Journal of Economics and Sustainable Development www.iiste.org
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.2, No.5, 2011

Global Financial Crisis and Oil Revenue in Nigeria

YAMDEN, PANDOK BITRUS

Department of Economics,

University of Jos, P.M.B. 2084,

Jos Nigeria

Tel: +2348032104525 E-mail: pandoky@yahoo.com

Abstract

This study examines the recent global financial crisis and its impact on the Nigerian crude oil revenue. The study used monthly data on crude oil revenue spanning 24 months before the crisis and the first 24 months during the crisis. The study employed the use of small sampling theory for analysis and the result showed that global financial crisis significantly affected oil revenue in Nigeria-even though the magnitude of the impact is beginning to ease from earlier reports. Tighter controls and regulation of the financial system together with economic diversification are recommended to mitigate against future occurrence.

Keywords: Financial Crisis, Oil Revenue, Small Sampling Theory

1. Introduction

Global financial crisis began in the United States and the United Kingdom when the global credit market came to a standstill in July 2007 (Avgouleas, 2008). The crisis really started to show its effects in countries like Nigeria in the middle of 2008 as it began to spread rapidly around the world, leading to a global downturn of economic activity . Around the world stock markets have fallen, large financial institutions have collapsed or been bought out, and governments in even the wealthiest nations have had to come up with rescue packages to bailout their financial systems (Gbolahan 2010).

This crisis has since become a major concern for political leaders, economists, and managers of financial institutions around the globe as it spread beyond the borders of the United States. Analysts have noted its numerous causes, including excessive corrupt practices, particularly the 'Sub-prime mortgage lending that led to high mortgage default and delinquency rates in the United States, the "hands-off approach to regulation" (or greed and unregulated capitalism), massive funding of the "war on terrorism," and erroneous belief that "free market" principle is perfect, fair and efficient (*The New York Times*, Nov 20, 2008) as cited in Gbolahan, (2010). Others have observed that the 'financial instability' is caused largely by inconsistent monetary and fiscal policy, politicians spending and borrowing excessively, inconsistent and unsustainable macro-economic policy, weak financial systems and institutions, and poor structure of international financial markets (Eichengreen, 2004) as cited in Gbolahan (2010). Yet it is possible that the crisis was caused by nature or regular economic boom-bust cycle.

The crisis has exposed weaknesses in the functioning of the global economy and led to calls for the reform of the international financial architecture (UNECA, 2009). Although the crisis was triggered by events in the US housing market, it spread to all regions of the world with dire consequences for global trade, investment and growth. It represents a serious setback for Africa because it is taking place at a time when the region is making progress in economic performance and management. Since 2000 the African region has had an average growth rate of real output above 5 percent and inflation has declined to single digit.

There have also been significant improvements in governance and a reduction in armed conflicts which have made the region more conducive to the attraction of private capital flows.

The global financial crisis has affected Nigeria through the reduction in volume and price of oil, low commodity prices, cut in tourism, cut in foreign credit lines and low remittances, reduction in foreign portfolio investment, soaring risk aversion, tumbling equity market and falling exchange rates.

Oil is a major source of energy in Nigeria and the world in general. Petroleum production and export are the mainstay of the Nigerian economy providing a greater percentage of the country`s revenue earnings (Ogbonna, 2004). The economy's dependence on the oil sector is very significant; 99 per cent of foreign exchange and 85 per cent of local revenues are directly derived from activities related to export of a single commodity - oil, which is at the center of the current financial crisis (Adamu, 2009). Oil, being the mainstay of the Nigerian economy plays a vital role in shaping the economic and political destiny of the country. Although Nigeria's oil industry was founded at the beginning of the century, it was not until the end of the 1970s that the oil industry began to play a prominent role in the economic life of the country such that Nigeria is now categorized as a country that is primarily rural, which depends on primary product exports especially oil products (Odularo, 2007).

The reduction in the demand for, and price of, oil in particular is providing a platform for reduced macro-economic performance through its usual channel of government revenue and foreign exchange earnings, and this portends serious implication for the growth and development of the economy. The global financial crisis which has led to the decline in the international oil price that peaked at $147 per barrel in July 2008 and declined to $47 per barrel portends a great danger for the economy of Nigeria because it has led to a significant reduction in the oil revenue of the Nigerian government which is bound to have a negative implication for the economy (Gbolahan 2010).

