

Inflation and Stock Market Return: Estimated Model from Nigeria

Sampson Ikenna Ogoke

Department of Banking and Finance,
Kingsley Ozumba Mbadiwe University, Ideato, Imo State

Edward Chinedum F.

Department of Accountancy, Abia State Polytechnic, Aba
DOI: 10.56201/ijssmr.v10.no7.2024.pg38.58

Abstract

This study examined the effect of inflation on stock market return in Nigeria. Time series data were sourced from Central Bank of Nigeria Statistical Bulletin from 1990-2023. Stock market return was modeled as the function of real inflation rate, nominal inflation rate, average inflation rate and target inflation rate. The study employed multiple regression models to estimate the relationship that exists between inflation and stock market return. Ordinary Least Square (OLS), Augmented Dickey Fuller Test, Johansen Co-integration test, normalized co-integrating equations, parsimonious vector error correction model and pair-wise causality tests were used to conduct the investigations and analysis. The study found that 89.5 and 74.9 variation in stock market return in Nigeria was explained by variation in inflation rate. Furthermore, the regression result revealed that real inflation rate have negative and significant effect, nominal inflation rate have positive and significant effect, average inflation rate have negative but no significant effect while target inflation rate have negative but no significant effect on the stock market return in Nigeria. From the findings the study conclude that inflation have significant effect on stock market return. We recommend the need for proper coordination among different governmental economic policy making institutions is vital. Inflation target in Nigeria should not only aim to combating inflation but also should have to consider the economic position of the country. Central Bank of Nigeria which is responsible for the monetary policy of the country should aim to keep inflation below ten percent to enhance stock market return.

Keywords: Inflation Rates, Stock Market Return, Real Inflation Rate, Nominal Inflation Rate

INTRODUCTION

The relationship between inflation and stock returns was first established in the context of Fisher effect, also known as the Fisher hypothesis. The Fisher effect is a product of the economic theory by Fisher (1930), who sought to explain the relationship between returns and inflation. For most of the period from 1930's to the 1970's, this theory was the logical explanation for the stock-inflation relationship, as it solidified the notion that assets underlying value is maintained in the face of inflation. However, Sharpe (2002) noted that during the 1970's investors found the Fisher theory to falter in the short and intermediate terms, as stock returns were negatively related to inflation.

The late 1970's thus heralded a wave of research in this area, with Nelson (1976), Jaffe and Mandelker (1976), Bodie (1976), Fama and Schwert (1977) and Modigliani and Cohn (1979) all producing empirical evidences to show the negative relationship between stock returns and inflation. Many reasons were provided, Feldstein (1980) arguing that taxation-inflation relationship played a pivotal role in influencing the relationship contrary to Fisher's theory. The most significant reasons put forward in the 1930's and 1990's for the new empirical evidences was independent effects of real economic activity to both stocks and inflation. Thus Fama (1981) argued that the direct relationship was spurious and was explained by the inferred (proxy) relationship between the variable and economic activity. Fama's argument was supported by Geske and Roll (1983), Gultekin (1983), Vanderhoff and Vanderhoff (1986), Chang and Pinegar (1987), Kaul (1987, 1990), Lee (1992), Ely and Richardson (1997), and Boucher (2006): however, criticized the proxy hypothesis and failed to find justifications for the Fama-generated explanation of the stock-inflation relationship. Hence, the rest of this chapter focuses on the various issues relating to inflation and stock returns in Nigerian and in other parts of the world.

According to Bodie et al. (2005) the most important characteristics of common stock as an investment vehicle is its residual claim and limited liability features. Residual claim means that stockholders are the last in line of all those who have a claim on the assets and income of the corporation. During the liquidation of the firm's assets, the shareholders have a claim to what is left after all other claimants such as the tax authorities, employees, suppliers, bondholders and other creditors can lose in the event of failure of the corporation in their original investment. Experts believe that the rate of inflation will influence the stock market volatility and risk. Most emerging equity markets in Africa, particularly in Nigeria, have been bedeviled with sell-down in recent times with foreign portfolio investors shifting their money to a more matured market where their returns on investment will not be eroded by inflation. Since the issue of inflation in the region becomes more of concern, funds will begin to flow out from the region largely on the theme of inflation, the worst of which is not over especially with the increase in the price of oil (Geetha, Mohidin, Chanran & Chong, 2000).

The relationship between inflation rate and stock returns has been examined by several financial economists around the world. However, the relationship has not been widely investigated in the Nigerian Stock Market, hence; the study would significantly contribute to the existing literature on the subject matter. The stock market is an integral component of the financial sector; its performance is very critical to growth process of the economy at large. In the last ten years, there has been rapid increase in the activities of the stock market, which has also fostered rapid competitiveness in stock trading in securities (stocks).

In a comprehensive study of relationship between inflation rates and stock markets in US, Malaysia and China, Geetha, et al. (2011) stated that inflation rate can be divided into expected inflation and unexpected. Expected inflation rate is as a result that economist and consumers plan on year to year, if inflation is expected, people are less likely to hold cash, overtime money losses value due to inflation. While, the unexpected inflation is beyond what was expected by economists and consumers. In general, the effect of unexpected inflation is much more harmful than the effects of expected inflation. The major effect of unexpected inflation is a redistribution of wealth from

lenders to borrowers. Several studies have been carried out on the relationship between inflation rates and stock markets or returns across emerging markets and developed economies. While some of these studies showed significant positive relationship between inflation rates and stock market, some found a significant negative relationship between stock market and inflation rate, and others found no significant relationship between the two variables. For instance, the studies of Fraser and Oyefeso (2002), Jang and Sul (2002), Moon (2001), Tessaromatis (1990), Peel, Pope and Paudyal (1990) all found significant positive relationship between inflation rates and stock market; Fama and Schwert (1977), Schwert (1981), Fama (1981), Geske and Roll (1983) and Kaul (1987) and others found a significant negative relationship between stock market and inflation. However, some other studies such as Pearce and Roley (1985), and Hardouvelis (1988) found no significant relationship between the two variables (inflation and stock market). However, in view of the wide range of conflicting empirical studies on how inflation rates in emerging markets affect the rate of stock returns, one cannot draw conclusions from them with any minimal acceptable level of confidence. More also, given the continuous unstable development of the Nigerian stock market occasioned by upsurge in inflation rates and coupled with the impact of the recent global financial crisis, there is a growing interest in examining its impact on stock returns within the context of the Nigerian Stock Market. Also, the numerous literatures on inflation and stock returns in Nigeria have not received the attention it deserves. From the above, this study examined the relationship between inflation and stock market return in Nigeria.

