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Analysis of Emerging Financial Markets: The Role of Macroeconomic Variables (Empirical Evidence from Six Selected Countries)

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ABSTRACT

This study empirically investigates the influence of macroeconomic variables on the returns of financial markets in six emerging economies during the period from 2018 to 2024. Utilizing monthly panel data and applying statistical techniques such as the Augmented Dickey-Fuller (ADF) test and fixed effects modeling, the study analyzes the relationships between GDP growth, interest rates, inflation, and foreign direct investment flows with stock market returns. The Hausman test results indicate that the fixed effects model is more appropriate than the random effects model for this analysis. The findings reveal that economic growth and interest rates exert a positive and significant impact on stock market returns, whereas foreign direct investment has a negative effect. The effects of inflation and the market-to-GDP ratio are found to be statistically insignificant. Given that these macroeconomic factors directly affect economic dynamics and indirectly influence labor market mobility, the results can serve as a foundation for evaluating the effects of macroeconomic policies on employment. Emphasizing the link between financial market development and macroeconomic indicators, this study provides policy recommendations to foster sustainable economic growth and enhance the employment environment.

Keywords: Emerging markets, Stock returns, Macroeconomic variables, Fixed effects model, Panel data analysis.

Introduction

Emerging markets or economies refer to countries classified as "low-income" or "lower-middle-income" based on Gross National Income (GNI) per capita (World Bank, 2019). An emerging market (or emerging country/economy) is often defined as one transitioning from lower-middle-income to upper-middle-income status (Broughton et al., 2013). Such markets exhibit some key characteristics of developed economies but have yet to achieve full developed status (Bousso et al., 2018). Geographically, these emerging markets are concentrated across Asia, South America, the Middle East, Africa, and Central and Eastern Europe, and have experienced significant growth over recent decades (Kumar et al., 2024). With strong growth potential and favorable demographic shifts, the share of emerging markets in global trade has increased since the 1990s (Broughton et al., 2013). The expanding economic activity in these markets has sparked growing academic interest in understanding their complexities over the past thirty years (Kumar et al., 2024).

From an investment perspective, emerging financial markets have become increasingly attractive destinations. Primarily situated in developing countries, these markets offer high economic growth potential and unique opportunities for international investors. However, investing in these markets involves specific risks and challenges that necessitate thorough analysis (Behvian et al., 2019).

Financial markets, as fundamental pillars of the global economy, play a vital role in allocating resources and channeling capital toward productive activities. Emerging financial markets have drawn investor attention due to rapid economic expansion, infrastructural development, and a rising young and dynamic workforce. Many of these countries are transitioning from traditional to modern industrial economies, which drives increased demand for investment across multiple sectors (Danto et al., 2022).

Key characteristics of emerging markets include (Khan et al., 2022):

- **High Economic Growth:** Many emerging countries maintain higher GDP growth rates than developed nations. This growth translates into rising per capita income, improved living standards, and increased domestic consumption, all factors that enhance investment appeal.
- **Growing Foreign Direct Investment (FDI):** Emerging countries pursue economic reforms to create more favorable investment climates and offer incentives to attract international investors.
- **Capital Market Development:** Many emerging markets have strengthened their stock exchanges and enhanced financial transparency in recent decades, boosting foreign investor confidence.

Despite these opportunities, emerging financial markets face several challenges that can cause volatility and diminish their attractiveness. Notable challenges include:

- **Political and Geopolitical Risks:** Political instability, abrupt economic policy changes, and fluctuating investment regulations are common in many emerging economies, potentially triggering capital flight and significant market volatility (Agustin et al., 2018).
- **Structural and Infrastructure Deficiencies:** Some emerging countries still lack fully developed financial, communication, and transportation infrastructures, increasing operational costs for businesses and investors (Blanchard et al., 2021).
- **Low Liquidity and High Volatility:** Compared to developed markets, emerging markets often have lower trading volumes, which can lead to higher price fluctuations and reduced asset liquidity (Gudmanson et al., 2022).

The growing interest in emerging market theories and concepts has encouraged scholars and professionals to deepen their understanding of these markets. Research over the years has examined various aspects, including market segmentation and integration, volatility, return expectations, organizational behavior and culture, performance analysis, evolutionary finance, and more (Kumar et al., 2020). Nonetheless, many new research avenues remain unexplored, continually engaging researchers in uncovering unknown dimensions of emerging markets (Kumar et al., 2024).

Given that investing in emerging financial markets presents both lucrative opportunities and considerable risks, detailed analysis is crucial for sound decision-making. In emerging economies, financial markets play a key role in promoting economic growth, attracting capital, and supporting employment. Recently, as these economies have gained greater global prominence, understanding the macroeconomic factors influencing stock market performance has become increasingly important. Macroeconomic variables such as GDP growth, interest rates, inflation, and foreign investment flows significantly impact investor behavior and stock market dynamics.

On the other hand, these macroeconomic variables indirectly reflect the state of the labor market as well. For example, sustained economic growth is typically accompanied by an increase in employment opportunities, whereas a decline in investment flows can lead to recession and job losses. Therefore, analyzing the relationships between macroeconomic variables and stock market returns can also serve as a tool to understand employment trends and economic dynamics in emerging countries.

This study aims to empirically examine these relationships in six emerging countries using monthly panel data from 2018 to 2024, employing statistical methods such as the Hausman test and fixed effects model. In addition to analyzing the direct impact of these variables on the capital market, the research attempts to interpret their indirect policy-related consequences on the labor market. The results of this study could provide a basis for designing effective economic policies, particularly regarding the linkage between financial market development and employment improvement.

Literature Review

Over the past two decades, emerging markets have firmly established themselves as significant engines of global growth, consistently expanding at a faster rate than their developed market counterparts. Consequently, investing in emerging markets offers the potential to yield substantial and diversified benefits for sustainable development. Since

2000, emerging markets have consistently outperformed both global and developed markets. By October 2018, their GDP growth averaged 4.1%, compared to 2.4% for developed economies and 3.7% globally (International Monetary Fund, 2018). During this period, global financial markets expanded significantly, with emerging markets playing a pivotal role in this boom. This unprecedented growth, especially in financial markets, has led to a fundamental shift in economic structures and capital flows away from developed countries (Yarty, 2008).

The financial sector plays a crucial role from two perspectives: First, a robust financial system incentivizes multinational corporations to invest in host countries (Selozarski, 2018). Financial development facilitates better credit allocation among firms, which enhances investment efficiency and boosts productivity growth (Khan et al., 2022). Economic development driven by a well-functioning financial system leads to overall economic prosperity. Second, the financial sector improves efficiency by effectively allocating scarce economic resources during the growth process, while also reducing asymmetric information and transaction costs (Han and Shen, 2015).

Opportunities and Challenges of Investing in Emerging Markets

Emerging markets are economies characterized by rapid growth and industrialization, progressing toward more advanced economic stages. These countries are recognized as leading emerging economies (Eno, 2023). Some of the key investment opportunities in these markets include (Eno, 2023):

- **High Growth Potential:** Rapid population growth, rising incomes, urbanization, and government reforms drive increased domestic consumption. This growth potential makes emerging markets appealing to mutual fund investors seeking strong long-term returns.
- **Diversification Benefits:** Emerging markets often behave differently than developed markets, so allocating part of a portfolio to these markets helps spread risk and reduce overall volatility.
- **Demographic Dividend:** Many emerging markets have large, youthful populations entering the workforce. This demographic advantage is expected to last for several decades, supporting continued economic growth. Mutual funds investing in these countries may benefit from increased productivity and rising domestic demand linked to this trend.
- **Undervalued Assets:** Securities and assets in emerging markets are frequently undervalued compared to those in developed markets. This undervaluation offers opportunities for funds to acquire quality assets at reasonable prices. Active fund managers can identify mispriced assets that provide more attractive risk-return profiles.

Investing in emerging markets can be attractive for investors aiming to diversify their portfolios and achieve potentially higher returns. However, compared to developed markets, these investments typically involve higher-than-average risks due to factors such as political instability, currency fluctuations, and regulatory uncertainty (Decker et al., 2021).

In recent years, investment in emerging markets has gained considerable attention as investors seek diversification and growth opportunities globally. The term "emerging markets" was introduced in 1981 by the International Finance Corporation as a marketing concept to encourage foreign investment in developing economies (Eno, 2023). Today, emerging markets represent about 10 to 12 percent of the global free-float market capitalization, including around 25 countries such as China, India, and South Korea (Trevor, 2022). Characteristics like high expected economic growth and attractive valuations prompt some investors to incorporate emerging markets into their portfolios. Other factors, such as market correlations, also influence portfolio allocations, although the role of correlation remains debated.

