

MONETARY RISK AND MARKET DYNAMICS AS DRIVERS OF CAPITAL MARKET DEEPENING IN ASEAN: A SUSTAINABLE DEVELOPMENT PERSPECTIVE

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Abstract

This study explores the determinants of capital market deepening in six ASEAN countries between 2010 and 2024, framed within the sustainable development agenda. Employing a dynamic panel approach with the System Generalized Method of Moments (System GMM), the analysis addresses challenges of endogeneity and persistence in financial development. The findings reveal that stock market returns and inflation exert a significant positive influence on the market capitalization to GDP ratio, while GDP growth and IPO activity show no meaningful effects. Contrary to expectations of a non linear threshold, inflation displays a consistent and predominantly positive association, suggesting that price levels remained within a range supportive of financial deepening. These results indicate that monetary and financial dynamics play a stronger role than real-sector growth in shaping ASEAN's market depth. For policymakers, the study underscores the importance of maintaining price stability, strengthening market institutions, and advancing inclusive financial reforms to align capital market deepening with the Sustainable Development Goals (SDGs).

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1. Introduction

The integration of global financial markets is widely recognized as a fundamental driver of economic growth and financial stability, yet its implications for emerging economies remain uneven. Foundational works such as Schumpeter (1911), King and Levine (1993), and Levine (1997) emphasize that well-functioning financial systems foster innovation, investment, and long-term productivity, while Demirgüç Kunt and Maksimovic (1998) highlight the role of financial development in expanding firms' access to capital and enhancing resilience. More recent contributions further underscore the capacity of capital markets to mobilize domestic savings, improve corporate transparency, and support sustainable development goals (Arner et al., 2020; Ibrahim et al., 2020). Within ASEAN, capital market deepening has become a strategic priority, not only to accelerate growth but also to align with SDGs. However, persistent institutional weaknesses, shallow financial systems, and high exposure to global monetary shocks leave the region vulnerable to inflation and exchange rate volatility (Abraham et al., 2020). Despite this urgency, empirical evidence on how monetary risks and market dynamics particularly inflation, stock returns, and IPO activity affect capital market deepening remains limited (Koranteng & You, 2024; Odionye et al., 2023). Addressing this gap is critical, as stronger capital markets are essential to sustaining inclusive growth and achieving SDG 8, SDG 9, and SDG 17.

According to Bansal et al. (2021), capital market indicators such as equity returns, market capitalization, financial depth, and IPO volume are not only reliable proxies of structural and institutional maturity but also essential instruments for evaluating progress toward broader development goals, including SDG 8, SDG 9, and SDG 17. However, the stability and credibility of these indicators in ASEAN remain vulnerable to persistent macro-financial risks. Inflationary volatility, in particular, erodes investor trust, weakens the attractiveness of markets, and disrupts capital mobilization, while positive equity performance strengthens investor sentiment and enhances resource allocation efficiency (Lepetit, 2023). Recent evidence shows these vulnerabilities are material: the ASEAN Investment Report (2024) documents that more than 32% of regional firms view inflation volatility and currency depreciation as critical obstacles to investment, and capital outflows of USD 4.16 billion in early 2025 triggered by global inflation shocks and tighter monetary policy underscore the fragility of regional markets (Reuters, 2025). At the same time, domestic participation is expanding Indonesia's retail investors surpassed 15 million in 2024 and its market capitalization reached USD 881 billion, equivalent to 45% of GDP (OECD, 2024) yet institutional fragility, fragmented oversight, and the absence of cross-border regulatory cohesion continue to hinder financial deepening (ASEAN Secretariat, 2025). These dynamics expose a critical research gap: while theory acknowledges the importance of inflation, investor sentiment, and capital formation in shaping financial depth, empirical studies rarely analyze their combined effects within ASEAN economies. Addressing this gap is vital, as deeper and more resilient capital markets are not only central to macroeconomic stability but also indispensable for achieving long-term sustainable development objectives in the region.



While the relationship between financial development and macroeconomic performance has been widely examined, limited attention has been paid to the combined role of market return, inflation risk, and capital formation activity in shaping capital market depth particularly in the ASEAN emerging markets (Haini, 2019; Marwa et al., 2022). Existing literature often isolates these indicators or embeds them in broader macro finance frameworks without specifically assessing their interactive effects on market capitalization expansion (Abraham et al., 2020). Moreover, few empirical studies directly evaluate capital market deepening as a function of capital mobilization events and investor expectations, despite their relevance in understanding market confidence and financial sustainability (Adoms et al., 2020; Yang et al., 2023). In the context of the Sustainable Development Goals (SDGs), this constitutes a critical gap, as well-functioning capital markets are increasingly viewed as instruments to mobilize long-term funding aligned with inclusive and sustainable growth.