LITERATURE REVIEW

Inflation

Gill (1973) defined inflation as any general increase in the price level of the economy in the aggregate. This is a Macroeconomic concept while in microeconomics, one may be concerned with a rise in the price of one commodity relative to other commodities, inflation involves a rise in the price of all commodities or of most commodities or most commonly of some index that measures the average of various prices taken together. This definition is still a bit general; Maddison (2016) observes that one might wish to know exactly what prices are being included in any particular index of inflation. In Nigeria there are three main indices of inflation in common use: Index of consumer prices, the wholesale price index and the gross national product price deflator the third index which reflects the distinction between changes in real gross national product and changes merely in money gross national product is the most general of these indices.

Gill (1975) posited that Keynesian view of inflation is one where inflation is caused by an aggregate demand for goods and services that exceeds national income at the full employed level. Sizer (2000) observes that the problem of inflation on reported profit stems from the way the profits are measured by accountants. He posited that accountants measure profit by finding the difference between the net assets at the beginning and end of the accounting period. They match the actual revenues of the period with the actual expenses of the period, and to the extent that revenue exceeds expenses, there is a profit. However under the historical cost accounting system, the matching process may be of revenue of the period with cost of an earlier period, they do not necessarily match current values.

Wood and Townsely (1980) argued that if as a result of inflation profit is seriously overstated, the burden of taxation on the business will be greater than that implied by the nominal rate of taxation. If reported profit, which result merely from a change in the value of money, or capital gains arising for the same reason, are taxed as if they are real income to the business, then the ability of the company to maintain the capital of the business intact and sustain real growth will be diminished furthermore, if historical cost profit are the basis for profit margin control underprice legislation, a company's ability to generate adequate cash during a period of high rate of inflation will be seriously impaired.

Stock Market Return

Stock market return is the returns that the investors generate out of the stock market. This return could be in the form of profit through trading or in the form of dividends given by the company to its shareholders from time-to-time. Stock market returns can be made through dividends announced by the companies. Generally at the end of every quarter, a company making profit offers a part of the kitty to the shareholders as dividend. This is one of the source of stock market return one investor expect. The most common form of generating stock market return is through trading in the capital market. In the capital market an investor could earn stock market return by buying a stock at lower price and selling at a higher price.

Stock market returns is not fixed ensured returns and are subject to market risks. It can be positive or negative. Stock market return is not homogeneous and changes from investor-to-investor depending on the amount of risk one is prepared to take and the quality of his stock market analysis. In opposition to the fixed returns generated by the bonds, the stock market returns are variable in nature. The idea behind stock return is to buy cheap and sell dear. But risk is part and parcel of this market and an investor can also see negative returns in case of wrong speculations.

Issahaku et al. (2013) opined that in stock market, the investors' invest their savings with an expectation of earning some income. This income may be termed as "stock returns" which may be in the form of profits earned from trading of shares or the dividends received. These dividends may be paid to the shareholders out of the profits earned; may be quarterly, half yearly, yearly. The stock prices or returns are bound to be affected by various risks occurring within a country and also events occurring across the world. Stock returns are very sensitive to political unrest in the country, economic crises, natural disasters like earthquake, cyclones and floods movements in international oil prices, inflation effects, changes in Government policies, norms and regulations and so on. It is known that stock prices or returns follow a random walk. It is a difficult task to predict or forecast the future returns.

Positivists' Theory

This theory accepts fundamentally that inflation has an impact on investment and that the impact is positive. In other words, inflation tends to encourage investment. According to Griffiths (1979), one of the major arguments, which have been used to justify the pursuit of inflation policies by governments, is that inflation results in a more rapid economic growth. Furthermore, he added that

inflation tends to redistribute income from wages to profits, as the marginal propensity to consume out of profit is allegedly much lower than that of wages, this leads to forced savings in the economy as whole with a corresponding increase in investment and in the rate of growth. Going by this argument, inflation also increases the level of saving by maintaining gross national product at its full capacity level. Another point pursued by this school is that inflation increases investment because it reduces the real rate of interest, which is relevant in investment decision.

Rapid economic growth they argued has taken place in countries with high rate of inflation. There is a widespread belief that inflation and development are related. This relationship could be that economic development, is a cause of inflation, or that inflation fosters economic development. Moderate rate of inflation may be the accompaniment of an increase in the production of wealth. The government policy of economic expansion by increasing the money supply almost inevitably leads to increase demand and, where there are spare resources, an increase in production. Even if the expansion leads to inflation, this may stimulate individuals to produce articles of real wealth instead of leaving their resources in depreciating money. Thus economic activities and the standard of living have in recent years risen appreciably in many parts of the world in greater competition for primary products and a consequence of increases in world prices. In conclusion, it is the view of this school that inflation is an inevitable ingredient if the economic growth and development are to be achieved. In other words, inflation does not depress but encourages investment.

Negativist Theory

The negativist theory views inflation as contributing adversely to increase in investment. In their view, the mention of inflation introduces a risk component which investors dread except there is a commensurate rate of returns. Hagger (1977) believed that inflation reduces the value of money and increases risk. This argument is correlated to the fact that inflation is a tax on money; expenditure in the private sector of the economy is reduced because of such tax. This school has the following, which made their views, echo prominently in many literatures. The effect of inflation upon a business can briefly be described as distorting its profit performance and valuations of its capital, which in turn affects the judgments and decisions of its management and investors, Case and Fair (1993), asserts that when unanticipated inflation occurs regularly, the degree of risk associated with investments in the economy. Increases in uncertainty may make investors reluctant to invest in capital and to make long-term commitments. He believes that the effect of raising capital makes new investment relatively unattractive. They suggest that the fear of resurgent inflation and the public policies it might call forth have clouded the outlook and contribution to the weakness in the investment climate. Further, they stress that inflation exerts a negatives influence on other parameters of economic activities, especially the growth of private investment. To achieve this aggregate effect on investment, inflation impact on separate systems that make up investment.

Neutralists

Theory probe into the neutralist analysis of investment and inflation shows that inflation has no visible impact on investment, Inflation is a unambiously evil phenomenon, it is by no means obvious to the economists that inflation is a bad thing. It has often been argued for example, that a price level which is changing at a constant proportional rate and which is fully anticipated and

acted upon by all economic. Agents will have negligible effect upon economic welfare (Trevithick, and Mulvey, 1975). There is no convincing evidence of any clear association, positive or negative, between inflation and the rate of economic development and investment. They warned that it is naïve to conclude that anyone is harmed by inflation. Until calculations are made, we cannot be sure if inflation was helpful or harmful to a specific entity. As a result, the neutralists concluded that investment is indifferent to inflation.

Taken together, the three schools seem to agree on one issue, that a little amount of price rise (inflation) is necessary for economic growth, hence investment. But the major line of divide lies in the agreement of a trade-off between desired level and the point at which inflation becomes injurious. In broad terms, the findings of the studies carried out by staff members of all International Monetary Fund (IMF) have been the same. Rapid economic growth has taken place in countries with high rates of inflation, and in countries with low rates of inflation Griffiths (1977). A more recent study suggests that an inflation of between 3 and 10 percent tends to be a positive encouragement to growth, while inflation of more than 10 percent tends to retard growth. The mechanism by which this allegedly takes place is that such a moderate rate of inflation tends to be a stimulus to savings and investment.

