International Journal of Management and Organizational Research

Inflation rate risk, equity risk premium on capital market development in Nigeria, (1992-2022)

Akpa Paul Hassan
Department of Accounting, Bingham University, Karu, Nasarawa State, Nigeria

* Corresponding Author: **Akpa Paul Hassan**

Article Info

ISSN (online): 2583-6641
Volume: 03
Issue: 05
September-October 2024
Received: 05-07-2024
Accepted: 10-08-2024
Page No: 18-26

Abstract
Despite the critical role of inflation rate risk and equity risk premium in shaping market dynamics, there remains a significant gap in understanding their specific impact on the development of Nigeria's capital market, raising concerns about the efficacy of current policy interventions and investment strategies. Given this foregoing, this study examined the effect of inflation rate risk, equity risks premium on capital market development using time series data spanned over a period of thirty-one (31) years 1992-2022. The study adopted the ex-post facto research design and the secondary data used in the study was sourced from CBN annual statistical bulletin for the relevant years. Descriptive statistics, Augmented Dickey Fuller Test (ADF), error correlation model and the ordinary least square (OLS) regression techniques were the main statistical tools used to analyse the data with the help of E-view 12 statistical package. The finding of this study revealed that inflation rate risk has negative and insignificant effect on capital market development. Conversely, equity risk premium exerts negative and a significant effect on capital market development in the context of Nigeria respectively. The study recommended that government should implement policies aimed at controlling inflation and promoting sustainable economic growth to mitigate its adverse effects on market dynamics. Also, foster collaboration between researchers, policymakers, and market practitioners to develop evidence-based policies addressing factors driving equity risk premiums and promoting market stability.

Keywords: equity risk premium, gross domestic products, inflation rate risk, and market capitalization

1. Introduction

The Nigerian economy, like many others, is subject to the influence of various macroeconomic factors that shape its capital markets. Among these factors, inflation rate risk and equity risk premium play pivotal roles in determining investor behavior, market dynamics, and overall capital market development. Capital market development in Nigeria remains a key priority for policymakers and financial regulators. A well-developed capital market is essential for mobilizing savings, channeling funds to productive investments, and supporting economic growth. However, challenges such as inadequate market infrastructure, regulatory constraints, and macroeconomic instability have hindered the full realization of Nigeria's capital market potential (Obiageli *et al.*, 2020) [37]. Inflation rate risk refers to the uncertainty associated with changes in the general price level of goods and services over time. In Nigeria, inflation has been a persistent challenge, often fluctuating due to factors such as exchange rate volatility, fiscal policy decisions, and external economic shocks. High inflation rates erode purchasing power, affect investment decisions, and introduce uncertainty into financial markets (Ovat, 2019) [44]. Equity risk premium, on the other hand, reflects the additional return that investors demand for holding equities over risk-free assets. It is a measure of the compensation investors require for bearing the risk associated with investing in the stock market. In Nigeria, where equity markets can be volatile and uncertain, understanding the dynamics of. Currently, there is a notable gap in the literature regarding the specific nexus between inflation rate risk, equity risk premium, and capital market development in the context of Nigeria.

While existing studies have explored various aspects of capital market dynamics and risk factors, there is a lack of comprehensive research that directly addresses the interplay between these critical variables in the Nigerian. By addressing this gap in the literature, this study seeks to contribute valuable empirical evidence and actionable insights to enhance understanding and decision-making in Nigeria's financial markets.

The basic hypothesis underlying this study are stated thus;

Ho_1: Inflation rate risk has no significant effect on market capitalization in Nigeria

Ho_2: Equity risk premium has no significant effect on all shares index in Nigeria

2. Literature Review

2.1. Conceptual Framework

2.1.1. Inflation Rate Risk

According to Aguiar and Gopinath inflation rate risk is a macroeconomic risk that affects businesses and countries, particularly those that are heavily dependent on the global economy. Inflation rate risk involves the risk of a rise in the cost of goods and services as a result of changes in the rate of inflation. It is a major risk to businesses, since it can reduce the purchasing power of customers and thus reduce their ability to purchase goods and services (Agung, 2021) [3]. Inflation rate risk is also a concern for governments, as it can erode their purchasing power and thus their ability to provide services to their citizens.

Asserted that inflation risk also referred to as purchasing power risk, is the risk that inflation will undermine the real value of cash flows made from an investment. Inflation risk can be seen clearly with fixed-income investments. They further opined that, if you buy a bond with a coupon rate of 3%, then this would be the nominal return of your investment. However, if the inflation rate is at 2%, your purchasing power is only really increasing by 1%.

2.1.2. Equity Risk Premium

According to Dake (2020) [13], the term equity risk premium refers to an excess return that investing in the stock market provides over a risk-free rate. Dake (2020) [13], further stated that, this excess return compensates investors for taking on the relatively higher risk of equity investing. Dake (2020) [13], goes to say therefore that size of the premium varies and depends on the level of risk in a particular portfolio Stocks are generally considered high-risk investments. Invariably, investing in the stock market comes with certain risks, but it also has the potential for big rewards. So, as a rule, investors are compensated with higher premiums when they invest in the stock market. Whatever return you earn above a risk-free investment such as U.S. Treasury bill (T-bill) or a bond is called an equity risk premium.