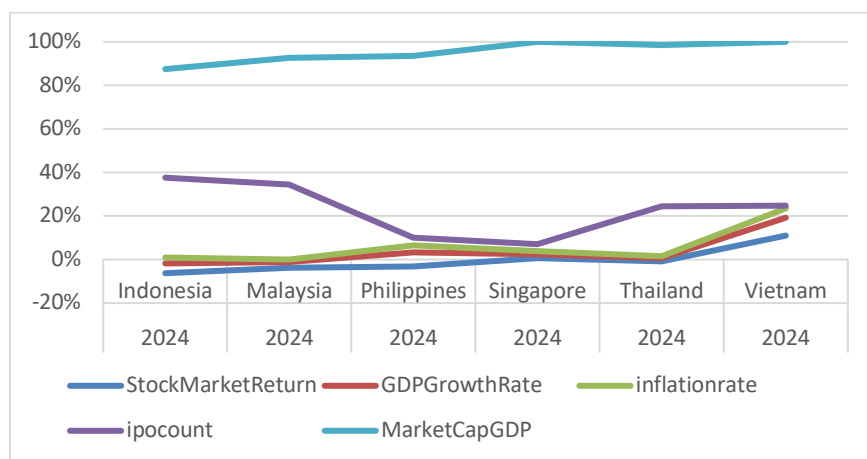


Figure 1. Macro Financial Indicators and Market Cap GDP in ASEAN 6 (2024)

In 2024, capital market indicators across six ASEAN countries showed diverse patterns. Vietnam led with the highest stock market return (9.5%) and GDP growth (7.09%), but recorded the lowest IPO activity (1) and a relatively moderate market capitalization-to-GDP ratio (65%). Indonesia and Malaysia posted negative returns (-7% and -6%), though Malaysia had the highest IPO count (55) and a strong market depth (93%). Singapore and Thailand showed modest growth (2%) but maintained deep markets, with Market Cap GDP at 118.4% and 100%, respectively. The Philippines saw moderate growth (6%) and stable inflation (3%), but low IPO activity (3). These figures highlight the structural disparities in market performance, mobilization, and depth across ASEAN, despite shared regional development goals.

To address this gap, this study employs a dynamic panel estimation using the System GMM (Generalized Method of Moments) approach to examine how stock market returns, GDP growth, inflation, and IPO activity affect capital market deepening, proxied by the market capitalization to GDP ratio (Ishioro & Tarurhor, 2022). By excluding policy or event-



related dummies, the model isolates structural financial economic linkages rather than episodic shocks (Asiedu et al., 2021). Integrating indicators of market sentiment, macroeconomic performance, monetary stability, and capital formation, the study seeks to clarify the endogenous drivers of ASEAN capital market development within a sustainable development framework, with results expected to yield policy-relevant insights for strengthening financial depth and resilience in line with the SDGs. Recent evidence reinforces this urgency: the OECD (2024) stresses that robust equity and bond markets are essential for financing corporate investment and infrastructure, while McKinsey (2017) highlights that more sophisticated and deeper markets across emerging Asia can expand access to long-term financing for enterprises and critical infrastructure. Within this framework, stock markets serve not only to mobilize domestic savings and improve corporate transparency but also to enhance macroeconomic stability. Empirical studies confirm that institutional quality, particularly sound monetary policy and regulatory frameworks, significantly influences stock market development and volatility in ASEAN (Shi et al., 2021). Consistent with this, the ASEAN Exchanges report (2024) documents cross-country disparities in market capitalization and IPO activity, reflecting varied levels of maturity and investor confidence. Collectively, these findings underscore that capital market deepening is shaped by the interplay of market performance, macroeconomic fundamentals, and institutional strength.

While previous studies have explored the relationship between financial development and macroeconomic performance, there is a notable gap in the literature concerning the combined impact of market returns, inflation risk, and capital formation activities on capital market deepening within the ASEAN context (Mail et al., 2020; Setiawan et al., 2020). Existing research often examines these factors in isolation or within broader macro-financial frameworks, lacking a focused analysis on their interactive effects on market capitalization expansion (Mulatsih et al., 2023). Moreover, few empirical studies have directly assessed capital market deepening as a function of capital mobilization events and investor expectations, despite their relevance in understanding market confidence and financial sustainability (Adoms et al., 2020; Qizam, 2021). This gap is particularly significant in the context of the Sustainable Development Goals (SDGs), where well-functioning capital markets are increasingly recognized as instruments to mobilize long-term funding aligned with inclusive and sustainable growth.

This research seeks to address a critical gap in the literature by examining, through empirical analysis, the extent to which monetary risks and market dynamics contribute to capital market deepening within ASEAN economies a subject that remains relatively understudied, particularly in the context of advancing sustainable development. Distinct from many earlier studies that often evaluate financial indicators in isolation or rely heavily on static analytical models, this study adopts a System Generalized Method of Moments (System GMM) approach. This advanced econometric technique captures the complex and evolving interactions between key macroeconomic variables and financial development indicators over time and across countries.



The innovative contribution of this study lies in its integration of diverse but interconnected variables namely stock market returns, GDP growth, inflation, and IPO activity into a single dynamic panel model. By doing so, it not only sheds light on the mechanics of capital market expansion but also frames its analysis within the broader narrative of achieving the Sustainable Development Goals (SDGs). The methodological strength of the System GMM lies in its ability to mitigate common empirical challenges, such as endogeneity and autocorrelation, while incorporating lagged dependent variables to explore structural persistence and inertia within financial systems in emerging markets.

