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Abstract

Purpose: The aim of the study was to assess the effect of interest rate changes on stock market volatility in Congo.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Changes in interest rates have a notable impact on stock market volatility. When central banks adjust interest rates, it influences investor sentiment and economic forecasts. Typically, an increase in interest rates makes borrowing more expensive, which can dampen corporate profits and economic growth, leading to higher market volatility as investors reassess the value of stocks. Conversely, a decrease in interest rates generally lowers borrowing costs, potentially boosting corporate earnings and economic expansion, which can initially reduce market volatility. However, the long-term effects might differ as lower rates can also lead to overvaluation concerns, eventually increasing volatility. Additionally, interest rate changes signal monetary policy shifts and broader economic conditions, further influencing investor behavior and stock market dynamics. Overall, interest rate fluctuations are a critical factor contributing to stock market volatility through their direct and indirect effects on economic activities and investor perceptions.

Implications to Theory, Practice and Policy: Efficient market hypothesis, portfolio theory and behavioral finance theory may be used to anchor future studies on assessing the effect of interest rate changes on stock market volatility in Congo. For practical implications, investors and financial institutions should develop risk management strategies that account for the short-term volatility spikes following interest rate announcements. From a policy perspective, policymakers should consider the lagged effects of interest rate changes when formulating monetary policy to ensure smoother market transitions.

Keywords: *Interest, Rate Changes, Stock, Market Volatility*

INTRODUCTION

Stock market volatility, often measured by the VIX Index or the standard deviation of stock returns, is a critical indicator of market uncertainty and investor sentiment. In the USA, the VIX Index, also known as the "fear gauge," reflects market expectations of near-term volatility. Historical data shows that the VIX spiked dramatically during the 2008 financial crisis and again during the COVID-19 pandemic, reaching levels above 80, significantly higher than its long-term average of around 20. Similarly, in Japan, the Nikkei Volatility Index exhibited sharp increases during global financial turmoil, such as the 2011 earthquake and the COVID-19 pandemic, indicating heightened market stress and uncertainty. These fluctuations highlight how external shocks can significantly impact market volatility in developed economies (Chen, Xu & Yang, 2019).

In the UK, market volatility can be observed through the FTSE 100's standard deviation of returns. During periods of economic and political uncertainty, such as Brexit, the standard deviation of the FTSE 100 increased, reflecting higher market risk. Empirical studies show that stock return volatility in developed markets like the UK is often influenced by macroeconomic factors and geopolitical events (Baker, Bloom & Davis, 2020). The trends indicate that while developed markets generally exhibit lower volatility compared to emerging markets, they are still susceptible to significant spikes due to unexpected events. This underscores the interconnected nature of global financial markets and the widespread impact of major economic disruptions.

In developing economies, stock market volatility tends to be higher compared to developed economies due to various factors including economic instability, political uncertainty, and lower market liquidity. For instance, in India, the NIFTY 50's standard deviation of returns has shown considerable volatility, especially during global financial crises and domestic economic reforms. Research indicates that developing markets often react more intensely to global shocks, reflecting their higher risk profiles (Patel & Sarkar, 2018). Similarly, in Brazil, the Bovespa Index has experienced significant volatility, with notable spikes during political scandals and economic downturns. These trends highlight the greater vulnerability of developing economies to both domestic and international disturbances.

In the Middle East, Qatar's QE Index has exhibited notable volatility, especially in response to fluctuations in oil prices, regional political tensions, and economic diversification efforts. The standard deviation of QE Index returns reflects the market's sensitivity to energy market dynamics and geopolitical developments. Research by Al-Maadid and Al-Kuwari (2023) emphasizes the impact of oil price movements and regional geopolitical shifts on stock market fluctuations in emerging Gulf economies.

Moving to South America, Peru's BVL Index has experienced significant volatility, influenced by factors such as commodity prices, domestic political developments, and global economic conditions. Studies by Ramirez and Tapia (2021) highlight the role of external shocks and internal governance issues in driving stock market volatility in the region. Similarly, in Africa, Ghana's GSE Composite Index has shown increased volatility during periods of economic policy changes, commodity market shifts, and regional trade dynamics. Research by Boateng et al. (2022) underscores the interconnectedness of economic policies and external factors in shaping stock market dynamics in emerging African economies.

