in local capital markets, the efforts required to overcome such obstacles, including regulatory improvement and legal harmonization, also need to be addressed. In the ASEAN context, cross-border cooperation to enhance regional capital market integration may also play an important role in addressing some of the challenges facing regional/local capital markets.

Hypothesis 1a : Access to Finance affects the Composite Index
Hypothesis 1b : Financial Access affects Stock Trading Volume

Relationship between Financial Efficiency and Capital Market Performance

Several research roles of financial efficiency have been carried out, such as on economic growth by Saqib (2018), renewable energy consumption by Cihat et al., (2021) and foreign ownership, good governance (Alan & Alan Aschauer, 1998). Research by Saqib (2018) found that there is a favorable correlation between financial sector efficiency and foreign investment in the form of long-term capital investment in the economy. Efficiency in the financial sector, such as improved accessibility and liquidity, promotes healthy economic growth, which in turn can attract more foreign direct investment. This foreign investment, which often involves a certain amount of long-term capital, also strengthens the capital market by providing additional resources, which in turn contributes to increased liquidity and growth of the capital market itself.

Research by Qamruzzaman & Kler (2022) also shows a positive and significant relationship between financial efficiency and foreign capital flows in both the short and long run, in this case investment. This result implies that money flows come from outside sources, such as foreign direct investment and migrant money flows, in an effort to gain easy access to financial services offered by the official financial system. In addition, the availability of credit benefits may have led to the inflow of capital from outside the economy. Therefore, it is imperative to diversify credit development and licensing of financial services, or so-called financial efficiency, to ensure the inflow of foreign money into the economy. Reinforced by Shleifer & Vishny (1996), who state that the operational efficiency of financial intermediaries improves corporate governance and strengthens the supervision of investment operations. Dispersed shareholders may not be willing to exert sufficient influence over fund management due to business frictions such as high transaction rates and knowledge asymmetry.

In addition, a study conducted in Pakistan by Shahbaz & Rahmad (2010) stated that the government should reform the financial system to improve financial efficiency which will increase investment flows from foreign countries. Financial efficiency has the main function of increasing cross-border cash flows in the form of investment (Abid & Goaied, 2017). Cash flows are related to the level of financial efficiency because the level of efficiency in financial agreements attracts international investors and markets, but also domestic level investors and other markets (Kablan, 2021).

Hypothesis 2a: Financial Efficiency affects the Composite Index.
Hypothesis 2b: Financial Efficiency affects stock trading volume.

Relationship between Financial Stability and Capital Market Performance

Financial stability does not have an agreed definition because the financial system has a complex nature and consists of various dimensions, markets, and products. The European Central Bank (ECB, 2023) defines financial stability as the ability of the financial system consisting of markets, financial intermediaries, and market infrastructure to absorb shocks and eliminate financial imbalances. This minimizes the likelihood of disruptions to the financial intermediation process that are severe enough to have a negative impact on economic activity.

Research conducted by Morgan et al., (2014) states that financial system stability is stable when it is able to facilitate economic performance, eliminate imbalances, and be sustainable in carrying out basic economic functions in mediating savings and investment in the real economy. In other words, with a stable financial system, investment can run smoothly, which will certainly have a direct effect on the capital market. Another study conducted by Lee & Lee (2023) found that major changes in monetary policy and stock prices influence equity market volatility. Investors in the United States are required to consistently watch Federal Reserve actions and price movements in the Chinese stock market to better understand future stock market volatility. Thus, stock volatility, which is used as a measurement tool for the financial stability variable in this study, has a relationship with stock prices. Regarding investors who are also part of the capital market, research conducted by Anadu et al., (2020) states that investor decisions can affect financial stability. Financial stability is a significant market risk factor that ultimately impacts investment performance. Policymakers, investors, and investment managers have an interest in resolving this financial market externality. In another study, it was also stated that extreme volatility will affect European securities markets in general and banking sector stocks in particular and have an adverse impact on material threats to stability and orderly market functioning (Arce & Mayordomo, 2016). To prevent this extreme volatility, European state supervisors prohibit the formation of short positions in the stocks of financial institutions in order to maintain financial stability. This means that financial stability and financial markets have a reciprocal relationship. Another study, however, suggests that financial instability in the US has led to China's oil-stock relationship