From a policy standpoint, the study generates evidence-based insights that are highly relevant for stakeholders such as financial regulators, central banks, and development agencies. By pinpointing which macroeconomic levers exert the most significant influence on fostering deeper, more inclusive, and more resilient capital markets, the research offers practical guidance for policy formulation. This is particularly timely for ASEAN countries working to harmonize financial sector growth with their national sustainability agendas. The findings are aligned with key global goals, including SDG 8 (promoting inclusive and sustained economic growth and decent work), SDG 9 (supporting innovation, industrialization, and robust infrastructure), and SDG 10 (reducing inequality and enhancing social inclusion across populations).

2. Literature Review

Finance Growth Nexus as the Grand Theory

The *Finance Growth Nexus* provides the grand theory underpinning this study. Schumpeter (1911) highlighted the role of financial institutions in channeling savings into productive investments and fostering innovation. King and Levine (1993) empirically confirmed that financial development predicts long term growth in GDP, capital accumulation, and productivity, while Levine (1997) identified five key channels savings mobilization, efficient allocation, corporate monitoring, risk management, and trade facilitation that emphasize the systemic importance of financial markets. Capital market deepening, measured through market capitalization, liquidity, and investor participation, thus becomes a central mechanism for economic progress.

Efficient Market Hypothesis (EMH) as Complementary Theory

The *Efficient Market Hypothesis* (Fama, 1970) complements this framework by asserting that asset prices reflect all available information, making returns and volatility efficient signals of fundamentals. Recognized as a cornerstone in financial economics and awarded the Nobel Prize in 2013, EMH is particularly relevant in ASEAN for understanding how inflation, exchange rate volatility, and stock returns affect capital mobilization. This highlights informational efficiency as a determinant of market depth.

Sustainable Development Theory as Normative Framework

The *Sustainable Development Theory* (Brundtland Report, 1987) extends the analysis beyond economics, framing capital markets as enablers of societal goals. Capital market deepening enhances efficiency while mobilizing long-term financing for infrastructure,



innovation, and inclusive growth, aligning with SDG 8, SDG 9, and SDG 17. This positions resilient and inclusive financial systems as essential for balanced, long-term development.

Synthesis

Together, these perspectives *Finance Growth Nexus*, *Efficient Market Hypothesis*, and *Sustainable Development Theory* offer a comprehensive foundation to examine how monetary risks and market dynamics jointly influence capital market depth and resilience in ASEAN economies.

The Relationship Between Stock Market Returns and Market Capitalization-to-GDP Ratio

Stock market returns serve as a barometer of investor sentiment and economic vitality. In emerging economies like those in the ASEAN region, higher stock market returns often signal robust investor confidence, leading to increased investment and an expansion of market capitalization relative to GDP.

Empirical evidence has consistently demonstrated a strong and positive association between the advancement of stock markets and the trajectory of economic growth in high-income nations, where this linkage tends to be reciprocal. In these contexts, economic expansion not only benefits from robust capital markets but also actively contributes to their further development. However, the pattern appears to diverge in middle-income economies, where the relationship is more commonly observed as unidirectional—stock market progress tends to stimulate economic growth, yet the reverse effect is comparatively limited. This asymmetry may reflect structural differences such as underdeveloped financial infrastructure, limited investor engagement, and weaker institutional frameworks, which collectively constrain the feedback loop from macroeconomic performance to capital market maturation.

Moreover, rising stock prices enhance firms' net worth, improving their balance sheets and reducing borrowing constraints. This facilitates greater investment and contributes to economic growth. For instance, in Indonesia, the stock market capitalization accounted for 45.2% of its nominal GDP in December 2020, indicating a significant role of the stock market in the country's economy. In the context of the Sustainable Development Goals (SDGs), vibrant stock markets can mobilize capital towards sustainable initiatives. The United Nations emphasizes the role of capital markets in financing the SDGs, highlighting that well-functioning stock markets can attract investments into sectors critical for sustainable development.

In summary, stock market returns play a crucial role in capital market deepening by boosting investor confidence, enhancing corporate financial health, and fostering economic growth, thereby increasing the Market Cap GDP ratio. This dynamic is essential for ASEAN countries aiming to achieve SDG-aligned growth.

H1: There is a positive and significant relationship between stock market returns and the market capitalization to GDP ratio in ASEAN countries.

The Relationship Between GDP Growth Rate and Market Capitalization to GDP Ratio

The GDP growth rate is widely regarded as a core indicator of a nation's economic strength and capacity for expansion. Within the ASEAN context, periods of robust GDP growth are typically associated with rising corporate earnings and strengthened investor confidence (Asmarani & Ningsih, 2023). This positive economic momentum often translates into higher stock valuations, which in turn elevate the market capitalization-to-GDP (Market Cap GDP) ratio, reflecting deeper capital market development. The relationship between



GDP growth and market capitalization is particularly relevant in advancing the Sustainable Development Goals (SDGs). In particular, SDG 8 (Decent Work and Economic Growth) underscores the importance of sustained economic expansion and the creation of productive employment opportunities (Căpraru et al., 2018; Lee & Goh, 2023). A well-functioning capital market, signaled by a strong Market Cap GDP ratio, serves as a key conduit for mobilizing financial resources toward infrastructure, innovation, and entrepreneurship—critical drivers of sustainable economic transformation (Asiedu et al., 2021). Thus, GDP growth not only reflects macroeconomic vitality but also acts as an enabler of broader developmental objectives when supported by efficient and inclusive capital markets.

