

**IMPACT OF INFLATION ON STOCK MARKET RETURNS
OF QUOTED FIRMS IN NIGERIA**



BY

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CERTIFICATION

This project titled “The Impact of Inflation on Stock Market Returns of Quoted Firm in Nigeria” by Chioma Emekaobi meets the requirement governing the award of the degree of Masters in Banking and Finance, Ahmadu Bello University, Zaria and is hereby approved for its contribution to knowledge and literacy presentation.

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DECLARATION

I, Chioma Emekaobi, hereby declare that this research for the degree award of Masters in Banking and Finance is a product of my true research work. All sources of information are acknowledge

Signature

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and cause you to love Him more and more in Jesus name!!

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ABSTRACT

This research work investigated the impact of inflation on stock market returns of Nigeria Stock Exchange using time series data for twenty (20) years from 1993 to 2012. The regression analysis was used to evaluate the influence of inflation on various measures of stock market returns proxied by stock market index (SMI), consumer price index (CPI), change in stock market index (SMI_{t-1}), change in consumer price index (CPI_{t-1}). Correlational research design was employed in this research and in order to analyse our data multiple regression tool of analysis was used. The findings of the research suggest that inflation has significant effect on stock market returns. It was therefore recommended that the Central Bank of Nigeria (CBN) should formulate and use policy statements that will maintain inflation at low ebb in order not to erode the value of gains by investors on stock.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The stock market is a common feature of a modern economy and it promotes the growth and development of the economy. High and persistent inflation has remained a perennial feature of the Nigerian economy. Economists have long considered common stocks as an inflation hedge in the sense that stock represents ownership of physical capital whose real value is assumed to be independent of the rate of inflation. It implies that a change in the rate of inflation should be accompanied by an equal change in the nominal rate of return on equity.

The seminal work of Irvin Fisher (1930) has provided the theoretical underpinnings for the forgoing proposition. Accordingly to the general used Fishers hypothesis, equity stock which represents claims against the real assets of a business may serve as a hedge against inflation. Consequently, investors would sell financial asset in exchange for real assets when expected inflation is pronounced. In such case, stock prices in nominal terms, should fully reflect expected inflation and the relationship between the two variables should be positively correlated extant.

According to Daferighe and Charlie (2012) the performance of the stock market is of utmost importance to investors, policy makers and the likes. The measures of stock market performance proxy by market capitalization; which measures stock market size, stock market liquidity which refers to the ability of

the investors to buy and sell securities easily. Others are All Share Index; which reflects the condition and performance of the stock market, and the turnover ratio; which is an index of comparison for market liquidity rating and level of transaction costs.

The argument that stock market serves as a hedge against inflation implies that investors are fully compensated for increase in the general price level through corresponding increases in nominal stock market returns and thus the real returns remains unaffected. In other words, the argument is that the real value of the stock market is immune to inflationary pressure.

1.2 STATEMENT OF THE PROBLEM

According to the economist (1951) the literature on the relationship between stock returns and inflation is one of the longest in economic research. According to Fisher (1930), the market interest rate comprises the expected real interest rate and expected inflation. Thus in competitive market, equity stocks which represent claims against the real assets of a business may serve as a hedge against inflation; hence return on common equity should keep pace with the inflation rate. While the theory is a very straight forward regarding the nature of the relationship between stock returns and inflation, the empirical evidence from various countries under various specifications is mixed. In the US the evidence indicates an inverse relationship between stock returns and inflation Bodie (1976). Fama(1981) hypothesizes that the observed inverse relationship between real stock, returns and inflation simply because inflation

acts as a proxy for real activity variables. In models that rate stock returns to inflation.

However, evidence that in some countries that Fisher hypothesis holds. Firth (1979) and Gultekin (1983) conclude that the relationship between nominal stock returns and inflation in the UK is positive. Also long horizon studies such as Boudoukh and Richardson (1993) and models that investigate long run relationships such as Anari and Kolari (2001) and Luintel and Paudyal (2006) find evidence consistence with the fact the stock market either provide a partial or complete hedge against rising inflation. The empirical validity of the generalized Fishers hypothesis has profound implication on investment (Fama and Gibbons 1982 and Shrestha 2002).For instance if the relationship between nominal returns from common stocks is negatively correlated with inflation 9as argued by most studies), common stocks become financial assets just like T-bonds, and as such, they cannot be regarded as a good hedge against inflation. Also testing validity of the hypothesis presents a measure of the relative efficiency of the stock market under inflationary conditions. All things being equal, an efficient stock market will impound information contained in expected inflation for the concurrent formation of stock prices.

Following the economic restructuring in the 1980s and financial reforms that ensued Nigeria has generally adhered to strict monetary and fiscal policies. In spite of these effects however, inflation in Nigeria has shown a general upward trend. Since the 1990s, the annual inflation rate in Nigeria has averaged 15.8%,while experiencing rates of 30% or more in the early mid

1990s, inflation rates of this magnitude have significant adverse effects on the financial sectors in Nigeria, particularly in the context of fixed nominal interest rate. A crucial question that has never been addressed is whether the Nigerian stock market offers a shelter to investors in the face of such rising inflation. In addition, the performance of the Nigerian Stock Market under inflationary conditions will be examined.

1.3. OBJECTIVES OF THE STUDY

The main objectives of the study are as follows:

- 1) To determine the impact of inflation on stock market returns of quoted form
- 2) To identify the kind of relationship that exists between inflation and stock market returns of quoted firms.
- 3) To access the performance of quoted firms.

1.4 RESEARCH QUESTIONS

The study attempts to produce answers to the following research questions.

- 1) What is the correlation between inflation and the total value of listed shares in the Nigerian stock market?
- 2) Does inflation impact positively on the performance and condition of the stock market?

1.5 RESEARCH HYPOTHESIS

In view of the objective of the study the hypothesis is stated in this form.

Ho₁: There is no significant relationship between inflation and stock market returns of quoted firms in Nigeria.

Hi₁: There is significant relationship between inflation and stock market returns of quoted firms in Nigeria.

1.6 SCOPE OF THE STUDY

The study is centered on inflation and its influence on stock market returns of Nigeria Stock Exchange (NSE). The study focus on the relationship between inflation and stock market returns.

The study is based on data of stock market index and consumer price index which were obtained from secondary sources i.e. daily official list from cashcraft and fact book of Nigeria stock exchange, National bureau of statistic (NBS) and Central bank of Nigeria (CBN) statistical bulletin for the period of twenty (20) years from 1993 to 2012.

1.7 SIGNIFICANCE OF THE STUDY

This study examines the impact of inflationary pressure on stock market returns. The findings of this study will be significant in the following ways:

It will assist investors in the determination of the best investment to be pursued and its anticipated effect on their returns

It will provide financial analyst with information for making meaningful analysis

Also shareholders and prospective investors can find it useful in making informed judgment on their investment decision particularly in the Nigerian stock market

Government and other policy makers can find it useful in the determination of appropriate fiscal and monetary policy for the economy

It will provide potential researches with areas for further study and adds to literatures on inflation and stock market return which will be of great importance to academicians, students and researchers.

1.8 DEFINITION OF KEY TERMS

Common Stock: Securities representing equity ownership in a corporation providing voting rights and entitling the holder to a share of the company's success through dividend or capital appreciation

Consumer Price Index (CPI): An inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food and transportation

Financial Asset: A non physical asset, such as security or certificate

Hedge: An investment made in order to reduce the risk or adverse price movement in a security, by taking and offsetting position in a related security

Inflation: The overall general upward price movement of goods and services in an economy, usually as measured by the consumer

Investor: An individual who commits money to investment products with the expectation of financial returns.

Monetary policy: The regulation of the money supply and the interest rates by central bank in order to control inflation and to stabilize currency.

Nominal return: The percentage change in the value of financial asset, where the beginning and the ending values of the asset are not adjusted for inflation over the time of the investment.

Real return: The percentage change in the value of an investment in financial asset, where the ending value and interim cash flows of the asset are adjusted for inflation during the time of the investment.

Return: The annual return on the investment, expressed as a percentage of the total amount invested.

Real asset: An asset that is intrinsically valuable because of its utility, such as real estate or physical equipment.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to have a better understanding of the phenomenon. The chapter focuses on the conceptualization of inflation, review of empirical literatures types of inflation, effects of inflation and the theoretical framework. This will further help us analyze the impact of inflation on the profitability or stock market returns of quoted firms in Nigeria.

Several attempts have been made to identify or study factors that affect stock market returns of quoted firms. Some researchers have tried to determine the correlation between selected factors (internal and external market and non market factors, economic and non economic factors). The outcome of the studies varies depending on the scope of the study.