Market Efficiency Theory

Efficient-market hypothesis (EMH) was prounded by Fama (1953). The theory asserted that financial market is "informationally efficient". There are three major forms of the hypothesis: "weak", "semi-strong", and "strong". Weak EMH claims that prices on traded assets (for example, stock bonds, or property) already reflect all past publicly available information. Semi-strong EMH states that prices reflect all publicly available information and that prices instantly change to reflect new public information. Strong EMH additionally claims that prices instantly reflect even hidden or "insider" information. Efficient market theory implies that market will react quickly to new information. Thus, it is important to know when the accounting report first became publicly known. The accounting report is informative only if it provides data not previously known by the market.

Stock market thrives on information. This is because information plays an essential role in reducing the investors' challenges in the capital market. Information is important to investors in helping them evaluate investment opportunities to decide how to allocate their savings. In addition, it is also important because it enables investors to monitor whether their resources have been used wisely by managers. Markets where information is irregular give opportunities for investors who are more informed to take advantage of those who are less informed, and make it more expensive for investors to buy or sell a security without affecting its price.

As a result of the important role of information to the market, stock exchanges word-wide, set listing and post-listing requirements for companies seeking quotation. For instance in Nigeria, the post-listing requirements of the NSE laid emphasis on the timely release of information. Quoted companies are required to provide the market with information about their operations to the public. This information includes quarterly, half-yearly and yearly financial accounts. However, the

investors in Nigeria have suffered untold hardship due to lack of regular and reliable information from the listed companies on NSE (Goddy, 2010).

In Nigeria, Nigerian stock market is efficient in the weak form and follows a random walk process (Olowe, 1999; Okpara, 2010). The implication is that all information conveyed in past patterns of a stock's price is reflected in the current price of the stock. Therefore, it is ineffectual to select stocks based on information about recent trends in stock prices. Olowe (1999) uses data of an end of the month quoted stock prices of 59 randomly selected from January 1981 to December 1992 on the Nigeria stock exchange and employs a sample autocorrelation test. The study concluded that the Nigeria stock market appeared to be efficient in the weak form. Kukah, Amoo and Raji (2006) focused their study on market indices in local currencies rather than prices of individual stocks. They use the capitalization weighted index of all listed stocks. They use both parametric and non-parametric test in determining the efficiency of the Nigerian stock market, according to them, the results of the parametric tests show that the Nigerian capital market is weak form efficient while the parametric tests showed that the market is not weak - form efficient.

Empirical Review

Gimeno and Marqués (2012) decomposed the nominal interest rates into real risk-free rates, risk premia and inflation expectations from January 1991 to December 1998 using an affine model that takes as factors the observed inflation rate and the parameters generated in the zeroyield curve estimation. In their study, they were able to measure inflations expectations for Spain during the 1990s and employed the Autoregressive Integrated Moving Averages (ARIMA). The study found out that with the evolution of inflationary expectations, its effect has yield minimal impact than expected.

Madsen (2004) empirically tested the Fisher hypothesis for Denmark amidst the controversies surrounding its validity between the periods 1890 to 1939 and the periods 1961 to 1995 and employed the Distributed Lag Model estimation technique. The paper showed theoretically and empirically that the validity of the Fisher effect is dependent on the way model is specified, the pattern of determining inflation, the measure or proxy of inflation expectations and the time frame of the data; and as such, the Fisher effect can hold temporary because it takes quite some time to share markets to adjust to news and innovations in inflation. A related study conducted by Gao (2005) examined the effect of inflationary expectation on financial markets of United States for the 10-year period from January 1995 to December 2004. The study employed both quantitative methods in measuring inflation as well as a qualitative measure in determining inflationary expectation; the quantitative method is the Ordinary least Squares (OLS) The result found out that there is a direct impact of inflationary expectation on stock market performance. The implication of this study is that the Fisher effect does not hold in this economy.

Daferighe and Charlie (2012) examined the effect which inflation has on stock market performance in Nigeria within the period 1991 till 2010. The study employed the ordinary least squares estimation technique and various measures of stock market performance were used. The result amongst others discovered that inflation had a negative impact on market capitalization, the total value traded ratio and changes in all share index. However, inflation does not have a

significant negative impact on the turnover ratio. The study recommended that the government should involve in enlightenment programmes which will improve the corporate governance measures in order to improve transactions in the market considering its present low level of activities.

Diaz and Jareño (2013) examined how inflation news affects the Spanish stock market returns. The study examined this objective in light of the market direction and flow-through ability. The data employed is 179 monthly IPC announcements that cover the period from February 1990 through December 2004 and they were analysed using the Autoregressive Moving Averages (ARMA). The result found from the study is that unanticipated inflation news spells abnormal returns on stock depending on the direction of the news, the present condition of the economy and flowthrough ability of the sector.

Mogire (2014) examined the effect of inflation on stock market returns of the Nairobi Stock Exchange. Sixty-five listed firms in the Nairobi Securities Exchange were examined. The study employed the Granger Causality test as well as the ordinary least squares estimation technique to investigate the objective. From the Granger Causality test, the result shows that there is a bi-directional relationship running from stock returns and inflation and vice versa. The result, however, found that stock market returns are positively correlated with the inflation rate. However, from the study, there is a negative relationship between the interest rate and stock returns.

Ibrahim and Agbaje (2013) examined the long run relationships as well as the interaction between stock returns and inflation rate in Nigeria. The study employed data spanning through the period of 1997 till 2010 and the data were analyzed using the Autoregressive Distributed Lag Model the conclusion from the study is that there is a significant effect of inflation on stock returns in Nigeria.

Owolabi and Adegbite (2013) examined the effect of inflation on the capital market performance in Nigeria using data obtained from the CBN bulletin and the data was analyzed using ordinary least square regression analysis. The result revealed that there is an indirect impact of inflation on the various determinants of stock market performance as measured in the study, only that inflation did not have a negative impact on market volume for the period under study. There remains to a large extent, scanty literature that has been conducted on this concept with respect to contemporary happenings and in a developing economy like Nigeria. Therefore, this study focused on the effect of inflation on stock market returns in Nigeria.

