

**EFFECTS OF MACRO-ECONOMIC VARIABLES ON FINANCIAL  
PERFORMANCE INDICATORS: EVIDENCE FROM NIGERIA PETROLEUM  
MARKETING**

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**Abstract**

*The objective of the study was to find out the effect of macroeconomic variables on the financial performance of Nigerian petroleum Marketing. Specifically, the aim of the study were to: Ascertain the impact of the gross domestic product (GDP) on the financial performance of Nigerian petroleum Marketing; Assess the effect of exchange rate on Nigerian petroleum Marketing; Evaluate the impact of inflation rate on Nigerian petroleum Marketing. Furthermore, this research provided a detailed methodology. Hence, it also provided detailed information on selected hypotheses, research design, and areas of study and instrument of data collection. Using evidence from Gross Domestic Product, exchange rate, and inflation rate on Nigerian petroleum Marketing. This work examined macroeconomic variables; from the result, it was observed that a unit change in the gross domestic product would result in 0.123792 changes in Petroleum marketing as a proxy for financial performance. This shows a negative relationship exists between GDP and financial performance. This may be as a result of the choice of variable and case study. The result also indicates that a unit change in Exchange Rate will result in -470028.06 changes in Petroleum marketing as a proxy for financial performance. Again the result shows that a unit change in Inflation Rate will lead to -168486.6 changes in Petroleum marketing as a proxy for financial returns, a negative relationship exists between the two variables, It was concluded from the study that financial performance of the economy could be controlled to a large extent by macroeconomic variables. Arising from the findings, the study recommended that Government through the appropriate authorities should embark on fiscal policies, it will encourage and increase the rate of growth on GDP since it has a positive relationship with financial performance.*

**Keywords:** Macro-economic, financial performance

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## **1.1 Introduction**

The state of a country's economy affects the performance of its organizations. Ventura (2007), whenever the economy is performing well the general expectation of most investors and shareholders is that companies would play well and thus overall growth in wealth. The economic performance is determined by the stability of macroeconomic variables, such as its exchange rate, rate of inflation, consumer price index, Gross Domestic Product, stock market index and interest rates. It is the expectation of policymakers at both the macro and micro levels in an economy that these variables would remain static and favorable to sustain business growth.

The growth rate of the global economy has been fluctuating over time. The global economic growth slowed down from 5 percent in the year 2010 to 3.8 percent in the year 2011. This can be attributed to several factors. First, the increase in the oil prices in the global market that led to the rise in the overall cost of production especially in industries that rely on oil products. Secondly, there was a general slowdown in the growth of the world emerging economies such as China due to the increased cost of production. Finally, this decline has been attributed to the euro debt crisis and the implementation of austerity measures in many leading industrial economies. (KNBS: 11).

Darfor and Agyapong (2010), the increases and decrease in the GDP have been attributed to both positive and negative occurrence in the economy. The positive factors include: increase in credit by the private sector, higher public investment in roads and the higher inflows of remittances from the Diasporas. However, there has been a negative aspect that has led to the decline of the economy including high-interest rates which constraints credit to the productive sector as result of loan default, escalating oil prices, increased inflation rate.

The role played by the oil sector towards economic growth in Nigeria cannot be underestimated. Petroleum is vital to many industries and the entire economy and is of importance to the maintenance of industrial civilization in its current configuration, and this is a critical concern for many nations. Oil accounts for a large percentage of the world's energy consumption, ranging from a low of 32% for Europe and Asia, to a high of 53% for the Middle East. The petroleum industry has been playing a dominant function and occupies a strategic position in the economic development of Nigeria (Azaiki and Shagari (2007). This is

evidenced by the total oil revenue generated in the Federation Account from 2005 to 2013 which amounted to N34.2 trillion while non-oil was N7.3 trillion, representing 82.36% and 17.64% respectively. Anything that affects the oil sector has changed the entire economy. Because of the position of the oil sector in our economy, this study is geared towards finding the effects of macroeconomic variables on the financial performance of Nigerian petroleum marketing.

### **1.2 Statement of the Problem**

Knowing how the market will perform as a response to macroeconomic changes is essential for those who are looking for returns on their investments and policymakers. Frequently, research in this area has found statistical proof to support the theory that macroeconomic variables affect the financial performance of corporate organizations. However, there are also studies that found no causal relationship between some of the variables (Nasseh and Strauss, 2000; Tangjitprom, 2012).