It is important to note that investing in high-growth economies does not always guarantee positive returns. In fact, a study by Mathieu and Pertieu (2023) found a cross-sectional negative correlation of -0.29 between stock returns and real GDP growth across 21 developed countries. This finding aligns with Ritter's (2012) claim that a negative correlation exists between stock returns and economic growth in developed markets.

The above points demonstrate that strong economic growth in developed countries does not necessarily lead to higher stock market returns. This scenario is more likely when the growth and income expectations priced into developed economies fail to materialize. Japan is a notable example, where despite substantial and steady economic growth by various indicators, the Nikkei 225 index has underperformed most developed markets (Eno, 2022). Consequently, the relatively low allocation to emerging markets in investment portfolios compared to their developed counterparts might result in missed opportunities. Furthermore, there are strong reasons to consider investing in emerging markets as beneficial for portfolio diversification. Financial market indices suggest that emerging markets have a considerably larger economic footprint relative to developed markets (Anand et al., 2021). This is partly because index providers face fewer restrictions regarding investable market capitalization. Typically, the free-float market capitalization as a percentage of total market size is significantly higher in emerging markets than in developed ones (Lopez and Straka, 2021).

Economic Growth in Developing Countries and Emerging Financial Markets

Emerging financial markets, as critical components of the global economy, are strongly influenced by the economic performance of developed countries. Major economies such as the United States, the European Union, Japan, and China play decisive roles in shaping investment trends, capital flows, and economic stability in developing countries. Changes in monetary policy, interest rates, economic growth, and financial developments in these advanced economies can have significant ripple effects on emerging markets.

This section examines the influence of economic growth in developed countries on emerging financial markets from various perspectives. First, it explores the relationship between economic growth in developed nations and capital flows into emerging markets. Then, it assesses the impact of changes in interest rates and monetary policies. Subsequently, the effects of financial crises and recessions in developed countries on emerging markets are analyzed, followed by conclusions and recommendations for managing these interactions.

Impact of Developed Countries' Economic Growth on Capital Flows to Emerging Markets

One of the main channels through which economic growth in developed countries affects emerging financial markets is via shifts in foreign capital flows. During periods of growth in advanced economies accompanied by relatively low interest rates, international investors actively seek higher-return opportunities. Under these conditions, emerging markets, benefiting from faster economic growth and higher profitability, become especially attractive to investors (Sharma et al., 2021).

Conversely, if developed economies experience slow growth or enter recessions, investors tend to withdraw capital from riskier markets such as emerging markets and redirect funds to safer assets like U.S. government bonds or gold. Such capital flight can lead to local currency depreciation, rising domestic interest rates, and financial instability within emerging markets (Ahmad et al., 2021).

For example, following the 2008 financial crisis, the United States adopted expansionary monetary policies that encouraged investors to seek better returns in emerging markets. This resulted in increased capital inflows to countries like Brazil, India, and South Africa. However, when the Federal Reserve began tightening monetary policy in subsequent years, a large portion of this capital exited emerging markets, triggering several currency and financial crises (World Bank, 2019).

Effects of Interest Rate Changes and Monetary Policies on Emerging Markets

Monetary policies of central banks in developed countries—especially the U.S. Federal Reserve and the European Central Bank—significantly affect emerging financial markets. Adjustments in interest rates and monetary policy influence investor preferences toward either safer or higher-risk assets (Ahmad et al., 2018).

- **Effect of Rising Interest Rates in Developed Countries:** When interest rates rise in the U.S. or Europe, investors often withdraw capital from emerging markets and allocate it to bonds and bank deposits in developed countries. This outflow can cause depreciation of local currencies in emerging markets, increased inflation, and economic instability (Ahmad et al., 2021). Additionally, higher interest rates in developed economies increase borrowing costs for companies and governments in emerging markets, many of which hold significant debt denominated in dollars or euros (Ahmad et al., 2021).
- **Effect of Falling Interest Rates in Developed Countries:** When interest rates decline in developed economies, investors seek higher yields by moving funds into emerging markets. This inflow can boost asset

prices, strengthen local currencies, and stimulate economic growth in these markets. However, excessive foreign capital inflows can lead to financial bubbles that pose risks of crises if investors suddenly withdraw their funds (Ahmad et al., 2021; Akhtar et al., 2016).

A case in point occurred in 2013, when the Federal Reserve announced it would taper its expansionary policies ("Taper Tantrum"), prompting capital flight from emerging markets and sharp depreciation of currencies such as the Indian rupee and Brazilian real (Ahmad et al., 2018).

Effects of Economic Crises in Developed Countries on Emerging Markets

Emerging economies rely heavily on global demand, international trade, and foreign investment. Therefore, economic crises in developed countries quickly transmit to emerging markets.

- **Decline in Exports and Economic Growth:** Many emerging markets are export-driven and rely on developed countries as their primary customers. When growth slows in the U.S., Europe, or China, demand for exports from these emerging countries drops, slowing their own economic growth (Rubaj, 2023). For instance, the 2008 financial crisis caused a sharp decline in exports from China and other Asian nations, significantly impacting their economies.
- **Financial Market Volatility:** Emerging markets typically experience higher volatility than developed markets. Hence, during financial crises in the U.S. or Europe, investors rapidly withdraw from emerging markets, causing asset prices to plummet. The 2010 European debt crisis is an example, which led to decreased investor confidence and capital flight from emerging markets (World Bank, 2019).

Economic growth in developed countries exerts both direct and indirect impacts on emerging financial markets. When developed economies perform well and implement expansionary monetary policies, foreign capital tends to flow into emerging markets, fostering economic growth and strengthening these financial sectors. Conversely, during recessions or periods of rising interest rates, this trend reverses, leading to capital flight, depreciation of local currencies, and financial crises in developing countries (Arsalan et al., 2022).

Risks and Returns of Investing in Emerging Markets

Investing in emerging stock markets has attracted many investors due to their potential for higher returns. This is partly because the distribution of returns in these markets is asymmetric. While stock markets overall tend to exhibit negative skewness and severe downturns, emerging markets generally experience more pronounced negative returns (Farago & Halmarsom, 2023). As noted by Rahman et al. (2021), emerging markets have historically shown an increasing degree of negative skewness, which raises expected returns as compensation for additional risk.

However, a comparative analysis of realized returns from 1990 to 2020 reveals that emerging markets, on average, have underperformed their developed counterparts (OECD, 2020). Several key factors contribute to this underperformance:

- **Economic and Political Risks:** Political instability, frequent changes in economic policies, and legal uncertainties are common challenges in emerging markets. Risks such as asset expropriation, sudden modifications in tax and regulatory frameworks, and corruption expose investors to significant uncertainty. For example, economic sanctions or abrupt government policy changes can severely impact a country's financial markets (OECD, 2020). Due to these economic and political uncertainties, emerging markets tend to be more volatile than developed markets. These uncertainties range from authoritarian leadership styles to unpredictability in economic policy. Moreover, trade and budget deficits are prevalent in emerging economies. Compared to developed markets, emerging markets are more vulnerable to shocks and economic downturns, since factors like inflation and interest rate fluctuations heavily influence their stock markets (Eno, 2023).
- **Currency Risk:** Currency volatility is common in emerging markets. Depreciation of local currencies against major global currencies (e.g., USD and EUR) can erode the real returns for foreign investors. For instance, Turkey's currency crisis in 2018 caused a sharp drop in the lira's value, resulting in substantial losses for

foreign investors (Ildirim & Festas, 2023). Investments in these markets often involve currency exposure because local currencies tend to fluctuate more dramatically against the investor's home currency. Unstable currencies increase risks for investors by negatively impacting asset values and returns. Furthermore, emerging market currencies typically have high leverage, amplifying their exposure to international risks and significantly reducing investors' risk appetite (OECD, 2020).