2.1.3. Capital Market Development

The capital market is a profoundly specific and coordinated financial market and indeed essential agent of economic growth and development (Odetayo & Sajuyigbe, 2012) [38], due to its capacity, its ability to facilitate and mobilize saving and investment (Okodua&Ewetan, 2013) [14]. Shallu (2014) [50] describes the capital market as a market were borrowing and lending of long-term funds takes place involving both debt and equity like shares, debentures, bonds. Posited that capital market adds to financial growth through the specific services it performs either directly or indirectly, notable among these functions are: mobilization of savings, creation of liquidity, risk diversification, improved dissemination, acquisition of information, and enhanced incentive for corporate control Holistically, capital market is a market for sourcing of medium and long-time period funds by way of both the authorities and personal sectors of the financial system.

2.2. Empirical Review

Akpa, (2022) [4] assessed the impact of portfolio risk on capital market development in Nigeria, empirically examined the impact of systematic risk on capital market capitalization in Nigeria from 1986-2020. Time series data and econometric tools were used to test for the stationarity and causality effect. Auto Regressive Distributed Lag Model (ARDL) and Error Correction Model (ECM) techniques were used to examine the short run and long run impact and relationship between Portfolio Risk and Annual Capital Market Capitalization in Nigeria (ACMCN). The study revealed that both in the long run and short run Inflation Rate (INFR) had positive relation with Annual Capital Market Capitalization in Nigeria (ACMCN) and it was statistically significant in explaining changes in Annual Capital Market Capitalization in Nigeria (ACMCN). On the other hand, at long and short run, Interest Rate in Nigeria (INTR) had negative relation with Annual Capital Market Capitalization in Nigeria (ACMCN) and it was statistically insignificant in explaining changes in Annual Capital Market Capitalization in Nigeria (ACMCN). Therefore, the study recommends that government should improve the efficiency and effectiveness of portfolio risk management in Nigeria since it was statistically significant in determining the improvement of Annual Capital Market Capitalization in Nigeria (ACMCN). The study of Akpa, (2022) [4] only focused on portfolio impact on capital market development, while this present study is more robust as it will evaluate the effect of inflation rate risk and equity risk premium on capital market development in Nigeria.

Fapetu *et al*., (2021) [22] examined the relationship between capital market performance and the macroeconomic dynamics in Nigeria, and it utilized secondary data spanning 1993 to 2020. The data was analyzed using vector error correction model (VECM) technology. The result revealed a significant long-run relationship between capital market performance and macroeconomic dynamics in Nigeria. The study observed long - run causality running from the exchange rate, inflation, money supply, and unemployment rate to capital market performance indicator in Nigeria. The result supports the Arbitrage Pricing Theory (APT) proposition in the Nigerian context. The theory stipulates that the linear relationship between an assets expected returns and the macroeconomic factors whose dynamics affect the asset's risk can forecast an asset's returns. In other words, the result of this study supports the proposition that the dynamics in the exchange rate, inflation, money supply, and unemployment rate influence the capital market performance. The study validates the recommendations of Arbitrage Pricing Theory (APT) in Nigeria. The study of Fapetu *et al*., (2021) [22] analyzed the relationship between capital market performance and the macroeconomic dynamics in Nigeria using vector error correction model (VECM) technology. While this present study will investigate the effect of inflation rate risk and equity risk premium on capital market using ordinary least square analysis and also checking for the stationarity of the variables.

Philip examined the effect of systematic risk and return on equity of quoted manufacturing firms in Nigeria. Panel data was sauced from financial statement of the manufacturing firm's from and Central Bank of Nigeria Statistical Bulletin from 2010-2019. Return on equity was modeled as function of interest rate risk, exchange rate risk, equity price risk and consumer price risk. Panel data methodology was employed while fixed effects and random effects estimates were tested using the Hausman test. Panel unit roots and panel co-integration analysis were conducted on the study. The results found that 83.8 percent variation on return on equity of the manufacturing firms can be explained by variation on the systematic risk indicators as formulated in the model. Interest rate risk has positive but no significant effect on the return on equity, exchange rate risk have positive and significant effect on the return on equity, equity price risk have positive and no significant effect on return on equity while consumer price risk have negative and significant effect on return on equity of the quoted manufacturing firms. From the findings, the study concludes that there is significant relationship between systematic risk and return on equity of the manufacturing firms. It recommends that systematic risk management implementation should not just be formulated but strategic and tactical measures should be put in place to absorb, retain and transfer systematic risk. Systematic risk management should be considered as part of strategic plans which need to be reviewed on a more frequent basis. Macroeconomics policies should directed towards stabilizing Nigerian exchange rate to avoid depreciating naira exchange rate against key currencies that exposes the firms to exchange rate risk. The study of Philip focused of the effect of systematic risk on only one industry (manufacturing firms) while this present study will focus on the entire industry on the capital market development.