Moreover, a study examining the mediating role of market capitalization in the relationship between economic growth and macroeconomic variables across twenty countries found that market capitalization partially mediates this relationship (Setiawan et al., 2020; Hossin & Hamid, 2021). This suggests that as GDP grows, it not only directly influences economic development but also indirectly does so by enhancing market capitalization, which in turn attracts further investment and promotes financial sector development. A robust GDP growth rate is intrinsically linked to an elevated Market Cap GDP ratio in ASEAN countries. This relationship not only reflects the economic health of a nation but also plays a pivotal role in achieving broader developmental objectives aligned with the SDGs.

H2: There is a positive and significant relationship between GDP growth rate and the market capitalization to GDP ratio in ASEAN countries.

The Relationship of Inflation Rate on Market Capitalization to GDP (Market Cap GDP)

Inflation is a critical macroeconomic variable that influences both investor behavior and the valuation of financial assets (Siswanah, 2021). In the context of ASEAN economies, the inflation rate affects the real returns of investments, thereby influencing investor sentiment and decisions (Adiputra & Affandi, 2018). Moderate and stable inflation is typically associated with a healthy investment climate, as it ensures predictability in financial markets and supports corporate profitability. However, excessive inflation may erode the real value of equities and deter long-term investment, which in turn affects overall market capitalization (Al-Rimawi & Kaddumi, 2021).

In emerging markets such as those in the ASEAN region, the inflation-market capitalization relationship is particularly nuanced (Farooq & Ahmed, 2017). For example, a study on ASEAN-5 countries found that an inflation rate above 7.84% serves as a critical threshold, beyond which inflation begins to impede economic growth and destabilize capital markets. This phenomenon occurs because high inflation distorts price signals, increases uncertainty, and leads to higher interest rates, which can depress stock valuations and reduce market depth. Moreover, managing inflation effectively contributes to financial and social stability, aligning with Sustainable Development Goal (SDG) 10: Reduced Inequalities. Keeping inflation within an acceptable range protects the purchasing power of lower-income groups and safeguards the real value of small-scale investments, thus reducing economic disparity and supporting inclusive financial markets. A controlled inflation environment is conducive to a higher Market Cap GDP ratio, as it supports both investor confidence and long-term capital formation.

H3: There is a non-linear relationship between inflation rate and the market capitalization-to-GDP ratio, where moderate inflation positively influences market depth, but high inflation



The Relationship of IPO Count on Market Capitalization to GDP (Market Cap GDP)

The frequency of Initial Public Offerings (IPOs) serves as a vital indicator of a country's capital market dynamism and depth (Garbowski et al., 2019; Shukla & Shaw, 2023). The surge in IPO activity aligns with the objectives of Sustainable Development Goal (SDG) 9, which emphasizes Industry, Innovation, and Infrastructure (Garbowski et al., 2019; Shukla & Shaw, 2023). By facilitating access to capital for businesses, IPOs play a pivotal role in fostering innovation, promoting sustainable industrialization, and enhancing infrastructure development. Moreover, the expansion of the investor base, evidenced by the 21.77% increase in Single Investor Identifications (SIDs) to 14.8 million as of December 2024, underscores the growing public participation in capital markets. A thriving IPO landscape not only augments the Market Cap GDP ratio but also signifies a healthy and inclusive capital market ecosystem, conducive to economic growth and aligned with broader sustainable development objectives.

This study focuses on analyzing the drivers of capital market deepening in six ASEAN countries Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Vietnam—over the period 2010 to 2024. The target population consists of country-level annual macroeconomic and capital market data, forming a balanced panel with 84 observations (Asmarani & Ningsih, 2023). The research context centers on the financial-economic linkages supporting sustainable development goals (SDGs), particularly SDG 8, 9, 10, and 17 (Mail et al., 2020; Ballester, 2025). The unit of analysis is the country-year, reflecting how macroeconomic factors influence capital market depth annually in each country.

H4: There is a positive and significant relationship between the number of Initial Public Offerings (IPOs) and the market capitalization-to-GDP ratio in ASEAN countries.

3. Research Methods

The selection of variables was grounded in established theories and prior empirical evidence, ensuring both theoretical relevance and policy significance. Market capitalization to GDP serves as a standard proxy for capital market depth (Levine & Zervos, 1998), while stock market returns capture market dynamics and efficiency in line with the Efficient Market Hypothesis (Fama, 1970). GDP growth rate reflects the finance growth nexus (Schumpeter, 1911; King & Levine, 1993), and inflation rate measures monetary risk, given its adverse effects on market efficiency (Boyd, Levine & Smith, 2001). IPO counts further indicate market activity and depth, as new listings enhance capital mobilization (Pagano, Panetta & Zingales, 1998). Data for these variables were obtained from reputable secondary sources, including the World Bank, ASEAN Exchanges, IMF, and national stock exchanges, then extracted, cross-verified for consistency, and compiled into a panel dataset ready for econometric analysis. The measurement of variables is as follows:

- 1) Market Cap GDP serves as the dependent variable, defined as the ratio of total stock market capitalization to GDP, reflecting capital market depth.
- 2) Stock Market Return represents the annual return on the main stock index in each country.