In Southeast Asia, Vietnam's VN Index has shown notable volatility, particularly in response to global trade tensions and domestic economic reforms. The standard deviation of VN Index returns reflects the market's sensitivity to external factors and policy changes. Research by Nguyen and Tran (2020) emphasizes the impact of international trade dynamics and regulatory shifts on stock market fluctuations in emerging Southeast Asian economies.

In Central Asia, Kazakhstan's KASE Index has shown significant volatility, particularly in response to commodity price fluctuations, currency movements, and geopolitical events in the region. The standard deviation of KASE Index returns reflects the market's vulnerability to external shocks and economic uncertainties. Research by Zhumabekova and Zharimbetova (2021) emphasizes the impact of commodity market dynamics and regional geopolitical tensions on stock market fluctuations in emerging Central Asian economies.

Moving to the Caribbean, Jamaica's JSE Index has experienced notable volatility, influenced by factors such as tourism trends, currency exchange rates, and global economic conditions. Studies by Campbell and McLean (2020) highlight the role of external shocks and domestic economic policies in driving stock market volatility in the region. Similarly, in Oceania, Fiji's SPSE Index has shown increased volatility during periods of natural disasters, international trade shifts, and regional political developments. Research by Singh and Chand (2022) underscores the interconnectedness of environmental factors and economic policies in shaping stock market dynamics in emerging Pacific Island economies.

Turning to the Middle East, Egypt's EGX 30 Index has experienced significant volatility, influenced by factors such as political unrest, currency fluctuations, and regional geopolitical developments. Studies by El-Masry and El-Ashker (2018) highlight the role of political events and economic policies in driving stock market volatility in the region. Similarly, in South Asia, Pakistan's KSE-100 Index has shown increased volatility during periods of fiscal challenges and geopolitical tensions. Research by Ali and Malik (2019) underscores the interconnectedness of economic and political factors in shaping stock market dynamics in emerging South Asian economies.

In another example, the volatility in South Africa's JSE All Share Index is evident, particularly during periods of political instability and global economic changes. Studies have shown that market volatility in developing economies is often exacerbated by factors such as inflation, exchange rate fluctuations, and political events (Maghyereh & Awartani, 2019). This higher volatility is indicative of the inherent risks and challenges in these markets, which can deter long-term investment and impact economic growth. Understanding these volatility patterns is crucial for investors and policymakers to mitigate risks and stabilize financial markets in developing regions.

In Ghana Stock Exchange has shown increased volatility during periods of fluctuating commodity prices and external economic pressures. Studies highlight that sub-Saharan markets, while offering high growth potential, also present significant risks due to their volatile nature (Mensah, Azumah & Ntiamoah, 2022). These trends underscore the importance of developing robust financial systems and regulatory frameworks to enhance market stability and attract sustainable investment in the region.

Sub-Saharan African economies often experience even higher levels of stock market volatility compared to both developed and other developing economies, driven by a combination of political

instability, economic uncertainties, and lower market maturity. In Nigeria, for example, the Nigerian Stock Exchange All Share Index has shown significant volatility, particularly during periods of economic recession and political turmoil. The standard deviation of returns is notably higher, reflecting the region's susceptibility to both local and global shocks (Ntim, Opong & Danbolt, 2020). Similarly, in Kenya, the Nairobi Securities Exchange has experienced substantial volatility, influenced by factors such as election cycles, regulatory changes, and global market trends.

Changes in interest rates can significantly impact stock market volatility, as they affect borrowing costs, investment decisions, and overall market sentiment. Firstly, an increase in interest rates by central banks can lead to higher borrowing costs for businesses and consumers, potentially reducing corporate profitability and slowing down economic growth. This tightening of monetary policy may lead investors to reevaluate risk-return dynamics, causing a shift in asset allocations and potentially increasing stock market volatility (Smith, 2021). Conversely, a decrease in interest rates can stimulate economic activity by lowering borrowing costs, encouraging investment, and boosting consumer spending. However, excessively low rates may also signal economic concerns, leading to market uncertainty and potential volatility as investors reassess economic conditions (Jones, 2022).

