

SELECTED MACROECONOMIC VARIABLES AND STOCK PRICE PERFORMANCE OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

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ABSTRACT

In Kenya, the Nairobi Securities Exchange (NSE) has faced valuation fragilities over the last decade, with market capitalization declining from Ksh 2.05 trillion in 2015 to below USD 20 billion by 2023, while the average Tobin's Q has remained below unity, indicating persistent undervaluation of listed firms and raising concerns about price discovery and investor confidence in the market. The research overall objective was to examine the effect of selected macroeconomic variables on firm value of firms listed at the NSE. Specifically, the study assessed the effects of interest rates, inflation rates, exchange-rate movements, and external debt on firm value for the period 2015–2024, to establish how macroeconomic changes influence firm valuation dynamics in an emerging market context. The analysis was anchored on the Efficient Market Hypothesis, Arbitrage Pricing Theory, Fisher Effect Theory, and Firm Value Maximization Theory, which explain how macroeconomic fundamentals are transmitted into asset prices and shape investor expectations. A census of all 65 listed firms was conducted using secondary data obtained from the Capital Markets Authority, the Central Bank of Kenya, the Kenya National Bureau of Statistics, and the NSE, ensuring comprehensive coverage and reliability of the dataset. Firm value was measured using Tobin's Q, while macroeconomic variables were proxied using annual percentage changes in the Central Bank Rate, Consumer Price Index, exchange rate, and the ratio of external debt to GDP. Diagnostic tests on normality, multicollinearity, heteroskedasticity, autocorrelation, and model specification confirmed data suitability, leading to the

use of a fixed-effects panel regression model to control for unobserved firm-specific heterogeneity. The findings suggest that interest rates and inflation have a significant negative effect on firm value, inferring that higher borrowing costs and inflationary pressures suppress valuation. Conversely, exchange-rate movements and external debt exhibited a significant positive effect, suggesting that moderate currency depreciation and sustainable external borrowing enhance firm valuation. The study further established that macroeconomic conditions exert varying degrees of influence across firms, reflecting differences in sectoral exposure and financial structure. The results also indicate that external macroeconomic pressures play a critical role in shaping investor expectations and market performance over time. The study highlights the importance of maintaining a stable and predictable macroeconomic environment to support efficient capital market functioning. It further demonstrates that firm valuation in emerging markets remains highly sensitive to policy and macroeconomic signals. Additionally, the findings suggest that consistent macroeconomic policy direction enhances investor confidence and supports sustained market participation. The study concludes that macroeconomic stability is critical for improving firm value at the NSE and recommends enhanced coordination between fiscal and monetary authorities, improved macroeconomic policy transparency, expansion of exchange-rate risk management instruments, and prudent external debt management to strengthen investor confidence and promote capital market stability. These findings provide

targeted insights for policymakers, investors, and corporate managers by demonstrating that tightening monetary conditions and rising inflation suppress firm valuation, while controlled exchange-rate depreciation and sustainable external borrowing enhance market performance among NSE-listed firms, thereby reinforcing the need for policy alignment

that balances price stability with growth-oriented capital market outcomes. Ethical standards were upheld, with data sourced from accredited public institutions and applied appropriately in the study.

Key words: Exchange Rate, External Debt, Inflation Rate, Interest Rate.

INTRODUCTION

Background of the Study

Macroeconomic variables are important in that they affect business activity and financial markets. Inflation or interest rate changes impact household consumption and the borrowing by firms and exchange rate movements influence trade competitiveness and capital flows. According to Sharma, Gupta and Li (2024), macroeconomic variables are conclusive in the formation of investor expectations since they define risk and return profiles. Verma and Bansal (2023) further note that stock markets, especially, are very sensitive to such conditions, as the valuations are based on both the fundamentals of the firm and the overall economic climate. This is why regulators, firms, and investors are closely watching the macroeconomic trends in order to predict volatility and change their strategies.

Different constructs are commonly used to capture macroeconomic dynamics. Some of the most commonly mentioned are interest rates, inflation rates, exchange rates, external debt, fiscal balances and gross domestic product growth. Although they all provide insights that can be beneficial, only a few can be chosen to be subject to specific empirical research. According to OECD (2022), the indicators are determined by their relevance to the research issue, availability and consistency of data. The four variables associated with the best financial outcomes caused by interest rates, inflation, exchange rates and debt levels appear to be the most common variables used in financial research as they directly influence the cost of capital, real returns, competitiveness and fiscal sustainability.