The rebirth of democratic dispensation in Nigeria was threatened with multi-facet challenges of high external indebtedness, rising rate of inflation from single to double-digit, unabating high rate of unemployment, slow-paced but fluctuating GDP growth rate, foreign reserve inadequacy, and the terrain of the country's power generation/distribution misfortune, which all had been the evident lengthened involvement of the military in the Nigeria political history. The country's national currency fiscal policy to a US dollar, inflation rates, monetary policies, and the extent or level of GDP growth the country has attained, the sustenance and continued maintenance of an upward increase remain a source of worry to Nigerians and national economists, considering the country's unsolved difficulties of energy generation and distribution which in turn has undermined the performance of the industrial and employment sectors. The purpose of this research is to analyze macroeconomic variables and their impact on the financial performance of petroleum marketing companies in Nigeria.

### **1.3 Objectives of the Study**

The general objective of the study is to find out the effect of macroeconomic variables on the financial performance of Nigerian petroleum Marketing. Specifically, the purposes of the study were to:

- i. Ascertain the impact of the gross domestic product (GDP) on the financial

performance of Nigerian petroleum Marketing.

- ii. Assess the effect of exchange rate on Nigerian petroleum Marketing.
- iii. Evaluate the impact of inflation rate on Nigerian petroleum Marketing.

#### **1.4 Research Questions**

- i. What is the effect of gross domestic product (GDP) on the financial performance of Nigerian petroleum marketing?
- ii. What is the impact of exchange rate on Nigerian petroleum marketing?
- iii. What is the effect of inflation rate on Nigerian petroleum marketing?

#### **1.5 Research Hypotheses**

- i. Gross domestic product (GDP) has a significant positive effect on the financial performance of Nigerian petroleum Marketing.
- ii. The exchange rate has a significant positive impact on the Nigerian petroleum Marketing.
- iii. The inflation rate has a significant positive effect on Nigerian petroleum Marketing.

#### **1.6 Significance of Study**

The following people are to benefit from this study:

- i. **Government:** This Study will enable government bodies and agencies to know how to direct its resources and also activities that promote the financial performance of Nigerian petroleum marketing. Moreover, they would even tell policies that can enable to encourage Nigerian petroleum marketers and service on the economy.
- ii. **Manufacturers/ exporters:** This study will allow petroleum marketers to know the challenges, constituencies, types, and factors of financial performance and also will increase familiarity between them and the economy. Also, this study will educate them on how and why they should go into financial performance indicators.
- iii. **Individuals:** This study will finally help individuals such as students, other researchers and co-operate bodies to know the importance of Nigerian petroleum marketing about the economy.

#### **1.7 Scope of the Study**

The study examines the effect of macroeconomic variables on financial performance indicators: Evidence from Nigerian petroleum Marketing. The key issues include Gross

Domestic Product (GDP), financial performance, Exchange rate, and Inflation rate.

### **1.8 Limitation of the Study**

The following are some limitations in the research of this paper;

- i.** Financial Constraints: the researcher could not affect the money to carry out more research work on the subject.
- ii.** Lack of Time: Enough time was not given to the researcher to effectively collect enough data for the job.
- iii.** Inadequate Source of Secondary Data: the insufficiency of secondary data hindered the researcher ability to gather enough information to carry out the work effectively.

## **2.0 Review of Related Literature**

### **Conceptual Review**

Akers (2001) defines macroeconomics as a branch of economics dealing with the performance, structure, behavior, and decision-making of an economy as a whole, rather than individual markets. This includes national, regional and international economies. Macroeconomics studies aggregate indicators such as Gross Domestic Production (GDP), unemployment rates and sometimes indices to understand how the whole economy functions. They develop models that explain the relationship between such factors as national income, output, consumption, unemployment, inflation, savings, investment, international trade, international finance, and others. While macroeconomics is a wide field of study, there are two areas of research that are emblematic of the discipline: the attempt to understand the causes and consequences of short-run fluctuations in national income (the business cycle), and the effort to understand the determinants of long-run economic growth (increase in national income). These models and their predictions are used by governments to assist in the development and evaluation of economic policy.

Crowley (2007) defines interest rate as the price a borrower pays for the use of the money they borrow from a lender or fee paid on acquired assets. Ngugi (2001) describes the interest rate as a price of money that reflects market information regarding the expected variables in the purchasing power of money or future inflation. Economists argue that the interest rate is the price of capital allocation over time; monetarist uses the interest rate as an essential tool to attract more saving, as increases in the interest rate draw more savings and the decrease in

interest rate will encourage investors to search for another investment that will generate more return accordingly. Insurance firms themselves earn high-interest income when interest rates are high, and on the contrary, high-interest rates discourage premiums.