METHODOLOGY

The method of empirical analysis in this study is the Vector Error Correction model approach to the estimation of the relationships between stock returns and inflation rate. This approach is very suitable for the study because it effectively captures persistence in prices disequilibrium over time and has been reported to be very efficient in forecasting (Ibrahim, 2010 and Panopoulou, 2007). Disequilibria in prices are persistent mainly because of the role of expectations in price determination. Thus, it is often the case that a well-defined pattern of influence is exerted on current prices by past price levels over a significant length of time. The Vector Error Correction model approach to estimation involves the use of the endogenous variables and the other

independent variables which are distributed over a period of time to predict current behavior of the endogenous variables. One statistical advantage of this method is that it has effectively developed an in-built capacity to correct serial correlations that are often present in time series data. Since one of the aims of the study is to forecast stock returns based on inflationary pressures, the Vector Error Correction model also captures some periods-ahead in the study. Moreover preliminary time series properties of the data were evaluated based on the augmented Dickey-Fuller. The test is required since the data used in the ARDL model are assumed to be integrated of order one 1(I). This test further reveals the level of persistence in prices in comparison with stock returns in Nigeria.

Model Specification

In order to estimate the relationship between inflation rates and stock market return, we employed the Ordinary Least Square (OLS) technique to ascertain the nature of relationship between the variables of interest.

$$SMR = f(RIFR, NIFR, AIFR, TIFR) \quad (1)$$

$$SMR = \beta_0 + \beta_1 RIFR_{it} + \beta_2 NIFR_{it} + \beta_3 AIFR_{it} + \beta_4 TIFR_{it} + \mu_{it} \quad (2)$$

Where

SMR = Stock market return

NIR = Nominal inflation rate

RIR = Real inflation rate

AIFR = Average Inflation Rate

TIFR = Target inflation rate

A-Priori Expectation

Base on theories such as inflation rates and stock market return theory and empirical results examined in this study, the variables are expected to have a positive effect on the dependent variables. The mathematical implication is stated as follows: $\beta_1, \beta_2, \beta_3, \beta_4 > 0$

Unit Root Test

Gujarati (2009) opined that often, data on time series do possess unit root. Stationarity in the series is defined if its joint distribution is time invariant. It means that the mean, variance and covariance that are cross-sectional moment's distribution do not rely on time and that relationship across time does not vary. Data on time series that contain unit root in an econometric analysis often translates to a misleading and spurious estimate of the relationship between variables. So, it is critical to consider the property dynamism of parameters and the data that measures them prior to evaluation. Diebold and Kilian (1997) affirm that ascertaining the stationarity of variables is good for forecasting prior to modeling. It also affords us the opportunity to ensure order of integration of both dependent and independent parameters converge to the same level. The testing procedures

for the unit root which are common and more acceptable is the Augmented Dickey Fuller (ADF) test.

Dickey and Fuller looked at the distribution of this kind of test statistic and found that OLS estimates are biased down (towards stationary) and OLS standard errors. Thus, it is possible that many series that you would have thought were stationary based on OLS regression were in fact generated by random walks (Cochrane, 2005). We shall therefore subject all the variables to unit root test using the Augmented Dickey Fuller (ADF) test specified in Gujarati (2004) as follows.

$$\Delta y_t = \beta_1 + \beta_2 + \delta y_{t-1} + \alpha \sum_{i=1}^m \Delta y_{t-i} + \epsilon_t \quad (3)$$

Where:

Δy_t = change time t

Δy_{t-1} = the lagged value of the dependent variables

Σ_t = White noise error term

If in the above $\delta = 0$, then we conclude that there is a unit root. Otherwise there is no unit root, meaning that it is stationary. The choice of lag will be determined by Akaike information criteria.

Co-integration Test

There exist the need via Johansen Co-integration to ascertain the long term relationship between the variable in the model after the order of integration of the parameters must have been proven. The co-integration procedure defines the long- run relationships among series according to Granger (1981), Engel and Granger (1987), Engel-Granger et al. (1987). In (1990), Johansen and Juselius also demonstrated how trace statistics could be used to detect integrating vector among several parameters. At least one co-integrating vector is required to guarantee co-integration among the variables. In co-integration test, Johansen trace test has the merit of more reliability than the maximum Eigen value (Kotircioglu et al., 2007).

To search for possible long run relationship amongst the variables, we employ the Johansen and Juselius (1990) approach. Thus, the study constructed a p-dimensional (4x1) vector auto regression model with Gaussian errors that can be expressed by its first differenced error correction form as

$$\Delta Y_t = \Gamma_1 \Delta Y_{t-1} + \Gamma_2 \Delta Y_{t-2} + \dots + \Gamma_{k-1} \Delta Y_{t-k+1} - \Pi Y_{t-1} + \mu + \epsilon_t \quad (4)$$

Where Y_t are the data series studied, ϵ_t is i. i. d, $N(0, \Sigma)$ $\Gamma_i + -1 + A_1 + A_1 + A_2 + A_3 + \dots + A_i$ for $i = 1, 2, 3, \dots, k-1$, $\Pi = I - A_1 - A_2 - \dots - A_k$. The Π matrix conveys information about the long term relationship among the Y_t variables studied. Hence, testing the co-integration entails testing for the rank r of matrix Π by examine whether the eigen values of Π are significantly different from zero.

Johansen and Juselius (1990) proposed two tests statistics to determine the number of co-integrating vectors (or the rank of Π), namely the trace and the maximum eigen-value (λ -trace) is computed as;

$$\lambda_{trace} = -T \sum_{j=r+1}^n \ln(1 - \lambda_j) \quad (5)$$

The trace tests the null hypothesis that “at most” r co-integration vector, with “more than” r vectors being the alternative hypothesis. The maximum eigenvalue test is given as:

$$\lambda_{\max} = -T \ln(1 - \lambda_{r+1}) \quad (6)$$

It tests the null hypothesis of r co-integrating vectors against the alternative hypothesis of $r + 1$ co-integration vectors. In the equation (3) and (4), is the sample size and λ is the largest canonical correlation.

Error Correction Model (ECM)

This approach represents a dynamic pattern with special characteristics that state changes from its long-term relationship and possess inbuilt mechanism which adjust with time into its short-term position. Meanwhile, the same level of co-integration is needed to guarantee a long-run association between variables. Error Correction term (ECT) must be statistically different from zero and at the same time negative under this approach. It demonstrates the adjustment speed of how the parameters re-unite towards their long-term values.

Granger Causality Test

In order to investigate the nature and direction of causality between money supply and economic growth in Nigeria, Granger causality test is employed. As noted by Gujarati and Porter (2009), X (Granger) causes Y, then changes in X should precede change in Y. thus, in a regression of Y on other variables (including its past values), if lagged values of X are included and it significantly improves the prediction of Y, then it can be inferred that X (Granger) causes Y, if Y (Granger) cause X, the same condition apply.