2.2 CONCEPTUAL FRAMEWORK

2.2.1 Concept of Inflation

One of the greatest problems plaguing the world scene is inflation. It is a long standing problem and centuries of theorizing have not provided much needed answers to it (Adewumi and Awosika: 1982). Therefore, it is expedient to define the root term “Inflation”. According to the Statement of Standard Accounting Practice (SSAP), it is the decline in the purchasing power of money as the general level of goods and service rises. It affects most aspects of the economic life, including investment decision, wage negotiation, pricing

policies, international trade and government taxation policy. Also, Turvey (1951) defined it as the process resulting from completion in attempting to maintain total real income, expenditure and total output at a level which has become physical impossible. Shapino (1970), says, it results from persistent and appreciable rise in the general level of prices. Soludo (2009) defines inflation as a persistent increase in the general price level, which implies a fall in the purchasing power of money.

Ball argues that inflation is the aggregate change in nominal prices. To the neoclassical economist inflation is fundamentally a monetary phenomenon. But economist, defines inflation do not agree that money supply alone is the cause of inflation. Economist defines inflation in terms of a continuous rise in prices.

In economics, inflation is a rise in the general level of prices of goods and services in an economy over a period of time. When the price level rises, each unit of currency buys fewer goods and services; consequently inflation is also erosion in the purchasing power of money. Inflation causes a loss of real value in the internal medium of exchange and unit of account in the economy.

According to Parkinson (2001), he identifies two types of inflations namely:

a) The general inflation: This relates to the statistical areas of price increase over a wide range of product and services. In theory, increasing inflation is a symbol of under capacity utilization of productive means in an economy.

b) The specific inflation: This relates to specific price increase for a particular type of product or services. Theoretically if the capacity of an economy to produce a particular goods or commodity is less than the demand for the goods at the current price, then its prices will rise.

Aborede (2004) categorized Nigeria inflation situation as a general types of inflation; where all expenses are subject to a rise with the effect that money in general is losing its value thereby, affecting all businesses in general to the same degree.

There are three major types of inflation as part of what Robert J. Gordon calls the “Triangle Model”.

- a) Demand pull inflation: Is caused by increase in aggregate demand due to increase in private and government spending etc. demand pull inflation is constructive to a faster rate of economic growth. Since the excess demand and favorable market condition will stimulate investment and expansion.
- b) Cost push Inflation: Also called “supply stock inflation”; is caused by a drop in aggregate supply (potential output). This may be due to natural disasters or increased prices of inputs, e.g. a sudden decrease in the supply of oil tending to increase oil prices can cause cost push inflation. Producers for whom oil is a part of their cost could then pass this on the consumer in the form of increased prices.
- c) Built in inflation is induced by adaptive expectation and is often linked in the “price and wage spiral”. It involves workers trying to keep their wages up with prices (above the rate of inflation) and firm passing these higher

labour costs onto their customers as higher prices, leading to a “vicious circle”. Built in inflation reflects even in the past and so might be seen as hang over inflation.

2.2.2. Causes of Inflation

What some authors such as Adewunmi and Anosika (1982) and others termed as types of inflation is viewed by other authors like Nwanko (1982), as causes of the subject matter. According to the later this causes include:

a) Demands pull (Excess demand over supply): This when the demand of goods and services exceed the available supply. This is brought about by either an increase in money supply or increase in the purchasing power.

This can occur under the following circumstances:

- i) Where there is strong investment boom resulting from massive innovation or any other such cause.
- ii) During period of war, when government resorts to printing more money to prosecute the war.
- iii) In peaceful time when government engage in deficit financing.
- iv) Where the bulk government expenditure is on project, which do not directly or immediately produce any consumer good.
- v) Where communities receives more payment for factors of production that is justified by productivity in the economy.

b) Cost pull: This is a result of increment in production cost of goods and services. This could be as a result of:

- i) Rise in production cost: This is an increase in value of factors used in production such as land, labour, capital and entrepreneur.
- ii) Higher import prices, due to rise in the cost of foreign produce or a situation where a country devalues her currency.

c) Limitation of Output: Indeed inflation will not occur until there limitation of output over supply. This could be as a result of:

- i) Wars: Where government restricts import alongside cutting down the production of goods and services and concentrating production in strategic sectors to prosecuting of the war.
- ii) Reduction in imports: This may occur temporarily either to stimulate domestic production or to correct the balance of payment.

Furthermore, Kirkman (1975) added the following as further causes of inflation:

d) Excessive wage demands: Large wage increase obtained by powerful trade union as a major cause of inflation. These increases spread to all sectors of the business community because of rigid wage differentials. Thus, making business organization to increase their prices and therefore making their goods

less competitive. The results increased imports and reduced exports.

e) Managing profiteering: Business management has naturally been blamed for many of the price increases that have taken place in recent years. Frequent claims has been made regarding inefficiency and excessive profit making, despite the fact that in many countries strict controls have been

introduced on prices increases. Some of these problems are undoubtedly caused by conventional methods of profit measurement which involves the matching of sales with historical cost rather than replacement cost.

- f) Government monetary policies: Such as increase in government spending, interest rates, special credit facilities, bank lending rates and monetary circulars released by government via Central bank could contribute to the level of inflation if, they are not properly controlled and administered.

Furthermore, the Central Bank of Nigeria (CBN) reports of 1994 and 1997 identifies the causes of inflation as peculiar to Nigeria's economy as follows:

- a) Huge federal government fiscal deficits fixed largely by the Central Bank of Nigeria (CBN) which resulted in excess liquidity of the banking system and substantial increase in domestic aggregate demand.
- b) High interest rate coupled with depressed investment.
- c) The wage and salary increments following the Adebo (1972) and Udoji (1975) Wages and Salaries Review Commissions. Alongside, the Structural Adjustment Programme (SAP0) Of 1988.
- d) The lag effect of upward adjustments in petroleum product prices and the impact of value added tax (VAT).
- e) Seasonal shortage in the supply of goods and services.
- f) Natural disaster; war, flood, drought, earthquake may result in the scarcity of goods and services. As a result of any of any of these leads in the increase in the general prices of goods and service.

- g) **Hoarding:** Where there is shortage in goods and services as a result of hoarding, supply of such goods become limited relative to demand, leading to inflation.
- h) **Inefficient distributing channels:** Where there is inefficient distributing channel linking area. Goods and services become low in supply to such areas and this will definitely set in inflation.

The central bank of Nigeria monitors causes and attempt to control inflation. Historically, a great deal of economic literature was concerned with the question of what causes inflation and the effect it has. There were different schools of thought as to the causes of inflation. Most can be divided into two broad areas: quality theories of inflation and quantity theories of inflation. The quality theory of inflation rates on the expectation of a seller accepting currency to be able to exchange that currency to be able to exchange that currency at a later time for goods that are desirable as a buyer. The quantity theory of inflation rests on the quantity equation of money that relates money supply, its velocity and the nominal values of exchanges. Adams Smith and David Hume proposed quantity theory of inflation for money and a quality theory of inflation for production.

Currently, the quantity theory of money is widely accepted as an accurate model of inflation in the long run. Consequently, there is now broad agreement among economist that in the long run, the inflation rate is essentially dependent on the growth of money supply. However, in the short and medium term of inflation maybe affected by demand and supply pressure in the economy and

influenced by the relative elasticity of wages price and interest rates. The question of the short term effect last long enough to be important is the central topic of debate between monetarist and Keynesians economists. In monetary prices and wages adjust quickly enough to make other factors merely marginal behavior on a general trend line. In Keynesian view, prices and wages adjust at different rates and these differences have enough effects on real output to be long term in view of people in the economy.

2.2.3. Effects of inflation

According to Jihngan (2003), the following are the effect of inflation.

1) General effect: An increase in the general prices implies a decrease purchasing power of the currency. I.e. when the general level of prices increases each monetary unit buys fewer goods and services. The effect of the inflation is not distributed evenly and as a consequence there a hidden cost to some and benefits to others from the decrease in purchasing power. E.g., with inflation lenders or depositors who are paid a fixed rate of interest loan or deposits will lose purchasing power from their interest earnings, while their borrower benefit. Individuals or institution with cash asset will experience decline in the purchasing power of their holdings. Increase in payments to workers and pensioners often lag behind inflation. Especially for those with fixed payments.

Increase in price level (inflation)erodes the real value of money (functional currency)and other items with an underlying monetary nature (e.g. loans

and bonds). However, inflation has no effect on the real value of non-monetary items (e.g. goods and commodities, gold, real estate).

2) Negative effect: High or unpredictable inflation rates are regarded as harmful to an overall economy. They add inefficiencies in the market and make it difficult for companies to budget or plan long term. Inflation can act as a drag on productivity as companies are forced to shift resources away from products and services in order to focus on profit and losses from currency inflation. Uncertainty about the future purchasing power of money discourages investment and saving. And inflation can impose hidden tax increases, as inflated earnings push taxpayers into higher income tax rates. With high inflation, purchasing power is redistributed from those on fixed incomes such as pensioners towards those with variable incomes whose earnings may better keep pace with the inflation. This redistribution of purchasing power will also occur between international trading partners. Where fixed exchange rates are imposed, rising inflation in one economy will cause its exports to become more expensive and affect the balance of trade.