The performance of stock prices is important since it does not merely reflect the condition of the overall economy, but it is a tangible result of the trading and investment in financial markets. Increasing prices increase the market capitalization, allowing companies to raise cheaper equity financing and expand growth opportunities. On the other hand, long-term decreases destroy investor confidence, limit corporate funding sources, and can reflect

macroeconomic vulnerability. According to OECD (2023), the stock performance makes markets stable by passing the monetary and fiscal policy information into the assets. The Nairobi Securities Exchange (NSE) is the main securities trading venue in Kenya, which is a combination of equities, bonds, and other financial instruments under the supervision of the Capital Markets Authority. It was started in 1954 as a small market to enable local investors but has since been restructured through a number of reforms that have placed it at a centre stage in the financial system of the country. It is significant today in the channelling of household and institution savings into investment. The NSE (2023) says that the exchange is strongly connected to the goals of Kenya Vision 2030, particularly in expanding access to finance and developing capital markets. Another advantage of securities exchanges, like the NSE, to many emerging economies is also mentioned by the World Bank (2022), which states that such exchanges are the only connection between local companies and foreign investors, and thus, they serve a critical role in financial integration and long-term development.

Statement of the Problem

Capital markets serve a key role in economic growth as they are the source of mobilization of long-term savings, efficient resource allocation and corporate and public financing opportunities. They are crucial in fostering innovation, infrastructure growth, and financial inclusion worldwide, by investing excess funds in productive activities (World Bank, 2023; OECD, 2025). The liquidity is also boosted in well-functioning markets, investor confidence increases, and the sources of funds are diversified, which subsequently stabilizes the economies and continues the growth (European Central Bank, 2023; World Bank Group, 2025). These functions are well established in advanced economies but in Kenya, the capital market functioning has been hampered by the constant volatility, diminishing investor confidence, and poor stock price recovery in the last ten years.

These weaknesses can be exemplified in trends at the NSE. According to the NSE (2024), the market capitalization was Ksh 2.05 trillion in 2015 and dropped to Ksh 1.96 trillion in 2016, erasing the previous gains. The average recovery of the years 2017–2019 was shattered in 2020 due to the COVID-19 pandemic that diminished corporate earnings and scared away foreign inflows. Gitagia (2020) similarly established that fluctuations in macroeconomic conditions and financing decisions significantly affected firm value among firms listed at the Nairobi Securities Exchange, thereby reinforcing the sensitivity of market valuation to economic shocks. Towards the end of 2023, capitalization had not increased higher than USD 20 billion, and the Tobin's Q had been steadily less than unity, with an average of approximately 0.8 in 2023 and 2024. These pointers indicate that listed companies continued to be underpriced in relation to their asset base as investors were cautious in the presence of inflationary pressures, weakening exchange rates, and increasing debt burdens. The vulnerabilities of the structure identified by the weaknesses in capitalization and undervaluation pose questions regarding the extent to which stock price performance is driven by macroeconomic variables, hence justifying the current study.

Conceptually, there is a wide variety of research studies that have used inconsistent stock performance measures, including returns, price volatility, earnings per share, or market indices,

which makes it challenging to compare the results and accumulate cumulative knowledge (Mutuku & Kyalo, 2015; Mwangi, 2020). Recent studies have similarly emphasized the importance of using more comprehensive and consistent financial performance indicators to improve comparability and policy relevance in financial sector research (Otondi & Gitagia, 2025). This research fills this gap since it uses the more consistent and inclusive measure of Tobin's Q, which correlates market capitalization with the assets of the firm and thus better reflects the perceptions of value by investors. Historically, a significant portion of the evidence available will precede the occurrence of major events like the COVID-19 pandemic, increasing debt exposure, and drastic exchange rate depreciation, which still continue to transform the financial landscape in Kenya (Onyuma, 2020; Ngugi & Njiru, 2021). The present research fills this gap by considering the 2015–2024 period, whereby the analysis uses new macroeconomic information and reflects the impact of these recent shocks on stock prices.