In case we do not find any evidence for co-integration among the variables, the specification of the Granger causality will be a vector autoregression (VAR) in the first difference form. However, if will find evidence of co-integration, there is the need to augment the Granger-type causality test model with a one period lagged error term. This is a crucial step because as noted by Engel and Granger (1987).

$$Y_t = \alpha_o + \sum_{i=1}^n \alpha_1^y Y_{t-1} + \sum_{i=1}^n X_{a1} X \mu \quad (7)$$

and

$$X_t = \beta_o + \sum_{i=1}^n \beta_1^y Y_{t-1} + \sum_{i=1}^n X_{\beta 1} X Y_t \quad (8)$$

The Test of Goodness of Fit (R^2)

The R^2 (multiple coefficient of determination) is carried out to test the strength of the independent variables in explaining the changes in the dependent variables. It is a statistical model whose main purpose is either the prediction of future outcomes or the test of hypothesis, on the basis of other related information. R^2 is a statistic that will give some information about the goodness of fit of a model. The null hypothesis of R^2 indicates that there is collinearity present in the data on the explanatory variables. ($H_o: y_1 = y_2 \dots = y_n$).

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Presentation of Unit Root Test at First Difference

Null Hypothesis: D(SMR,2) has a unit root		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.940951	0.0000
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	
Null Hypothesis: D(TIFR) has a unit root			
Augmented Dickey-Fuller test statistic		-5.173512	0.0002
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	
Null Hypothesis: D(RIFR) has a unit root			
Augmented Dickey-Fuller test statistic		-5.962927	0.0000
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	
Null Hypothesis: D(AIFR) has a unit root			
Augmented Dickey-Fuller test statistic		-6.571735	0.0000
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	
Null Hypothesis: D(NIFR) has a unit root			
Augmented Dickey-Fuller test statistic		-6.206931	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

Source: Computed by Researcher from E-view 9.0

The stationarity test result shows that all the variables are stationary at first difference. The probability values are less than the critical value of 0.05; therefore we conclude that there is stationarity among the variables at level. From the above, the study concludes that the variables are integrated in the order of 1(1).

Table 2: Unrestricted Cointegration Rank Test (Trace)

Series: SMR RIFR AIFR NIFR TIFR

Hypothesized	Eigenvalue	Trace	0.05	Prob.**
No. of CE(s)		Statistic	Critical Value	
None *	0.750114	120.8863	95.75366	0.0003
At most 1 *	0.627743	79.28376	69.81889	0.0073
At most 2 *	0.503563	49.63860	47.85613	0.0337

At most 3	0.400467	28.62962	29.79707	0.0677
At most 4	0.235590	13.28151	15.49471	0.1049
Normalized cointegrating coefficients (standard error in parentheses)				
SMR	RIFR	AIFR	NIFR	TIFR
1.000000	-5.464118 (1.72639)	-2.352579 (0.66053)	4.964790 (1.35375)	-2.557339 (0.57555)

Source: Computed by Researcher from E-view 9.0

Testing the co-integration result, evidence from the table above shows at least two co-integrating equation from the maximum Eigen value and the trace statistics, this means the rejection of null hypothesis in favour of the alternate hypothesis. The failure of the co-integration test to produce the direction of long run relationship that exists between the variable makes us to test the normalized co-integration result. From the above result, all the independent variables have negative long run relationship except nominal inflation rate.

Table 3: Presentation of the Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.811353	0.692444	1.171725	0.2533
D(SMR(-1))	0.243091	0.239427	1.015300	0.3205
D(RIFR(-1))	-0.711062	0.372027	-1.911316	0.0485
D(AIFR(-1))	-0.073951	0.156456	-0.472663	0.6409
D(NIFR(-1))	0.689808	0.309556	2.228378	0.0359
D(TIFR(-1))	-0.155608	0.258597	-0.601741	0.5532
ECM(-1)	-0.049389	0.083643	-0.590469	0.5606
R-squared	0.895484	Mean dependent var		1.103548
Adjusted R-squared	0.749369	S.D. dependent var		3.214391
S.E. of regression	3.292781	Akaike info criterion		5.438978
Sum squared resid	249.3753	Schwarz criterion		5.809039
Log likelihood	-76.30416	Hannan-Quinn criter.		5.559609
F-statistic	9.798373	Durbin-Watson stat		2.119369
Prob(F-statistic)	0.000000			

Source: Computed by Researcher from E-view 9.0

Table 3 shows the Vector Error Correction result for the estimated regression model presented in chapter three of this study. From the result, the positive coefficient of 0.811353 as the regression intercept indicates that the independent variables have positive effect on the dependent variable at constant rate. However, the R-square and the Adjusted R-square of 0.895484 and 0.749369 proved that the independent variables can explain 89.5 and 74.9 variation in the dependent variable. The F-statistics of 9.798373 at the probability of 0.000000 indicates the significance of the model at 5% level of significance. The Durbin-Watson statistics of 2.119369 showed the absence of negative serial auto correlation between the variables in the time series which requires further analysis. Results from the independent variables shows that real inflation rate have negative and significant effect on stock market return in Nigeria, nominal inflation rate have positive and significant effect on stock market return, average inflation rate have negative but no significant

effect on stock market return and target inflation rate have negative but no significant effect on stock market return. The findings are supported by other empirical studies. According to Fisher (1930), assets which represent claims to physical or real assets, such as stocks, should offer a hedge against inflation. The inflation-stock returns correlation has been a subject of extensive study since the end of 1970's and the beginning of 1980 (e.g. Lintner, 1975; Bodie, 1976; Fama and Schwert, 1977; Jaffe and Mandelker, 1976; Nelson, 1976, Fama 1981; Pindyck, 1984) and was confirmed more recently (Graham, 1996; Siklos and Kwok, 1999; Barnes et al, 1999). In analyzing the Fisher hypothesis, most of these empirical studies have focused on asset returns over relatively short time horizons (less than a year). However, Boudoukh and Richardson (1993) investigated the relationship between stock returns and inflation at both short (1 year) and long (5 year) horizons using long term annual US and UK data, and obtained quite interesting results that at the 1-year horizon nominal stock returns and inflation are approximately uncorrelated, while at the 5-year horizon the Fisher equation holds.

Conclusion

Over the last few years, the real value of common stocks has been on the decent, coincident with a generally rising inflation. If inflation is one of the factors to blame for the dismal performance of stocks then it must reduce expected real corporate profit or raise the required rate of returns on stocks, according to the traditional model of stock prices. This study has shown that inflation has not been a very strong factor in stimulating stock returns in the Nigerian Stock market. Another issue of importance is whether investors take into accounts the gains from a debt which accrues to corporations when inflation occurs. Apparently, this has not been the case for Nigeria because the role of institutional investors in the stock market has not been played out well over the years. The study found that real inflation rate have negative and significant effect on stock market return in Nigeria, nominal inflation rate have positive and significant effect on stock market return, average inflation rate have negative but no significant effect on stock market return and target inflation rate have negative but no significant effect on stock market return.