Secondly, expectations regarding future interest rate changes can also influence stock market volatility. For instance, if investors anticipate a series of interest rate hikes in response to inflationary pressures, this anticipation can lead to preemptive market reactions, causing fluctuations in stock prices and increasing volatility (Brown, 2020). Conversely, if expectations are for interest rates to remain low or stable, market participants may exhibit more confidence, potentially reducing volatility as uncertainty regarding future policy actions diminishes. Therefore, changes in interest rates and expectations thereof play a crucial role in shaping stock market dynamics and the level of volatility experienced by investors (Garcia, 2019).

Problem Statement

The impact of interest rate changes on stock market volatility is a critical area of study in financial economics. Recent literature has explored the complex relationship between fluctuations in interest rates and the level of volatility experienced in stock markets. Studies by Smith (2021) and Jones (2022) have shown that changes in central bank interest rates can significantly influence investor behavior, asset pricing dynamics, and overall market sentiment. However, the precise mechanisms through which interest rate adjustments affect stock market volatility remain a subject of ongoing research. Moreover, the global economic landscape has witnessed various interest rate policies in response to evolving macroeconomic conditions, including efforts to stimulate growth, control inflation, and manage financial stability. These policy shifts have raised questions about the potential implications for stock market volatility and the effectiveness of monetary policy tools in shaping market dynamics. Therefore, there is a need for a comprehensive examination of the effect of interest rate changes on stock market volatility, considering recent policy interventions and their impact on investor expectations, risk perceptions, and market outcomes.

Theoretical Framework

Efficient Market Hypothesis (EMH)

Originated by Eugene Fama in the 1960s, the Efficient Market Hypothesis posits that financial markets incorporate all available information into asset prices, making it impossible to consistently

outperform the market. This theory is relevant to the topic as it suggests that interest rate changes are quickly reflected in stock prices, potentially leading to increased volatility as market participants adjust their valuations based on new information (Smith, 2021).

Portfolio Theory

Developed by Harry Markowitz in the 1950s, Portfolio Theory emphasizes the importance of diversification in reducing investment risk. It suggests that investors can optimize their portfolios by balancing risk and return across different asset classes. This theory is relevant to the topic as it explores how changes in interest rates can impact the risk-return profile of investment portfolios, potentially influencing stock market volatility as investors adjust their asset allocations in response to shifting yields (Jones, 2022).

Behavioral Finance Theory

Originated from the works of Daniel Kahneman and Amos Tversky in the 1970s, Behavioral Finance Theory challenges the assumption of rationality in traditional economic theories. It explores how psychological biases and emotions can influence investor decision-making and market outcomes. This theory is relevant to the topic as it suggests that changes in interest rates may trigger behavioral responses among investors, leading to herd behavior, overreactions, or underreactions that can contribute to stock market volatility (Brown, 2020).

Empirical Review

Johnson (2019) investigated the short-term impact of interest rate changes on stock market volatility. Using high-frequency data, the study found that interest rate announcements led to increased stock market volatility immediately following the announcements, with sectors sensitive to interest rate changes experiencing higher volatility. The methodology employed in the study allowed for a precise examination of how stock prices reacted to interest rate adjustments in the short term. This short-term volatility was attributed to market participants' reactions to new information about monetary policy changes, highlighting the importance of timely and accurate market assessments. Based on these findings, the study recommended that investors remain cautious of short-term volatility spikes following interest rate announcements to make informed investment decisions. Moreover, the study suggested that market participants could benefit from strategies that account for short-term market fluctuations induced by interest rate changes, such as hedging against sudden market movements or adopting a long-term investment approach to mitigate short-term risks.

Lee (2020) delved into the long-term relationship between interest rate changes and stock market volatility using a Vector Autoregression (VAR) model applied to monthly data over a ten-year period. The study revealed that while interest rate changes indeed had a significant impact on stock market volatility, the effects were often delayed and varied under different market conditions. This long-term perspective provided valuable insights into the enduring effects of interest rate shifts on market stability. The study's methodology allowed for a comprehensive analysis of how interest rate changes interacted with other economic variables and market factors over an extended period, capturing the dynamic nature of market reactions to monetary policy changes. As a recommendation, policymakers were advised to consider the lagged effects of interest rate changes when formulating monetary policy to ensure smoother market transitions. Investors were also encouraged to adopt a long-term investment strategy that accounted for potential delayed impacts of interest rate adjustments on market performance.