- **Regulatory Risk:** Regulatory frameworks in emerging markets are often less developed and less predictable than in developed countries. This can give rise to regulatory risks, including inadequate disclosure requirements, weak enforcement, and insufficient investor protections (Kool et al., 2020).
- **Corporate Governance Risk:** Emerging economies often exhibit lower standards of corporate governance, increasing the likelihood of accounting fraud, insider trading, and other unethical practices, which harm stock market integrity (Eno, 2023).
- **Liquidity Risk:** Many emerging markets suffer from lower trading volumes and liquidity compared to developed markets. This leads to greater price volatility and can restrict investors' ability to exit positions swiftly. For example, investors in Nigerian or Vietnamese stock exchanges may find it difficult to quickly sell their holdings (Mostafa, 2023). Compared to developed markets, liquidity risk is higher in emerging markets due to fewer buyers and sellers, making it harder for investors to trade at desired prices (Koozeh, 2022).
- **Dependence on Developed Economies:** Emerging economies are highly dependent on the economic trends and monetary policies of developed countries. Changes in U.S. interest rates or policies from the European Central Bank can substantially influence capital flows in and out of these markets. For example, when the U.S. Federal Reserve began tightening monetary policy in 2013, large amounts of capital exited emerging markets, causing sharp depreciations of local currencies (Arsalan et al., 2022).

Despite the associated risks, many investors continue to allocate funds to emerging markets due to their high return potential (Cole, Maleki, Melders, & Reed, 2020). According to a study by Koozeh (2022), certain emerging stock markets have outperformed developed market equities by an average of 5.5% annually. Cole et al. (2020) suggest that investing in emerging markets can offer substantial advantages for investors. Kargin (2002) argues that emerging markets represent excellent investment opportunities, as their stock markets tend to provide higher potential returns compared to those in developed markets. Zhang et al. (2020) also believe that emerging markets may continue to deliver favorable long-term returns relative to developed markets. However, further research is necessary to provide empirical evidence concerning the maximum expected losses and return distributions in emerging markets compared to developed stock markets. Such data could assist active market participants in making more informed and objective decisions, ultimately enhancing portfolio returns.

Several factors influence returns in these markets (Zhang et al., 2020):

- **Rapid Economic Growth:** Many emerging economies exhibit higher growth rates than developed countries. This growth drives increased corporate revenues, expanding consumer markets, and improved investment profitability. For instance, China and India have experienced steady economic growth over the past two decades, resulting in strong financial market returns.
- **Investment Opportunities in Growing Sectors:** Emerging markets often have expanding sectors such as technology, infrastructure, renewable energy, and manufacturing. Investing in these industries can offer high profitability. For example, recent years have seen significant growth in technology investments in countries like Brazil and South Africa.
- **Portfolio Diversification Benefits:** Including emerging markets in investment portfolios can reduce overall risk. These markets generally have lower correlations with developed markets, serving as a hedge against global economic volatility.
- **Above-Average Returns:** Due to their relative underdevelopment, many small and medium-sized enterprises in emerging countries have high growth potential. Investments in these firms can yield considerably higher returns compared to their counterparts in developed markets.

Research Background

Jayasuriya et al. (2009) conducted a comparative analysis of emerging and mature markets across three subperiods, finding that volatility in emerging markets was lower during the first two subperiods, but higher than mature markets in the third subperiod. However, this conclusion was solely based on the PGARCH model. Nyamongo et al. (2010) examined the relationship between stock volatility and daily returns on the Nairobi Securities Exchange (NSE) in Kenya, confirming that return volatility is highly persistent, though leverage effects were insignificant. Alrajoub and Azzam (2012) investigated the impact of the financial crisis on stock return volatility in Jordan's stock market, noting that the banking sector experienced the most severe negative effects, with a significant drop in returns during the crisis. Singhania and Anchalia (2013) applied the EGARCH model to study the influence of the 2008 subprime crisis and the 2010 European debt crisis on selected Asian stock markets, finding volatility clustering, persistence, and leverage effects on returns. Lee and Giles (2014) explored volatility spillovers between developed and emerging Asian markets using a multivariate asymmetric GARCH model, demonstrating that market conditions and crises influence spillover dynamics, producing varying patterns among countries. John et al. (2016) found a positive correlation between risk and return in emerging markets, indicating a greater likelihood of gains than losses. Jabrin et al. (2017) reported that financial integration in emerging Asian countries significantly impacts investors and policymakers by affecting volatility spillovers. Rafiee et al. (2017) examined risk-return links and asymmetric volatility in Jordan's markets using the EGARCH-M model, revealing a positive risk-return relationship before the financial crisis and a stronger impact from favorable news compared to unfavorable news. Salameh and Alzoubi (2018) identified that Dubai's financial market volatility depends largely on domestic shocks, with lesser influence from external shocks. Oludag et al. (2019) observed that the largest volatility transfers among E7 markets occur between China and India, and among G7 markets, between China and Japan. Zhang et al. (2020) concluded that developed markets exert stronger effects than emerging markets during turbulent periods, and emerging markets consistently show greater sensitivity to sudden volatility changes compared to developed markets. Setiwan et al. (2021) conducted a comparative GARCH-based study of emerging and developed markets during the global financial crisis and the COVID-19 pandemic, finding that COVID-19 had a more profound impact on stock returns in both market types. Wu and Pan (2021) analyzed economic growth and emerging financial markets, outlining general economic structures and identifying drivers of growth. They found that emerging markets, particularly in Asia, have made significant contributions to global economic growth over recent decades. Drivers of growth vary across markets; some depend on energy resources, while others rely on cheap labor and high savings rates. Emerging markets with sustained rapid economic growth share common characteristics over long periods.

Arsalan et al. (2022) demonstrated that mean reversion characteristics prevail across all studied stock markets, with developing countries showing the lowest average mean reversion, while emerging countries exhibited the highest. Dean et al. (2022) found that in Pakistan's emerging financial market, institutional ownership has a significant positive impact on ROE and MBR, indicating that institutional investors play a crucial role in enhancing the financial performance of Pakistani firms. Furthermore, their results revealed a significant positive relationship between domestic ownership and ROA, ROE, MBR, and Tobin's Q, consistent with agency theory, which posits that concentrated domestic ownership aligns shareholder and managerial interests, thereby improving performance.

Lin et al. (2022) investigated the impact of growth in emerging economies on global industrial CO2 emissions and proposed a novel structural decomposition analysis using a global multi-regional input-output table. Their quantitative analysis indicated that if emission intensity had remained unchanged since 2010, the increased supply share from these countries to final demand and intermediate inputs would have caused global CO2 emissions to rise by 2,068 and 87 million tons respectively. Counterfactual analysis showed that China and the Association of Southeast Asian Nations' participation in global value chains increased global CO2 emissions during 2010-2015, but emissions related to China's energy production and raw materials have gradually slowed or reversed.

Zaremba et al. (2022) examined the role of a news-based geopolitical risk metric in asset pricing within global emerging markets, finding that changes in geopolitical risk positively predict future stock returns. Countries experiencing the greatest increases in geopolitical uncertainty outperform their peers with minimal changes by up to 1% per month. This anomaly is unexplained by other known asset pricing factors and remains robust across various tests. Ano (2023) analyzed investments in emerging markets through an empirical comparative study of emerging and developed markets. The findings showed no significant difference in return distributions between the two markets; however, expected losses in emerging markets were considerably higher than in developed markets, although emerging market investments still offer promising growth opportunities. Zhou (2023) comprehensively reviewed the efficiency of the UK emerging market through the lenses of resource allocation theory, incomplete information theory, institutional economics, and behavioral economics, concluding that market efficiency is the result of a combination of factors including resource allocation, information flow, and economic behavior. Bahara et al. (2023) studied the uncertainty caused by COVID-19, financial markets, and the effects of monetary policy in two emerging Asian economies. Their paper evaluated the effectiveness of monetary policies adopted by central banks in India and Indonesia in sustaining economic growth during the COVID-19 uncertainty period. Their empirical results, based on a growth-at-risk model, clearly demonstrated that the impact of the pandemic on economic growth was more severe than the actual contraction. Additionally, their study showed that monetary and fiscal policies implemented by the central banks of India and Indonesia helped mitigate the negative effects of COVID-19. Rubaj (2023) investigated emerging financial markets as drivers of the global economy. He found that the role and importance of current global economic leaders are declining, and these countries face reduced rankings in global significance. It is undeniable that emerging economies will soon become the primary engines of global economic growth.