Recommendations

- i. Monetary policy should aim at finding a more realistic price level that will be suiting to investors in the stock market. Such policies geared at controlling inflation should take into cognizance the role of monetary and real variables especially as these will go a long way in further deepening of the stock market.
- ii. There is need for proper coordination among different governmental economic policy making institutions is vital. Though it is the choice of a policy on priority among inflation and stock market, whatever the government chooses the coordination among fiscal policy, monetary policy, trade policy and investment policy is essential to achieve the desired goal.
- iii. Though inflation targeting is the current fashion among monetary policy makers, developing countries such as Nigeria, inflation target in Nigeria should not only aim to combating inflation but also should have to consider the economic position of the country.
- iv. Central Bank of Nigeria which is responsible for the monetary policy of the country should aim to keep inflation below 10% so that the stock market return is not hampered. In order

to achieve this target, coordination of the fiscal and monetary policies is necessary and thus the Ministry of Finance and Economic Development.

- v. Inflation targeting is a monetary policy construct in which a central bank announces a target and then directs its policy tools in achieving the set target. The study recommends that inflation threshold need not be necessarily the inflation target; the inflation objective for monetary policy should be set lower than the inflation threshold.

REFERENCES

- Adams, G. McQueen, G & Wood, R. (2004). The effects of inflation news on high frequency stock returns. *Journal of Business*, 77, 547-574.
- Adrangi, B., Chatrath, A., & Sanvicente, A. Z. (2010), *Inflation, output, and stock prices: Evidence from Brazil*, Sao Paulo: IBMEC
- Ahmed S. & Cardinale, (2005). Does inflation matter for equity returns, *Journal of asset management*, 6, (4), 259- 273
- Ahmed, S. and Mortaza, M. G., (2005). Inflation and growth in Bangladesh: 1981-2005 Policy *Analysis Unit Working Paper, Series WP0604, 1 – 22.*
- Aksoy, Y., Basso, H. S., et al (2009). Liquidity effects and cost channels in monetary transmission. *Birkbeck Working Papers in Economics and Finance*, 0902. Birkbeck, Department of Economics, Mathematics & Statistics.
- Alessi, L., & Detken, C. (2009). Real time' early warning indicators for costly asset price boom/bus cycles. A role for global liquidity. *ECB Working Paper, 1039.*
- Al-Khazali, O. M. (2013). Stock prices, inflation, and output: Evidence from the emerging Markets. *Journal of Emerging Market Finance* 2(3), 287-314.
- Aminu U. and Anono A. Z. (2012). Effect of Inflation on the Growth and Development of the Nigerian Economy (An Empirical Analysis). *International Journal of Business and Social Science*, 3(10): 183-191.
- Anari, A. & Kolari, J. (2001), Stock prices and inflation, *The Journal of Financial Research*, 26.(4), 587-602
- Andreas C.W. (2010). Sensitivity of inflation rate to monetary policy in the European economy. *European Journal of Economy and Business Management*, 24 (18), 217-248.
- Asaminew, E., (2010). Inflation and Growth: An estimate of the Threshold Level of Inflation for Ethiopia. *Proceeding of the Ninth International Conference on the Ethiopian Economy. Ethiopian Economics Association, Addis Ababa, July 21 -23, 2011.*
- Assenmacher-Wesche, K., & Gerlach, S. (2006). Understanding the link between money growth and inflation in the euro area. *CEPR Discussion Paper, 5683.*
- Ayalew, Y., (2000). The Trade-off between Inflation and Unemployment in Ethiopia. *Proceedings of the 10th Annual Conference on the Ethiopian Economy: Nazareth, Ethiopia, Ethiopian Economics Association. Nov. 3-5, 2000.*

- Ayyab, M. S. B., & Anees, R. T. (2019). Inflation's impact on stock return: A study from Pakistan. *Journal of Emerging Technologies and Innovative Research*, 6(3), 627 – 634.
- Baharumshah, A.Z., Hamzah, N.A. & Sarbi S.R.M., (2011). Inflation uncertainty and economic growth: Evidence from LAD ARCH Model. *Journal of Applied Statistics* 38(1), 195 – 206.
- Bakare H., Kareem R. and Oyelekan B., (2015). Effects of Inflation Rate on Economic Growth in Nigeria (1986-2014)
- Ball, L., Mankiw, N.G., & Romer, D., (1988). The New Keynesian Economics and the Output-Inflation Trade-off. *Brookings paper on Economic Activity*, 1988(1), 1 – 90.
- Barnes, M., Boyd, J. H., & Smith, B. D. (1999). Inflation and asset returns. *European Economic Review*, Elsevier, 43(4-6), 737 – 754.
- Bassey, G. E. & Onwioduokit, E.A. (2011). An analysis of the threshold effects of inflation on economic growth in Nigeria. *WAIFEM Review*, 8(2), 90-100.
- Baumol, W.J., (1999). Retrospectives Say's Law. *Journal of Economic Perspectives* 13(1), 195 – 204.
- Beck, G., & Wieland, V. (2010). Money in monetary policy design: monetary cross-checking in the New-Keynesian model. *IMF Working Paper*, 23, 289-346.
- Bedford, J., et al (2009). Quantitative easing. *Quarterly Bulletin*, 6 (11), 90-100.
- Bera, A.K. and Higgins, M.L., (1993). ARCH Models: Properties, estimation and testing', *Journal of Economic Surveys*, 7 (4), 305 – 62.
- Berg, A., Portillo R., & Filiz Unsal, D. (2010). On the optimal adherence to money targets in the new Keynesian framework, an application to low-income economies. *IMF Working Paper*, WP/10/134.
- Bernanke, B. S. (2006). Monetary aggregates and monetary policy at the Federal Reserve: A historical perspective. *The fourth EBC Central Banking Conference*, Germany.
- Bernanke, B. S., & Laubach, T. (1999). Inflation targeting. *N.J. Princeton University Press*.
- Beyer, A., (2009). A stable model for euro area money demand revisiting the role of wealth. *ECB Working Paper*, 1111.
- Bick, A., (2010). Threshold effects of inflation on economic growth in developing countries' in econ papers. Goethe University, Department of Economics, 1 – 8.
- Bittencourt, M., (2010). Inflation and economic growth in Latin America: Some Panel Time Series Evidence' University of Pretoria department of economics working paper series, 2010 2011, 1 – 22.
- Blanchard, O., & Gali, J., (2005). Real wage rigidities and the new Keynesian model. *Federal Reserve Bank of Boston Working Paper Series No. 05-14*, 1 – 36.