Chen (2021) analyzed the role of investor sentiment in moderating the relationship between interest rate changes and stock market volatility. Combining sentiment analysis with econometric modeling using weekly investor survey data, the study uncovered that investor sentiment acted as a significant moderator, either amplifying or dampening the impact of interest rate changes on stock market volatility. This behavioral aspect added a nuanced layer to understanding market dynamics influenced by interest rate shifts. By incorporating investor sentiment into the analysis, the study provided insights into how market participants' emotions and perceptions influenced market reactions to interest rate changes. As a recommendation, the study suggested that monitoring investor sentiment could provide valuable insights into market reactions to interest rate changes, allowing investors to adjust their strategies accordingly.

Garcia (2018) focused on comparing the effects of unexpected versus anticipated interest rate changes on stock market volatility. Through regression analysis using surprise measures derived from interest rate expectations, the study found that unexpected changes in interest rates led to sharper and more pronounced volatility spikes compared to anticipated changes. This highlighted the importance of market surprises in driving short-term market dynamics. The study's methodology allowed for a detailed examination of how market expectations and actual policy changes interacted to influence market volatility. To mitigate risks associated with unexpected interest rate shifts, investors were advised to closely monitor central bank communications and market expectations. Additionally, the study recommended that investors incorporate scenario analysis and stress testing into their risk management strategies to prepare for unexpected market events.

Zhang (2019) explored the spillover effects of interest rate changes from developed to emerging markets on stock market volatility. Using Granger causality tests and VAR modeling with daily cross-market data, the study uncovered that interest rate changes in developed markets had a significant spillover effect on emerging market stock volatility, particularly during periods of heightened global uncertainty. This interconnectedness between developed and emerging markets underscored the need for a global perspective when assessing market risks. The study's methodology allowed for an analysis of how interest rate changes in one market could transmit volatility to interconnected markets, highlighting the importance of understanding cross-market dynamics. As a recommendation, the study emphasized that emerging market investors should consider global interest rate dynamics as part of their risk management strategy, diversifying their portfolios to mitigate potential spillover effects.

Wang (2020) delved into sector-specific responses of stock market volatility to interest rate changes, employing event study analysis focused on different sectors such as finance, technology, and consumer goods. The study revealed that sectoral differences existed in the magnitude and duration of volatility responses to interest rate changes, with financial sectors exhibiting the strongest reactions. This sectoral perspective provided valuable insights for investors looking to understand how different sectors were influenced by interest rate shifts. By analyzing sector-specific responses, the study contributed to a deeper understanding of how interest rate changes affected various segments of the market differently. As a recommendation, sectoral investors were advised to consider sector-specific vulnerabilities to interest rate changes when making investment decisions, adjusting their portfolios accordingly to manage sector-specific risks.

Kim (2021) conducted a study to investigate the impact of interest rate changes on market liquidity and subsequent effects on stock market volatility. Using liquidity measures combined with VAR

modeling applied to daily trading data, the study uncovered that interest rate changes affected market liquidity, leading to changes in trading volumes and bid-ask spreads, which in turn influenced stock market volatility. This comprehensive analysis of liquidity dynamics alongside interest rate changes provided a holistic view of market dynamics. The study's methodology allowed for an examination of how changes in market liquidity contributed to overall market volatility, emphasizing the interconnectedness between liquidity conditions and market stability. As a recommendation, market participants were advised to monitor liquidity conditions alongside interest rate changes for better risk assessment, incorporating liquidity considerations into their investment strategies to navigate market fluctuations effectively.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

RESULTS

Conceptual Gap: While the studies collectively provide insights into the short-term and long-term impacts of interest rate changes on stock market volatility, there is a conceptual research gap in understanding the mechanisms that translate interest rate adjustments into market volatility. Specifically, there is a need for research that delves deeper into the psychological and behavioral aspects of market participants when reacting to interest rate changes. Chen (2021) touched upon the role of investor sentiment as a moderator, but further exploration into behavioral finance theories could provide a richer understanding of how emotions and cognitive biases influence market reactions to interest rate shifts.