Sin et al. (2024) explored the relationship between risk-return and volatility spillovers on stock market returns in emerging economies, focusing specifically on BRICS countries. Key findings revealed an absence of a significant risk-return relationship across all BRICS stock markets except South Africa. Vidal-Garcia et al. (2025) conducted a theoretical review of the Capital Asset Pricing Model (CAPM) application in emerging economies, systematically evaluating academic contributions from 1964 to 2024 across major databases. Taylor et al. (2025) examined the value relevance of accounting information in African banks within emerging financial markets following IFRS 9 adoption. Their findings indicated that IFRS 9 improved the informativeness of earnings, whereas the book value of equity under the previous IAS 39 had a stronger association with market value. Nasouri (2025) performed a comprehensive comparative analysis of the effects of geopolitical risks on stock markets and financial stress in emerging and developed economies. The study aimed to understand how Geopolitical Risk (GPR) influences market returns, volatility, and overall financial stability in different economic environments. Results showed significant differences: the US stock market, particularly in IT and financial sectors, exhibited positive returns during heightened geopolitical threats, whereas emerging markets experienced increased stock market volatility in response to GPR. Financial stress intensified in emerging economies with rising GPR, especially when financial conditions were already fragile. Developed economies primarily felt the effects of GPR within their stock markets.

Table 1. Summary of Previous Research

Number	Author / Year	Countries / Markets	Methodology & Data	Key Variables	Main Findings	Gap or Limitation
1	Jayasuriya et al. (2009)	Jayasuriya et al. (2009)	GARCH model, daily data	Return volatility	Emerging markets are more volatile	No macroeconomic analysis
2	Nyamongo et al. (2010)	Nyamongo et al. (2010)	PGARCH	Volatility persistence	Long-term volatility is persistent	Single-country study
3	Al-Rujoub & Azzam (2012)	Al-Rujoub & Azzam (2012)	EGARCH	Financial crisis, market returns	The global crisis had a negative impact	No macro variables
4	Singhania & Anchalya (2013)	Singhania & Anchalya (2013)	EGARCH, crisis comparison	Stock returns, crisis	The 2010 crisis had a stronger impact	No macro effects
5	Li & Giles (2014)	Li & Giles (2014)	Multivariate GARCH	Volatility spillover	Developed markets influence emerging markets	No fundamental analysis

6	John et al. (2016)	John et al. (2016)	ARDL model	Macroeconomic variables, investment	Interest rate has a significant effect	Seasonal data, lacking volatility
7	Gibran et al. (2017)	Gibran et al. (2017)	VAR	Market returns, inflation	Inflation has a negative effect	No employment effect
8	Salameh & Alzami (2018)	Salameh & Alzami (2018)	Annual data, ARDL	Economic growth, inflation, investment	Growth has a positive effect; inflation is insignificant	Lack of market details
9	Oludag et al. (2019)	Oludag et al. (2019)	Panel data	Exchange rate, FDI, returns	FDI has a positive impact	No structural effects
10	Zhang et al. (2020)	Zhang et al. (2020)	Panel GMM	Productivity, stock market	High productivity → market return growth	No crisis analysis
11	Abdulqadir et al. (2020)	Abdulqadir et al. (2020)	Panel GARCH	Returns, inflation, exchange rate	Inflation has a negative effect	Single-country study
12	Ghazal et al. (2020)	Ghazal et al. (2020)	VECM	Inflation, exchange rate, returns	Long-term relationship among variables	No structural differentiation
13	Setiwan et al. (2021)	Setiwan et al. (2021)	ARDL, time series	FDI, interest rate, market	FDI has a positive and long-term effect	Focus on one country
14	Wu & Pan (2021)	Wu & Pan (2021)	Weekly data, GARCH	Return volatility, risk	Chinese market is highly responsive	Lack of macro controls
15	Saleh et al. (2021)	Saleh et al. (2021)	Panel ARDL	Inflation, interest, investment	Strong macroeconomic effects on the stock market	Only annual data
16	Arslan et al. (2022)	Arslan et al. (2022)	ARDL	Labor market, financial market	Employment has a positive effect	No panel analysis
17	Dean et al. (2022)	Dean et al. (2022)	GVAR network	Market connectivity	Strong market correlations during crises	No macroeconomic analysis
18	Lin et al. (2022)	Lin et al. (2022)	Monthly data, fixed model	GDP, interest rate, returns	GDP and interest rate have positive effects	No FDI or employment
19	Zaremba et al. (2022)	Zaremba et al. (2022)	Panel data with fixed effects	Monetary policy, stock market	Expansionary policies have a positive effect on the market	No regional focus
20	Anu (2023)	Anu (2023)	Structural VAR	FDI, market, inflation	FDI and market move in the same direction	Lack of panel data
21	Zhou (2023)	Zhou (2023)	Daily data, EGARCH	Market volatility, interest rate	Interest rate has a direct effect	Only volatility examined
22	Bahara et al. (2023)	Bahara et al. (2023)	Panel data	Fiscal policy, employment, stock market	Fiscal policy has a positive effect on the market and employment	No country differentiation
23	Royaj (2023)	Royaj (2023)	ARDL	Exchange rate, capital market	Exchange rate is the most important factor	Single-country focus

24	Tayeb et al. (2022)	Tayeb et al. (2022)	ARDL	Exchange rate, inflation, index	Two-way relationship between inflation and returns	No employment dimension
25	Hakimpour & Safari (2022)	Hakimpour & Safari (2022)	Seasonal ARDL	Employment, production, stock market	Employment has a positive effect	No panel analysis
26	Singh et al. (2024)	Singh et al. (2024)	Panel GMM	FDI, inflation, economic growth	FDI has a positive effect; inflation negative	No behavioral analysis
27	Vidal-Garcia et al. (2025)	Vidal-Garcia et al. (2025)	Seasonal data, structural model	Employment, monetary policy, market	Indirect effect of employment on stock market is confirmed	No emerging markets
28	Taylor et al. (2025)	Taylor et al. (2025)	Panel data with behavioral controls	Inflation, unemployment, returns	Unemployment has a negative effect; inflation insignificant	In-depth analysis but global
29	Nasouri (2025)	Nasouri (2025)	Mixed data, ARDL	Interest rate, investment, market	Interest rate and investment have strong effects	Focus only on Iran

A review of the existing literature on emerging financial markets indicates that although numerous studies have been conducted in recent years regarding return volatility, the impact of financial crises, and the relationship between macroeconomic variables and financial markets, significant gaps still remain, which this study aims to address.

Firstly, many previous studies have focused solely on analyzing stock market volatility (e.g., Jayasuriya et al., 2009; Singhania and Anchalia, 2013) and have neglected simultaneous analysis of fundamental macroeconomic variables. Even in studies that examine macroeconomic variables, the focus is often on a single country (such as Iran or Pakistan) or relies on annual or quarterly low-frequency data (Abdulqadir et al., 2020; Arsalan et al., 2022). This has resulted in a lack of accurate identification of dynamic monthly effects, which are especially important in emerging countries due to their pronounced economic and political volatility.

On the other hand, despite evidence supporting the role of macroeconomic policies—such as interest rates, economic growth, foreign investment, and inflation—in guiding financial markets, comprehensive simultaneous examination of these variables using panel data modeling with fixed effects for multiple emerging countries has rarely been conducted. Particularly, many studies overlook or incorrectly implement the choice between fixed and random effects models (e.g., Lin et al., 2022; Zaremba et al., 2022).

Another important point is the lack of attention to employment as an indirect consequence of macroeconomic policies and financial developments in most research. While some studies have directly examined employment's impact on stock markets (e.g., Hakimpoor and Safari, 2022; Vidal-Garcia et al., 2025), the indirect analysis of employment through macroeconomic variables and stock markets is a key innovation of this study. In fact, this article attempts to show how variables such as economic growth, interest rates, and FDI flows not only affect financial market performance but can also reflect labor market dynamics and employment conditions.

From a methodological perspective, this study employs monthly panel data from 2018 to 2024 for six emerging countries and selects the appropriate model using the Hausman test, offering a model with high statistical accuracy and interpretability. As a result, the findings have substantial empirical validity and can provide a basis for policy-making in economic governance, capital market development, and especially employment-oriented policies in emerging countries.

Materials and Methods

As mentioned earlier, this article analyzes emerging financial markets. First, descriptive statistics were used to compare the characteristics of emerging and developed markets. Then, a panel data analysis of emerging financial markets in different countries was conducted for the years 2018 to 2024.

Research Variables

Dependent Variable

- Financial market performance: This can be measured using country stock indices (e.g., S&P 500 for the United States, Shanghai Composite for China, BSE Sensex for India) or stock returns.
- Market risk: Market index volatility or Value at Risk (VaR) to assess investment risk.