Udo *et al.,* (2020) [54] evaluated the effect of capital market development on the economic growth of Nigeria using data on Real Gross Domestic Product as a proxy for economic growth while capital market variables constitute the independent variables. This includes Market Capitalization, All Share Index, Number of Listed Securities and the number of listed companies The study adopted an ex-post-facto research design which utilized secondary data for the period 1983 -2016. While an Augmented Dickey-Fuller unit root test was used for preliminary analysis; an Autoregressive Distributed Lag (ARDL) was used for the model estimation. A combination of ARDL bounds test for co-integration, ARDL short and long run error correction models were used for estimation. All the tests helped to confirm the integrity of our models. Findings of the study indicate that, the Number of listed Securities and All Share Index maintained a significant relationship with economic growth in Nigeria both in the short and long runs. Based on the findings of study it was recommended that government should help to remove all impediments to stock market development in the form of tax, legal and regulatory barriers as they act as disincentives to investments in the capital market. The study of Udo *et al.,* (2020) [54] is limited and outdated in terms of time frame (1983 -2016). Therefore, this present finding will represent the latest happening in the Nigeria capital market by studying the relationship from 1992 to 2022.

2.3. Theoretical Framework

2.3.1. Modern Portfolio Theory

Modern Portfolio Theory (MPT), developed by Harry Markowitz in the 1950s, offers a foundational framework for understanding the dynamics of investment portfolios in the context of inflation rate risk, equity risk premium, and capital market development in Nigeria. Inflation rate risk, characterized by the uncertainty surrounding changes in purchasing power due to inflation, is addressed within MPT by advocating for the inclusion of assets that offer inflation protection, such as inflation-linked bonds or real assets like real estate and commodities. Equity risk premium, representing the additional return expected from investing in stocks over a risk-free asset, is managed through diversification across different asset classes, as MPT emphasizes the importance of spreading risk to optimize returns. Furthermore, MPT underscores the critical role of efficient capital markets in facilitating portfolio diversification and providing investors with access to a broad spectrum of investment opportunities. As Nigeria's capital market continues to mature and evolve, adhering to MPT principles can aid investors in navigating the complexities of risk and return, potentially leading to more informed investment decisions and improved long-term performance.

2.3.2. Efficient Market Theory

Efficient market theory was put forward by (Fama, 1970) [20]. This study is anchored on efficient market theory. Fama argues that the primary role of any market is allocation of ownership of the economy's capital stock. He opined that an ideal market would provide accurate signals of resource allocation. He explained than in a market, firms make production and investments decisions and investors chose securities that represent ownership of firms. Apiyeva (2007) [8] utilized the theory and argued that a market which the securities price fully reflects all available information is an efficient market. Jensen (1968) [29] opines that it is impossible to beat the market. This implies that an investor cannot make abnormal profits by trading in the stock markets. Tursoy, *et al.,* (2008) [53] indicates that stock prices follow a random walk and it is therefore not possible to accurately predict prices based on the past trends. The theories categorises markets based on their efficiency and brings out three forms of market efficiency. The weak form of market is a level of efficiency which prices reflect all past information that is available.

3. Methodology

To estimate the concerned models and examine the statistical significance of the variables that relate to inflation rate risk and equity risk premium and capital market development, this study employed ex-post facto research design using annual time series data from 1992 - 2022. The variables are obtained from the Central Bank of Nigeria statistical bulletin. Various econometric techniques have been employed in estimating the effects of exchange rate and interest rate risks and capital market development. This study used Autoregressive Distributed Lag Model (ARDL) with the help of E-view 12. This is because the ARDL method yields consistent and robust results both for the long-run and short-run relationship between series with different integration orders performed to know if the series were stationary or not. The lag selection test was also done to determine the appropriate lag length for the analysis.

To examine if exchange and interest rate risks on capital market development in Nigeria, the study modifies and adapted the model developed by Ifionu and Ibe (2015) [28]. In

accordance with the models, the model for this study is as follows:
The mathematical form of the model is given as:

$$\mathbf{Mcap = \beta_0 + \beta_1 IRR + \beta_2 ERP + \beta_3 GDP + \mu t} \quad \textbf{(i)}$$

Where

Mcap= Market Capitalization;
IRR = Inflation Rate Risk
ERP = Equity Risk Premium
GDP = Gross Domestic Product
t = Time (1992, 1993-2022)
μt = Stochastic Error Term.

Table 1: Definition of Variables

Variable	Type	Measurement	Source
Variable of Interest			
Market Capitalization (Mcap)	Dependent	This measure the level of stock market development	Obiageli *et al*., (2020) [37]
Inflation Rate Risk (IRR)	Independent	Is measure as average consumer cost of living in percentage	Fahmi *et al*., (2017)
Equity Risk Premium (ERP)	Independent	Is calculated as the difference between the estimated real return on stock and the estimated real return on safe bonds, by subtracting the risk-free return from the expected asset return (percentages)	Hooy and Robert (2015)
Gross Domestic Product (GDP)	Control	Is calculated as private consumption + gross private investment + government investment + government spending + (exports –imports).	Mutwiri (2019) [35]

***Source*:** Researcher Computation (2024)

Apriori Expectation

A prior expectation for this model would anticipate that market capitalization (Mcap) would be positively influenced by equity risk premium (ERP) and gross domestic product (GDP), while the impact of inflation rate risk (IRR) might be less certain, given the uncertainty encapsulated in the stochastic error term (μt).