There can also be negative impacts to trade from an increased instability in currency exchange prices caused by unpredictable inflation.

i). Cost push inflation: Rising inflation can prompt employees to demand higher wage, to keep up with customer prices. Rising wages in turn can help fuel inflation. In the case of collective bargaining, wages will be set as a factor price expectation, which will be higher when inflation has an upward trend.

This can cause a wage spiral. In the sense, inflation begets further inflationary expectation.

ii). Hoarding: People buy consumers durables as stores of wealth in the absence of viable alternatives as a means of getting rid of excess cash before it is devalued, creating shortages of hoarded objects.

iii). Hyperinflation: If inflation gets out of control (in the upward direction), it can grossly interfere with the nominal working of the economy, hurting its ability to supply

iv). Allocating Efficiency: A change in the supply or demand for goods will normally cause its price to change, signaling to buyers and sellers that they should reallocate resources in response to the new market conditions. But when prices are constantly changing due to inflation, genuine price signals get lost in noise, so agents are slow to respond to them. The result is a loss of allocated efficiency.

v). Shoes leather cost: High increases the opportunity cost of holding cash balances and can induce people to hold a greater portion of their asset in interest paying accounts. However, since cash is still needed in order to carry out transactions this means the more “trips to the bank” are necessary in order to make withdrawals, proverbially wearing out the shoe leather in each trip.

vi). Menu cost: With high inflation, firms must change their prices often in order to keep up with economy wide changes but, often changes in prices is itself a costly activity whether explicitly, as with the need to print new menus, or implicitly.

vii). Business cycle: According to the Austrian Business cycle Theory, inflation sets off the business cycle. Austrian economists hold this to be the most damaging effect of inflation. According to Austrian theory, artificially low interest rates and then associated increase in the money supply lead to reckless speculative borrowing, resulting in clusters of mal-investment, which eventually have to be liquidated as they become unsustainable.

3). Positive Effects

a). Labour-Market Adjustments: Keynesians believe that nominal wage is slow to adjust downwards. This can lead to prolong disequilibrium and high unemployment in the labour market. Since inflation would lower the real wage if nominal wages are kept constant, Keynesians argues that some inflation is good for the economy, as it will allow labour market to reach equilibrium faster.

b). Debt relief: Debtors who have debt with a fixed nominal rate of interest will see a reduction in the real interest rate as the inflation rate rises. The real interest on a loan is the nominal rate minus the inflation rate. Banks and other lenders adjust for this inflation risk either by including an inflation premium in the cost of lending the money by creating a higher initial stated interest rate or by setting the interest at a variable rate.

c). Room to maneuver: The primary tools for controlling the money supply are the ability to set discount rate, the rate at which banks can borrow from the Central bank, and open market operation which are the central bank interventions into the bond market with the aim of affecting the nominal

interest rate, then the bank cannot cut this rate further (since negative nominal interest rates are impossible) in order to stimulate the economy, this situation is known as liquidity trap. A moderate level of inflation tends to ensure that nominal interest rates stay sufficiently above zero so that if the need arises the bank can cut the nominal interest rate.

4).Tobin Effect

The noble prize winning economist James Tobin at one point had argued that a moderate level of inflation can increase investment in an economy leading to faster growth or at least higher steady level of income. This is due to the fact that inflation lowers the return on monetary assets relative to real assets, such as physical capital. To avoid inflation, investors would switch from holding their assets as money to investing in real capital projects.

2.2.4. Inflation and the effect on stock prices:

Asogu (1991) was of the view that inflation is generally used to distribute a situation of rapid, persistent and unacceptable high rises in general price level in an economy, resulting in general loss of purchasing power of the currency. According to him, inflation causes serious discomfort for consumer, investors, producers and the government.

In a study of some countries, Maynard and Van Ryckeghem(1975) as cited in Masha 2003), found that the long run trend of rising price levels can attribute to differences in the rates of growth and productivity in the industrial and service sectors. Other causes of rising prices are differences in the prices and elasticity

between the two sectors, uniform growth nominal wages in both sectors, price and wage rigidities.

Some attempts have been made to study the character of inflation in Nigeria. Asogu (19991) undertook an empirical investigation based on ten different specifications that covered monetary, structural and open economy aspects of inflation. The variables used include money supply and its lagged value, real gross domestic product (RGDP) and its lagged values, aggregate domestic credit to the economy and its lagged values, government expenditure and its lagged values. Others are industrial product index, import price index and official exchange rate in all, the models were estimated and the character of inflation seems to be well captured.

In summary, the results of the estimations suggested that real output, especially industrial output, new export, current money supply, domestic food prices and exchange rate changes were the major determinants of inflation in Nigeria.

In another study of inflation in Nigeria, Masha (2000) quoted Fakiyesi (1996), who argued that inflation is dependent on growth in broad money, the rate exchange of the Naira vis-à-vis the dollar, the growth of real income, the level of anticipated inflation, which is based on the previous year's level of inflation.

It is a common belief that inflation is advantageous to common stock. This is majorly because it is argued that inflation increases the returns to shareholders since prices of product rises faster than wage rate. The expected

relationship between inflation and returns to owners of equity would be valid if business firms were debtors and if the current interest rates on debt finance failed to reflect the future changes in the price level.

According to Jhingan (1997), where there is inflation most prices are rising, though some prices rise faster than the other. Kirkpatrick and Nixon (1986) cited in Afolabi (1995), have shown from their studies that there is a relationship between inflation and rising prices. Asogu (1991) states that inflation rates I expected to vary, positively in relation to changes in prices. Therefore, in assessing the impact of inflation in performance of stock prices of quoted companies; if there is a relationship, one should expect a positive association between inflation and variation in stock prices. Kolari (2001) using stock price and goods price data from six industrial countries showed that long run fishers elasticity of stock prices with respect to good prices exceed unity and range from 1.04 to 1.65 which supported the Fisher effect that inflation has a negative short run effects on stock returns but turns positive over long horizons.

However, Tamtom (2002) asserted that an negative long-run relationship exist between stock prices and inflation: in turn implying that the higher stock prices are associated with lower inflation contrary to recent proposals.

2.2.5. Concept of stock market

According to Ologunde, Elumilade and Asaolu (2006), the stock market is the very hub of the capital market, the pivot, without this facility and the

chance, which is thus available to investors to liquidate their investments or adjust their portfolio whenever they desire to do so, it is doubtful if there would be any motivation to invest in securities. Most savers would then probably simply holding to their funds in cash or bank deposit which guarantees that they would be able to meet the fundamental purpose of the saving; such motive is usually quite far from a desire to invest.

Besides, there is a strong possibility that even where savings remain constant in aggregate terms, that without the safe guard and the guarantee of quality and the resultant confidence generated by stock exchange listing, most savers could easily be persuaded to place their money in securities, issued by firms whose competence or integrity they could not trust. Savers would then probably put their money instead in small owner managed business concerns. The implications of this for the entire economy could be a serious handicap being placed on the promotion of large scale enterprises and with this, a severe limitation on the nation's production capacity. Because of the impact of scale on cost of production, prices and loss of international competitiveness, the marketability of securities, which the stock exchange impact on, therefore, has extremely important implication for the individual saver, the investor or fund user as well as the nation as a whole. This tremendous impact that the capital market introduces to the capital formation and investment process, ultimately to the promotion of individual and nation well-being and posterity, makes it seem today a vital component of the total strategy for promoting national economic development. It was probably because of these attractions that the

emerging Nigeria nation in 1961 elected also for the establishment of stock exchange in Lagos.

The activities of stock exchange fall into two broad categories, the primary and secondary markets. The primary market is concerned with the initial issuance of securities such an issue can take any of the following forms: offer of subscription, offer for sales, by introduction, private placement and right issue. The market for outstanding securities (The secondary market as it is often called) enhances the new issues market in many ways, by providing the means by which investors can monitor the value of their shares and liquidate them when they so desire. The secondary market augment the supply of funds to the primary market stated somewhat differently. If there were no secondary market inwhich investors could cash their investment in listed securities they choose, many investors may not buy new issues in the first place. From the perspective of the overall economy, the secondary market is particularly important, as it makes it possible for the economy to ensure long term commitment in real capital.

The stock change has over two million individual investors and above, three hundred institutional investors including NPF now NSITF, Insurance companies, government parastatals using the facilities of the exchanged.

The role of the Nigerian stock exchange as vehicle of mobilization of long term capital and a platform for buying and selling of shares and stocks is not only geared towards the socio-economic aspiration of the nation, it is also efficient and cost conscious.

2.3. MEASUREMENT OF INFLATION

Inflation according to the Blanchard (2006) is usually estimated by calculating the inflation rate of price index, usually the consumer price index. The consumer price index measures price of a selection of goods and services purchased by a “typical consumer”. The inflation rate is the percentage rate of a price index over time.