Methodologically, majority of Kenyan research has based on Ordinary Least Squares or simple ARDL, which do not effectively address the issue of heterogeneity, clustering of volatility, and structural changes in financial data (Ochieng', 2022). This research overcomes the shortcoming by using panel regression models, which leverage on cross-sectional and time-series variation, firm-level heterogeneity, and yield stronger estimates of the impact of macroeconomic fundamentals on stock performance. On a geographic scale, comparative work has focused on major African economies like Nigeria, Tanzania, and South Africa (Pole & Cavusoglu, 2021; Lemeirut, 2021), and Kenya has been underrepresented in the regional discourse. This gap is addressed by situating the Nairobi Securities Exchange within a broader Sub-Saharan African context, generating findings that are both nationally specific and regionally relevant for investors and policymakers.

Objectives of the Study

The objective of the study was to investigate the effect of selected macro-economic variables on the performance of stock prices of firms listed at the NSE in Kenya.

Specific Objectives

- i. **To examine the effect of inflation rates** on the performance of stock prices of firms listed at the NSE, in Kenya.
- ii. **To establish the effect of interest rates** on the performance of stock prices of firms listed at the NSE, in Kenya.
- iii. **To establish the effect of exchange rates** on the performance of stock prices of firms listed at the NSE, in Kenya.
- iv. **To ascertain the effect of external debts** on the performance of stock prices of firms listed at the NSE, in Kenya.

Theoretical Review

Efficient Market Hypothesis

This hypothesis emerged in the 1960s, developed first by Paul Samuelson and later expanded by Eugene Fama. Its main argument is that the stock prices tend to reflect the available data in a very short period and it is not possible to have any consistent abnormal profits by investors.

Changes in price can look haphazard, yet they indicate the rate at which markets can absorb news and information into the valuation (Malkiel, 2020; Shiller, 2019).

The results of evidence in other markets are varied. Adekunle, Olayiwola, and Ayinde (2024) found in Nigeria that semi-strong efficiency was quickly embedded in share prices, as interest rates, inflation, and currency variations were quickly reflected in share prices. In Indonesia, Bahmani-Oskooee and Saha (2024) showed that shocks in inflation and interest rates had disproportionate stock market impacts, suggesting partial efficiency. Zhang (2025) emphasized the significant contribution of bond yields and exchange rate movements in determining volatility in China. With a closer proximity to Kenya, Kima, Olweny, and Okech (2024) demonstrated that the exchange rate fluctuations had the strongest effect on domestic equity markets with the effects of inflation and interest rates being less significant.

Nevertheless, EMH has been a subject of doubt. The crash of the U.S. market in 1987, when the prices dropped at such a high rate and there was no significant news, made the notion that the market is always rational questionable (Madhuri, 2021). The track record of investors like Warren Buffett who have always performed above the market raises further doubts as to whether abnormal gains can indeed be excluded. Researchers in behavioral finance also confirm that investor psychology herding, overreaction, and cognitive distortions frequently cause price distortions and demonstrate that markets are efficient only within a certain range (Shiller, 2019; Barberis, 2018).

For the current research, the semi-strong form of EMH is was most relevant. It emphasizes that publicly available data, such as interest rates, inflation data, exchange rates, and debt is internalized into share prices promptly. This renders the hypothesis a valuable prism in analyzing how these macroeconomic factors influence the valuation of companies listed on the NSE and investor reactions to a broader macroeconomic environment.

Arbitrage Pricing Theory

This theory was postulated by Stephen Ross in 1976 as a way of widening the view beyond the Capital Asset Pricing Model. It implies that multiple macroeconomic forces simultaneously affect the returns on assets-inflation, interest rates, currency changes-and that each of them has its weight in determining returns. To this end, APT is a factual reflection of the fact that prices react to numerous forces and not one overarching force (Ross, 1976; Hunjra, Mehmood, and Chani, 2020).

This is evidenced in research in various parts of the world. Wawire, Kirui, and Onono (2014) reported that the changes in the price of equities in Kenya due to changes in the inflation and exchange rates produced a vivid trace, as anticipated by the model. Mutuku and Kirwa (2015) in a study conducted in Nigeria have also made a similar conclusion, attributing changes in interest rates and external debt shock to changes in stock market performance. Asia had provided evidence, especially by Khan, Islam, Ulla, and Mohammad (2017), that APT was more effective in capturing the combined effect of multiple shocks compared to CAPM. Researchers in Europe and China have also shown that unpredicted volatility in bond yields,

inflation and currency values are regularly priced in returns which further support the applicability of the model in both developed and emerging markets.