(Ghedira & Nakhli, 2023). This may be influenced by the strong relations between the two countries in terms of long-standing trade, investment, and political partners. But apart from that, in this case, financial stability has an influence on the country's stock market. So, based on the above literature, the following hypothesis can be concluded:

Hypothesis 3a: Financial Stability affects the Composite Index

Hypothesis 3b: Financial Stability affects Stock Trading Volume

RESEARCH AND METHODOLOGY

Theoretical Framework

To determine the effect of financial development on capital market performance, the following model is designed for this study.
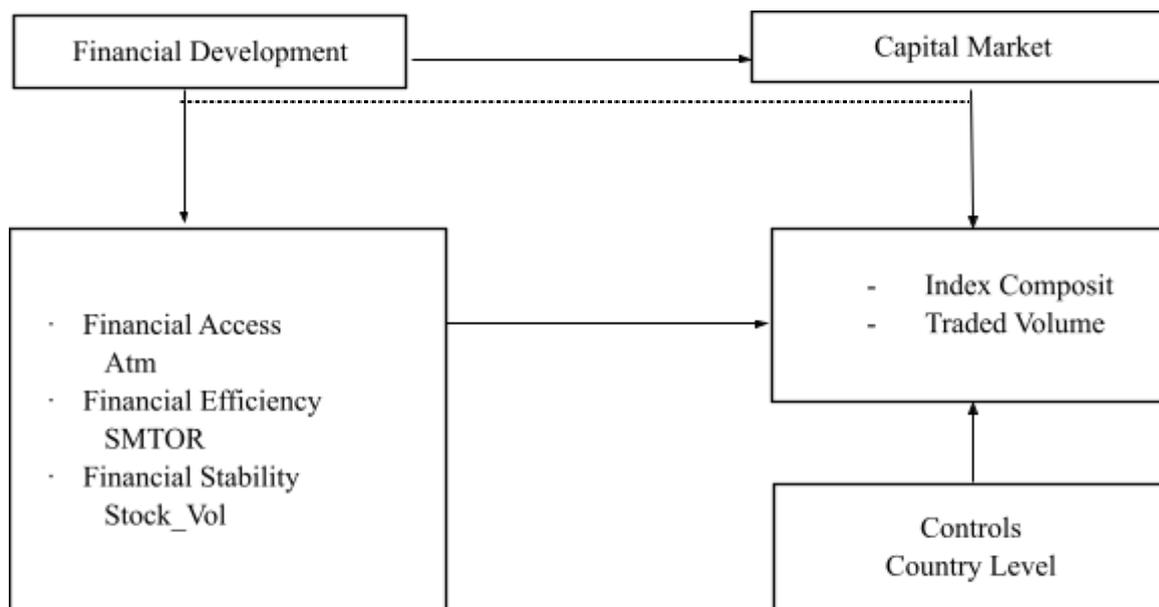

Figure 1. Resource Model
Source: Authors (2023)

In terms of the conceptual formulation process and technical measurement, Figure 1 illustrates the research design. The conceptualization involves the relationship between the construct of financial development and capital market performance, as depicted in the figure. The proposed economic justification aims to identify the relationships and effects resulting from the influence of financial development on capital market performance. To experimentally incorporate these key concepts into observed parameters, several substitute indicators are employed. The three primary financial characteristics considered are: (1) financial access, (2) financial efficiency, and (3) financial stability. Simultaneously, the Composite Index and Trading Volume serve as surrogate indicators for the variables representing capital market performance. To address the endogeneity problem, researchers utilize fundamental economic (macroeconomic) indicators, neutralizing the confounding effect of the main independent variables on the dependent variable.