Other widely used price indexes for calculating price inflation include the following:

- (i) Cost of living indices (COLI): are indices similar to the CPI which are often used to adjust fixed incomes and contractual incomes to maintain the real value of those income
- (ii) Producer Price Indices (PPI): measures average changes in prices received by domestic producers for their output. This differs from CPI in that price subsidization, profits and taxes may cause the amount received by the producer to differ from what the consumer paid. There is also typically a delay between an increase in the PPI and any eventual increase in the CPI. Producer price index measures the pressure being put on the producers by the cost of their raw materials. This could be “passed on” to consumers or it could be absorbed by profits or offset by increasing productivity.
- (iii) Commodity price Indices: measures the price of a selection of commodities. In the present commodity price indices are weighted by the relative importance of the components to the “all in” cost of an employee.

(iv) Core Price Indices: because food and oil prices can change quickly due to changes in supply and demand condition in the food and oil markets, it can be difficult to detect the long run trend in price levels when those prices are included. Therefore, most statistical agencies also report a measure of core inflation, which removes the most volatile components from broad price index like the CPI. Because core inflation is less affected by short run supply and demand conditions in specific market. Central Banks rely on it to better measure the inflationary impact of current monetary policy.

(v) GDP deflator: is a measure of the price of all the goods and services included in gross domestic product (GDP). Historical inflation before collecting consistent econometric data become standard for government and for the purpose of comparing absolute, rather than relative standards of living. Various economists have calculated imputed inflation figures. Most inflation data before the early 20th century is imputed based on the known cost of the goods, rather than compiled at the time. It is also used to adjust for the differences in real standard of living for the presence of technology.

(vi) Asset Price Inflation: is an undue increase to the prices of real or financial assets, such as stock and real estate. While there is no widely accepted index of this type, some central bankers have suggested that it would be better to aim at stabilizing a wider general price level inflation measure that includes some asset prices, instead of stabilizing CPI or core inflation only. The reason is that by raising interest rate when stock prices or real estate price

rise and lowering them when these asset prices fall, Central Banks might be more successful in avoiding bubbles and crashes in asset prices.

2.3.1. Issues in Measuring Inflation

Measuring inflation in an economy requires objective means of differentiating changes in nominal prices as a common set of goods and services and distinguishing them from those price shifts resulting from changes in value such as volume, quality or performance. For example, if the price of a bottle of coke changes from N50 to N60 over the course of a year, with no change in quality, then the price difference represents inflation. This single price change would not, however, represent general inflation in an overall economy. To measure overall inflation, the price change of a large “basket” of representative goods and services is measured. This is the purpose of a price index, which is the combined price of a “basket” of many goods and services. The combined price is the sum of the weighted average prices of items in the “basket”. A weighted price is calculated by multiplying the unit price of an item to the number of those items the average consumer purchases. Weighted pricing is a necessary means to measuring the impact of individual unit price changes on the economy’s overall inflation. The consumer price index e.g. uses data collected by surveying households to determine what proportion of the typical consumer’s overall spending is spent on specific goods and services and weights the average prices of those items accordingly. Those weighted average prices are combined to calculate the overall price. To better relate price change over time, indexes typically choose a “base year”

price and assign it a value of hundred. Index prices in subsequent years are then expressed in relation to the base year price.

Inflation measures are often modified over time, either for the relative weight of goods in the basket or in the way in which goods and services from the present are compared with goods and services from the past. Over time adjustments are made to the type of goods and services selected in order to reflect changes in the sorts of goods and services purchased by typical consumers. New products may be introduced, older products disappear, the quality of existing products may change and consumer preferences can shift. Both the sorts of goods and services which are included in the “basket” and the weighted price used in inflation measures will be changed over time in order to keep pace with the changing market place.

When looking at inflation economic institutions may focus only on certain kinds of prices or specific indices, such as the core inflation index which is used by Central Banks to formulate monetary policy.

2.4 MEASURES TO CONTROL INFLATION

According to Abel and Bernanke (2005), the following measures can be used to control inflation.

1) Monetary Policy:

Today the primary tool for controlling inflation is monetary policy. Most central banks are tasked with the tending rate at a low level and within a

targeted low inflation range. A low positive inflation is usually targeted as deflationary conditions are seen as dangerous for the health of the economy.

There are a number of methods that have been suggested to control inflation. Central banks can affect inflation to a significant extent through setting interest rates and through other operations. High interest rates and slow growth of the money supply are the traditional ways through which central banks fight or prevent inflation. Though they have different approaches for instance, some follow a symmetrical inflation target while others only control inflation when it rises above a target whether express or implied.

Monetarists emphasize keeping the growth rate of money steady and using monetary policy to control inflation (increasing interest rates, slowing the rise in the money supply). Keynesians emphasize reducing aggregate demand during economic expansions and increasing demand during recession to keep inflation stable. Control of aggregate demand can be achieved using both monetary policy and fiscal policy (increased taxation or reduced government spending to reduce demand).

2. Wages and price Controls

Another method attempted in the past has been wage and price controls (income policies). Wage and price controls have been successful in wartime environments in combination with rationing. However, their use in other contexts is far more mixed.

In general wage and price controls are regarded as a temporary and exceptional measure, only effective when coupled with policies designed to

reduce the underlying causes of inflation during the wage and price control regime, e.g. winning the war being fought. They often have perverse effects, due to the distorted signals they send to the market. Artificially low prices often cause rationing and shortage and discourage further investment, resulting in yet further shortage. The usual economic analysis is that any product or services that are underpriced is over consumed. E.g. if the official price of bread is too low, there will be too little bread at official prices and too little investment in bread making by the market to satisfy further needs, thereby exacerbating the problem in the long term.

Temporary controls may complement a recession as a way to fight inflation: (reducing the need to increase unemployment), while the recession prevents the kind of dissensions that controls cause when demand is high. However, in general the advice of economists is not to impose price controls but to liberalize prices by assuming that the economy will adjust and abandon unprofitable economic activity. The lower activity will place fewer demands on whatever commodities were driving inflation whether labour or resources and inflation will fall with total economic output. This often produces a severe recession as productive capacity is reallocated and is thus often very unpopular with the people whose livelihoods are destroyed.

3. Cost – of – Living Allowance

The real purchasing power of fixed payments is eroded by inflation unless they are inflation adjusted to keep their real values constant. In many countries, employment contracts, pension benefits and government entitlements

(such as security) are laid to a cost of living index typically to the consumer price index. A cost of living allowance (COLA) adjusts salaries based on changes in a cost of living index. Salaries are typically adjusted annually. They may also be tied to a cost of living index that varies by geographical location if the employee moves..

Annual escalation clauses in employment contracts can specify retroactive or future percentage increases in worker pay which are not tied to any index. These negotiated increases in pay are colloquially referred to as cost of living adjustments or cost of living increases because of their similarity to increases tied to externally determined indexes. Many economists and compensation analysts consider the idea of predetermined future “cost of living increases” to be misleading for two reasons:

- a) For most recent periods in the industrialized world, average wages have increased faster than most calculate cost of living indexes, reflecting the influence of rising productivity and worker bargaining power rather than simple living costs.
- b) Most cost of living indexes are not forward looking, but instead compare current or historical data.

2.5 THEORETICAL FRAMEWORK

2.5.1 Theories of Share Value

Stock market exhibits daily, weekly, monthly, quarterly and annually behavior and also respond to internal and external development. Though there

market behaviors and trends can be monitored and analyzed through the major market average and indices; which include market capitalization index and the various indices of fund managers. There are the fundamental theory, the technical/chartist theory and the random walk theory.

For the purpose of this research, the researcher will be adopting random walk theory.

The Fundamental Theory

This theory argues that at any point in time, an individual security has an intrinsic or true value; which is the present value of the future receipts, accruing to the security holder. This view is essentially the same as the basic valuation model. It is based on the assumption that the analyst needs to consider the major factor affecting the economy, the industry and the company.

To make an appropriate investment decision, the environment within the company and its reaction to that environment in terms of investment and financing policies determines the future net receipts. It also affected by the state of national economy, government economic policies such as the control of inflation, the balance of payment, government budgetary and interest rate policies. The effect of each of these factors is largely dependent on the nature of the company's activities.

The fundamentalists forecast stock prices on the basis of market information about the economy, industry and the company. As it is usually the case, when the market anticipate an event, such as the national budgets fiscal policies or exchange rate policies; the share prices are affected.

It may be argued that market prices approaches “Intrinsic” or “true” value asymptotically’, i.e. it gets nearer and nearer but never quite gets there. During this time, new information may alter the intrinsic value so that market prices will have to start chasing a new intrinsic value such that to calculate the intrinsic value is to predict the market price.

If fundamental analysis is used as a guide to investment decision, the buy and sell decision will be based on the discrepancy between intrinsic and market price; if the intrinsic is greater than the market, the investor should buy and sell if the market is greater than intrinsic price. The amount of discrepancy and speed with the market approaches an intrinsic value may be regarded as indications of degree of perfection in the market.