Jhingan (2002) defines inflation as a persistent and appreciable rise in the general level of prices. Akers (2014) states that inflation rate measures changes in the average price level based on a price index. The most commonly known index is the Consumer Price Index (CPI). The index measures average retail prices that consumers pay.

Harvey (2012) describes the exchange rate as the value of two currencies relative to each other. It is the price of one money expressed concerning another currency. It is the price at which the currency of one country can be converted to the currency of another. Although some exchange rates are fixed by agreement, most fluctuate or float from day to day. Martin and Mauer (2003), reveals that understanding the impact of foreign exchange risk is a critical element for. put:".e0ses of firm valuation and risk management Gross Domestic Product is the market value of all finished goods and services produced in a country within a particular period, mostly one year. It is a gauge of economic recession and recovery and an economy's general monetary ability to address externalities.

### **Financial Performance**

Eshna (2016) financial Performance in a broader sense refers to the degree to which financial objectives being or has been accomplished and is an essential aspect of financial risk management. It is the process of measuring the results of a company's policies and operations in monetary terms. It is used to measure a firm's overall financial health over a given period and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

### **The relationship between Macroeconomic Variables and Financial Performance**

Evidence has shown that since 1980 some relationship exists between the stock of money and economic growth or economic activity in Nigeria. Over the years, Nigeria has been controlling her economy through variations in her inventory of cash. Consequent upon the effect of the collapse of oil price in 1981 and the balance of payment (BOP) deficit experienced during this time, various methods of stabilization ranging from fiscal to monetary policy were used. Ikhide and Alwoda (2013) concluded that reducing money stock of money through increased interest

rates would lower gross national product (GNP). Thus the notion that the share of money varies with economic activities applies to the Nigerian economy. As already explained money supply exerts considerable influence on economic activity in both developed and developing economies. The low level of the number of monetary aggregates in general and money stock, in particular, had been responsible for the fundamental failure of many African countries to attain growth and development. Various scholars have laid much of the blame for the failure of monetary policies to translate into economic growth on the government and its agencies as a result of inadequate implementation and sincerity on the part of policy executors.

Firms and interested groups such as managers, shareholders, creditors, and tax authorities look to answer essential questions like what is the financial position of the firm at a given point of time and how is the Financial Performance of the firm over a given period? These questions can be answered with the help of a financial analysis of a firm. The economic analysis involves the use of financial statements. A financial statement is a collection of data that is organized according to logical and consistent accounting procedures. Its aims are to convey an understanding of some economic aspects of a business firm. It may show a position of a period as in the case of a Balance Sheet or may indicate a series of activities over a given period, as in the case of an Income Statement. Thus, the term 'financial statements' generally refers to two basic statements: the Balance Sheet and the Income Statement. The Balance Sheet shows the financial position (condition) of the firm at a given point in time. It provides a snapshot that may be regarded as a static picture. "Balance sheet is a summary of a firm's financial position on a given date that shows Total assets = Total Liabilities + Owner's equity." The Income Statement (referred to in India as the profit and loss statement) reflects the performance of the company over a period. "Income statement is a summary of a firm's business revenues and expenses over a specified period, ending with net income or loss for the period." However, financial statements do not show all the information related to the commercial operations of a firm, but they furnish some beneficial information, which highlights two critical factors profitability and financial soundness (Eshna, 2016)

## **2.2 Theoretical Review**

### **Theoretical Review adopted in this study is Arbitrage**

**Pricing Theory;** Arbitrage Pricing Theory is a general theory of asset pricing that has become

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influential in the pricing of assets. This survey was developed primarily by the economist Stephen Ross in 1976 as an alternative to the capital market pricing model (CAPM). It is a multi-actor model in which every investor believes that the stochastic properties of returns of capital assets are consistent with factors framework.

Ross (2006) argues that if equilibrium prices offer no arbitrage opportunities over a static portfolio of assets, then the expected returns on the assets are approximately linearly linked to the factor loadings or beta. In other words, the expected returns of a financial asset can be modeled as a linear function of various macroeconomic variables or general market indices, where a factor specific beta coefficient represents the sensitivity to change in each factor. The model-derived rate of return is used to price the asset accurately, and the asset price should equal the expected end of period price discounted at the rate, implied by the model. If the price diverges, arbitrage should bring it back into line.