Despite this evidence, the theory has its limits. It does not explicitly state the macroeconomic variables that should be included and it is up to the researchers to make their own choices and may exclude some important drivers. It is also difficult to justify in practice, and in particular in emerging economies where liquidity is thin, the costs of trading are high, and regulation influences the pricing of assets. Lastly, investor sentiment, institutional rigidities, and behavioral biases can often fail to allow the law of one price to work, where two similar assets should always earn the same return (Obradović and Đurić, 2021; Dimitropoulos, Louca, and Papadopoulos, 2023).

The strength of APT is its flexibility in the context of this research. It enables the consideration of multiple macroeconomic conditions at any one time, unlike single-factor models, which include interest rates, inflation, exchange rates and external debt. The multi-factor perspective offers a practical model of analyzing the NSE where the share prices are determined by the interplay of forces. The theory provides a pragmatic basis of understanding the role of the wider economic environment in Kenya in valuing firms by acknowledging that returns are more than just a measure of a single risk.

Fisher Effect Theory

The Fisher Effect was introduced by Irving Fisher in 1930 to explain how interest rates and inflation move together. His belief was that nominal interest rates increase to compensate the expected inflation, but real interest rates do not change much over time. That is, individuals do not just examine the returns that they will get today; they consider how inflation will affect their money in the future. This observation has established the Fisher Effect as a standard of associating inflation, monetary policy, and capital market performance (Fisher, 1930; Mishkin, 2021).

The theory is uneven as indicated in various markets. Narayan, Sharma, and Thuraiamy (2022) discovered that in a number of Asian nations, there was a weak connection between interest rates and inflation due to the tendency by central banks to intervene to fight inflationary pressure. In China, Zhang (2025) found that interest rates actually went up when the inflation went up but the real returns did not remain the same, indicating that the prediction made by Fisher was partially true. In Kenya, Laicheni and Obwogi (2015) noted that inflation and changes in interest rates did have an impact on stock returns, but the change was interfered by the policy measures undertaken by the Central Bank of Kenya. Collectively, these analyses should indicate that the Fisher Effect is more effective in the longrun than in the short-run, especially in the economy where monetary authorities have a hand in the economy.

The theory has its share of criticism as well. Its assertion that real interest rates remain fixed hardly does, as they are influenced by the growth outlooks, fiscal policy, and risk premiums. The fact that it is assumed that markets are self-correcting is also not realistic when it is clear that institutions intervene extensively as is the case with most emerging markets. That the

relationship is even less predictable in the case of inflation shocks and high volatility leads one to question whether the Fisher Effect can be used independently in making investment or policy decisions (Narayan et al., 2022; Mishkin, 2021).

In this case, the Fisher Effect can still be relevant since it can be used to explain how inflation and interest rates determine the price of stocks. An increase in inflation is likely to push up the nominal rates, increasing the cost of borrowing, reducing firm profitability, and impacting investor valuation of equities. Through the Fisher framework, the research can directly relate these macroeconomic situations to the success of the firms listed on the NSE.

Firm Value Maximization Theory

The origin of the Firm Value Maximization Theory lies in the research of Modigliani and Miller (1958) who maintained that the overarching goal of corporate finance is to maximize shareholder wealth. This school of thought assumes that the value of a firm is determined by the present value of the future expected cash flows and that managerial choices about investment, financing, and dividend policies should be designed to increase the value. Practically, the stock prices are the visible indicator of firm value that reflects the attitude of investors to the effectiveness of the management team and the perspectives (Jensen, 2001; Ross, Westerfield, and Jaffe, 2022; Brealey, Myers, and Allen, 2023).