4. Result and Discussion

4.1.1. Descriptive Statistics

In order to have glimpse of the data used in the study, a first pass at the data in form of descriptive statistics was carried out. This gives us a good idea of the patterns in the data used for the analysis. The summary statistics is presented in Table 2.

Table 2: Descriptive Analysis Result

	MCAP	IRR	ERP	GDP
Mean	8858238.	18.61988	9.129032	46030.07
Median	8900100.	12.87660	6.200000	43837.39
Maximum	31520550	72.83550	23.90000	84293.61
Minimum	483.4800	5.388000	1.900000	19620.19
Std. Dev.	8283995.	16.48745	6.323090	21119.09
Skewness	0.580636	2.100828	0.748048	0.123749
Kurtosis	2.831183	6.356984	2.346888	1.520205
Jarque-Bera	1.778691	37.35920	3.442106	2.907604
Probability	0.410925	0.000000	0.178878	0.233680
Sum	2.75E+08	577.2164	283.0000	1426932.
Sum Sq. Dev.	2.06E+15	8155.081	1199.444	1.34E+10
Observations	31	31	31	31

***Source*:** E-View 12 Output (2024)

The table presents summary statistics for four variables: Market Capitalization (MCAP), Inflation Rate Risk (IRR), Equity Risk Premium (ERP), and Gross Domestic Product (GDP). Each variable is characterized by its mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera statistic, and associated probability. Analysis of skewness and kurtosis provides insights into the distributional properties of the data. Positive skewness indicates a right-skewed distribution, implying that there may be more extreme values on the higher end of the scale. Conversely, negative skewness would suggest a left-skewed distribution. Kurtosis measures the peakedness or flatness of the distribution; values greater than 3 indicate leptokurtosis (higher peakedness), while values less than 3 suggest platykurtosis (flatter distribution).

The Jarque-Bera test assesses whether the data distribution resembles a normal distribution based on skewness and kurtosis. A higher Jarque-Bera statistic with a lower probability indicates a departure from normality. Examining the variables individually, MCAP displays a right-skewed distribution with leptokurtosis, suggesting the presence of outliers and a higher peak in the distribution. IRR exhibits positive skewness and leptokurtosis, indicating a right-skewed distribution with more extreme values on the higher end. ERP also shows positive skewness and leptokurtosis, suggesting a right-skewed distribution with a higher peak. GDP demonstrates nearly symmetrical distribution with slight positive skewness and a moderately peaked shape.

Overall, based on the Jarque-Bera test results, none of the variables exhibit a normal distribution. The presence of skewness, kurtosis, and the results of the Jarque-Bera test indicate departures from normality, suggesting that these variables may follow non-normal distributions, which is common in financial and economic data.

4.1.2. Correlation Analysis

Table 3 presents correlation values between dependent and independent variables and the correlation among the independent variables themselves. These values are generated from Pearson Correlation output. The table contains correlation matrix showing the Pearson correlation coefficients between the dependent and independent

variables and among the independent variables of the study. Table 3 shows the correlation between the dependent variable, MCAP and the independent variables of IRR and ER Pamong the independent variables themselves on the other hand. Generally, a high correlation is expected between dependent and independent variables while a low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent variables of 0.80 is considered excessive, and thus certain measures are required to correct that anomaly in the data.

Table 3: Correlation Analysis Result

Correlation				
Probability	**MCAP**	**IRR**	**ERP**	**GDP**
MCAP	1.000000			

IRR	-0.398555	1.000000		
	0.0264	-----		
ERP	0.622132	-0.161633	1.000000	
	0.0002	0.3850	-----	
GDP	0.895956	-0.443161	0.795773	1.000000
	0.0000	0.0125	0.0000	-----

***Source*:** E-View 12 Output (2024)

The correlation table reveals significant relationships among the variables. Market Capitalization (MCAP) demonstrates a strong positive correlation with Gross Domestic Product (GDP), indicating that as the GDP of the economy grows, the market capitalization tends to increase as well. Additionally, there is a moderate positive correlation between MCAP and Equity Risk Premium (ERP), suggesting that higher market capitalization may be associated with higher equity risk premiums, reflecting increased investor confidence or risk perception in the market.

Moreover, Inflation Rate Risk (IRR) exhibits a negative correlation with both MCAP and GDP, implying that higher inflation rates may correspond to lower market capitalization and GDP growth. This negative relationship underscores the adverse effects of inflationary pressures on market performance and economic expansion.

Furthermore, the strong positive correlation between GDP and Equity Risk Premium (ERP) suggests that higher GDP levels may coincide with higher equity risk premiums, indicating potential market risk or investor caution during periods of economic expansion.

In essence, these correlations highlight the interconnectedness of market capitalization, inflation rate risk, equity risk premium, and GDP, emphasizing the importance of considering macroeconomic factors in assessing market dynamics and investment decision-making. These relationships underscore the need for policymakers, investors, and financial analysts to closely monitor and evaluate macroeconomic indicators to navigate market conditions effectively and mitigate risks associated with inflation and market volatility.