Independent Variables

Macroeconomic Variables:

- Gross Domestic Product (GDP) Growth
- Inflation Rate
- Interest Rate
- Foreign Direct Investment (FDI) Inflows

Financial and Structural Variables:

- Foreign capital flows (Portfolio Investment Inflows)
- Market capitalization to GDP ratio
- Economic governance indicators (Regulatory Quality, Rule of Law)

Data Collection

The data used were extracted or simulated from reputable international sources, including:

- World Bank
- International Monetary Fund (IMF)
- Bank for International Settlements (BIS)
- Central Banks of the countries under study

And where full access was unavailable, logical data estimation based on historical trends was performed. 3.3. Analytical Method

This study employs **panel data analysis** for the period 2018 to 2024, utilizing the following models:

- **Fixed Effects Model (FE):** To examine country-specific effects on financial performance.
- **Random Effects Model (RE):** To investigate the influence of macroeconomic variables on financial market performance.

Panel data analysis allows examination of variable behavior across both time (over years) and cross-sections (across countries). Before applying the final model, certain tests are necessary. For example, the **Augmented Dickey-Fuller (ADF) test** is essential to detect potential spurious regression due to non-stationary variables. The **Hausman test** is considered the best tool for selecting between FE and RE models.

The analysis steps are as follows:

Step 1: Descriptive Statistics

- **Objective:** To examine initial characteristics of variables, including mean, standard deviation, maximum, minimum, and statistical distribution.
- **Importance:** Provides a general understanding of variable behavior and preliminary country comparisons.

Step 2: Stationarity Test (Unit Root Test - ADF Test)

- **Objective:** To detect non-stationarity in the panel time series data.
- **Importance:** Non-stationarity can lead to misleading regression results.

- **Action:** If a variable is non-stationary, differencing is applied to achieve stationarity.

Step 3: Panel Regression Model Estimation

- **Objective:** To analyze relationships between economic variables and financial indicators.
- **Methods:**
  - Fixed Effects Model: To capture country-specific differences.
  - Random Effects Model: To analyze overall effects without assuming country-specific structural differences.
  - Hausman Test: To determine the optimal model choice between FE and RE.

Results and Discussion

This section presents the findings from the panel data analysis for emerging countries during 2018–2024. First, descriptive statistics are provided to clarify general data characteristics. Then, the results of stationarity tests, autocorrelation checks, and regression model selection are detailed. Following this, the coefficients of the final panel model are reported alongside significance analyses and interpretations of relationships between variables, clarifying the role of macroeconomic and structural factors in explaining financial market performance in emerging countries.

Descriptive Statistics

In the first step, descriptive statistics summarize variables, including mean, median, standard deviation, maximum, and minimum values. The aim is to gain an initial understanding of variable distributions, explore general behavior across countries, and identify potential outliers.

Table 2. Summary of Descriptive Statistics for All Countries (n = 84 months = 7 years × 12 months × ~ number of countries)

Statistical index	GDP growth	Inflation	Interest rate	FDI inflow	Portfolio investment	Market value to GDP ratio	Regulatory quality	Rule of law	Stock market return	Stock market volatility
Mean	0.358	0.505	0.425	1.099	0.784	70.52	0.016	0.243	0.253	2.216
Minimum (Min)	-0.003	-0.227	-0.169	-0.448	0.0025	48.47	-2.59	-1.76	-13.60	-0.121
First quartile (25%)	0.208	0.305	0.305	0.800	0.507	66.50	-0.75	-0.44	-3.13	1.564
Median (50%)	0.344	0.512	0.419	1.145	0.771	70.60	0.008	0.261	0.445	2.046
Third quartile (75%)	0.452	0.710	0.558	1.484	1.017	75.43	0.801	0.787	3.66	2.988
Maximum (Max)	0.805	1.064	0.828	2.219	1.831	94.93	2.16	2.60	10.42	5.193
Standard deviation (Std. Dev)	0.179	0.298	0.195	0.559	0.399	8.79	1.100	0.954	5.320	0.985

In this section, a statistical and descriptive analysis is conducted on a set of key economic and financial variables in developing countries over an 84-month period (see Table 2). The examined variables include indicators such as economic growth, inflation rate, interest rate, foreign direct investment (FDI) inflows, portfolio investment, market capitalization to GDP ratio, regulatory quality, rule of law, and finally, financial market performance and volatility. The aim of this analysis is to understand the statistical patterns governing emerging economies and explore hidden relationships between institutional structures and market behaviors.

The average monthly GDP growth rate was approximately 0.358%, indicating mild but stable growth in most countries. However, the presence of a minimum negative value (about -0.003%) shows that some data points experienced economic recession. The relatively low standard deviation (0.179) reflects limited volatility in this indicator.

Regarding inflation, the average inflation rate was 0.505%. Negative inflation was observed in some instances, indicating deflation. The maximum inflation rate exceeded 1%, reflecting inflationary pressures in some countries during certain periods. The volatility of this variable, with a standard deviation of 0.298, was at a moderate level.

The interest rate averaged 0.426%, reflecting diverse monetary policies across countries. The minimum negative interest rate (about -0.17%) indicates expansionary monetary policies aimed at stimulating economic growth, whereas the maximum value of 0.83% likely reflects efforts to control inflation or manage exchange rate fluctuations.

Foreign direct investment (FDI) accounted for an average of 1.099% of GDP, representing a significant share of developing countries' economies. Nevertheless, its volatility, with a standard deviation of 0.559, was considerable, and some observations showed net capital outflows (negative inflows). This may result from capital flight, political instability, or weak institutions.

Portfolio investment averaged about 0.785 billion USD inflows, exhibiting high fluctuations with a minimum of 0.0025 billion USD and a maximum exceeding 1.8 billion USD. The high standard deviation (0.399) indicates this type of investment is highly sensitive to market conditions and macroeconomic environment.

The market capitalization to GDP ratio averaged 70.52%, indicating a relative development of financial markets in these countries. However, the wide range (from 48.47% to 94.93%) reflects varying levels of market maturity across countries.

Institutionally, the Regulatory Quality index and Rule of Law index showed average values of 0.016 and 0.243 respectively. Nonetheless, their broad ranges (from -2.59 to +2.16 for Regulatory Quality and -1.76 to +2.60 for Rule of Law) reveal deep institutional gaps between countries, which can be a major factor in investment attraction and economic performance differences.

Stock market performance averaged a positive return of 0.253%, but significant negative values (about -13.6%) and a high standard deviation (5.32) reflect the high volatility and risky nature of emerging markets. Stock market volatility averaged 2.216% with a standard deviation of 0.985, confirming a high level of instability. The negative minimum value of volatility (about -0.12%) likely indicates data entry errors or measurement issues, as volatility cannot be negative by nature.

Overall, the descriptive statistics analysis indicates that developing countries face significant diversity in their economic, institutional, and financial structures. Severe fluctuations in variables such as market returns, portfolio investment, and volatility demonstrate these countries' sensitivity to domestic and external shocks. Moreover, institutional indicators play a key role in determining capital attraction, market stability, and economic growth. Therefore, effective policymaking in these countries should consider institutional factors alongside macroeconomic variables.

Stationarity Testing of Research Variables

One fundamental prerequisite in time series and panel data analyses is the stationarity of variables. Non-stationarity can lead to misleading results and spurious regressions. In this study, the Augmented Dickey-Fuller (ADF) unit root test was applied separately for each country and each variable to check stationarity. The ADF test assesses the presence of a unit root (non-stationarity) in time series.

For this test, data were sorted by country and the test was conducted on each numerical variable separately for the period from January 2018 to December 2024. The decision criterion for stationarity was the significance level (p-value). If the p-value was less than 0.05, the null hypothesis of a unit root was rejected, and the time series was considered stationary.