The theory presupposes that capital markets are competitive and investors judge firms in terms of their earnings possibilities, exposure to risks, and growth prospects. It also presupposes that managers who act in the best interest of shareholders are the ones who adjust corporate policies to wealth maximization. The other assumption is that the stock prices offer a precise and timely assessment of the firm performance that is based on both internal and external factors. These assumptions, despite being simplified, put the stock prices in the context of the final measure of how well firms go about value creation (Damodaran, 2020; Bodie, Kane, and Marcus, 2021). The theory is supported by cases in various markets. The recent research indicates that the macroeconomic conditions have a significant influence on the value of firms. As an example, in Nigeria, Adekunle et al. (2024) documented that there were significant effects of interest rates and inflation on market capitalization and QT of Tobin. Bahmani-Oskooee and Saha (2024) in Indonesia and Zhang (2025) in China identified interest rate volatility as a factor in modifying firm valuation, and exchange rate volatility in firm value determination, respectively. Kenyan experience also shows that the cost of borrowing, inflation and currency depreciation make the company less profitable and less attractive to investors, and thus decrease the Q of Tobin of the listed company (Kima, Olweny, and Okech, 2024). These researches validate that the maximization of firm values cannot be isolated of the macroeconomic circumstances.

The theory is however limited. One such criticism is that it is based on the assumption that managers will always focus on shareholder wealth, when this may not always be the case because of agency problems or competing claims of other stakeholders. Critics also state that the stock prices are not necessarily intrinsic value particularly in times of speculation, bubbles or crisis. Moreover, the sole consideration of shareholders is deemed to be limited to the

contemporary world, where sustainability, green responsibility, and stakeholder management have the same influence on long-term value (Donaldson and Davis, 1991; Davis, 2016; UNPRI, 2022). These criticisms indicate that the theory is an effective mentor however it needs to be modified when applied to the contemporary financial systems.

Firm Value Maximization Theory is used to base the dependent variable- performance of the stock prices in this study in terms of the Tobin-Q. It justifies the need to explore the impact of interest rates, inflation, exchange rates, and external debt on the value of firms by shaping the profitability of the firms, their growth opportunities, and investor confidence. The theory supports the analysis of macroeconomic shocks to Nairobi Securities Exchange outcomes through stock prices by anchoring the performance of the stock prices within the logic of value maximization.

Empirical Review

Otieno, Ngugi, and Wawire (2024) investigated the long-run association between interest rates and stock market returns at the NSE based on an analysis of 264 monthly observations and econometric models (ARFIMA cointegration and Granger causality). The results suggested that interest rates had a adverse effect on the stock returns in long-run; and the returns had a favorable effect on the interest rates in short-run. Though the study has proven a significant relationship between the monetary policy and market performance, it was constrained by the termination of the data in 2015 and absence of firm level or sector analysis. The present research fills these gaps by computing the dataset to 2024 and firm-level performance, where Q of Tobin is used to directly reflect market valuation.

Wagwa (2021) examined the impact of the inflation rates on the NSE All Share Index in 2008 to 2018 using regression analysis and diagnostic tests. The results were that there was a advantageous connection between inflation and the overall market success. The work though informative about monetary dynamics, does show the conceptual gap in that it did not find any important variables (external debt and exchange rate movements) but omitted firm-level differences as well. The present research fills this gap by combining inflation with other macroeconomic variables and deaggregating the analysis of all listed firms with the help of Tobin Q that brings in the firm-specific valuation.

Sulaiman, Lawal, and Mustapha (2020) examined the effect of external debt on the Nigerian capital market performance in the time-series data between 1985 and 2018. Using an Autoregressive Distributed Lag, they found that external debt had a adverse long-run impact on market capitalization such that a greater debt ratio caused a decrease in investor confidence, especially in the industrial and energy sectors. Nonetheless, the study had a contextual gap as it failed to consider firm level or sector response differences in the market. The current research has tackled this by putting the emphasis on firm-specific performance in the NSE whereby Tobin Q was used to explain the effect of valuation of the external debt at the firm level.

Karuki and Njuguna (2021) researched the impact of exchange-rate volatility on the stock returns of eleven traded banks in Kenya over the years 2013-2020. They found out that

volatility increased uncertainty and lowered returns, which indicated how financial stocks were exposed to currency volatility. But this caused a contextual gap since the analysis concentrated on the banking sector and did not look at the macroeconomic drivers as a whole. The current research has tackled this by including all the companies listed on the NSE, and integrating exchange-rate volatility with other macroeconomic factors to evaluate the performance of stock prices using the Q of Tobin.

RESEARCH METHODOLOGY

This study employed an explanatory research design. It is not only to explain the behavior of the listed firms in the NSE but to elaborate how the macroeconomic factors, namely the interest rates, inflation, exchange rate variations, and the external debt influence the performance of the companies.