### **2.3 Empirical Review**

Mutuku and Kimani (2012) investigated the impact of Gross Domestic Product (GDP) on Nairobi stock market performance. They used time series data spanning 1996 to 2010 and vector auto-regressive" based co-integration technique. The study reveals that GDP hurts NSE hence the stock market is not a perfect hedge against GDP. Gay (2008) evaluated the association among stock prices and macroeconomic variables in cases of China, India, Brazil, and Russia; the emerging economies of the world. The study used oil price, exchange rate, and moving average lags values as explanatory variables. The MA (Moving/average) method with OLS (Ordinary Least Square) were employed. The study concludes that in emerging economies the domestic factors influence more than external factors, i.e., exchange rate, and oil prices.

Achsani and Strohe (2002) examined the relationship between inflation and the index of Jakarta financial performance; with OLS (Ordinary Least Square) technique. They conclude that increase has a negative correlation with financial performance. Nishat (2004) evaluated the long-term association among macroeconomic variables, stock prices and employed money supply, consumer price index (CPI), industrial production index, (IPI) and foreign exchange rate as explanatory variables, Nishat used Karachi financial performance of 100 index price from 1974 to 2004. Most of the time series data is non-stationary therefore unit Root

technique is used to make data stationery. The result also indicates that industrial production is significantly affected by macroeconomic variables. Grange causality test was used to find the correlation among the variables. The results reveal that there are causal relationships between the financial performance and macroeconomic variables. However, the results show that interest rate is not Granger caused by economical performance.

Mukherjee and Naka (2005) investigated the role of macroeconomic variables on the index of Tokyo stock exchange financial performance. Using Ordinary Least Squares (OLS), they found a long-term equilibrium relationship between the index of Tokyo stock exchange financial performance and macroeconomic variables such as money supply, exchange rate, and long-term. Bond rate. Apergis and Eleftherio (2002) investigated the relationship among the index of the Athens stock exchange, interest rate and inflation. Adopting a linear regression approach, the study concluded that increase has a more significant impact on the performance of the index of the Athens stock exchange than the interest rate.

Rapach (2001) analyzed the long run relationship between inflation and the stock prices adopting Ordinary Least Squares (OLS) approach. Using macroeconomic data from sixteen developed countries, the study found a weak correlation between inflation and stock prices. Liuve and Shrestha (2008) examined the relationship between asset of macroeconomic-variables and the index of Chinese stock market. By employing hetero-scedastic co-integration, they found that a significant relationship exists between the index of the Chinese stock market and macroeconomic variables. They concluded that inflation, exchange rate, and interest rate have a adverse correlation with the index of Chinese stock market.

Hashemzadeh and Durukan (2009) studied the link between macroeconomic variables and the stock prices in the Istanbul stock exchange using OLS techniques. The empirical results showed that interest rate is negatively associated with the stock price and there is no statistically significant relationship between inflation and stock price.

Aydemir and Demirh, (2009) investigated the relationship between the exchange rate and the index of the Istanbul stock exchange. By employing the Toda-Yamamoto causality test, they found that there exists two-way causation between stock exchange index and exchange rate.

Erdemetal (2005) analyzed the relationship between macroeconomic variables and the index

of the Istanbul stock exchange. Employing OLS techniques, they concluded that there is a negative relationship between inflation and the stock price, and real economic activity proxies by industrial production have a positive effect on the stock price. The result shows that ambiguous impacts of exchange rate depreciation on stock prices.

### **3. Research Methodology**

The study is an ex-post facto design with secondary data collected from Central Bank of Nigeria Statistical Bulletin and National Bureau of statistics covering the period 2000-2014.

The study made use of regression analysis with a model specification as follows.

The model' based on the methodology stated-that;  $PET = F(GDP, EXR, INF)$

For analytical purpose, the model is transformed to,  $PET = \beta_0 + \beta_1GDP + \beta_2EXR + \beta_3 INF + \mu$ ). *Where:*

PET = Contributions of petroleum to GDP as a proxy for financial

Performance of petroleum marketing GDP = Gross Domestic Product

EXR = Exchange Rate

INF = Inflation Rate

$\beta_0$  = Constant Term

$\beta_1$  = Coefficient of Gross Domestic Product

$\beta_2$  = Coefficient of Exchange Rate

$\beta_3$  = Coefficient of Inflation Rate

$\mu$  = Error Term

### **Presentation and Analysis of Result**

$PET = -618622.7 + 0.123792 GDP - 47028.06 EXR - 168486.6INF$

$t^* = -0.103338 \quad 9.360959 \quad -8.179140 \quad -1.149432$

$f^* = 10.60469$

$R^2 = 0.760846$

**Table 4.1: Summary of t-Test, and F-Test Results**

Variables	Coefficients	Coefficients Calculated Tabulated (t*)	Tabulated value (to.025)	Test Results
GDP	0.123792	9.360959	2.306	SS
EXR	-47028.06	-8.179140	2.306	SS
INF	-168486.6	-1.149432	2.306	NS
	f*	F0.0i		SS

From the above table "SS"=Statistical Significant.