Data and Sample

All data were sourced from documented third-party archival sources. Information on financial development was gathered from various sources using the World Development Indicator and the Global Financial Development Database (GFDD) Index. Yahoo Finance served as the platform for collecting information related to the measurement of capital market performance. The data, considered as longitudinal data, combines cross-sectional and time-series analyses conducted on individual units. Following Baltagi (2008) research, this longitudinal data is designated as panel data analysis. The study population comprises countries that are members of ASEAN, with samples taken from several ASEAN countries (Indonesia, Singapore, Malaysia, Thailand, Vietnam, and the Philippines). The observation period spans from 2007 to 2022, focusing specifically on the variables predetermined in the research model.

Model Specification

This study employs a panel data regression model with capital market performance as the dependent variable and financial development as the independent variable. According to Mertens et al., (2016), panel data analysis has the potential to support causal relationships more effectively, handling both observable and

unobservable effects compared to cross-sectional data. The cross-sectional sample in this study comprises six countries, with time-series observations spanning sixteen years. The model used in panel data analysis is as follows, with all variable definitions explained in Table 1. Subscripts i and t denote country and year, respectively, as specified in the proposed statistical model. I_rate represents the real interest rate, indicating the inflation-adjusted lending rate measured by the GDP deflator. E_rate denotes the official exchange rate set by the national authority or determined on the legally approved currency market. The variable FD (financial development), the main independent variable, is derived from three surrogate indicators: Atm, the number of ATMs per 100,000 adults; $SMTOR$, the total value of shares traded divided by the average market capitalization during the period; and $Stock\_Vol$, stock price volatility, representing the average volatility of the national stock market index over 360 days. For a more comprehensive understanding in this study, operational definitions are provided, encompassing the measurement of each variable, as detailed in the following section.

Table 1. Operational Definition

No	Variable	Definitions	Data Source
1	ATM	ATM logs per 100,000 adults	World Bank using Global Financial Development Database
2	Stock_Vol	Total value of stock market traded to GDP (%)	World Bank using Global Financial Development Database
3	Smtor	Stock market turnover ratio (%)	World Bank using Global Financial Development Database
4	Adj_Close	Country Composite Index	Yahoo Finance
5	Volume	Stock Trading Volume	Yahoo Finance
6	I_rate	Real interest rate (%)	World Bank using World Development Indicators Database
7	E_rate	Log of the exchange rate (LCU) per US dollar, period average	World Bank using World Development Indicators Database

Source: Authors (2023)

RESULT AND DISCUSSION

Result

The analysis began by classifying the sample information and summarizing it into descriptive statistics. In the first step, we trimmed the initial sample of 10 ASEAN countries to only 6 ASEAN countries that met the criteria of the purposive sampling method. In the second step, we separated the data from each company into two groups, namely Panel A and Panel B. Furthermore, data processing was carried out using the descriptive statistics feature available in E-Views 9 software. The descriptive data contained in the following presents statistical details as follows:

Table 2. Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std.Dev	Observation
Panel A: Dependent Variable						
Adj_Close	99344524	10040321	5.93E+08	27601,10	1.58E+08	96
Volume	1.26E+08	588464.2	9.72E+08	1.867.337	2.76E+08	96
Panel B: Independent Variable						
ATM	56,20	54,14	117,79	11,47	28,11	96
SMTOR	41,00	31,24	129,28	10,90	24,76	96
Stock_Vol	18,82	18,29	36,09	8,15	6,49	96
I_rate	3,15	3,62	3,62	-20,50	4,00	96
E_rate	5.470,50	38,76	23.271,21	1,25	8.272,03	96

Source: Authors (2023)

Description: This table illustrates a summary of descriptive statistics consisting of mean, median, minimum, maximum, and standard deviation information from each research variable. The sample period starts in 2007 and lasts until 2022. Research samples were taken from several ASEAN countries (Indonesia, Singapore, Malaysia, Thailand, Vietnam, and Philippines).