- 3) GDP Growth Rate measures the yearly percentage change in gross domestic product.
- 4) Inflation Rate captures annual changes in consumer prices.
- 5) IPO Count records the number of initial public offerings each year. For normalization and variance stabilization, IPO Count was logarithmically transformed in the regression model.

To examine the data, this study employs the System Generalized Method of Moments (System GMM), a dynamic panel estimation technique well-suited to addressing key econometric challenges such as endogeneity, unobserved heterogeneity, and autocorrelation. Unlike traditional estimators, System GMM leverages lagged values of the dependent variable as internal instruments, thereby reducing bias arising from omitted variables and simultaneity. Moreover, the use of a robust two-step estimation procedure enhances the efficiency of coefficient estimates by correcting for potential heteroskedasticity and serial correlation in the error terms. This methodological approach ensures a more reliable and consistent assessment of how macroeconomic factors influence capital market deepening across ASEAN economies. The empirical model is formally specified as follows:

$$Y_{it} = \alpha + \beta_1 Y_{i,t-1} + \beta_2 X_{1,it} + \beta_3 X_{2,it} + \beta_4 X_{3,it} + \beta_5 X_{4,it} + \varepsilon_{it}$$

Where:

Code Variable Description

Y_{it} : Market Capitalization to GDP Ratio (Market Cap GDP)

$Y_{i,t-1}$: Lag of Market Cap GDP (Dynamic term)

$X_{1,it}$: Stock Market Return

$X_{2,it}$: GDP Growth Rate

$X_{3,it}$: Inflation Rate

$X_{4,it}$: IPO Count (Log-transformed)

ε_{it} : Error term (includes unobserved heterogeneity after differencing)

To ensure the robustness and validity of the dynamic panel model, this study utilizes the System Generalized Method of Moments (System GMM) estimator, a technique specifically designed to handle the complexities of panel data, including potential endogeneity, unobserved heterogeneity, and dynamic interactions among variables. By incorporating lagged dependent variables as instruments, the model effectively reduces biases that may arise from omitted variables and reverse causality. For greater reliability, the estimation employs the Windmeijer-corrected two-step procedure, which generates robust standard errors that remain consistent even in the presence of heteroskedasticity and serial correlation. This correction enhances the precision of coefficient estimates, especially in



studies with relatively small samples. Consistent with recent empirical literature, the application of robust standard errors in GMM estimations is crucial to preventing misleading inferences and ensuring the credibility of results (Kripfganz, 2019).

4. Results

The descriptive statistics table is crucial as it provides an initial overview of the distribution, variability, and scale of each key variable used in the study. It highlights substantial heterogeneity across countries and time, particularly in stock market returns and market capitalization relative to GDP, indicating the presence of economic volatility and structural differences in ASEAN capital markets. These variations justify the use of robust dynamic panel techniques such as System GMM, while also validating the appropriateness and readiness of the dataset for further econometric analysis.

Table 1. Summary Statistics of Financial and Macroeconomic Variables

Variable	Obs	Min	Max	Mean	Std. dev
Stock Market Return	90	-32,78	48	5,08	14,99
GDP Growth Rate	90	-10	15	4,53	3,27
inflation rate	90	-1	18,58	3,11	2,6
ipo count	90	1	59	21,36	13,66
Market Cap GDP	90	15	269,9	97,6	58,29

Source: Data Analysis

The descriptive statistics reveal notable variation across all key variables in the dataset. Stock market returns range widely from 32.78% to 48%, with a high standard deviation (14.99), indicating significant volatility in ASEAN equity markets. GDP growth also shows a broad range (10% to 15%), reflecting diverse economic conditions among member countries. Inflation rates vary from 1% to 18.58%, suggesting episodes of both deflation and high inflation. The number of IPOs spans from 1 to 59, highlighting disparities in capital market activity, while Market Capitalization to GDP ranges from 15% to 269.9%, underscoring structural differences in financial market depth. Overall, the data demonstrate the heterogeneity and dynamic nature of ASEAN economies, reinforcing the need for robust econometric modeling.

To ensure the robustness and credibility of the System GMM estimation, it is essential to conduct a series of diagnostic tests that assess the validity of instruments, the presence of autocorrelation, and the reliability of coefficient estimates in the context of a small panel dataset. In particular, tests such as the Arellano–Bond test for AR(1) and AR(2) serial correlation, along with the Sargan and Hansen tests for over-identifying restrictions, are



employed to verify model consistency and instrument validity. The following table summarizes these diagnostic checks, which are critical for verifying that the model meets the core assumptions of dynamic panel estimation. By applying these diagnostics, the study helps prevent biased inference, mitigates the risk of instrument proliferation, and confirms that the specification appropriately captures the structural relationships among variables across ASEAN countries.