- Bodie, Z., (1976), Common stocks as a hedge against inflation, *Journal of Finance*, 31, 459-470
- Boucher, C., (2006) Stock price inflation puzzle and the predictability of stock market returns *Economic Letters*, 90, 205.
- Boudoukh, J., Richardson, M. & Whitelaw, R.F. (1994), Industry returns and the Fishers Effect, *The Journal of Finance*, 49, 1595-1615
- Barnes, Mp., Boyd, J.H & B.D Smith (1999). Inflation and asset returns, *European Economic Review*, 43, 737- 754
- Box, G.P.& Jenkins G.M (1978). *Time series Analysis: Forecasting and Control*, Revised Edition, Holden-Day
- Boyd, J.H. & Champ, B., (2006). Inflation, banking and economic growth. *Federal Reserve Bank of Cleveland working paper, NO.98, 1 – 5.*
- Bradley, M. & Jarrell, G. A. (2013). Inflation and the constant- growth valuation model: A clarification. *Simon School of Business Working Paper, No. FR 03-04.*
- Brissimis, S. & N. Magginas, (2006). Forward Looking Information in VAR Models and the Prize Puzzle. *Journal of Monetary Economics*, 53, 1225-1234.
- Bruno, M. & Easterly, W., (1996). Inflation and growth: In search of a stable relationship. *Federal Reserve Bank of St. Louis, May/June 1996, 139 – 145.*
- Cagan, P. (1956). The monetary dynamics of inflation. In *Studies in the Quantity Theory of Money*, M. Friedman, (ed.). University of Chicago Press, Chicago.
- Campbell, J.Y. and Shiller, R.J., (1988). Interpreting co-integrated Models. *Journal of Economic Dynamics and Control*, 12(2-3), 505-522.
- Caporale, T., & Jung, C. (1997). Inflation and real stock prices. *Applied Financial Economics*, 7, 265 – 266.
- CBN, (2018). 4th Quarter 2018 statistical bulletin. Retrieved from https://www.cbn.gov.ng/Out/2019/STD/2014Q4%20Quarterly%20Statistical%20Bulletin%20compilatio_n_Final.xls
- Chang, E.C.& Pinegar, J.M., (1987). Risk and inflation, *Journal of Financial and Quantitative Analysis*, 22, (1), 89-99
- Choudhry, T., (2001). Inflation and rates of returns on stocks: Evidence from high inflation countries, *Journal of International Financial Markets, Institutions and Money*, 11, 75-96
- Cottrell, A., (1997). Keynes, Richardo, Malthus and Say's Law. *History of Economic Societies meetings, Charleston, SC, June 1997, 1 – 20.*
- Daferighe, E. E., & Charlie, S. S. (2012). The impact of inflation on stock market performance in Nigeria. *American Journal of Social and Management Sciences*, 3(2), 76 – 82.
- Dai, M. (2010). Financial market imperfections and monetary policy strategy. *Bureau Economie Theoretique et Applique, Documents de travail, 2010-19.*
- Dalle, G., (2009). Challenges of crop cultivation in pastoral dry lands of Ethiopia proceedings of the national conference on sustainable land management and poverty alleviation, *Addis Ababa, 18(19), 77 – 84.*
- Davis, N. and A.M. Kutan (2013). Inflation and output as predictors of stock returns and volatility: international evidence. *Applied Financial Economics*, 13: 693-700.
- De Grauwe, P., & Polan, M. (2005). Is inflation always and everywhere a monetary phenomenon?. *Scandinavian Journal of Economics*, 107 (2), 239-259.

- Dholakia, R.H., & Sapre, A.A., (2011). Speed of adjustment and inflation – unemployment trade-off in developing countries – Case of India. *Indian Institute of Management Research and Publication, Working paper Series no. 2011-07-11, July 2011, 2 – 30.*
- Diaz, A., & Jareno, F. (2013). Inflation news and stock returns: Market direction and flow-through ability. *Empirical Economic, Springer, 44, 775 – 798.*
- Dickey, D.A., & Fuller, W.A., (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of American Statistical Association, 74, 427 – 431.*
- Dickey, D.A., & Fuller, W.A., (1981). The likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica, 49, 1057 -1072.*
- Dinsa, B. & Kifle, D.,(2009). Use of fertilizers and crop productivity in western Oromiya’, proceedings of the national conference on sustainable land management and poverty alleviation. *Addis Ababa, 18(19), 122 – 131.*
- Dotsey, M. & Sarte, P.D. G., (2000). Inflation uncertainty and growth in a cash-in-advance economy. *Journal of Monetary Economics 45 (3), 631 – 655.*
- Ely, D. & Robinson, K.J., (1997). Are stock a hedge against inflation? International evidence using a long run approach, *Journal of International Money and Finance, 16, (1), 141-167.*
- Engsted T & Tanggaard, C (2002), The relation between asset returns and inflation at short and long Horizons, *Journal of International Financial Markets, Institutions and Money, 12, 101-118.*
- Engle, R.F., (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of united kingdom inflation. *Econometrica, 5(3), 987-1007.*
- Fama, E. F. (1981). Stock returns, real activity, inflation, and money. *American Economic Review, 71, 545-565.*
- Fama, E.F. & Schwert, G.W., (1977). Asset returns and inflation, *Journal of Financial Economics, 5, 115-146*
- Fama, E.F., (1981) Stock returns, real activity, inflation and money, *American Economic Review 71 (4), 545-565*
- Ferguson, R. W. (2005). *Asset process and monetary liquidity*. Speech during 7th Deutsche Bundes bank Spring Conference.
- Fielding, D., (2008). Inflation volatility and economic development: Evidence from Nigeria. *University of Otago Economics Discussion Papers No. 0807, 1 – 22.*
- Fisher, I. (1930). *The theory of interest*. New York: MacMillan.
- Friedman, M. (1957). *Theory of the consumption function*. Princeton: University Press.
- Fisher, R.A, (1930). *The general theory of natural selection*, Oxford University Oxford.
- Gao, Y. (2005). *Inflation expectation and financial markets*. An Interactive Qualifying Project Report Submitted to the faculty of the Worcester Polytechnic Institute, DZT-0421.
- Geetha, C., Mohidin, R., Chandran, V.V., & Chong, V. (2011). The relationship between inflation and stock market: Evidence from Malaysia, United States and China. *Journal of Economic Studies (JES), 17(1), 1-22.*
- Ggor, M.L. (2011). The global monetary shocks and inflation in Developing Economy. *International of Economic Management, 41 (26), 186-217.*
- Gimeno, R., & Marqués, J. M. (2012). A market based approach to inflation expectations risk premia and real interest rates. *The Spanish Review of Financial Economics, 10, 18 – 29.*