Table 2 provides information on the annual descriptive data sets of the six selected countries. In particular, Panel A presents basic information on the dependent variables, namely the composite index (Adj_Close) and trading volume (Volume). From this data, it can be observed that the average composite index over the period 2007 to 2022 is around 99344524, with a minimum value of 27601.10 and a maximum composite index value of 5.93E+08. Then, the trading volume (volume) shows that the average trading volume is 1.26E+08 with a minimum trading activity of 1,867,337 and the maximum trading volume is 4.37E+09. Meanwhile, Panel B contains

information on the number of ATMs per 100,000 adults. In this panel, we can see that the average number of ATMs per 100,000 adults is 56.20. The minimum number of ATMs per 100,000 adults is 11.47, while the maximum score is 117.79. In the Smtor (stock market turnover ratio) variable, the average value is 41.00%, with a minimum value of 10.90% and a maximum value of 129.28%. Then, the Stock_Vol variable (stock volatility) has an average value of 18.82, a minimum value of 8.15, and a maximum value of 36.09.

Panel B also contains other control variables, such as I_rate and E_rate. The use of these variables aims to explain and control the interaction between the main variables. For example, this study uses an average interest rate (I_rate) of around 3.15% with a minimum value of 20.50% and a maximum value of 3.62%. The average value of the exchange rate (E_rate) is about 5,470.50, with a minimum price of 1.25 and a maximum of 23,271.21. In the next step, we analyzed hypothesis testing on the first statistical model. The results of testing Financial Development on the Composite Index (Adj_Close) are shown in the statistical analysis table below:

Table 3. Statistical Analysis

Dependent Variable: ADJ_CLOSE?
Method: Pooled Least Squares
Sample: 2007 2022
Included observations: 16
Cross-sections included: 6
Total pool (balanced) observations: 96

	Coefficient	Std. Error	t-Statistic	Prob.
C	19.628	0.338	57.978	0.000
ATM?	0.012	0.002	4.847	0.000
SMTOR?	-0.001	0.002	-0.601	0.548
STOCK_VOL?	-0.014	0.006	-2.150	0.034
I_RATE?	-0.000	0.007	-0.105	0.916
E_RATE?	0.031	0.016	1.925	0.057
R-squared	0.989	Mean dependent var		20.540
Adjusted R-squared	0.988	S.D. dependent var		2.331
S.E. of regression	0.250	Akaike info criterion		0.179
Sum squared resid	5.346	Schwarz criterion		0.472
Log likelihood	2.402	Hannan-Quinn criter.		0.297
F-statistic	812.234	Durbin-Watson stat		1.283
Prob(F-statistic)	0.000			

Source: Authors (2023)

Description: Based on the statistical results conducted using the fixed effects model (FEM), researchers found that the coefficient of determination, or R^2, is relatively large (0.989), or equivalent to 98%. This means 98% of the variation that occurs in the dependent variable (Adj_CLose) can be explained by the independent variables (ATM, SMTOR, Stock_Vol, I_rate, and E_rate).

The statistical results presented above demonstrate a positive and significant ($p < 0.05$) contribution of the number of ATMs per 100,000 adults (ATM) to the Composite Index (Adj_Close). This study explores the relationship between access to financial services, measured by the number of ATMs, and market capital performance, represented by the Composite Index (Adj_Close). Our findings reveal that a higher number of ATMs is associated with a positive contribution to capital market performance, and this relationship is not only positive but also statistically significant ($p < 0.05$). This implies that increased public access to financial services through ATMs has a tangible impact on capital market development.

In practical terms, this finding holds crucial implications. It suggests that enhanced access to financial services can positively contribute to capital market growth and development. Improved access provides people with more opportunities to participate in the capital market, fostering broader economic growth. Overall, these results underscore the importance of financial service accessibility in supporting capital market development and economic growth, creating a more inclusive and efficient financial environment.

Moving forward, we analyze the impact of financial efficiency, represented by the stock market turnover ratio (SMTOR), on capital market performance (Composite Index, Adj_Close). The statistical results show an insignificant negative coefficient ($p > 0.05$) for the SMTOR variable, indicating that, within this study's framework, financial efficiency does not significantly affect capital market performance as measured by the Composite Index. Despite SMTOR reflecting active turnover in the stock market, the results suggest that other factors may exert greater influence on the Composite Index.