4.3. Unit Root Test

The unit root test adopted here is the Augmented Dickey Fuller Test and the results are shown in Table 3 below:

Table 3: Summary of ADF unit Root Test for the series of MCP, IRR, ERP and GDP

Variables	Lags	T-statistic	5% critical value	P-Value	Integrated Order	Remarks
MCAP	0	-1.678647	-2.963972	0.4314	I (0)	Not Stationary
	1	-7.307541	-2.967767	0.0000*	I (1)	Stationary
IRR	0	-2.176229	-2.963972	0.2185	I (0)	Not Stationary
	1	-4.446335	-2.981038	0.0017*	I (1)	Stationary
ERP	0	-0.356792	-2.963972	0.9044	I (0)	Not Stationary
	1	-5.042843	-2.967767	0.0003*	I (1)	Stationary
GDP	0	-1.280655	-3.004861	0.6195	I (0)	Not Stationary
	1	-4.404258	-2.948404	0.0013*	I (1)	Stationary

***Source*:** Researchers Computation (E-view 12) 2024

It is evidenced from Table 3, that all the variables MCP, IRR, ERP and GDP were all found to be stationary at first difference respectively; that is integrated at order 1,and at 5% level of significance. Since all the variables were found to be stationary at first different orders, it was logical for the study to conduct Johansen Co-integration test to validate the dataset. Overall, conducting the Johansen Co-integration test is logical in this scenario as it allows for the validation of potential long-term relationships among the variables, providing deeper insights into the underlying dynamics of the dataset and facilitating more robust modeling and analysis.

Johansen Co-integration Analysis

Decision Rule

The decision rule for Johansen Co-integration Analysis is to reject the null hypothesis of no co-integration if the Trace statistic exceeds the critical value at a 5% level of significance.

Table 4: Johansen Co-integration Analysis

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.655893	51.35439	47.85613	0.0226
At most 1	0.357068	20.41712	29.79707	0.3950
At most 2	0.209742	7.607322	15.49471	0.5083
At most 3	0.026566	0.780843	3.841466	0.3769

***Source*:** E-View 12 Output (2024)

The results indicate that the null hypothesis of no co-integration is rejected for the scenario "None," as the Trace statistic exceeds the critical value at the 5% significance level with a probability of 0.0226. This suggests the presence of at least one co-integrating equation among the variables.
However, for the scenarios allowing for up to one, two, or three co-integrating equations, the Trace statistics do not surpass the corresponding critical values at the 5% significance level. This implies failure to reject the null hypotheses of at most one, two, or three co-integrating equations, respectively.In essence, the results suggest evidence of co-integration in the case of at least one co-integrating equation, indicating a long-term relationship among the variables.

Table 5: Ordinary Least Square Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-815065.8	1737120.	-0.469205	0.6435
D(MCAP(-1))	0.774692	0.625396	1.238723	0.2285
D(IRR(-1))	4672.537	91960.63	0.050810	0.9599
D(ERP(-1))	-317762.4	331246.4	-2.959293	0.0478
D(GDP(-1))	586.3283	686.8115	0.853696	0.4025
ECM(-1)	-1.258952	0.678841	-1.854562	0.0771
R-squared	0.232079	Mean dependent var		622408.8
Adjusted R-squared	0.057552	S.D. dependent var		5142754.
S.E. of regression	4992574.	Akaike info criterion		33.87221
Sum squared resid	5.48E+14	Schwarz criterion		34.15768
Log likelihood	-468.2109	Hannan-Quinn criter.		33.95948
F-statistic	1.329758	Durbin-Watson stat		2.232652
Prob(F-statistic)	0.288440			

***Source*:** E-View 12 Output (2024)

The table presents the results of a regression analysis, indicating the coefficients, standard errors, t-statistics, and probabilities associated with each variable.The coefficient for the constant term (C) is negative but not statistically significant, suggesting that the intercept does not significantly contribute to explaining the variation in the capital market development.
The coefficients for the lagged differences of Market Capitalization (MCAP), Inflation Rate Risk (IRR), Equity Risk Premium (ERP), and Gross Domestic Product (GDP) are presented as D(MCAP(-1)), D(IRR(-1)), D(ERP(-1)), and D(GDP(-1)), respectively. Among these lagged differences, only D(ERP(-1)) has a statistically significant negative coefficient, implying that a one-unit increase in the lagged difference of ERP is associated with a decrease in the market capitalization, holding other variables constant.The coefficient for the Error Correction Term (ECM) is negative but not statistically significant, suggesting that the speed of adjustment to restore equilibrium after a deviation from long-run relationships is not statistically significant in this model.The R-squared and adjusted R-squared indicate the proportion of variance in the dependent variable explained by the independent variables, with a value of 0.232079 suggesting that the model explains approximately 23.2% of the variance in the dependent variable.
The F-statistic tests the overall significance of the regression model, with a p-value of 0.288440 indicating that the model is not statistically significant at the conventional significance level of 0.05. The Durbin-Watson statistic has a value of 2.232652, which is close to 2. This suggests that there is no significant autocorrelation present in the residuals of the regression model. Therefore, the independence assumption of the regression analysis is likely satisfied, indicating that the model's estimates are reliable and that the model adequately captures the relationships between the variables.