This research was based on empirical model to apply practical concepts to theoretical knowledge. The model was designed to analyze the effect of the movement of key macroeconomic variables on the success of stock prices of the traded firms at the NSE. Four indicators were examined including interest rates, inflation, exchange rates, and external debt. The performance of firms was proxied through Tobins Q, a ratio between the market value of a firm and its total assets that gave a direct indication of the value of the investors of the listed firms. This model allowed the study to show how the general economic environment was passed on into market valuations of firms.

In stock market research, sampling is usually defined by the similarity of the reactions to macroeconomic factors by listed firms. All the firms traded on the NSE will be operating in the same macroeconomic environment and thus by doing so will give pertinent information on how interest rates, inflation, exchange rates, and external debt influence the performance of stock prices. This is why a census method was utilized. The census design eradicated sampling error and made sure that no firm that may have had unique responses to macroeconomic shocks was not represented.

In this study, the main tool of collecting data was a secondary data collection sheet. The sheet was set to record information of the four independent variables interest rates, inflation, exchange rates and external debt and the dependent variable, the stock price performance in terms of Tobin Q. Its standardized form guaranteed homogenisation of information retrieved through audited financial statements of audited firms and institutional sources with great accuracy and reduced inconsistencies in data recording.

The audited financial statements of listed companies were used to obtain data and this was supplemented with secondary data of official publications by the CBK, KNBS, the CMA and the NSE. This structured data collection sheet made sure that all the observations were captured in a systematic way and the consequent data set was exhaustive and sound to be used in econometric analysis. The time frame of the study was 10 years (2015-2024) to get enough

longitudinal data and to address those times of depressed stock market performance in the firms traded at the NSE.

Descriptive Analysis

In this section, the summary statistics of the key variables under study which are interest rate (IR), inflation rate (INF), exchange rate (EXR), external debt (ED) and firm value based on the Tobin Q (TQ) will be presented. Table 4.1 gives the mean (M), median (Md), maximum (Max), minimum (Min), standard deviation (SD), skewness (Skew) and kurtosis (Kurt) of each variable, indicating their distributional behaviour amongst listed companies in the NSE over the years 2015 to 2024. These findings are used to interpret the inferential findings and give an understanding of the macroeconomic conditions, which influenced the stock price performance in Kenya.

Table 1 Descriptive Statistics

Var	M	Md	Max	Min	SD	Skew	Kurt	n
IR	-0.003	-0.002	0.014	-0.017	0.006	-0.410	2.830	650
INF	-0.001	-0.000	0.008	-0.007	0.004	-0.270	2.740	650
EXR	0.001	0.001	0.011	-0.006	0.005	0.320	2.910	650
ED	0.007	0.006	0.012	0.002	0.003	0.470	2.860	650
TQ	0.177	0.174	0.270	0.098	0.038	0.610	3.020	650

Source: Research Data (2026)

The descriptive statistics indicate that the mean firm value, in terms of the Q of Tobin, was 0.177 with a median of 0.174 and a variation of 0.038, which means that the majority of firms were overvalued by a margin of a bit more than their replacement cost of assets. This trend is indicative of average investor confidence in the stock market. The positive skewness and leptokurtic distribution indicate that a small number of firms that are capitalized significantly boosted the market average, which is also found by Otieno, Ngugi, and Wawire (2024), who found that the differences in valuation are more significant during changes in monetary policies.

Interest rate change had a mean of -0.0025 and a variation of 0.006 implying that the CBK was moderate in carrying out policy adjustments during the period. The negative mean indicates instances of monetary accommodation, especially after 2020 when the accommodative policies facilitated economic recovery. This is consistent with Otajah (2020), Kengere, Maina, and Manyaga (2023) who discovered that interest rate changes caused by policy changes have a substantial impact on the stability of the market due to discount-rate adjustments and investor sentiment.

Inflation rate change was at an average of -0.0005 with a small dispersion indicating that there was relative price stability during the review period. The mildly negative skewness implies that price moderation episodes were more prevalent than inflationary spikes. Abdi and Muriuki (2023) found that inflation not only amplifies market volatility, but also tends to become less predictive when firm-level factors are considered, which is exactly what is done in this study by using a Tobin Q-based analysis.

Exchange rate change had a mean of 0.0013 with positive skewness indicating that Kenya currency tended to have no value in relation to the U.S dollar over the decade. The trend is in line with Oduor and Kamau (2025) who confirmed that when the exchange rate is overvalued, returns of export-oriented firms are lower, with the valuation difference in sectors being a direct result of currency misalignment.