The capital market is a multifaceted domain with various interacting variables. Macro-economic factors, government policies, global events, and investor preferences can significantly impact capital market performance, with market efficiency being just one contributing factor. These findings underscore the need for further research to

explore additional variables influencing capital market dynamics, aiming to gain a more comprehensive understanding of its complexity.

Although the statistical results indicate that SMTOR does not have a significant impact on capital market performance as measured by the Composite Index (Adj_Close), this discovery contributes valuable insights into the factors influencing the intricate capital market. It suggests the importance of considering diverse variables alongside market efficiency to obtain a more complete understanding of capital market performance. This insight guides future research efforts to unravel the intricate dynamics within capital markets.

Additionally, our analysis reveals that the variable Stock_vol exhibits a significant negative coefficient ($p < 0.05$) on Adj_Close, indicating a substantial relationship between stock volatility and capital market performance. The negative coefficient implies that an increase in stock volatility is associated with a decrease in stock prices. High stock volatility, often linked with market anxiety, may result in reduced investor confidence and participation in the capital market.

Companies and investors seeking asset value stability should prioritize risk management of stock volatility to support stable capital market performance. Investors and stakeholders need to factor in stock volatility when making investment decisions, especially during periods of high volatility requiring more careful risk management. These results prompt further inquiries into the factors influencing stock volatility and its broader impact on overall capital market performance, paving the way for more in-depth research.

The next step involved analyzing hypothesis testing in the second statistical model. The results of the test for Financial Development on Trading Volume (VOLUME) are presented in the following statistical analysis Table:

Table 4. Statistical Analysis

Dependent Variable: VOLUME?
Method: Pooled Least Squares
Sample: 2007 2022
Included observations: 16
Cross-sections included: 6
Total pool (balanced) observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.1595	0.817	22.221	0.000
ATM?	0.026	0.006	4.281	0.000
SMTOR?	-0.004	0.005	-0.858	0.393
STOCK_VOL?	0.036	0.015	2.317	0.022
I_RATE?	0.007	0.017	0.421	0.674
E_RATE?	-0.089	0.038	-2.290	0.024
R-squared	0.944	Mean dependent var		18.616
Adjusted R-squared	0.937	S.D. dependent var		2.422
S.E. of regression	0.605	Akaike info criterion		1.941
Sum squared resid	31.150	Schwarz criterion		2.235
Log likelihood	-82.192	Hannan-Quinn criter.		2.060
F-statistic	143.633	Durbin-Watson stat		1.065
Prob(F-statistic)	0.000			

Source: Authors (2023)

Description: Based on the statistical results conducted using the fixed effects model (FEM), the researcher found that the coefficient of determination, or R2, is relatively large (0.944) or equivalent to 94%. This means that 94% of the variation that occurs in the dependent variable (volume) can be explained by the independent variables (ATM, SMTOR, Stock_Vol, I_rate, and E_rate).

The statistical results presented above reveal that the number of ATMs per 100,000 adults (ATM) has a positive and significant contribution ($p < 0.05$) to trading volume (Volume). In capital markets, trading volume plays a crucial role as it reflects market activity and liquidity. The statistical results indicating a positive and significant contribution of the number of ATMs to trading volume offer a more detailed understanding of the impact of financial access on capital markets. The number of ATMs per 100,000 adults reflects the availability of access to financial services, including bank accounts and investments in the capital market. With more ATMs available, individuals and investors have easier access to their funds, manage them, and make investments. The presence of more ATMs can also boost trading activity in the capital market, allowing investors to promptly respond to investment opportunities or market changes without significant delays. This, in turn, leads to increased trading volume, influencing the overall performance of the capital market.

Therefore, the statistical results indicating a positive and significant contribution of the number of ATMs to trading volume provide clear evidence that financial access through ATMs has a positive impact on capital market performance. Greater access enables investors to participate more actively in the market, improve market liquidity,

and support overall economic growth. Subsequently, the statistical results of the stock market turnover ratio (SMTOR) variable display an insignificant negative coefficient ($p > 0.05$), indicating no discernible relationship or contribution to trading volume (Volume). SMTOR is a metric reflecting the stock market's ability to experience active turnover of assets and shares quickly. A higher SMTOR suggests a more efficient market in managing its trading and liquidity. The statistical results showing an insignificant negative coefficient on SMTOR indicate that, within the framework of this study, the level of stock market efficiency (as measured by SMTOR) does not significantly impact trading volume in the capital market. The p-value > 0.05 suggests that the relationship between SMTOR and trading volume does not reach the threshold of statistical significance typically set at 0.05. Consequently, there is insufficient statistical evidence to conclude that SMTOR has a significant influence on trading volume.