CUSUM Test

The CUSUM test is used to detect structural changes or parameter instability in a time series data by analyzing the cumulative sum of the recursive residuals.

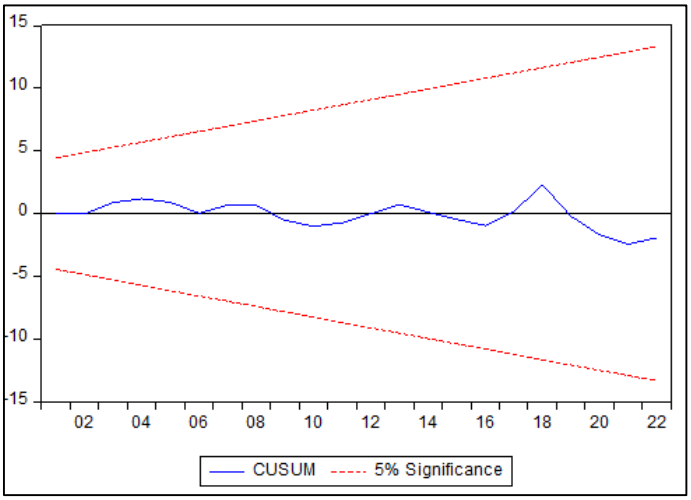

Fig 1: CUSUM Test

In an attempt to ensure that the OLS model is well fitted, the study employs cumulative sum (CUSUM) test developed by Durbin, Brown, and Evans. The test decision is that, if the plotted CUSUM statistics lies within 5% significance level, the coefficient estimates are accepted. Figure 1 shows that the CUSUM plot falls within the 5%level of significant (indicated by the two red lines).This shows that the model is stable and not spurious.

Discussion of Findings

The finding from the first hypothesis reveals that inflation rate risk has no significant effect on market capitalization is a notable outcome with several implications in the context of financial markets and economic theory. One potential explanation drawn from existing literature is that investors in certain markets may adopt strategies to hedge against inflation risk, thereby mitigating its impact on market

capitalization. For instance, investors may allocate their portfolios to inflation-protected securities or assets that have historically exhibited lower sensitivity to inflationary pressures. This behavior may lead to market capitalization being less affected by fluctuations in inflation rates, as investors proactively adjust their investment decisions to manage inflation risk.

Moreover, empirical studies (Udo *et al.*, 2020,) [54] have shown that the relationship between inflation and stock market performance can be complex and may vary across different economic environments. While high inflation rates can erode purchasing power and reduce corporate profitability, leading to lower market capitalization in some cases, other factors such as monetary policy responses, economic growth prospects, and investor sentiment may also influence market dynamics. Therefore, the absence of a significant effect of inflation rate risk on market capitalization in this study could reflect the mitigating effects of these factors, which offset the direct impact of inflation on market valuations. From a financial perspective, the finding suggests that market participants may not perceive inflation rate risk as a primary determinant of market capitalization in the studied context. This study outcome aligns with the study of Ifionu and Ibe (2015) [28].

The study's discovery that equity risk premium (ERP) has a negative significant effect on capital market development suggests that higher perceived risk in emerging markets may deter investment, hindering market growth. Existing literature supports this, indicating that factors like regulatory uncertainty and investor behavior contribute to elevated risk premiums, dampening investor confidence and liquidity. Consequently, policymakers should focus on reducing risk perceptions through regulatory enhancements and investor education initiatives to stimulate market participation and foster capital market development.

5. Conclusion and Recommendations

The study's findings reveal that inflation rate risk doesn't significantly impact market capitalization, while equity risk premium negatively affects capital market development. These outcomes highlight the complexities of financial markets, where inflation risk may be managed by investors, mitigating its direct impact on market valuation. Conversely, elevated equity risk premiums, driven by factors like regulatory uncertainty and investor behavior, may impede market growth by deterring investment.

Based on the statistical evidence and the conclusions of this study, the following recommendations were made.

1. Implement policies aimed at controlling inflation and promoting sustainable economic growth to mitigate its adverse effects on market dynamics.
2. Foster collaboration between researchers, policymakers, and market practitioners to develop evidence-based policies addressing factors driving equity risk premiums and promoting market stability.