The crisis is beginning to ease around the globe with oil prices picking up as time went by. Gbolahan (2010) reported significantly lower oil revenue in the crisis period compared to the period before the crisis, it is pertinent to note that several developments have taken place in the period succeeding his findings. Financial markets picking up and oil price increase have steadied for some time now.

This study therefore, seeks to examine whether the situation has change or is still the same –using an expanded data to include more recent developments. The rest of the study is organized thus; Section two is a review of related literature. Section three is methodology while section four offers data analysis. Section five is summary and conclusion.

2. Review of Related Literature

According to Wikipedia (2009), a financial crisis occurs when there is a disorderly contraction in money supply and wealth in an economy. It is also known as credit crunch, it occurs when participants in an economy lose confidence in having loans as well as recall existing loan. The financial banking system relies on credit creation as a result of debtors spending, this money is in turn "banked" and loaned to other debtors, as a result, a relative small contraction in lending can lead to a dramatic contraction in money supply.This study concurs with Wikipedia since the situation has discourage credit creation due to financial institutions reluctance to offer credit and the public sceptical about bank loans.

Eichengreen and Porters (1987) defined financial crisis "as a sharp change in asset prices that leads to distress among financial markets participant". But as Eichengreen (2004) has observed, it is not very "clear where to draw the line between sharp and moderate price changes or how to distinguish severe financial distress from financial pressure".The changes in asset prices was not just evident but significant. The stock market indicators in Nigeria crashed and so also the crude oil price around the world.

Several factors have been advanced as **causes of financial crisis.** These factors include:

- ***Regulatory failures:***

Some financial crises have been blamed on insufficient regulation, and have led to changes in regulation in order to avoid a repeat. According to (Strauss-kahn, 2008), the present financial crisis is as a result of 'regulatory failure to guard against excessive risk-taking in the financial system, especially in the US. Likewise, the New York Times (2008) singled out the deregulation of credit default swaps as a cause of the crisis .This study concur with the view that loose regulation is a major cause of the financial crisis hence tightenening of regulation is required to prevent any future occurrence

- ***Contagion:***

This refers to the idea that financial crises may spread from one institution to another, as when a bank run spreads from a few banks to many others, or from one country to another, as when currency crises, sovereign defaults, or stock market crashes spread across countries. When the failure of one particular financial institution threatens the stability of many other institutions, this is called *systemic risk* (Kaufman et al, 2003).the contagion effect is not just evident in one industry but also spread to others. For example, many bank invested heavily in stock market speculation leading to excessive losses for the banks when the bubble burst.

- **Recessionary effects:**

Some financial crises have little effect outside of the financial sector, like the Wall Street crash of 1987, but other crises are believed to have played a role in decreasing growth in the rest of the economy. There are many theories why a financial crisis could have a recessionary effect on the rest of the economy. These theoretical ideas include the 'financial accelerator', 'flight to quality' and 'flight to liquidity', and the Kiyotaki-Moore model. Some 'third generation' models of currency crises explore how currency crises and banking crises together can cause recessions (Burnside et al, 2008). The recent financial crisis affected growth of several economies around the globe with the emerging economies recently identified as growth prospect for the global economy in the short term.

According to Stiglitz (2008), "A unique combination of ideology, special-interest pressure, populist politics, bad economics, and sheer incompetence has brought us to our present condition. Ideology proclaimed that markets were always good and government always bad. The fact is that key problems facing our society cannot be addressed without an effective government". He said this mess (market failures) was just the tip of the iceberg and that beneath the surface lies a myriad of smaller micro problems.

The reasons for the global financial crisis are varied and complex, but largely it can be attributed to a number of factors in both the housing and credit markets, which developed over an extended period of time. Some of these include: the inability of homeowner to make their mortgage payments, poor judgment by the borrower and or lender, speculation and overbuilding during the boom period, risky mortgage products, high personal and corporate debt levels, financial innovation that distributed and concealed default risks, central bank policies, and regulation (Stiglitz, 2008).

The history of crude oil development or oil prospecting in Nigeria began as far back as 1908, when a German company, the Nigerian Bitumen Corporation started its exploration. Their pioneering efforts however, ended with the outbreak of the First World War in 1914.In 1937 oil prospecting resumed again in Nigeria. Shell D`Arcy, the forerunner of the present Shell Petroleum Development Company of Nigeria obtained the sole concession to explore and prospect oil in Nigeria. Their activities were again terminated by the outburst of the Second World War in 1947. The company resumed its operations with a renewed

vigour and the first well was drilled in iho near Owerri in 1957. This was followed in 1958 by another well drilled in Akata in Akwa Ibom State. It should be noted that these two wells yielded no oil (Ogbonna, 2004).