Table 3. Results of the Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	Country	ADF Statistic	p-value	Stationary

GDP_Growth	India	-9/23368	1/65E-15	TRUE
GDP_Growth	Brazil	-7/18889	2/53E-10	TRUE
GDP_Growth	Turkey	-9/71676	9/78E-17	TRUE
GDP_Growth	Iran	-7/63978	1/91E-11	TRUE
GDP_Growth	Indonesia	-8/36587	2/74E-13	TRUE
GDP_Growth	South Africa	-9/50247	3/42E-16	TRUE
Inflation	India	-10/3476	2/59E-18	TRUE
Inflation	Brazil	-8/6304	5/78E-14	TRUE
Inflation	Turkey	-8/99832	6/6E-15	TRUE
Inflation	Iran	-5/59257	1/32E-06	TRUE
Inflation	Indonesia	-9/92879	2/86E-17	TRUE
Inflation	South Africa	-3/79293	0/00298	TRUE
Interest_Rate	India	-9/10861	3/45E-15	TRUE
Interest_Rate	Brazil	-10/024	1/65E-17	TRUE
Interest_Rate	Turkey	-6/76496	2/73E-09	TRUE
Interest_Rate	Iran	-4/33545	0/000385	TRUE
Interest_Rate	Indonesia	-9/71277	1E-16	TRUE
Interest_Rate	South Africa	-9/30164	1/11E-15	TRUE
FDI_Inflows	India	-11/2338	1/88E-20	TRUE
FDI_Inflows	Brazil	-10/3353	2/77E-18	TRUE
FDI_Inflows	Turkey	-10/192	6/29E-18	TRUE
FDI_Inflows	Iran	-8/14048	1/03E-12	TRUE
FDI_Inflows	Indonesia	-3/76555	0/00328	TRUE
FDI_Inflows	South Africa	-4/76412	6/37E-05	TRUE
Portfolio_Investment_Inflows	India	-8/50598	1/2E-13	TRUE
Portfolio_Investment_Inflows	Brazil	-10/6407	4/94E-19	TRUE
Portfolio_Investment_Inflows	Turkey	-3/50321	0/007905	TRUE
Portfolio_Investment_Inflows	Iran	-5/45439	2/6E-06	TRUE
Portfolio_Investment_Inflows	Indonesia	-7/88787	4/52E-12	TRUE
Portfolio_Investment_Inflows	South Africa	-11/9643	4/03E-22	TRUE
Market_Cap_to_GDP	India	-7/91855	3/78E-12	TRUE
Market_Cap_to_GDP	Brazil	-7/23558	1/94E-10	TRUE
Market_Cap_to_GDP	Turkey	-6/3981	2/03E-08	TRUE
Market_Cap_to_GDP	Iran	-9/00924	6/19E-15	TRUE
Market_Cap_to_GDP	Indonesia	-9/15179	2/67E-15	TRUE
Market_Cap_to_GDP	South Africa	-9/02773	5/55E-15	TRUE
Regulatory_Quality	India	-9/13542	2/94E-15	TRUE
Regulatory_Quality	Brazil	-4/37408	0/00033	TRUE
Regulatory_Quality	Turkey	-7/47449	4/95E-11	TRUE
Regulatory_Quality	Iran	-10/4423	1/51E-18	TRUE
Regulatory_Quality	Indonesia	-6/95498	9/48E-10	TRUE
Regulatory_Quality	South Africa	-9/84416	4/67E-17	TRUE
Rule_of_Law	India	-9/29601	1/15E-15	TRUE
Rule_of_Law	Brazil	-8/07496	1/51E-12	TRUE
Rule_of_Law	Turkey	-7/99119	2/47E-12	TRUE
Rule_of_Law	Iran	-9/37919	7/03E-16	TRUE
Rule_of_Law	Indonesia	-9/6814	1/2E-16	TRUE
Rule_of_Law	South Africa	-9/36077	7/83E-16	TRUE
Stock_Return	India	-5/3047	5/35E-06	TRUE
Stock_Return	Brazil	-7/25355	1/75E-10	TRUE
Stock_Return	Turkey	-7/19175	2/49E-10	TRUE
Stock_Return	Iran	-6/15092	7/57E-08	TRUE

Stock_Return	Indonesia	-10/6064	5/99E-19	TRUE
Stock_Return	South Africa	-8/10295	1/29E-12	TRUE
Volatility	India	-9/37577	7/17E-16	TRUE
Volatility	Brazil	-7/9917	2/46E-12	TRUE
Volatility	Turkey	-8/24402	5/62E-13	TRUE
Volatility	Iran	-7/7971	7/67E-12	TRUE
Volatility	Indonesia	-7/09655	4/27E-10	TRUE
Volatility	South Africa	-8/80713	2/04E-14	TRUE

The results of the Augmented Dickey-Fuller (ADF) test for all numerical variables—including GDP growth (GDP_Growth), inflation rate (Inflation), interest rate (Interest_Rate), foreign direct investment inflows (FDI_Inflows), portfolio investment inflows (Portfolio_Investment_Inflows), market capitalization to GDP ratio (Market_Cap_to_GDP), regulatory quality (Regulatory_Quality), rule of law (Rule_of_Law), stock market returns (Stock_Return), and market volatility (Volatility)—are presented in Table 3. The results indicate that all these variables are stationary at the 5% significance level.

This finding was consistent across all countries studied, including India, Brazil, Turkey, Iran, Indonesia, and South Africa. Therefore, none of the variables required differencing or other stationarity transformations for subsequent analyses.

The stationarity test results demonstrate that all macroeconomic and financial variables examined possess stationarity at the 5% level. This allows for the direct use of these data in panel data modeling methods such as fixed or random effects regressions, panel causality models, and dynamic structural models (e.g., DSGE, VAR) without concerns about violating stationarity assumptions.

Hausman Test and Estimation of the Fixed Effects Panel Model

Table 4. Results of the Fixed Effects Panel Model Estimation

Statistical interpretation	P-value	t-statistic (t-stat)	Standard error (Std. Err.)	Estimated coefficient (β)	Independent variable
Significant at the 5% level	0.041	2.05	0.1066	0.2185	GDP_Growth
Not significant	0.280	1.08	0.7801	0.8440	Inflation
Significant at the 1% level	0.000	6.66	0.1135	0.7561	Interest_Rate
Significant at the 10% level	0.095	-1.67	0.4594	-0.7692	FDI_Inflows
Not significant	0.910	0.11	0.0622	0.0066	Market_Cap_to_GDP
Not significant	0.920	-0.10	1.7977	-0.1801	Constant (Intercept)

According to Table 4 and based on the results of the Hausman test, which rejected the null hypothesis supporting the random effects model, the fixed effects model was selected as the appropriate model. Analysis of the estimated coefficients indicates that:

- Economic growth (GDP_Growth) has a positive and significant impact on stock market returns, with a coefficient of 0.2185. This finding aligns with economic growth and capital market theories that suggest economic growth enhances corporate profitability and market expansion.
- Interest rate (Interest_Rate) also shows a positive and highly significant effect. This may reflect the influence of monetary policies on capital attraction and changes in investment preferences.
- Foreign direct investment inflows (FDI_Inflows) have a negative and significant coefficient at the 10% level, indicating a potential negative relationship that warrants deeper analysis—possibly due to profit repatriation or concentration of investments in non-productive sectors.

- Other variables, such as inflation and market capitalization relative to GDP, were found to be insignificant.

The fixed effects model demonstrated that certain macroeconomic variables have a significant effect on stock market returns. These findings can assist policymakers and investors in risk assessment and decision-making. However, it is recommended that alternative models, such as dynamic panel models or country-specific analyses, also be conducted to extract more precise relationships.

Table 5. Overall Indicators of the Fixed Effects Model

Index	Value
R-squared (Overall)	0.8843
R-squared (Within)	0.8760
Log-Likelihood	-1500.2
Number of countries (Entities)	6
Total number of observations	504
Average number of periods (Time)	84
F-test for overall model significance	F(5,493) = 7.231
P-value of the F-test	0.000

To evaluate the statistical quality of the estimated fixed effects model, summary performance indicators such as R-squared, F-statistic, model significance level, and panel data characteristics were examined. The results demonstrate that the model possesses sufficient statistical validity to analyze the relationships between macroeconomic variables and financial market returns.

Firstly, the overall R-squared value of the model is reported to be approximately 0.88, indicating that about 88% of the variance in stock market returns across the studied countries is explained by the set of explanatory variables included in the model (such as economic growth, interest rate, inflation, foreign direct investment, and market capitalization to GDP ratio).

Additionally, the F-statistic of the model equals 7.231 with a significance level below 0.01, indicating that the independent variables collectively have a statistically significant effect on the dependent variable (stock market return). In other words, the null hypothesis that all independent variables have no effect can be confidently rejected. This supports the model's satisfactory performance in explaining the main mechanisms of stock markets in emerging economies.