Appendix A

Table 1: Data Presentation

YEAR	MCAP	IRR	ERP	GDP
1992	483.48	44.59	5.2	19,620.19
1993	638.23	57.17	4.3	19,927.99
1994	993.54	57.03	6.4	19,979.12
1995	1,981.19	72.84	6.2	20,353.20
1996	3,092.50	29.27	6.1	21,177.92
1997	3,966.71	8.53	5.3	21,789.10
1998	3,134.60	10.00	7.2	22,332.87
1999	3,003.90	6.62	5.1	22,449.41
2000	4,556.56	6.93	4.5	25,430.42
2001	7,212.65	18.87	3.5	26,935.32
2002	8,423.30	12.88	3.1	31,064.27
2003	8,359,300	14.03	3.5	33,346.62
2004	6,112,500	15.00	3.4	36,431.37
2005	8,900,100	17.86	3.2	38,777.01
2006	5,120,900	8.23	1.9	41,126.68
2007	13,181,700	5.39	2.8	43,837.39
2008	9,563,000	11.58	3.4	46,802.76
2009	7,030,800	12.56	3.5	50,564.26
2010	9,918,200	13.72	17.5	55,469.35
2011	10,275,300	10.84	18.1	58,180.35
2012	14,800,900	12.22	13.7	60,670.05
2013	19,077,400	8.48	12.2	63,942.85
2014	16,875,100	8.06	14.8	67,977.46
2015	17,003,400	9.01	11.8	69,780.69
2016	16,185,700	15.68	11.9	68,652.43
2017	21,128,900	16.52	12.3	69,205.69
2018	31,520,550	12.09	12.7	70,536.35
2019	12,900,000	11.40	14.7	72,094.09
2020	13,000,000	13.25	19.7	70,800.54
2021	16,185,700	16.95	21.1	73,382.77
2022	17,428,441	19.64	23.9	84,293.61

***Source*:** CBN Statistical bulletin on Public Finance and Real Sector, (2022)

6. References

1. Adebowale EA, Akosile AI. Interest rate, foreign exchange rate, and stock market development in Nigeria. Binus Business Review. 2018;9(3):247-53.
2. Adekunle OA, Alalade YSA, Okulenu SA. Macroeconomic variables and its impact on Nigerian capital market growth. International Journal of Economics and Business Management. 2016;2(2):22-37.
3. Agung W. How does company performance, systematic risk, and capital structure affect corporate value: empirical study on the Indonesian capital market? International Journal of Economics and Management Studies. 2021;8(10):45-50.
4. Akpa PH. The impact of portfolio risk on capital market development in Nigeria. Bingham University Journal of Accounting and Business. 2022;7(1):165-81.
5. Amedu AJ. Administration of Nigerian capital market and national development. Online Publication of Ph.D. Thesis, Department of Public Administration and Local Government, University of Nigeria, Nsukka; c2018.
6. Anyamaobi C. Systematic risk and foreign portfolio investment: evidence from Nigeria capital market. International Journal of Social Sciences and Management Studies. 2022;1(3):100-13.
7. Anyanwu JC. Monetary Economics: Theory, Policy, and Institutions. Onitsha: Hybrid Publishers; 2018.
8. Apiyeva D. The determinants of stock market performance in emerging economies. Journal of Business and Finance. 2007;23(2):389-416.
9. Aremu OS, Suberu OJ, Ladipo OO. Impact of the Nigerian capital market operations on local investments in Nigeria. Journal of Research in International Business Management. 2017;1(8):258-61.
10. Bello AA, Raheem IO. Impact of financial meltdown on the efficiency of the Nigerian capital market. American Research Journal of Humanities & Social Science. 2021;4(11):42-8.
11. Bernanke BS, Gertler M. Monetary policy and asset price volatility. Working Paper 7559. National Bureau of Economic Research; c2020.
12. Central Bank of Nigeria. Nigeria capital market: Highlights of CBN Statistical Bulletin. Retrieved from https://www.cbn.gov.ng/Publications/Statistical-Bulletin/Highlights-of-CBN-Statistical-Bulletin.pdf; 2022.
13. Dake K. Orienting dispositions in the perception of risk: an analysis of contemporary worldviews and cultural biases. Journal of Cross-Cultural Psychology. 2020;22(61):15-26.
14. Dedunu H. Financial variables impact on common stock systematic risk. International Journal of Scientific Research and Innovative Technology. 2017;4(10):52-67.
15. Deeson A. Risk and uncertainties. Available from: www.nytime.com2011/Wikipedia; c2021.
16. Dickson B, Muragu K. Corporate performance measurement: a tool for improved management. Journal of Business Strategy. 1994;15(5):36-43.
17. Donwa P, Odia J. An empirical analysis of the impact of the Nigerian capital market on her socio-economic development. Journal of Social Sciences. 2010;24(2):135-42.
18. Ezeanyeji C, Maureen I. Foreign portfolio investment on economic growth of Nigeria: an impact analysis. International Journal of Academic Management Science Research. 2019;3(3):24-38.
19. Fama E. Efficient stock markets: a review of theory and empirical work. Journal of Finance. 1976;25:383-416.
20. Fama EF. A review of theory and empirical work. Journal of Finance. 1970;5(2):115-46.
21. Fama EF, French KR. Permanent and temporary components of stock prices. The Journal of Political Economy. 1988;96(2):246-73.
22. Fapetu O, Ojo SM, Balogun AA, Asaolu AA. Capital market performance and macroeconomic dynamics in Nigeria. Fuoye Journal of Finance and Contemporary Issue. 2021;1(1):29-37.
23. Gatuhi SK. Macroeconomic factors and stock market performance in Kenya. International Journal of Medical and Biomedical Studies. 2015;5(3):28-37.
24. Goetzmann WN. Equity portfolio diversification. Review of Finance. 1997;1(2):433-63.
25. Gujarati D. Basic Econometrics. 4th ed. Singapore: McGraw-Hill; c2004.
26. Gworo CO. The relationship between trading volumes and price volatility of shares in the Nairobi Securities Exchange. International Journal of Research and Development Organization. 2016;2(4):59-74.
27. Handa C. Irrelevance of open market operations in some economies with government being dominated in rate of return. Journal of Fundamental and Applied Life Sciences. 2005;5(2):388-93.
28. Ifionu EP, Ibe RC. Inflation, interest rates, real gross domestic product, and stock prices on the Nigerian Stock Exchange: a post SAP impact analysis. Research Journal of Finance and Accounting. 2015;6(14):215-23.
29. Jensen MC. The performance of mutual funds in the period 1945-1964. Journal of Jomo Kenyatta University of Agriculture and Technology. 1968;2(3):5-11.
30. Krugman P. Financing versus forgiving a debt overhang: some analytic notes. Journal of Development Economics. 1994;29(7):253-68.
31. Kubinschi M, Barnea D. The systematic financial shock transmission mechanism in an empirical macro-financial model. Romanian Journal of Economic Forecasting. 2016;19(4):79-94.
32. Lambe I. Essentials of Financial Management, 2nd ed. Nasarawa State: Kajolam; c2021.
33. Mann SC. Market Microstructure Theory. 1996.
34. Musaab MN, Saeed SJ, Mosavi A. The effect of marketing investment on firm value and systematic risk. Journal of Open Innovation. 2021;7(1):1-17.
35. Mutwiri NM. The relationship between systematic risk factors and performance of the stock market in Kenya. Global Journal of Business and Social Science Review. 2019;5(3):6-15.
36. Nguyen TT. Macroeconomic Indicators and the Stock Market Returns in Emerging Economies: The Case of Vietnam. London: Cardiff Metropolitan University; c2016.
37. Obiageli AE, Nwokeji ENA, Ozua LA. The effect of financial variables on systematic risk (beta) of money deposit banks in Nigeria. International Journal for Innovative Research in Multidisciplinary Field. 2020;6(11):10-9.
38. Odetayo TA, Sajuyigbe AS. Impact of Nigerian capital market on economic growth and development. International Journal of Arts and Commerce. 2012;1(5):12-25.