#### 4.0 Analysis and Discussion of the Result

From the result, it was observed that a unit change in the gross domestic product would result in 0.123792 changes in Petroleum marketing as a proxy for financial performance. And also that positive relationship exists between the two variables. This contradicts the findings of Cheechee and Herbeman (2002) who concluded that a negative correlation exists between GDP and financial performance. This may be as a result of the preference of variable and case study.

The result also shows that a unit change in Exchange Rate will result in -470028.06 changes in Petroleum marketing as a proxy for financial performance. And even that negative relationship exists between the two variables. This conforms to the findings of Liuve and Shrestha (2008) who concludes that a negative correlation exists between Exchange Rate and financial performance. This justifies the theoretical expectation of the relationship between exchange rate and financial performance.

Again the result shows that a unit change in Inflation Rate will result to -168486.6 changes in Petroleum marketing as a proxy for financial performance, a negative relationship exists between the two variables, Tflis.:3tstf" is in line with the findings of Liuve and Shrestha (2008). This justified the theoretical expectation of the relationship between exchange rate and financial performance.

R2 which is coefficient of multiple determinations shows that 76 percent approximately of changes independent variable (PET) is caused by changes in independent variables (GDP, EXR, and INF). This shows the reliable goodness of fit.

From the table of significance, it is observed that the computed values of t-statistic for GDP

and EXR are higher than the tabulated value on the absolute term. This shows that GDP and EXR have a significant impact on PET, while the opposite holds for Inflation Rate (INF). The computed value of F -statistic, on the other hand, is higher than the tabulated value at the 5 percent level of significance, i.e.,  $10.60469 > 2.306$ . This means that the entire regression plane is significant.

## **5.0 Conclusions**

Macroeconomic variables used in this study which includes, gross domestic product, exchange rate, and inflation rate maintained the expected nature of the relationships that exists between the aforementioned independent variables and petroleum contributions to the gross domestic product as a proxy for financial performance (dependent variable). The study provides insight into how financial performance of corporate organizations and the entire economy is being affected by macroeconomic variables. It is concluded from the survey that financial performance of the economy can be controlled to a large extent by macroeconomic variables.

Arising from the findings, the study wishes to recommend as follows:

- i.** Government through the appropriate authorities should embark on fiscal policies; it will encourage and increase the rate of growth on GDP since it has a positive relationship with financial performance.
- ii.** Exchange rate as a macroeconomic variable should be regulated to maintain the significant impact it has on the financial performance of corporate organizations and the entire economy.
- iii.** Inflation rate though, according to the findings of the study has no significant impact on economic performance should be checkmated to reduce the adverse effect it may have with financial performance since the survey shows that negative relationship exists between inflation and financial performance.
- iv.** Further studies should also be conducted to determine the effects of other macroeconomic variables on economic performance.

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**Appendix I**

Dependent Variable-;-PET II				
Method Least Squares:!				
Date: 06/19/15 Time 0955				
Sample 2004 2013				
Included observations 10				
Variable	Coefficient	Error	t-Statistic	
C	-618622.7	18622.79	-0103338	
0.3364:				
GDP	0.123792	0.058486	9.360959	
0.0004'				
EXR	-47028.06	59739.68	-8.179140	
0.0009				
INF	-168486.6	1626949	-1.149432	
0.5171				
R-squared		0760846	Mean dependence var'	
7965022				
Adjusted		0.421799	SD. dependent	
1939922				
SE. of regression		1475107.	Akaike info criterion	
313553				
Sum squared reside	1.31	E+13	Schwarz criterion	
31.535553				
Log likelihood		-153.6777	F-statistic	
1060469				
Durbin-Watson stat	1307911		Prob(F-statistic)	
0.105496				

**APPENDIX II**

Year	PET	GDP	EXR	INF
2004	4247716.05	11411066.91	133.5004	15
2005	5664883.21	14572239.12	132.147	17.9
2006	6982935.44	18564594.73	128.6516	8.2
2007	7533042.6	20657317.67	125.8331	5.4
2008	9097750.7	24296329.29	118.5669	11.6
2009	7418148.91	24794238.66	148.9017	12.5
2010	9747355.2	29205782.96	150.298	13.7
2011	9872638	36679700.89	155.8462	12.9
2012	9883810.9	45375897.9	157.0981	12.9
2013	9201934.8	57850995.9	160.2907	13.1

*Source: Central Bank Statistical Bulletin, 2014*