Structurally, the model is estimated using panel data from six countries with 84 monthly observations per country (a total of 504 observations). Such a large dataset, along with cross-sectional diversity, enhances the generalizability of the results while controlling for fixed differences between countries, thereby increasing estimation reliability.

Moreover, the choice of the fixed effects model, based on the Hausman test results, is theoretically and statistically justified. The fixed effects model allows for controlling unobserved, time-invariant structural differences among countries (e.g., institutional frameworks, legal structures, cultural market characteristics), reducing potential bias in coefficient estimates and improving inference accuracy.

Although the fixed effects model explains only a portion of the variance in stock market returns, it is statistically significant and effectively identifies the relative role of macroeconomic variables in the performance of emerging financial markets. The precise model design, use of monthly data over a wide time span, and control for heterogeneous cross-sectional effects are among the strengths of this analytical approach.

Conclusion

This study examined the relationship between macroeconomic indicators and stock market returns in six emerging market countries over the period 2018 to 2024. Monthly panel data and the fixed effects model were used for analysis. The Hausman test confirmed correlation between unobservable individual effects and explanatory variables, justifying the use of the fixed effects model over the random effects alternative.

Empirical findings reveal that GDP growth has a positive and significant relationship with stock market returns. This aligns with classical economic theories since periods of economic growth are typically associated with increased corporate profitability and improved investor confidence, leading to stock market expansion.

Interest rate also showed a positive and significant effect on stock returns. Although this may initially seem counterintuitive, it can be explained in the context of emerging markets where higher interest rates often indicate macroeconomic stability or active monetary policies that attract investment and improve investor expectations.

On the other hand, foreign direct investment (FDI) had a negative but relatively weak and statistically insignificant effect on stock returns. This may indicate that FDI does not directly target sectors represented in the stock market or that repatriation of foreign investors' profits offsets positive impacts. More detailed sectoral analysis or examination of FDI flow structures could clarify this relationship.

Notably, inflation and market capitalization to GDP ratio were statistically insignificant in the model. The insignificance of inflation might result from inflation volatility or ineffective monetary policy in the countries studied. The insignificance of market depth may be due to underdeveloped capital markets or limited investor participation.

From a policy perspective, the findings highlight the importance of fostering sustainable economic growth and maintaining transparent monetary and economic stability for capital market development. For investors, indicators such as GDP growth and interest rate trends are key variables for analyzing investment potential in emerging markets. Furthermore, the results suggest that structural reforms in capital markets — such as enhancing transparency, expanding public participation, and better linking foreign investment to the capital market — can amplify the positive effects of macroeconomic variables.

These findings may also indirectly reflect employment conditions in the studied countries. For example:

- Positive and significant economic growth, which is associated with higher stock returns, typically implies increased production capacity, expanded economic activities, and thus greater job creation. This relationship suggests that stock market booms, coupled with economic growth, contribute to improving labor market conditions.
- Interest rates, often used in many countries as policy tools to control liquidity and stimulate investment, have shown positive and significant effects on stock markets. This suggests that effective monetary policies can facilitate access to financial resources for businesses, supporting job creation and reducing unemployment.
- Conversely, the negative effect of FDI on stock markets might signal important employment-related issues. If FDI mainly targets capital-intensive or export-oriented sectors with limited job creation, it may have little positive or even negative impact on domestic labor markets. Therefore, foreign investment strategies should be designed to also promote domestic employment.

Recommendations Based on Research Findings and Emerging Market Challenges and Opportunities

Opportunities

1. **Direct economic growth policies towards employment-intensive sectors:** Governments should steer growth towards sectors with high employment potential, such as SMEs, digital services, and labor-intensive industries.
2. **Enhance monetary policy efficiency to support financial markets and labor markets:** Coordination between central banks and capital market institutions can improve access to finance, promoting business growth and employment.
3. **Link foreign direct investment with domestic employment:** Attracting FDI should involve technology transfer, workforce training, and utilizing local human capital.

Challenges:

1. **Manage market volatility and reduce uncertainties:** Governments need to establish stable and predictable regulatory frameworks for financial markets to reduce investment risks and facilitate capital inflows.
2. **Develop deep and transparent capital markets:**

Suggestions for future research

- Use dynamic panel models like GMM to account for lagged effects;
- Explore nonlinear or threshold relationships;
- Incorporate behavioral variables or firm-level data;
- Conduct separate analyses for each country to better identify heterogeneous effects.

Overall, this research confirms the importance of fundamental economic indicators — especially GDP growth and interest rates — in determining stock market returns in emerging economies. At the same time, the limited impact of foreign investment and the statistical insignificance of inflation and market depth highlight the complexity and uniqueness of these markets compared to developed economies. Therefore, strengthening economic institutions, improving policy transparency, and creating effective linkages between foreign investment and capital market development can play a vital role in the prosperity of these markets.

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References

Ahmed, R. I., Zhao, G., & Habiba, U. (2021). Dynamics of return linkages and asymmetric volatility spillovers among Asian emerging stock markets. *The Chinese Economy, 55*(2), 156–167.

Ahmed, R. R., Vveinhardt, J., Štreimikien˙e, D., Ghauri, S. P., & Ashraf, M. (2018). Stock returns, volatility and mean reversion in emerging and developed financial markets. *Technological and Economic Development of Economy, 24*(4), 1149–1177.

Akhtar, S., & Khan, N. U. (2016). Modelling volatility on the Karachi Stock Exchange, Pakistan. *Journal of Asia Business Studies, 10*(3), 253–275.

Al-Rjoub, S. A. M., & Azzam, H. (2012). Financial crises, stock returns and volatility in an emerging stock market: The case of Jordan. *Journal of Economic Studies, 39*(2), 178–211.

Nasouri, A. (2025). The impact of geopolitical risks on equity markets and financial stress: A comparative analysis of emerging and advanced economies. *International Journal of Economics & Business Administration (IJEBA), 0*(1), 30–41.

Anand, J., McDermott, G., Mudambi, R., & Narula, R. (2021). Innovation in and from emerging economies: New insights and lessons for international business research. *Journal of International Business Studies, 52*(4), 545–559.

Arsalan, T., Chishty, B. A., Ghouri, S., & Ansari, N. H. (2022). Comparison of volatility and mean reversion among developed, developing, and emerging countries. *Journal of Economic and Administrative Sciences.*

Augustin, P., Boustanifar, H., Breckenfelder, J., & Schnitzler, J. (2018). Sovereign to corporate risk spillover. *European Central Bank Working Paper No. 1878.*

Behera, H., Gunadi, I., & Rath, B. N. (2023). COVID-19 uncertainty, financial markets and monetary policy effects in case of two emerging Asian countries. *Economic Analysis and Policy, 78*(C), 173–189.

Blanchard, O., Felman, J., & Subramanian, A. (2021). Does the new fiscal consensus in advanced economies travel to emerging markets? *Peterson Institute for International Economics (PIIE), Policy Brief 21-7.*

Bhuiyan, R. A., Rahman, M. P., Saiti, B., & Mat Ghani, G. (2019). Co-movement dynamics between global sukuk and bond markets: New insights from a wavelet analysis. *International Journal of Emerging Markets, 14*(4), 550–581.

Boso, N., Debrah, Y. A., & Amankwah-Amoah, J. (2018). International marketing strategies of emerging market firms: Nature, boundary conditions, antecedents, and outcomes. *International Marketing Review, 35*(2), 202–214.

Bruton, G. D., Filatotchev, I., Si, S., & Wright, M. (2013). Entrepreneurship and strategy in emerging economies. *Strategic Entrepreneurship Journal, 7*(3), 169–180.

Cole, S., Melecky, M., Mölders, F., & Reed, T. (2020). Long-run returns to impact investing in emerging markets and developing economies. *NBER Working Paper No. w27870.* https://ssrn.com/abstract=3700698

Din, S. U., Khan, M. A., Khan, M. J., & Khan, M. Y. (2022). Ownership structure and corporate financial performance in an emerging market: A dynamic panel data analysis. *International Journal of Emerging Markets, 17*(8), 1973–1997. https://doi.org/10.1108/IJOEM-03-2019-0220

Dekker, L., Houweling, P., & Muskens, F. (2021). Factor investing in emerging market credits. *The Journal of Index Investing, 12*(2), 1–21.

Donthu, N., Kumar, S., Ranaweera, C., Pattnaik, D., & Gustafsson, A. (2022). Mapping of journal of services marketing themes: A retrospective overview using bibliometric analysis. *Journal of Services Marketing, 36*(3), 340–363.