Table 2. System GMM Diagnostic Tests and Model Validity

Test Type	Test Statistic	p-value	Model Validity Interpretation
Arellano-Bond Test AR(1)	$z = 1.52$	0.129	No first-order serial correlation (valid)
Arellano-Bond Test AR(2)	$z = 1.81$	0.070	No second order serial correlation (acceptable)
Sargan Test	$\chi^2(1) = 0.00$	0.985	Instruments are valid (not overidentified)
Hansen Test	$\chi^2(1) = 0.00$	1.000	Instruments are valid and not correlated with error
Difference-in-Hansen (subset)	$\chi^2(1) = 0.00$	1.000	Level equation instruments are valid
Number of Instruments	7	—	Below critical threshold (avoids overfitting)

Source: Data Analysis

To validate the robustness and consistency of the dynamic panel estimation, several diagnostic tests were conducted. The Arellano-Bond test for first-order autocorrelation [AR(1)] yielded a z-statistic of -1.52 with a p-value of 0.129, indicating no significant first-order serial correlation in the differenced residuals. More importantly, the Arellano-Bond test for second-order autocorrelation [AR(2)] produced a z-statistic of -1.81 and a p-value of 0.070, which is slightly above the conventional 5% threshold, suggesting no strong evidence of second-order serial correlation, a key assumption for the validity of the GMM estimator. The Sargan and Hansen tests of overidentifying restrictions confirm the overall validity of the instrument set, with p-values of 0.985 and 1.000, respectively, both indicating that the instruments are not correlated with the error term. Additionally, the Difference-in-Hansen test also returns a p-value of 1.000, supporting the validity of the subset of instruments used in the level equation. With only seven instruments employed, the model avoids the problem of instrument proliferation, further enhancing the credibility of the estimation. These results



collectively support the internal consistency and empirical reliability of the two-step System GMM estimator, even under small-sample conditions with robust standard error adjustment.

This regression table is central to the analysis as it encapsulates the primary empirical results of the study, indicating which macroeconomic factors exert a statistically significant influence on the Market Capitalization to GDP ratio within ASEAN economies. The strong significance of the lagged Market Cap/GDP coefficient confirms the existence of persistent path dependence, underscoring that past levels of market development heavily shape current outcomes. Likewise, the significance of Stock Market Return and Inflation Rate emphasizes their pivotal role as drivers of capital market deepening, reflecting both the performance of equity markets and the influence of monetary stability on investor behavior. In contrast, the lack of significance for GDP Growth and IPO activity suggests that traditional growth metrics and episodic market entries alone are insufficient to explain market depth, pointing instead to the relevance of institutional quality, regulatory frameworks, and investor confidence as underlying determinants. Taken together, the findings reported in this table establish a robust empirical foundation for interpreting the dynamics of capital market growth in ASEAN and for formulating policy recommendations aimed at fostering more resilient and inclusive financial systems.

Table 3. System GMM Estimation Results and Hypothesis Decisions

Variable	Coefficient	Std. Error	t-Statistic	p-Value	Decision
L.Market Cap GDP	1.130.054	0.029290	38.58	0.000	Significant
StockMarketReturn	0.980217	0.225003	4.36	0.007	Accepted (H1)
GDPGrowthRate	-1.430.383	0.859007	-1.67	0.157	Rejected (H2)
InflationRate	2.202.419	0.778951	2.83	0.037	Rejected (H3 non-linear)
lnIPOcount	3.795.518	5.137.831	0.74	0.493	Rejected (H4)
Constant	-29.618.430	19.164.990	-1.55	0.183	

Source: Data Analysis

Based on the System GMM estimation results, the lagged dependent variable L.Market Cap GDP shows a highly significant and positive coefficient (1.130054, $p < 0.01$), indicating strong dynamic persistence in capital market development across ASEAN countries. The variable Stock Market Return is also statistically significant at the 1% level, with a positive coefficient of 0.980217 ($p = 0.007$), confirming that better stock performance contributes meaningfully to increases in the market capitalization-to-GDP ratio. Meanwhile, Inflation Rate presents a significant positive effect on Market Cap GDP (coefficient = 2.202419, $p = 0.037$), suggesting that moderate inflation may support asset revaluation and investment confidence. On the other hand, GDP Growth Rate is found to be statistically insignificant (coefficient = 1.430383, $p = 0.157$), implying that real-sector growth does not directly influence capital market deepening in the observed model. Similarly, ln IPO count (coefficient = 3.795518, $p = 0.493$) fails to demonstrate a significant effect, indicating that



IPO frequency alone is not a reliable determinant of market capitalization relative to GDP. These results collectively highlight the importance of monetary and financial market dynamics over real economic indicators in shaping capital market development in the ASEAN region.