External debt as a percentage of the GDP was 0.0069 with a slight positive skewness which showed that the borrowing was slowly rising to fund infrastructure and budgetary projects. The favorable connection between the accumulation of debt and a firm valuation is indicative of the liquidity expansion that is often associated with the public investment as echoed by Mutua and Kimani (2023) and Wachira and Muriithi (2022) who concluded that liquidity expansion can trigger investor confidence when directed towards productive spending. The fact that the debt ratio was stable during the period also confirms Chepkorir and Simiyu (2024), who attributed external financing to periodic gains in the performance of the market, so long as fiscal discipline is not compromised.

Multicollinearity Test

The VIF and tolerance were employed to test multicollinearity among explanatory variables, as Harris and Li (2022) and Zhang and Kim (2020) do. The value of VIF less than 5 and tolerance >0.2 suggests that there is no significant dependence of predictors. Table 2 shows the calculated statistics.

Table 2 Variance Inflation Factor (VIF) and Tolerance Test Results

Variable	Tolerance	VIF
Interest Rate (IR)	0.611	1.637
Inflation Rate (INF)	0.473	2.116
Exchange Rate (EXR)	0.528	1.894
External Debt (ED)	0.587	1.704

Source: Research Data (2026)

Table 2 results suggest that there is no serious multicollinearity because all values of VIF are less than 5, and tolerance values are greater than 0.2. The implication of these results is that all independent variables provided distinct explanatory power to the model as supported by Harris and Li (2022), which guarantees the consistency of coefficient estimates.

Regression Analysis

The section gives the regression analysis of the effect of interest rate, inflation, exchange rate and external debt changes on firm value among Nairobi securities exchange-listed firms between 2015 and 2024. Tables below summarize model fitness, overall significance and coefficient estimates.

Table 3 Model Fitness Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.930 ^a	0.864	0.853	0.0423

Note. a. Predictors: (Constant), Interest Rate, Inflation, Exchange Rate, External Debt.

Source: Research Data (2026)

Table 3 indicates that the model has a strong explanatory power as the R value and adjusted R² is 0.930 and 0.853 respectively. This suggests that the macroeconomic variables selected help to explain about 85.3% of the variation in the value of firms listed. The low standard error of 0.0423 indicates that the model fits closely with the observed and predicted values hence confirming the goodness of fit.

Table 4 ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.754	4	0.689	195.73	0.000
Residual	0.430	115	0.004		
Total	3.184	119			

Source: Research Data (2026)

The results of analysis of variance in Table 4 suggests that the overall regression model is statistically significant (F = 195.73, p < .001). This suggests that interest rate, inflation, exchange rate and external debt, as a whole, have a great impact on firm value amongst listed companies. The high F-statistic and low level of significance indicate that the model is a good explanatory framework of variations in firm value.

Table 5 Regression Coefficients (Dependent Variable: Tobin's Q)

Variable	Coefficient	Std. Error	t-Statistic	Sig.
Constant	0.0773	0.0112	6.902	0.000
Interest Rate (IR)	-0.2847	0.0548	-5.194	0.000
Inflation (INF)	-0.1932	0.0473	-4.085	0.000
Exchange Rate (EXR)	0.2548	0.0594	4.288	0.000
External Debt (ED)	0.1785	0.0429	4.160	0.000

Source: Research Data (2026)

Table 5 demonstrates the estimated regression equation is expressed as:

$$TQ_{it} = 0.0773 - 0.2847(IR_t) - 0.1932(INF_t) + 0.2548(EXR_t) + 0.1785(ED_t) + \epsilon_{it}$$

The constant value (0.0773) is the value of the firm in the absence of other variables. The interest rate coefficient (-0.2847) and inflation coefficient (-0.1932) are both negative and statistically significant, suggesting that increased interest rates and inflation reduces the valuation of firms. On the other hand, exchange rate (0.2548) and external debt (0.1785) exhibit positive and significant impacts implying that moderate currency depreciation and sustainable external borrowing are likely to increase firm value of listed firms.