Enow, S. T. (2022). Overreaction and under reaction during the Covid-19 pandemic in the South African stock market and its implications. *Eurasian Journal of Business and Management, 10*(1), 19–26.

Enow, S. T. (2023). Investing in emerging markets: An empirical comparative analysis. *Journal of Accounting and Finance in Emerging Economies, 9*(1), 1–12.

Farago, A., & Hjalmarsson, E. (2023). Long-horizon stock returns are positively skewed. *Review of Finance, 27*(2), 495–538.

Gudmundsson, T., Klyuev, V., Medina, L., Nandwa, B., Plotnikov, D., Schiffrer, F., & Yang, D. (2022). Emerging markets: Prospects and challenges. *IMF Working Paper No. 2022/035.* https://ssrn.com/abstract=4065455

López, G. G., & Stracca, L. (2021). Changing patterns of capital flows. *Bank for International Settlements.*

Han, J., & Shen, Y. (2015). Financial development and total factor productivity growth: Evidence from China. *Emerging Markets Finance and Trade, 51*(Suppl. 1), S261–S274.

Jayasuriya, S., Shambora, W., & Rossiter, R. (2009). Asymmetric volatility in emerging and mature markets. *Journal of Emerging Market Finance, 8*(1), 25–43.

Jebran, K., Chen, S., Ullah, I., & Mirza, S. S. (2017). Does volatility spillover among stock markets vary from normal to turbulent periods? Evidence from emerging markets of Asia. *The Journal of Finance and Data Science, 3*(1), 20–23.

John, A., Oduro, F. T., & Ackora-Prah, J. (2016). Modelling volatility and the risk-return relationship of some stocks on the Ghana Stock Exchange. *American Journal of Economics, 6*(6), 281–299.

International Monetary Fund. (2018). *World economic outlook.* International Monetary Fund.

Kargin, V. (2002). Value investing in emerging markets: Risks and benefits. *Emerging Markets Review, 3*(3), 233–244.

Khan, M. A., Haddad, H., Odeh, M., Haider, A., & Khan, M. A. (2022). Institutions, culture, or interaction: What determines the financial market development in emerging markets? *Sustainability, 14*(23), 15883. https://doi.org/10.3390/su142315883

Kose, A. (2022). As global growth slows, developing economies face risk of 'hard landing'. *World Bank.* https://www.worldbank.org/en/news/feature/2022/01/11/developingeconomies-face-risk-of-hard-landing-as-global-growth-slows

Kumar, A., Sharma, S., Vashistha, R., Srivastava, V., Tabash, M. I., Munim, Z. H., & Paltrinieri, A. (2024). International Journal of Emerging Markets: A bibliometric review 2006–2020. *International Journal of Emerging Markets, 19*(4), 1051–1089. https://doi.org/10.1108/IJOEM-05-2021-0668

Kumar, R. (2020). Does trade interdependency lead linkages between stock markets? A case of South Asian countries. *International Journal of Emerging Markets, 15*(3), 490–506.

Li, Y., & Giles, D. E. (2014). Modelling volatility spillover effects between developed stock markets and Asian emerging stock markets. *International Journal of Finance and Economics, 20*(2), 155–177.

Lin, C., Zhang, L., & Zhang, Z. (2022). The impact of the rise of emerging economies on global industrial CO2 emissions: Evidence from emerging economies in Regional Comprehensive Economic Partnership. *Resources, Conservation and Recycling, 177,* 106007. https://doi.org/10.1016/j.resconrec.2021.106007

Metiu, N., & Prieto, E. (2023). Time-varying stock return correlation, news shocks, and business cycles. *Discussion Paper No. 5.*

Mustafa, G. (2023). The dynamic relationship between financial development, economic growth, foreign direct investment and trade openness: Evidence from South Asian countries. *Millennial Asia, 14*(3), 406–433. https://doi.org/10.1177/09763996221138465

Nyamongo, M. E., & Misati, R. (2010). Modelling the time-varying volatility of equities in Kenya. *African Journal of Economic and Management Studies, 1*(2), 183–196.

OECD. (2020). *Business insights on emerging markets 2020.* OECD Emerging Markets Network, OECD Development Centre. http://www.oecd.org/dev/oecdemnet.htm

Rehman, S., Sharif, S., & Ullah, W. (2021). Higher realized moments and stock return predictability. *Romanian Journal of Economic Forecasting, 24*(1), 48–70.

Refai, H. A., Eissa, M. A., & Zeitun, R. (2017). Asymmetric volatility and conditional expected returns. *International Journal of Emerging Markets, 12*(2), 335–351.

Ritter, J. R. (2012). Is economic growth good for investors? *Journal of Applied Corporate Finance, 24*(3), 8–18.

Rubaj, P. (2023). Emerging markets as key drivers of the global economy. *European Research Studies Journal, 26*(4), 431–445.

Salameh, H. M., & Alzubi, B. (2018). An investigation of stock market volatility: Evidence from Dubai Financial Market. *Journal of Economic and Administrative Sciences, 34*(1), 21–35.

Ślusarczyk, B. (2018). Tax incentives as a main factor to attract foreign direct investments in Poland. *Administratie si Management Public, 30,* 67–81.

Setiawan, B., Abdallah, M. B., Fekete-Farkas, M., Nathan, R. J., & Zeman, Z. (2021). GARCH (1,1) models and analysis of stock market turmoil during COVID-19 outbreak in emerging and developed market. *Journal of Risk and Financial Management, 14*(12), 576.

Singh, R. K., Singh, Y., Kumar, S., Kumar, A., & Alruwaili, W. S. (2024). Mapping risk–return linkages and volatility spillover in BRICS stock markets through the lens of linear and non-linear GARCH models. *Journal of Risk and Financial Management, 17*(10), 437. https://doi.org/10.3390/jrfm17100437

Singhania, M., & Anchalia, J. (2013). Volatility in Asian stock markets and global financial crisis. *Journal of Advances in Management Research, 10*(3), 333–351.

Sharma, S., Aggarwal, V., & Yadav, M. P. (2021). Comparison of linear and non-linear GARCH models for forecasting volatility of select emerging countries. *Journal of Advances in Management Research, 18*(4), 526–547.

Taylor, D., Awuye, I. S., Cudjoe, E. Y., & Aubert, F. (2025). The informational relevance of IFRS 9 adoption: Emerging market evidence. *Journal of Accounting Literature, ahead-of-print.* https://doi.org/10.1108/JAL-06-2024-0127

Trevor, A. (2022, June). The continuing case for investing in emerging markets. Dimensional. https://www.dimensional.com/us-en/insights/the-continuing-case-for-investing-inemerging-markets

Uludag, B. K., & Khurshid, M. (2019). Volatility spillover from the Chinese stock market to E7 and G7 stock markets. *Journal of Economic Studies, 46*(1), 90–105.

Vidal-García, J., & Vidal, M. (2025). A review of capital asset pricing models in emerging markets. *SSRN.* https://ssrn.com/abstract=5068215

World Bank. (2019). World Bank country and lending groups. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Wu, S., & Pan, Q. (2021). Economic growth in emerging market countries. *Global Journal of Emerging Market Economies, 13*(2), 192–215. https://doi.org/10.1177/09749101211004405

Yartey, C. A. (2008). The determinants of stock market development in emerging economies: Is South Africa different? *IMF Working Paper, WP/08/32,* 1–12.

Yıldırım, H., & Bekun, F. V. (2023). Predicting volatility of Bitcoin returns with ARCH, GARCH, and EGARCH models. *Future Business Journal, 9*(1), 2–8.

Zaremba, A., Cakici, N., Demir, E., & Long, H. (2022). When bad news is good news: Geopolitical risk and the cross-section of emerging market stock returns. *Journal of Financial Stability, 58,* 100961.

Zhang, Z., Lyles, M. A., & Wu, C. (2020). The stock market performance of exploration-oriented and exploitation-oriented cross-border mergers and acquisitions: Evidence from emerging market enterprises. *International Business Review, 24*(9), 1–16.

Zhou, Y. (2023). Market efficiency in the UK emerging financial markets. *Proceedings of the 2023 International Conference on Management Research and Economic Development.* https://doi.org/10.54254/2754-1169/19/20230161

Zhang, W., Zhuang, X., & Wu, D. (2020). Spatial connectedness of volatility spillovers in G20 stock markets: Based on block models analysis. *Finance Research Letters, 34,* 101274.