In the context of this study, this finding may suggest that, while the level of stock market efficiency is crucial in measuring the health of the capital market, this efficiency may not directly affect trading activity in the form of volume. Various other factors could be influencing trading activity in the capital market, such as macroeconomic factors or government policies. This finding could serve as a foundation for further research to explore other factors that may affect trading volume in the capital market, aside from financial efficiency. Additionally, the variable Stock Volatility (Stock_vol) has a significant positive coefficient ($p < 0.05$). This indicates that the Stock_Vol variable has a significant impact on trading volume (Volume). Firstly, it is important to understand that stock volatility reflects the level of fluctuation or instability of stock prices in the market. The statistical results showing a significant positive coefficient ($p < 0.05$) on the Stock_vol variable indicate that the level of stock volatility significantly influences the volume of trading in the capital market.

Stock volatility can impact trading activity in the capital market. When volatility is high, investors may be more active in trading to take advantage of excessive prices, leading to an increase in trading volume. Investors tend to respond to volatility by organizing their portfolios and trading more frequently. If stock prices fluctuate significantly, investors may tend to buy or sell their shares faster, resulting in increased trading volume. The level of volatility can also affect market liquidity, creating opportunities and risks for market participants, ultimately leading to increased trading volume. These results have important implications for understanding capital market performance. Stock volatility levels can be a relevant indicator for analyzing market activity, understanding investor reactions, and predicting potential changes in trading volume.

CONCLUSION

In hypotheses one, our analysis reveals a positive and significant relationship between the number of ATMs per 100,000 adults and the Composite Index, indicating that increased public access to financial services through ATMs has a noteworthy impact on capital market growth. This finding underscores the crucial role of financial access in fostering economic and capital market development. It provides valuable insights for policymakers and financial institutions aiming to enhance financial inclusion and stimulate economic growth through capital market participation.

Moving to hypotheses two, where we explored the impact of financial efficiency, measured by the stock market turnover ratio (SMTOR), on capital market performance. Despite the generally accepted notion that SMTOR reflects market efficiency, our results reveal an insignificant negative coefficient. This suggests that other nuanced factors play a role in influencing capital market performance beyond market efficiency. This highlights the intricate nature of capital markets, urging further research to comprehensively understand the multifaceted dynamics that impact investment decision-making. The practical implications of Study 2 are particularly significant for stakeholders involved in capital markets and financial policy. While Study 1 emphasizes the potential role of increased financial access in driving economic growth through capital markets, Study 2 underscores the importance of recognizing that market efficiency alone does not determine capital market performance. Policymakers and practitioners need to consider a broader set of variables to formulate effective strategies for market development.

Turning our attention to hypotheses three, which investigates the relationship between financial stability, measured by stock volatility, and capital market performance, our results demonstrate nuanced outcomes. The negative and significant coefficient observed in the Composite Index suggests that high stock fluctuation negatively impacts the overall market performance, possibly due to investor concerns leading to asset sell-offs. Conversely, the positive and significant coefficient observed in trading volume indicates that heightened stock fluctuation prompts increased investor activity, with more active trading and asset sales.

In summary, the findings from our three studies collectively contribute to a more comprehensive understanding of the intricate dynamics that influence capital market performance. While financial access and efficiency play crucial roles, the complexity of the capital market necessitates a holistic consideration of various factors, including stability and investor behavior. These insights can guide policymakers, financial institutions, and investors in formulating strategies that foster sustainable economic growth and robust capital markets. Further research is encouraged to delve deeper into these multifaceted interactions and expand our knowledge base in this critical domain.

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