Discussion

The Influence of Stock Market Returns on Market Capitalization-to-GDP Ratio

Empirical evidence consistently shows a strong positive link between stock market returns and the Market Capitalization-to-GDP ratio, confirming that equity performance is a key driver of capital market deepening in ASEAN. This aligns with the Finance Growth Nexus, where Schumpeter (1911) emphasized the role of financial institutions in channeling savings into productive investment, later supported by King and Levine (1993) and Levine (1997) through evidence that financial development fosters capital accumulation and productivity. Rising stock returns strengthen corporate balance sheets, ease credit frictions, and expand investment capacity, consistent with the financial accelerator hypothesis, while also enhancing allocative efficiency. From the lens of the Efficient Market Hypothesis (Fama, 1970), returns encapsulate aggregate information, making them efficient signals of fundamentals; in ASEAN, positive equity performance stimulates investor participation and corporate expansion, thereby raising the capitalization-to-GDP ratio. Complementing this, the Sustainable Development Theory (Brundtland Report, 1987) highlights that deepening markets via robust stock performance mobilizes financing for infrastructure, innovation, and inclusive growth, advancing SDG 8 (Decent Work and Economic Growth). Thus, stock returns are not merely speculative outcomes but structural mechanisms that reinforce financial depth, macroeconomic stability, and sustainable development (Fong et al., 2020; Asmarani & Ningsih, 2023).

The Influence of GDP Growth Rate on Market Capitalization to GDP Ratio

Empirical findings reveal that GDP growth does not exert a statistically significant effect on the Market Capitalization-to-GDP ratio, a result that challenges conventional theory which posits that sustained economic expansion should strengthen corporate earnings, boost investor confidence, and increase market capitalization. Instead, the relationship appears contingent on mediating factors such as institutional quality, regulatory effectiveness, and financial literacy, consistent with Jahan et al. (2019) and Puschmann et al. (2020) who argue that macroeconomic growth alone is insufficient to guarantee capital market deepening. Within the Finance Growth Nexus (Schumpeter, 1911; Levine, 1997), this suggests that the transformation of economic gains into financial depth requires robust institutions to mobilize savings and allocate capital efficiently, while from the Sustainable Development perspective (Brundtland Report, 1987), it highlights that inclusive financial systems and transparent governance are necessary to translate growth into resilient markets. Thus, GDP growth in ASEAN may stimulate capital markets only when accompanied by institutional reforms, strong investor protection, and innovation driven infrastructure, reinforcing the objectives of SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure) in ensuring that economic expansion is effectively channeled into sustainable and inclusive financial development.



The Influence of Inflation Rate on Market Capitalization to GDP Ratio

The findings show a positive and statistically significant relationship between inflation and the Market Capitalization-to-GDP ratio. This suggests that during the observed period, moderate inflation supported asset revaluation, enhanced liquidity, and encouraged investor participation in ASEAN financial markets (Nguyen, 2021). Although classical theory often points to a non-linear pattern where inflation beyond a certain threshold undermines investor confidence and destabilizes capital markets (Ehigiamusoe et al., 2019), the results of this study did not confirm the presence of such a threshold effect. Instead, the evidence indicates a predominantly linear and positive association, reflecting that inflation remained within a range that facilitated financial deepening rather than weakening it. These results underline the importance of maintaining price stability. Moderate inflation can foster capital market development by sustaining liquidity and strengthening investor trust, but high inflation still poses risks that policymakers must anticipate. In line with the Sustainable Development framework (Brundtland Report, 1987), stable inflation contributes to financial resilience and supports broader goals such as SDG 8 on decent work and economic growth and SDG 10 on reducing inequalities by ensuring inclusive participation in financial markets (Bouis et al., 2025).

The Influence of IPO Count on Market Capitalization to GDP Ratio

The analysis shows that Initial Public Offerings (IPOs) do not exert a statistically significant influence on the Market Capitalization-to-GDP ratio, indicating that IPO activity in itself is not a reliable proxy for structural market deepening. Rather, the developmental impact of IPOs hinges on the sustained performance and governance quality of newly listed firms, the liquidity depth of the market, and the absorptive capacity of investors to support long-term growth. Recent evidence highlights that, while Southeast Asia has experienced rising IPO volumes, the aggregate capitalization derived from these listings has trended downward, reflecting challenges in transforming IPO activity into durable market expansion (Al-Masawa et al., 2019; Susilo, 2022). From the perspective of the Finance–Growth Nexus (Schumpeter, 1911; Levine, 1997), this underscores that capital formation through equity markets requires more than listing frequency it depends on efficient allocation, transparency, and institutional support. Likewise, under the Sustainable Development framework (Brundtland Report, 1987), IPOs contribute to market deepening only when they generate sustainable value creation, support innovation, and strengthen governance structures. Thus, policy interventions should move beyond quantity-driven IPO promotion toward enhancing firm quality, resilience, and post-listing performance, alongside strengthening market infrastructure. Such reforms not only safeguard against superficial market growth but also align with SDG 9 (*Industry, Innovation, and Infrastructure*), ensuring that IPO-driven capital formation fosters resilient financial ecosystems and inclusive, innovation-led development.