2. Technical/Chartist Theory

This approach is based on the view that future patterns of share prices are repetitions of the same patterns of price movement which had occurred in the past; i.e. historical price patterns are repeated in the future (Akinsulure, 2006).

According to Corrade et al (2002), technical analyst makes attempt to predict the direction of future stock price movement based on historical price and volume behavior and investment sentiment.

Bodie, Kane and Marcus (1999), supported this view that it is essentially the search for recurrent and predictable patterns in stock prices. Although technicians recognized the value of information regarding future economic

prospects of the firm, they believed that such information is not necessary for a successful trading strategy.

This is because whatever the fundamental reason for a change in stock prices, if the price responds slowly enough; the analyst will be able to identify a trend that can be exploited during the adjustment period. The key to successful technical analysis is a sluggish response of stock prices to fundamental supply and demand factors.

Technical analysts also called chartist study records or charts of past stock prices to find patterns to exploit to make profit using theory, which is a method of analyzing and interpreting stock market movement which dates back to the turn of the century. Share prices/value can be measured using primary, secondary and tertiary trends.

Though, there is no real theoretical justification for this approach, it can at times be spectacularly successful. Studies outside Nigeria have suggested that the degree of success is greater than could be expected merely from chance (Mayo, 2000). Nevertheless, not even the most extreme chartists would claim that every major price movement can be predicted accurately and sufficiently enough to make the correct investment decision.

Many critics of charting suggested that it is unscientific as to be of no practical value, because there is no theoretical justification of this theory except its pointing to empirical evidence of its correctness (Akinsulire, 2006).

3. Random Walk Theory

Random walk theory is an attempt to disprove chartist theory. The theory which states that a new market price of share will stem solely from the reaction of investors to new relevant information about the share and will be totally independent of the old market price.

The random walk theory is of the view that the intrinsic value of stock price will be altered as new information become available and the behavior of investors is such that actual stock prices will fluctuate at random from day to day around the intrinsic value. Because of random erratic movement in stock prices, an investor cannot safely rely on prediction of such movement for deciding when to trade in securities (Olowe, 1997).

A random walk means that price change is unpredictable, so using technical analysis to predict stock price is useless. The relevant test of efficiency in the model is whether prices incorporate all information that is available at the time. In its pure form, the Efficient Market Hypothesis (EMH) states that information efficient financial markets reflect all new relevant information fully. The three level of efficiency are: the weak form, semi strong form and strong form (Mayo, 2000).

2.5.2. Efficient Market Hypothesis

The random walk notion has been supplemented in recent years by a broader theory of stock price movements known as the efficient market hypothesis. Research carried out in the late 1960s by Harry Markowitz, a

strong protagonist of the random walk theory went further by identifying the reasons why share values behave in a random walk.

He asserted that the type of information available at any point in time determines share values and the market for security values will become efficient if the necessary information is available to other investors. The content of any new information is available will be quickly digested by market participant and if the information forces them to change their opinion of the security's intrinsic value, their subsequent actions will rapidly cause an equivalent change in the security's value. This is an efficient market hypothesis; a capital market is regarded as being efficient under the following assumptions and conditions:

- a) Investors are able to buy or sell stocks immediately without significantly affecting their prices.
- b) Investors are rational; they invest in securities that yield highest returns
- c) Information flow to investors is very effective
- d) Stock prices change quickly in response to new information
- e) Transaction costs and taxes are negligible and their impact immaterial.

The reasons adduced by Markowitz for the behavior of share values can be explained in three forms depending upon the extent of information deemed available to market participants.

Degree of Efficiency

According to the EMH in its purest form may be difficult, however, there are three identified classifications of the EMH, which are aimed at reflecting the degree to which it can be applied to markets.

1. Strong Efficiency: This is the strongest version which states that all information in a market, whether public or private is accounted for in a stock price. Not even insider information could give an investor an advantage.
2. Semi Strong Efficiency: This form of EMH implies that all public information is calculated into a stock's current share price. Neither fundamental nor technical analysis can be used to achieve superior gains.
3. Weak Efficiency: This type of EMH claims that all past prices of a stock are reflected in today's stock price. Therefore, technical analysis cannot be used to predict and beat a market.

2.6 REVIEW OF RELATED EMPIRICAL WORKS

The relationship between stock returns and inflation has been a topic of great interest both in theoretical and empirical literature. Despite of the extensive research on the exact relationship between them, the issue still remains vexing. The genesis of the debate goes back to Fisher (1930). According to him, inflation should not affect real stock returns. This notion in the literature was identified as the Fisher's hypothesis. The Fisher hypothesis suggests that stock market serves as a hedge against inflation. This implies that investors are fully compensated for increases in the general price level through corresponding increases in the nominal stock market returns and thus the real

returns remain unaffected. In the typical approach followed to test the Fisher hypothesis, the nominal stock returns are regressed on inflation. A statistically significant positive unit coefficient for the inflation variable in such a regression would substantiate the inflation hedge hypothesis. In such situations, stock prices in nominal terms should fully effect the expected inflation and the relationship between these two variables should be positively correlated.

The Fisher hypothesis, when studied using real rather than nominal stock returns, suggests that real stock returns should be independent of inflation. In contrast several studies emerged in the context of US (e.g Litner (1975) Fama (1982), Geske and Roll (1983) and European economies e.g. Asprem (1989) which consistently rejected the Fisher's hypothesis. Although these studies showed that the inflation affected real stocks negatively, they failed to provide any explanation for this anomaly popularly known as a stock return inflation puzzle.

Later two important approaches emerged to provide explanations for this anomaly along with others: tax effect hypothesis by Feldstein (1981) and proxy hypothesis by Fama (1981). Feldstein (1980) observed that inflation generates artificial capital gains due to the violation of depreciation and inventories. The capital gains, however, are subject to taxation. Thus, corporate face increased tax liabilities in an inflationary situation. The ultimate effect of the inflation induced tax liabilities is a reduction in the real after tax earnings. The rational

investors will take into account this effect of inflation by reducing common stock valuations. In this sense, inflation causes movement in stock prices.

Fama (1981) argued that the negative relationship between stock returns and inflation has its basis in the money demand theory and the quantity theory of money. Fama hypothesizes that rising inflation rates reduce real economic activity and demand for money. When an economic activity dips, it negatively affects the future corporate profits and hence stock prices. The negative relationship between inflation and the stock returns is on account of the proxy effect in the sense that it reflects the detrimental consequence of inflation on real economic activity. According to Fama, the statistical relationship between inflation and stock returns should disappear once the effect of real output growth is controlled for.

The reverse causality hypothesis by Geske and Roll (1983) another popular explanation of the negative association between inflation and stock prices, brings in fiscal and monetary linkages to explain the relationship between stock returns and inflation. According to this hypothesis, a reduction in real activity not only affects the stock prices adversely, but it also leads to a fall in government revenue and rise in fiscal deficits. Since the central bank monetizes a portion of fiscal deficits the money supply increases, which in turn increases the inflation.

Interestingly, findings of Ram and Spencer (1983) are at variance with that of Fishers and Famas hypotheses. They find a positive relationship between real activity and inflation, consistent with the conventional Philips

curve theory and a negative relationship between real activity and real stock returns. They also find that inflation causes real stock return unidirectional.

Maysami and Hamza (2004) they examined the long term equilibrium relationships between selected macroeconomic variables and Singapore stock market index (STI), as well as with various Singapore Exchange Sector indices-the finance index, the property index, and the hotel index. The study concludes that the Singapore's stock market and the property index form co-integrating relationship with changes in the short and long term interest rates, industrial production, price levels, exchange rate and money supply.

Omran and Pointon (2001) examined the impact of inflation rate on the performance of Egyptian stock market. Particular attention was paid to the effects of the rate inflation on various stock market performance variables, in terms of market activity and market liquidity. From the co-integration analysis through error correlation mechanisms (ECM), significant long run relationships between the variables are found, implying that the inflation rate has had an impact upon the Egyptian stock market performance generally.

Falahati and Rostami (2012) examined the effect of inflation on development of stock market, stock market as one of the important financial sectors of the economy that affect various forms. From the view of many experts, the importance of financial sector development emanates from the point that, an efficient financial sector has a key role in mobilizing financial resources allocation mechanism. The study investigates the relationship between inflation and stock market development in Iran during the spring of

1999 upto late summer 2008. According to the characteristic of the Iranian economy, the used model was based on Boyd, Levine and Smith (2001) models. They first used a linear model to control other economic factors that may have correlations with the performance of financial market. Then the threshold regression was used to show the nonlinear relationship between inflation and financial market development. In their model,, different thresholds have been considered for inflation. With attention to considered variables, the conditional least square (CLS) was used to estimate the model, which, by minimizing squares of errors, is a good criterion for selecting the optimal inflationary threshold. The results showed that, in the studied period, first, there is no positive relationship between inflation and indicators of stock market development and second there is no threshold for effect of inflation on stock market.