- Goutsmedt, A., Pinzon-Fuchs, E., Renault, M., & Sergi, G. (2016). Criticizing the Lucas Critique: Macroeconometricians' Response to Robert Lucas. ffhals01364814f.
- Graham, F.C. (1996). Inflation, real stock returns and monetary policy, *Applied Financial Economics*, 6, 29-35.
- Gujarati, D.N., & Porter, D. C. (2011). *Basic Econometrics* (5th ed.). NY, New York: McGraw-Hill Irwin.
- Gultekin, N.B. (1983). Stock market returns and inflation evidences from other countries, *The Journal of Finance*, xxxviii,1, 49-65
- Hatemi-J, A. (2009). The international Fisher effect: Theory and application. *Investment Management and Financial Innovations*, 6(1), 117 – 121.
- Ibrahim, T. M., & Agbaje, O. M. (2013). The relationship between stock return and inflation in Nigeria. *European Scientific Journal*, 9(4), 146 – 157.
- Hess, P.J. & Lee, B.S (1999). Stock returns and inflation with supply and demand disturbance. *The Review of Financial Studies*, 12, (5), 1203-1218
- Jaffe, J. & G. Mandelker (1976). The fisher effect for risky assets: an empirical investigation *Journal of Finance*, 31, 447-458
- James C.S, Koreisha, S. & Partch M., (1985). A Varma analysis of the causal relations among stock returns real output and nominal interest rates, *Journal of Finance* 40, 375
- Kajanoja, L. (2003). Money as an indicator variable for monetary policy when money demand is forward looking. *Bank of Finland Discussion Paper*, 9/2003.
- Kaul G.,(1990). Monetary regimes and the relation between stock returns and inflation expectation, *Journal of Financial and Quantitative Analysis*, 25, (3), 307-321
- Kaul, G., & Seyhun, N. (1990). Relative price variability, real shocks, and the stock market. *Journal of Finance*, 45, 479-496.
- Kaul, G., (1987). Stock returns and inflation: The role of the monetary sector, *Journal of Financial Economics*, 18,253-274.
- Laopodis N.T (2006). Dynamic interaction among the stock market, Federal Funds Rate, Inflation and Economic Activity. *The Financial Review*, Eastern Finance Association, 41(4), 515-545. *International Journal of Business and Social Science* Vol. 6, No. 11; November 2015 167
- Lee, K, & Ni .S.,(1996). Stock returns real activities and temporary and persistent inflation, *Applied Financial Economics*, 6, 433-441.
- Luintel, K.B. & Paudyal, k. (2006). Are common stock a hedge against inflation? *Journal of Financial Research*, 29, 1-19
- Madsen, J.B. (2004). Pitfalls in estimates of relationship between share returns and inflation. FRU Working Papers 2004/07, University of Copenhagen. Department of Economics. Finance Research Unit.
- McQueen, G. & Roley, V.V., (1993) Stock prices, news and business conditions, *Reviews on Financial Studies*, 3, 144-157 Nelson, C.R, (1976). Inflation and rate of return on common stocks, *The journal of Finance*, 31, 471-483.
- Modiglian, F. & Cohn, R.A (1978). Inflation rational valuation and the market, *Financing Analysts Journal*, 35, 24-24.

- Modigliani, F., & Cohn, R. (1979). Inflation, rational valuation and the market. *Financial Analyst's Journal*, 35, 22 – 44. M
- Nautz, D., & Rondorf, U. (2010). The (in)stability of money demand in the euro area: lessons from the cross-country analysis. Humboldt-Universität zu Berlin, SFP 646. *Discussion Paper 2010-023*.
- Olu J. F. & Idih E. O. (2015). Inflation and economic growth in Nigeria. *Journal of Economics and International Business Management*, 3(1): 20-30.
- Omoke P. C. (2010). Inflation and Economic Growth in Nigeria. *Journal of Sustainable Development*, 3(2): 159-167.
- Osuala A.E., Osuala K. I. and Onyeike S.C. (2013). Impact of inflation on economic growth in Nigeria – a causality test. *JORIND* 11(1): 206-217
- Owolabi, A. U., & Adegbite, T. A. (2013). Inflation and capital market performance: The Nigerian outlook. *Journal of Emerging Trends in Economics and Management Sciences*, 5(1), 93 – 99.
- Ozurumba, B,A. (2012). The impact of stock market return on foreign portfolio investment in Nigeria. *IOSR journal of Business and Management*, 2 (4), 10-19
- Panopoulou, E. (2007) Predictive Financial Models of the Euro Era: A New Evaluation Test, *International Journal of Forecasting*. 23: 695-705. Peel, D.A & Pope P.F. (1988). Stock return and expected inflation in the UK; Some new evidence, *journal of business finance and accounting*, 15,(4) 459-467
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationship. *Journal of Applied Econometrics*, 16(3) 289–326.
- Pindyck, R. S. (1983) Risk, inflation, and the stock market. (NBER Working Paper No. 1186)
- Rakhal, R. (2018). Determinants of stock market performance. *NCC Journal*, 3(1), 134-142. 42 *Journal of Economic Studies (JES)*, Vol. 17, Issue No. 1, 2020;
- References Balduzzi, P. (1995). Stock returns, inflation, and the ‘proxy hypothesis’: A new look at the data. *Economics Letters*, 48, 47-53.
- Ritter, J.R. & R.S Warr (2002). The decline of inflation and the bull market of 1982-1999, *Journal of financial and Quantitative Analysis*, 37, (1), 27-61.
- RSS Wikipedia Atom Feed (2014, February) Fisher hypotheses. Retrieved from en.wikipedia.org/. Fisher_hypotheses
- Schotman, P.C. & Schweitzer, M. (2000). Horizon sensitivity of the inflation hedge of stocks, *Journal of Empirical Finance*, 7, 301-315.
- Schwert, G.W. (1981). The adjustment of stock prices to information about inflation, *The Journal of Finance*, 12, 435-444.
- Sharpe, S.A. (2002). Re – examine stock valuation: The implications of analysis earnings forecast, *The Review of Economics and Statistics*. 84(4), 632 - 648. Sharpe, W.F. (1994). A simplified model for portfolio and analysis, *Journal of management science*, 29, 277 – 293.
- Shuaib I. M., Ekeria A. O. and Ogedengbe F. A. (2015). Impact of Inflation Rate on the Economic Growth in Nigeria. *British Journal of Economics, Management & Trade* 9(3): 1-11
- Siklos, & B. Kwok (1999). Stock returns and inflation: a new test of competing Hypothesis *Applied Financial Economics*, 9,507-581.

- Sirchenko, A. (2008). Modeling monetary policy in real time: does discreteness matter. *EERC Working Paper 08-07*.
- Svensson L. E. O. (2003). The future of monetary aggregates in monetary policy analysis. Comments on Edward Nelson. *Journal of Monetary Economics*, 50,1061- 1070.
- Tessaromatis, J. (1990). Money supply announcement and real interest rates: Evidence from the UK. Index-linked bond market, *Journal of Banking and Finance*, Vol. XIV
- Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money, Credit, and Banking*, 1, 15 – 29.
- Vanderhoff, J. & Vanderhoff, M. (1986). Inflation and stock returns: an industry analysis, *Journal of Economics and Business*,38,341-352.
- Wong, K. & Wu, H. (2003). Testing fisher hypothesis in long horizons for G7 and Eight Asian Countries, *Applied Economics Letter*, 10,(14), 917-923.4
- Zhongqiang, B. (2014). Study on the impact of inflation on the stock market in China. *International Journal of Business and Social Science*, 5(7), 261 – 271.