5. Conclusion and Suggestion



This study examined the influence of monetary risk and market dynamics on capital market deepening in ASEAN countries, with a particular focus on stock market returns, GDP growth rate, inflation rate, and IPO activity, using the Market Capitalization to GDP ratio (Market Cap GDP) as a proxy. The empirical results, estimated through the System GMM approach, reveal that stock market performance and inflation are significant predictors of capital market depth, while GDP growth and IPO frequency do not exhibit statistically significant effects. The findings suggest that capital market development in emerging ASEAN economies is strongly shaped by market sentiment and monetary conditions rather than by real sector growth or capital formation events alone. This indicates the need for structural improvements beyond macroeconomic stability, including institutional reforms, investor education, and regulatory enhancements, especially in relation to Sustainable Development Goals (SDGs) such as SDG 8, SDG 9, and SDG 10.

Nonetheless, this study is subject to several limitations. First, the model does not incorporate institutional variables such as financial regulation quality, rule of law, or governance transparency which may influence capital market outcomes. Second, the panel data used only covers the period from 2010 to 2024, potentially limiting the study's ability to detect longer-term effects and delayed structural changes. Third, despite the application of the System GMM technique to address endogeneity, the issue of instrument proliferation and potential measurement errors in secondary macroeconomic data remain areas of concern. These limitations imply that while the results are statistically robust, they should be interpreted with caution, particularly regarding causal generalization across all ASEAN economies.

Given these considerations, future researchers are encouraged to explore the role of institutional quality and investor behavior in mediating capital market development. Incorporating qualitative case studies, high-frequency financial data, and behavioral economic frameworks may provide a more granular understanding of how capital markets evolve under different regulatory and macroeconomic settings. Moreover, future studies might consider integrating sustainability-oriented financial indicators, such as green bond issuance and ESG disclosures, to better capture the intersection between capital market deepening and sustainable development. While the study provides valuable empirical insights into the drivers of capital market development in ASEAN, it also calls attention to the multifaceted and institutionally contingent nature of financial deepening. Strengthening capital markets in this region requires not only favorable macroeconomic conditions, but also deliberate policy design, financial education, and inclusive innovation.

Limitations

Like any empirical investigation, this study is subject to several limitations. First, reliance on macro-level panel data may obscure firm and sector specific heterogeneities, such as industry dynamics or corporate governance variations, which could provide richer insights into capital market development. Second, although the analysis incorporates key macroeconomic and market indicators, institutional dimensions such as investor protection, regulatory quality, and financial literacy are not explicitly modeled, potentially constraining explanatory power in the ASEAN context where institutional quality is uneven. Third, the time horizon (2010–2024) captures medium-term trends but may not fully reflect structural reforms and long-run transformations in rapidly evolving economies like Vietnam and the



Philippines. Finally, while System GMM estimation mitigates endogeneity and autocorrelation, challenges such as instrument proliferation and potential omitted variable bias remain. Despite these constraints, the study contributes meaningful insights into the interplay between macroeconomic risks, market dynamics, and capital market deepening in ASEAN. The findings provide a valuable empirical foundation for policymakers seeking to strengthen financial resilience and align capital market development with sustainable growth objectives, while also highlighting promising avenues for future research that integrates micro-level, institutional, and long term perspectives.

Implications and Future Directions

Although this study has limitations, the findings generate concrete implications for policymakers and development oriented financial institutions in ASEAN, especially when viewed through the lens of the Sustainable Development Goals (SDGs). The evidence that stock returns and inflation significantly influence market depth indicates that policies must transcend short term market stabilization and instead tackle systemic challenges to build resilient, inclusive capital markets. First, harmonizing disclosure and governance standards across ASEAN through ACMF and ACGS initiatives can reduce information asymmetry, strengthen investor confidence, and directly advance SDG 16 (Peace, Justice, and Strong Institutions). Second, adopting ISSB aligned sustainability reporting with phased relief for SMEs would mobilize long-term capital consistent with SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). Third, reinforcing investor protection and cross-border surveillance under ACMF Vision 2025 is essential to stabilize participation, improve price discovery, and strengthen regional integration in line with SDG 17 (Partnerships for the Goals). Fourth, IPO policies should be reoriented toward structural bottlenecks such as streamlined approval processes, SME fast track schemes, and incentives for aftermarket liquidity so that new listings contribute to genuine market deepening rather than cyclical booms. Fifth, macroeconomic credibility must be enhanced through the provision of inflation-hedging instruments (e.g., inflation-linked bonds, FX and commodity derivatives) to sustain real returns and safeguard financial stability. Finally, broadening the investor base via retail participation initiatives including fractional trading, low-fee investment platforms, and financial literacy programs will support inclusive capital market development, ensuring that financial gains are distributed more equitably across society.

Future Research Directions Looking forward, future research should integrate institutional quality indicators (rule of law, governance effectiveness) to test their mediating role in capital market deepening, as well as cross-border integration metrics such as ASEAN CIS fund flows and dual listings to capture the regionalization of financial markets. Panel-based assessments of disclosure reforms (e.g., ISSB/ESG milestones) and market microstructure variables (turnover, bid-ask spreads) can sharpen the empirical understanding of depth and efficiency. Moreover, adopting mixed-methods approaches that combine econometric models with case studies of regulatory and governance reforms would enrich insights into which policy frameworks most effectively balance macroeconomic risks, strengthen investor confidence, and align financial development with the broader sustainability agenda of the SDGs.



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