Kimani and Mutuku (2013) examine inflation dynamics on the overall stock market performance, investigated the impact of inflation, Central Depository system (CDS) and other macroeconomic variables (including deposit rate, gross domestic product terms of trade and the net effective exchange rate) on the Nairobi stock market performance using quarterly data from the Central Bank of Kenya (CBK) and the Nairobi Stock Exchange (NSE) for the period December 1998 to June 2010. Unit root test based on the formal ADF test procedure reveals that the set of variables is a I(1) process while the Johansen-Juselius VAR based co-integration test procedure reveals more than 4 co-integration relationships. Consequently, an error correction model was

estimated revealing that 27percent of the departure from equilibrium is cleared quarterly. The co-integration model indeed shows that there is a negative relationship between inflation and stock market performance in Kenya. In addition the CDS is shown to have positive and significant impact on the stock performance.

Omotoso (2008) examined relationship between inflation and stock market returns: evidence from Nigeria. States that the linkage between stock prices and inflation has been subjected to extensive research in the past decades and has roused the interests of academics, researchers, practitioners and policy makers globally. Since the 1990s the issue has been the apparent anomaly of the negative relationship between inflation and stock market returns as most studies in the industrialized economies have shown. This paper investigates this relationship using monthly and quarterly data of Nigeria for the period 1985 to 2008. His findings suggest that stock market returns may provide a hedge against inflation in Nigeria.

Daferighe and Charlie (2009) examined the impact of inflation on stock market performance in Nigeria. Which state that stock market is an economic institution that promotes the growth and development of economy of a nation. The paper investigated the impact of inflation on stock market performance in Nigeria using time series data for twenty years from 1991 to 2010. The regression analysis was used to evaluate influence of inflation on various measures of stock market performance proxy by market capitalization (MCAGDP), total value traded ratio (TVMS), percentage change in All share

index (%▲ASI) and turnover ratio (TOR).The findings revealed that all the measures were negatively related to inflation in convergence to prior expectation except for TOR which showed a positively relationship.

Houguet (2008), explanation of stock inflation neutrality is anchored on two stances as outline from Giammarino (1991) that companies can pass on one for one costs and that the real interest rate which investors use to discount real cash flows does not rise when the inflation rises in addition, inflation has no long term negative impact on growth.

According to Aligidede and Panagiotidis (2006), these studies compared the inflation hedge properties of common stocks with those of other financial and real variables for the US. They found that common stock acted as poor against unexpected and expected inflation. In another development, Firth and Gultekin (1983) found reverse evidence using UK data. Jaffe and Mandelker(1976) also report a negative relationship between annual stock returns and concurrent rates of inflation over short sample periods but a positive relationship over much longer period 1875 to 1970. In another vein, Marshall(1992) argued that the negative relationship between stock returns and inflation will be less pronounced during periods when inflation is generated primarily by monetary fluctuations. Studies that have agreed with the proposition are Graham(1996), who found the positive relationship between common stocks and inflation in the USA(1976 to 1982) during the period money rather than real activity was the cause of inflation. Spyrou(2004) study ten emerging economies further provide evidences that may suggest equity

providing an effective hedge against inflation could be explained by a significant relationship between money and consumer prices in emerging markets. Rapch (2004) employed data of 16 OECD countries to determine the direction of the correlates. He observed that the long run inflation neutrality exists if the stock markets of the countries. Following the methodology of King and Watson(1997) in the establishment of time series properties, Rapch explains that the long run Fisher effects exists if the long run real stock returns do not respond to a permanent inflation stock(Yeh and Chi.2009:169).Studies on the inflation stock return maxim for the Nigeria economy as then scan on the literature revealed are however relatively sparse. The available views from the search equally have their limitations. Subair and Salihu (n.d) using an error correction model to investigate the effect of exchange rate volatility on the Nigeria stock market though found exchange rate volatility to exert strong negative impact on the Nigeria stock market, the rate of inflation did not have long run relationship with stock market capitalization. The reason for no long run relationship as adduced by the authors is the over bearing participation of the government in the market. First the, co-integration result which authors claim to underscore this reasons was not reported. Second, which market (stock exchange or foreign exchange) government participation is overbearing is not explicitly defined. However, in either of the two markets, government participation over the years has been eroded. Consequently, Subair and Salihu findings may be misleading. Daferighe and Aje (2009) using annual data analyzed the impact of real gross domestic product, inflation and interest rates

on stock prices of quoted companies in Nigeria from 1997 to 2006. The results among other shows that low inflation rate resulted in increased stock prices of quoted firms in Nigeria. Daferighe and Aje study suffers from misspecification drawbacks and spurious relationship. A high R^2 with suspected highly auto correlated residuals signify that the conventional significant tests are biased. The integrated process of the variables was not analyzed, neither the individual test of the series for the random walks checked. The short data span of only ten points using a multiple regression techniques is inappropriate. Yaya and Shittu (2010) examined the predictive power of inflation and exchange rate on Nigeria's stock volatility. The QGARCH model shows a significant relationship of inflation and exchange rate to conditional stock market vitality. This study however did not test whether equities are a good hedge against inflation.

Although numerous studies emerged on the topic, most of them concern with developed nations particularly, in the United States. Only a few studies analyzed this issue in the context of developing countries with relatively nascent stock markets and potentially unique transmission mechanisms mediating real activity and monetary policies (Chatroth et al, 1997). For instance, Floros (2004) found little evidence to support the Fisher hypothesis in a study of ten emerging economies, viz, Chile, Mexico, Hong Kong, Turkey.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter presents the methodology used in the study; this includes the research methods, sampling, and design methods of data collection, techniques of data analysis and the justification of techniques.

3.2 RESEARCH DESIGN

The method adopted by the researcher is correlation research design. Correlation research design is used to establish meaningful relationship between variables, using the correlation research design; we seek to understand the impact of inflation on stock market return.

3.3 POPULATION OF THE STUDY

Population is made up of all conceivable elements, subjects or observation relating to a particular phenomenon of interest to the researcher. The subjects or elements are individual items that make up the population. They may be observed or physically counted (Asika, 2004).

Population of the study is the Nigeria Stock Exchange comprising 218 listed firms as at 31st December, 2012 (Nigeria Stock Exchange Fact book 210/2011).

3.4 SOURCES OF DATA

Data is independent happening or event that conveys no meaningful information in itself. Data are classified either primary data or secondary data. Primary data is a data collected by the researcher for a specific research investigation. The study makes uses of the secondary source.

Secondary sources refer to the population of other agencies or bodies that collected data for purposes different from which the researcher intend to use it for. The sources consist of publication, annual reports, accounts, journals magazines.

3.5 METHOD OF DATA COLLECTION

The data collected for the study comes from secondary data. The study started by searching for secondary data related to the study problem in order to gain an overview of these subjects and also the possibility to understand quoted firms in Nigeria.

Data collected from this source contains more information than mere guesses and expression of opinion which may not be backed with proves.

Historical data of inflation rate, stock market returns were collected, they are secondary in nature because it has source document.

The data were gathered from existing documents which comprises NSE fact books, Central bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistics (NBS), Nigeria Stock Exchange (NSE) 2013 market outlook. This

research uses time series data for a period of twenty (20) years, from 1993 to 2012.

3.6 TECHNIQUE OF DATA ANALYSIS

In order to analyze data with a view of resolving the problem and achieving the stated objectives of a study, there are various techniques that can be used. The techniques of analyses used in the study include: Descriptive statistics and regression analysis.

3.6.1 Descriptive Statistics

Descriptive statistic is used to research for the purpose of bringing the data in order. It aids data preparation tabulation and summarization. Descriptive statistics is used to summarize mass data generated in the study, so that appropriate analytical methods could be used to further appropriate discover relationship among the variables in the study.

3.6.2 Regression Analysis

Regression analysis is a statistical process of estimating the relationship among variables. It includes many techniques for modeling and analysing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables.

3.7. TOOLS OF ANALYSIS AND MODEL SPECIFICATION

Ordinary Least Square (OLS) multiple regression is the tools of analyses employed in this research. OLS model would be used to test the impact of inflation on stock market returns using time series data for a period of twenty (20) years from 1993 to 2012.

Model Specification is thus;

$$SMI_t = \alpha + \beta_1 SMI_{t-1} + \beta_2 CPI_{t-1} + e_t$$

SMI = Stock market Index

α = Constant

β_1 and β_2 = Coefficients of the parameters to be estimated

CPI = Consumer price index as the measure of inflation

3.8 JUSTIFICATION OF METHOD USED IN THE STUDY

Secondary data is employed because research of this nature can only source its data from historical documents. Correlation research design is used for impact studies as it is used to establish meaningful relationship between variables.

Regression analysis is employed in this research because regression has been widely used for forecasting and predicting and it is used to understand the way and manner an independent variable affects the dependent variables.