39. Odogu LI, Tonye O, Disu BS. The effect of systematic risk and stock market performance in Nigeria. Research Journal of Finance and Accounting. 2016;2(2):71-88.
40. Okodua H, Ewetan O. Stock market performance and sustainable economic growth in Nigeria: a bounds testing cointegration approach. Journal of Sustainable Development. 2013;6(2):52-61.
41. Okoye VO, Nwisienyi KJ. The capital market contributions towards economic growth and development: the Nigerian experience. Global Advanced Research Journal of Management and Business Studies. 2013;1(2):21-32.
42. Olson E. Nigerian capital markets: an overview. Journal of African Business. 2005;6(2):35-46.
43. Omotor A. The Nigerian capital market: a financial analysis. European Scientific Journal. 2017;13(23):58-71.
44. Ovat VU. An analysis of the performance of the Nigerian capital markets. International Journal of Business and Management Reviews. 2019;11(3):479-89.
45. Pudji A. Influence of fundamental factors and systematic risk on stock prices of companies listed in the Indonesian stock exchange. European Research Studies Journal. 2017;20(4):230-40.
46. Rahmadina. The impact of company size on systematic risk based on capital asset pricing models in food and beverages companies listed on the Indonesia stock exchange. International Journal of Applied Finance and Business Studies. 2021;9(1):1-7.
47. Ross SA. The arbitrage theory of capital asset pricing. Journal of Economic Theory. 1976;13(3):341-60.
48. Ross SA. The arbitrage theory of capital asset pricing. Journal of Economic Theory. 1976;13(1):341-60.
49. Ross S, Westerfield R, Jordan B. Fundamentals of Corporate Finance, 10th ed. New York: McGraw-Hill Irwin; c2013.
50. Shallu F. Indian capital market and impact of SEBI. Tactful Management Research Journal. 2014;2(4):1-10.
51. Tamunonimim AN, Ibe RC. Exchange rate and macroeconomic performance in Nigeria: a causal post structural adjustment programme investigation. Global Journal of Management and Business Research Finance. 2013;13(7):38-63.
52. Todsro U, Stephen MC. Economic diversification in Nigeria in the face of dwindling oil revenue. Journal of Economics and Sustainable Development. 2015;6(4):61-7.
53. Tursoy T, Gunsel N, Rjoub H. Macroeconomic factors, the APT and Istanbul. Research Journal of Finance and Accounting; c2008.
54. Udo GC, Nwezeaku NC, Kanu SI. Effects of capital market development on the economic growth of Nigeria. International Journal of Innovation and Economic Development. 2020;7(2):41-56.
55. Wyman O. Accelerating emerging capital markets development in Nigeria. International Journal of Development and Management Review. 2015;14(1):49-62.
56. Usman OA, Adejare AT. Analysis of the impacts of interest rate and exchange rate on capital market performance in Nigeria. International Journal of Economics, Commerce and Management; 2014:2(6).