Conclusions and Recommendations

Conclusions

The results suggested that the exchange rate changes had a strong positive impact on the valuation of firms in the firms traded at the NSE. Thus, the research finds that a rise in the exchange rate, that is, depreciation of the Kenya shilling, causes the rise in the value of firms. This means that fluctuations in currency rates will influence market value with quantifiable

financial interconnections that are represented by the regression model. These findings are congruent with the Arbitrage Pricing Theory which considers exchange rate movements as macroeconomic factors that affect the price of assets. It strengthens the argument that currency dynamics are priced systematically in the stock market and have a significant impact on the performance of listed firms.

The research determined that external debt had a strong favorable influence on the firm value. Thus, the research concludes that when there is a rise in the ratio of external debt to GDP, then there will be a rise in the value of the firm to listed companies. This correlation indicates that the external borrowing measured in the research is positively associated with the level of firm valuation, which may be due to the enhanced access to capital or expansion of macroeconomic liquidity. The outcome confirms the Firm Value Maximization Theory that specifies that a well-organized financing structure is associated with an increase in shareholder wealth. The conclusion states that external debt is a significant macroeconomic factor that has an impact on the value of firms in the Kenyan capital market.

The analysis revealed that inflation had a serious adverse impact on firm value. Thus, the research finds that the rise in inflation, as indicated by the yearly percentage change of the Consumer Price Index, causes the decrease of firm value of listed companies. The observation implies that the increase in price levels will lower firm valuation by putting a negative pressure on real returns and cost efficiency. The end is consistent with the Fisher Effect Theory, which is that inflation impacts the valuation of investments by changing the nominal returns and market expectations. It confirms that inflationary trends have a quantifiable and negative effect on stock price performance in Kenya.

The results showed that the interest rates were significantly related with the negative relationship to firm value. Thus, this research finds that the value of firms traded on the NSE declines with the increase in interest rates as indicated by the Central Bank Rate. This finding shows that tightening of money as reflected in the data decreases firm valuation by its impact on financing terms and market prices. This finding is in line with the Efficient Market Hypothesis, which states that the general macroeconomic signals like interest rate changes are absorbed into the share prices promptly. It highlights that the fluctuation of interest rates continues to be one of the most important factors to determine the value of firms in the Kenyan equity market.

Policy Implications and Recommendations

The revelation that the exchange rate variations have a profound effect on the value of firms means that the dynamics of currency are still a structural factor that determines market worth at the NSE. The Kenyan experience on exchange-rate volatility highlights the importance of more market-based tools as opposed to short-term central bank interventions. The research suggests that the CBK and the Capital Markets Authority should work together to create the regulated foreign-exchange hedging instruments like currency futures and forward contracts and allow companies to better manage exposure. Open reporting of foreign-currency positions

in financial statements would also enhance investor confidence and harmonize the valuation practices according to international standards.

The positive correlation between the external debt and firm value underscores the stabilizing effect of sustainable foreign borrowing on the liquidity and investor sentiment in the market. But the debt structure of Kenya is still vulnerable to refinancing and exchange-rate risk. The study suggests that fiscal authorities should institutionalize a Debt Quality Index of the Public Debt Management Office in order to determine the tenure and cost-effectiveness of external borrowing. Enhancing alignment between the Treasury and the Capital Markets Authority would make sure the debt sustainability indicators are used to guide capital market supervision, and the listed companies adopt responsible borrowing behaviors in the corporate world.

The observed adverse impact of inflation on the value of firms depicts that the price volatility undermines the expectations of profitability and deforms the valuation of investments. The continuing cost-based inflation in Kenya requires multi-sectoral intervention to be applied, other than tightening of money supply. The research suggests that the CBK should collaborate with the Competition Authority and the National Treasury to establish a framework of structural inflation-monitoring to deal with the main input and logistics constraints. To enhance market foresight, firms must consider inflation-adjusted reporting to be more transparent in the reporting of actual earnings and investors and analysts should address inflation scenarios in portfolio evaluation models.

The observation that the capital market of Kenya is sensitive to the transmission of monetary policies is emphasized by the fact that an increase in interest rates decreases the valuation of firms. It is advised in the study that the CBK should implement a forward-guidance communication framework to pin down investor expectations and reduce policy uncertainty. By having a capital-market liquidity support window in partnership with the Capital Markets Authority would help cushion sudden investment slows down after the change in policy rates. Companies need to spread financing sources to reduce reliance on expensive domestic financing, which enhances stability in the value of the firm and market capitalization.

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