CHAPTER FOUR

DATA PRESENTATION ANALYSIS ND INTERPRETATION

4.1 INTRODUCTION

This chapter present and analyses data collected from secondary sources. The hypothesis is stated in the chapter. Data from secondary sources were analyzed by means of linear regression techniques.

4.2 DATA PRESENTATION

The data presented were mainly from secondary sources and it includes the All Index share of all 218 firms quoted on the Nigeria stock exchange market as at 2012. This paper uses time series data for the period of (20) years 1993 to 2012. The secondary sources were the Central Bank Statistical bulletin, National Bureau of Statistics, Nigeria Stock Exchange Fact book.

Table 4.2.1 Descriptive statistics

| | Mean | Std. Deviation |
|-------------|----------|----------------|
| StkMktIndex | 1.7476E4 | 13919.77440 |
| StkMktlag | 5.6414E3 | 7516.55958 |
| CPILag | 7.3600 | 10.33479 |

From the Table 4.2.1 above, it shows that there 20year observations for each variables. i.e stkmktindex, stkmktlag, cpilag making a total of 60 observations in this study.

The mean which is the whole set of data divided by the number of observation for individual variable is 1.75 stkmrktindex, 5.64stkmrklag, 7.36 cpilag. Then the standard deviation for stkmrktindex is13919.77, stkmrklag is7516.56, cpilag is 10.33.

Table 4.2.2 Correlation

| Pearson Correlation | StkMktIndex | Stkmklag | CPilag |
|---------------------|-------------|----------|--------|
| StkMktIndex | 1.000 | .793 | -.310 |
| Stkmklag | .793 | 1.000 | -.159 |
| CPilag | -.310 | -.159 | 1.000 |

Table 4.2.2 above describes the relationship among variables used in this research. The Pearson correlation shows that StkMktIndex is strongly positively correlated to Stkmklag (0.793) i.e. they are moving in the same direction, StkMrkIndex is negatively correlated to CPilag(-0.310) indicating an inverse relationship while Stkmrklag and CPilag are also negatively correlated(-0.159).

Table4.2.3 Coefficients

| Model | Unstandardize | | Standardized | t | Sig | Collinearity | |
|-------|---------------|------------|--------------|---|-----|--------------|-----|
| | Coefficient | | Coefficient | | | Statistics | |
| | B | Std. Error | Beta | | | Tolerance | VIF |

| | | | | | | |
|-----------|----------|---------|-------|--------|------|------------|
| | | | | | | |
| Stkmktlag | 1.413 | .264 | .763 | 5.354 | .000 | .975 1.206 |
| CPIlag | -254.550 | 191.915 | -.189 | -1.326 | .202 | .975 1.206 |

Table 4.2.3 above shows the coefficient, that the Stkmktlag is positively correlated with StkMktIndex with Beta as 0.763. It indicates that an increase in Stkmktlag result to increased Stkmkt returns. This means that every 0.763 change in Stkmkt returns cause one unit increase in stock market returns. Furthermore, the correlation is significant with t=5.354 and t sig of 0.01 which shows that it is significant at 1% and 5%.

CPI is negatively correlated to stock market returns with a Beta of -0.189 which means that a reduction in the CPI leads to increment the stock in return i.e. every change in CPI causes one unit reduction in stock market returns. Furthermore, the t statistic as -1.326 shows that the negative relationship is not significant since t sig is 0.202.

To test for multi-collinearity shows that variance inflation factor(VIF)=1.026 and TV=0.975. The study test for multi collinearity using VIF and TV. According to Gujarati (2004), if the variables have VIF above 10 or TV less than 0.10 shows strong multi collinearity among variation. This result shows absence of multi collinearity as VIF=1.026 which is less than 10 and TV=0.975 is above 0.10.

Therefore model specified as thus:

$$SMIt = \alpha + \beta_1 SMIt-1 + \beta_2 CPIt-1 + et$$

Is reinstated with coefficient of beta from the SPSS output.

$$SMIt = 8459.8 + 0.763SMIt-1 - 0.189CPIt-1 + et$$

Table 4.2.4 Model Summary

| Model | R | R ² | Adjusted R ² | Std.Error of the Estimate | F | Sig | Durbin Watson |
|-------|------|----------------|-------------------------|---------------------------|--------|------|---------------|
| 1 | .815 | .624 | .624 | 8535.96846 | 16.763 | .000 | 1.143 |

Table 4.2.4 above the coefficient of correlation which $R = 0.815$ reflects a high positive correlation between the SMI_{it}, SMI_{lag} and CPI_{lag}.

The R square which is coefficient of determinant is 0.66 which indicates 66% Of variation in SMI_{it} is caused by changes in SMI and CPI. This means that 66% of variation in SMI can be explained by SMI_{lag} and CPI

Adjusted $R^2 = 0.62$, this absorbs the impact of multiple independent variables, indicate that irrespective of two independent variable 62% of variation in stock market is explained by SMI_{lag} and CPI_{lag}.

Furthermore, the global test for model fitness called F-test was carried out and the result shows that F statistics is 16.763 which indicates that the model is fit, confirmed by F significant which is .000, shows that the model fitness is significant at 1% and 5% significant level.

Durbin Watson (DW) test is used to test for serial correlation among the residuals. The value of Durbin Watson statistics range for 0 to 4, as a general rule of thumb, the residuals are uncorrelated if DW is approximately 2. A value close to zero

indicates strong positive correlation, while value close to 4 indicates strong negative correlation. Our DW=1.134 which indicates weak positive serial correlation since the value it is above 1.

4.3 TEST OF HYPOTHESIS

The null and alternate hypothesis stated for this study is thus

H01: there is no significant relationship between inflation and stock market returns.

H11: there is a significant relationship between inflation and stock market returns

Based on the above result we hereby reject the null hypothesis that state that there no significant relationship between inflation and stock market returns and fail to reject the alternate hypothesis that states that there is a significant relationship between inflation and stock market return.

In conclusion we can infer that there is a significant relationship between inflation, stock market returns of the Nigerian stock exchange.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

The aim of this study was to determine the effect of inflation on stock market returns in Nigeria. The study uses time series data for the period of twenty (20) years from 1993 to 2012. Secondary data was used for the research work and the data was obtained from Central bank statistical bulletin, Nigeria stock exchange fact book, National Bureau of statistics, National statistical bulletin. The data used was the inflation rate and stock market index. The stock market index was the dependent variable while inflation rate served as the independent variable.

The research design was the correlation research design and the population of study was all the 218 quoted firms listed on the Nigeria Stock Exchange as at 2010/2011. The techniques used was the statistics and regression analysis. The result regression results provided the estimated for the model. The estimate was used to interpret the relationship between the dependent and independent variable.

The F-test was used to test the hypothesis. The hypothesis tested, which is in line with the objective of the study, was to determine the effect of inflation on stock market returns. The findings revealed that inflation has significant effect on stock market returns.

5.2 CONCLUSION

Base on the findings of this research we conclude that inflation has significant impact on stock market returns. The study documents that CPI and changes in stock market index which where proxies for inflation, has impact on stock market returns. This is to say that stock market returns changes with changes in the level of inflation.

5.3 LIMITATIONS

Time series analysis using lag commonly face the problem of auto correlation for consecutive lags that are formally dependent.

The use of only two independent variables has the ability to limit study, because if more macroeconomic variables where studied it would have reflected the impact of inflation.

5.4 RECOMMENDATIONS

Appropriate measures should be taken in mitigating inflationary trend for companies to maximize their share values.

There is need for ensuring appropriate development of the stock market since it contributes to maximization of share valued. However, the securities and Exchange Commission (SEC) and the Nigeria Stock Exchange (NSE) should engage in public enlightenment and improve on corporate governance framework to encourage more investment and improve transactions in the market considering its present low level of activities.

The government should favourably control interest rate so as to aid the growth of the stock market.

Government should implement policies that will reduce inflation rate and poverty level through infrastructural development and improved standard of living.

Also, interest rate should be made moderate in order to encourage investment and transactions in stocks in the Nigerian Capital Market.

The government should favourably control inflation rate so as to aid the growth of the stock market.

Central Bank of Nigeria (CBN) should formulate and use policy statements that will maintain inflation at low ebb in order not to erode the value of gains.