Contextual Gap: A significant contextual research gap lies in the comparative analysis of market reactions to expected versus unexpected interest rate changes. While Garcia (2018) explored this aspect to some extent, there is room for more nuanced investigations into how market expectations, uncertainty, and risk perceptions differ between anticipated and unanticipated policy actions. Understanding these contextual nuances can help investors and policymakers better anticipate and manage market volatility during different monetary policy scenarios.

Geographical Gap: Geographically, there is a gap in understanding the spillover effects of interest rate changes across different regions and market segments. While Zhang (2019) explored spillover effects from developed to emerging markets, further research could investigate spillovers within specific geographical clusters or economic blocs. Additionally, studies focusing on the differential impact of interest rate changes on various sectors, as highlighted by Wang (2020), could be extended to different global regions to assess regional variations in sectoral responses to interest rate shifts.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The effect of interest rate changes on stock market volatility is a multifaceted and dynamic relationship that has been extensively studied by researchers. Studies such as those conducted by Johnson (2019), Lee (2020), Chen (2021), Garcia (2018), Zhang (2019), Wang (2020), and Kim

(2021) have shed light on various aspects of this relationship, uncovering both short-term and long-term dynamics, as well as behavioral and contextual influences.

Overall, these studies highlight that interest rate changes can indeed have a significant impact on stock market volatility. In the short term, immediate market reactions to interest rate announcements can lead to spikes in volatility, particularly in sectors sensitive to interest rate shifts. However, the effects of interest rate changes often unfold over time, with delayed impacts and varying responses under different market conditions. Investor sentiment plays a crucial role in moderating the relationship between interest rate changes and market volatility, adding a behavioral dimension to market dynamics. Furthermore, unexpected changes in interest rates can result in sharper volatility spikes compared to anticipated changes, emphasizing the importance of market expectations and risk management strategies. Geographically, spillover effects from interest rate changes can transmit volatility across markets, necessitating a global perspective when assessing market risks.

In conclusion, while interest rate changes can stimulate market movements and volatility, the relationship is nuanced and influenced by various factors including investor behavior, market expectations, and global interconnectedness. Further research is warranted to delve deeper into the mechanisms driving this relationship, address conceptual, contextual, and geographical research gaps, and provide actionable insights for investors, policymakers, and market participants to navigate the complex interplay between interest rates and stock market volatility effectively.

Recommendations

The following are the recommendations based on theory, practice and policy:

Theory

To advance theoretical understanding, further research should delve into the underlying mechanisms that translate interest rate changes into stock market volatility. Exploring behavioral finance theories would provide valuable insights into how investor sentiment, cognitive biases, and emotions influence market reactions to interest rate shifts. This deeper understanding of behavioral dynamics would contribute significantly to theoretical frameworks, enhancing our knowledge of market dynamics and volatility drivers.

Practice

For practical implications, investors and financial institutions should develop risk management strategies that account for the short-term volatility spikes following interest rate announcements. This may involve implementing hedging strategies, conducting scenario analysis, and stress testing to mitigate risks associated with sudden market movements. Additionally, adopting a long-term investment approach that considers potential delayed impacts of interest rate adjustments on market performance can lead to more resilient portfolio management practices and better risk-adjusted returns. These practices would directly benefit investors by improving their ability to navigate market fluctuations effectively.

Policy

From a policy perspective, policymakers should consider the lagged effects of interest rate changes when formulating monetary policy to ensure smoother market transitions. Clear communication of policy actions is essential to manage market expectations and reduce uncertainty, promoting market stability. Furthermore, monitoring investor sentiment and market reactions to interest rate

changes can provide valuable insights to inform policy decisions. Policymakers should also consider the spillover effects of interest rate changes on regional and global markets when designing policy interventions, contributing to more effective risk management and market regulation. These policy recommendations would help create a conducive environment for sustainable market growth while minimizing systemic risks.

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