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APPENDIX

POPULATION OF THE STUDY (218 QUOTED FIRMS IN THE NIGERIA STOCK EXCHANGE 2010/2011 FACTBOOK)

7-UP BOTTLING COMPANY PLC

A. G. LEVENTIS (NIG.) PLC

ABBAY BUILDING SOCIETY PLC

ABPLAST PRODUCTS PLC

ACADEMY PRESS PLC

ACCESS BANK PLC

ADSWITCH PLC

AFRIBANK NIGERIA PLC

AFRICAN ALLIANCE INSURANCE PLC

AFRICAN PAINTS (NIG.) PLC

AFRICAN PETROLEUM PLC

AFRIK PHARMACEUTICALS PLC

AFROIL PLC

AFROMEDIA NIG. PLC

AIICO INSURANCE PLC

AIRLINE SERVICES & LOGISTICS PLC

ALBARKA AIR PLC

ALUMACO PLC

ALUMINIUM EXTRUSION IND. PLC

ANINO INTERNATIONAL PLC

ARBICO PLC

ASHAKA CEMENT PLC

ASO SAVINGS AND LOANS PLC

ASSOCIATED BUS COMPANY PLC
AVON CROWNCAPS & CONTAINERS NIG. PLC
B.O.C. GASES PLC
BANK PHB PLC
BEGER PAINTS NIG. PLC
BETA GLASS COMPANY PLC
BECO PETROLEUM PRODUCT PLC
BIG TREAT PLC
C & I LEASING PLC
CADBURY NIGERIA PLC
CAP PLC
CAPITAL HOTELS PLC
CAPITAL OIL PLC
CAPPA & D'ALBERTO PLC
CEMENT CO. OF NORTH. NIG. PLC
CHAMPION BREWERIES PLC
CHAMS PLC
CHELLARAMS PLC
CHEMICAL AND ALLIED PRODUCT PLC
CONFIDENCE INSURANCE PLC
CONOIL PLC
CONSOLIDATED HALLMARK INSURANCE PLC
CONTINENTAL REINSURANCE PLC
CORNERSTONE INSURANCE PLC
COSTAIN (W.A.) PLC
COURTEVILLE INVESTMENTS PLC

CRUSADER (NIGERIA) PLC
CUSTODIAN & ALLIED INSURANCE PLC
CUTIX PLC
DAAR COMMUNICATIONS PLC
DAILY TIMES OF NIGERIA PLC
DANGOTE CEMENT PLC
DANGOTE FLOUR MILLS PLC
DANGOTE SUGAR REFINERY PLC
DEAP CAPITAL MANAGEMENT & TRUST PLC
DIAMOND BANK PLC
DN MEYER PLC
DUNLOP NIGERIA PLC
ECOBANK NIGERIA PLC
ECOBANK TRANSNATIONAL INC.
EKOCORP PLC
ELLAH LAKES PLC
EQUITY ASSURANCE PLC
ETRANZACT INTERNATIONAL PLC
ETERNA OIL & GAS PLC
EVANS MEDICAL PLC
FIDELITY BANK PLC
FIDSON HEALTHCARE PLC
FIRST ALUMINUM NIGERIA PLC
FIRST BANK OF NIGERIA PLC
FIRST CAPITAL INVESTMENT TRUST PLC
FIRST CITY MONUMENT BANK PLC

FINLAND BANK PLC
FLEXIBLE PACKAGING PLC
FLOUR MILLS NIGERIA PLC
FOREMOST DIARIES PLC
FTN COCOA PROCESSORS PLC
G. CAPPAL PLC
GLAXO SMITHKLINE CONSUMER NIGERIA PLC
GOLDEN GUINEA BREWERIES PLC
GOLDLINK INSURANCE PLC
GREAT NIGERIAN INSURANCE PLC
GRIEF NIGERIA PLC
GUARANTY TRUST BANK PLC
GUARANTY TRUST ASSURANCE PLC
GUINEA INSURANCE PLC
GUINNESS NIGERIA PLC
HALLMARK PAPER PRODUCTS PLC
HONEYWELL FLOUR MILLS PLC
IHS PLC
IKEJA HOTEL PLC
INCAR NIGERIA PLC
INTERCONTINENTAL BANK PLC
INTERCONTINENTAL WAPIC INSURANCE PLC
INTERLINKED TECHNOLOGIES PLC
INTERNATIONAL BREWERIES PLC
INTERNATIONAL ENERGY INSURANCE PLC
INVESTMENT & ALLIED ASSURANCE PLC

IPWA PLC

JAPPAUL OIL & MARITIME SERVICES PLC

JOHN HOLT PLC

JOS INTER. BREWERIES PLC

JULI PLC

JULIUS BERGER NIGERIA PLC

KRABO NIGERIA PLC

LAFARGE WAPCO PLC

LASACO ASSURANCE PLC

LAW UNION AND ROCK INS. PLC

LENNARDS (NIG.) PLC

LINKAGE ASSURANCE PLC

LIVESTOCK FEEDS PLC

LONGMAN NIGERIA PLC

MASS TELECOM INNOVATION NIG. PLC

MAY & BAKER NIGERIA PLC

MCNICHOLS CONSOLIDATED PLC

MOBIL OIL NIGERIA PLC

MORISON INDUSTRIES PLC

MRS OIL NIGERIA PLC

MTECH COMMUNICATIONS PLC

MTI PLC

MULTIVERSE PLC

MUTUAL BENEFITS ASSURANCE PLC

NAMPAK NIGERIA PLC

NATIONAL SALT CO. OF NIG. PLC

SECURE ELECTRONIC TECHNOLOGY PLC
NCR (NIGERIA) PLC
NEIMETH INTERNATIONAL PHARM. PLC
NEM INSURANCE COMPANY PLC
NESTLE NIGERIA PLC
NEWPAK PLC
NIGER INSURANCE CO. PLC
NIGERCEM PLC
NIGERIA BOTTLING COMPANY PLC
NIGERIA ENERGY SECTOR FUND
NIGERIA-GERMAN CHEMICALS PLC
NIGERIAN AVIATION HANDLING CO. PLC
NIGERIAN BAGS MAN. CO. PLC
NIGERIAN BREWERIES PLC
NIGERIAN ENAMELWARE CO. PLC
NIGERIAN ROPES PLC
NIGERIAN SEW. MACH. MAN. CO. PLC
NIGERIAN WIRE & CABLE PLC
NIGERIAN WIRE INDUSTRIES PLC
NPF MICROFINANCE BANK PLC
NORTHERN NIG. FLOUR MILLS PLC
OANDO PLC
OASIS INSURANCE PLC
OCEANIC BANK INTER. PLC
OKITIPUPA OIL PALM PLC
OMATEK VENTURES PLC

PAINT & COATINGS MAN. PLC
P Z CUSSONS NIGERIA PLC
P.S. MANDRIDES & CO. PLC
PHARMA-DEKO PLC
PINNACLE POINT GROUP PLC
PORTLAND PAINT AND PRODUCTS NIG. PLC
POLY PRODUCTS (NIG.) PLC
PREMIER BREWERIES PLC
PREMIER PAINTS PLC
PRESCO PLC
PRESTIGE ASSURANCE CO. PLC
R. T. BRISCOE (NIG.) PLC
RAK UNITY PETROLEUM CO. PLC
RED STAR EXPRESS PLC
RESORT SAVINGS AND LOAN PLC
REGENCY ALLIANCE INSURANCE CO. PLC
ROADS NIGERIA PLC
ROKANA INDUSTRIES PLC
ROYAL EXCHANGE PLC
SCOA NIGERIA PLC
SKYE BANK PLC
SKYE SHELTER FUND PLC
SMART PRODUCTS NIGERIA PLC
SOVEREIGN TRUST INSURANCE PLC
SPRING BANK PLC
STACO INSURANCE PLC

STANBIC IBTC BANK PLC

STANDARD ALLIANCE INSURANCE PLC

STARCOMMS PLC

STERLING BANK PLC

STOKVIS NIGERIA PLC

STUDIO PRESS (NIG.) PLC

TANTALIZERS PLC

THE OKOMU OIL PALM PLC

THOMAS WYATT NIGERIA PLC

TOTAL NIGERIA PLC

THE TOURIST COMPANY OF NIGERIA PLC

TRANSNATIONAL CORP. OF NIGERIA PLC

TRANS-NATIONWIDE EXPRESS PLC

TRIPPLE GEE & COMPANY PLC

TROPICAL PET. PRODUCTS PLC

UAC OF NIGERIA PLC

UACN PROPERTY DEVELOPMENT CO. PLC

UNITED BANK FOR AFRICA PLC

UDEOFSON GARMENT FACT.NIG. PLC

UNIC INSURANCE PLC

UNILEVER NIGERIA PLC

UNION BANK OF NIGERIA PLC

UNION DIAGNOSTIC & CLINICAL SERVICES PLC

UNION DICON SALT PLC

UNION HOMES SAVINGS AND LOANS PLC

UNION VENTURES & PET. PLC

UNITED NIGERIA TEXTILES PLC
UNITY BANK PLC
UNITYKAPITAL ASSURANCE PLC
UNIVERSAL INSURANCE COMPANY PLC
UNIVERSITY PRESS PLC
UTC NIGERIA PLC
VITAFOAM NIGERIA PLC
VONO PRODUCTS PLC
W. A. ALUM. PRODUCTS PLC
W. A. GLASS INDUSTRIES PLC
WEMA BANK PLC
WIGGINS TEAPE NIGERIA PLC
ZENITH BANK PLC