Oil was eventually discovered in Nigeria in 1956 at Oloibiri in the Niger Delta after half a century of exploration. Following the discovery of crude oil by Shell D'Arcy Petroleum, at the time the sole concessionaire, pioneer production began in 1958 from the company's oil field in Oloibiri in the Eastern Niger Delta. Nigeria joined the ranks of oil producers in 1958 when its first oil field came on stream producing 5,100 bpd. After 1960, exploration rights in onshore and offshore areas adjoining the Niger Delta were extended to other foreign companies such as Mobil, Agip, Safrap, Gulf, Chevron, Amoseas (Texaco) etc. In 1965 the EA field was discovered by Shell in shallow water southeast of Warri. Oil production by the joint venture (JV) companies accounts for about 95 per cent of Nigeria's crude oil production. Shell, which operates the largest joint venture in Nigeria, with 55 per cent Government interest (through the Nigerian National Petroleum Corporation, NNPC), produces about 50 per cent of Nigeria's crude oil. Exxon Mobil, Chevron, Texaco, ENI/Agip and TotalfinaElf operate the other JV's, in which the NNPC has 60 per cent stake. By the late sixties and early seventies, Nigeria had attained a production level of over 2 million barrels of crude oil a day.

In 1970, there was a rise in the world oil price, and Nigeria was able to reap instant riches from its oil production. Nigeria joined the Organization of Petroleum Exporting Countries (OPEC) in 1971 and established the Nigerian National Petroleum Company (NNPC) in 1977; a state owned and controlled company which is a major player in both the upstream and downstream sectors (Madujibeya, 1976).

Petroleum production and export play a dominant role in Nigeria's economy and account for about 90 per cent of her gross earnings. This dominant role has pushed agriculture, the traditional mainstay of the economy, from the early fifties and sixties, to the background.

Government policies and the increasing market forces of demand and supply has significantly affected the production of crude oil in Nigeria. The era when total production infrastructure was owned by the oil companies (as the government provided only regulatory framework) witnessed speedy increases in the output or productivity of crude oil. For instance the output increased from 1.9 million barrels in 1958 to 152.4 million barrels in 1966. Until 1965 when the first refinery was built in Port Harcourt, Nigeria used to export almost all her crude oil as the record rose from 1.8 million barrels in 1958 to 139.5 million barrels in 1966. History was made in the Nigerian production and exportation of crude oil between 1970 and 1986 as output of crude oil rose from 395.7 million barrels in 1970 to 660.1 million barrels in 1975 (Ogbonna, 2004).

At present, Nigeria has four refineries with a combined installed refining capacity of 445,000 barrels per day[bpd]. These four refineries are:

1. The first Port Hacourt refinery, commissioned in 1965 with an installed capacity of 35,000 bpd and later expanded to 60,000 bpd.

2. The Warri refinery, commisioned in 1978 with an installed refining capacity 100,000 bpd and upgraded to 125,000 bpd in 1986.

3. The Kaduna refinery, commissioned in 1980 with an installed refining capacity of 100,000 bpd and upgraded to 110,000 bpd in 1986.

4. The second Port Hacourt refinery which was commissioned in 1989 with 150,000 bpd processing capacity and designed to fulfil the dual role of supplying the domestic market and exporting its surplus.

The combined capacities of these refineries exceed the domestic consumption of refined products, chief of which is premium motor spirit (petrol), whose demand is estimated at 33 million litres daily. However, the refineries are operating far below their installed capacities as they were more or less abadoned during the military era, skipping the routine and mandatory turn around maintenance that made products importation inevitable. The monetization of oil revenue has been a major factor in liquidity and fiscal management in Nigeria.

2.1 Contribution of the Nigerian Oil Sector to the Economy

Over the past years the oil industry has made a number of contributions to the Nigerian economy. These contributions include the contributions to government revenues, foreign exchange reserves; creation of employment opportunities; gross domestic product, local expenditure on goods and services; and the supply of energy to industry and commerce.

The payment of substantial revenues to the government is undoubtedly one of the most important contributions of the oil industry to the Nigerian economy. It has dominated government finances, particularly since 1971 when it constituted about half of total federally collected revenue (Ogbonna, 2004).

According to Gbolahan (2010), the significant increase in government receipts in recent years is a reflection of three factors: increased crude oil production in Nigeria; the huge increase in crude oil prices and the more favorable fiscal arrangements obtained by the government as a result of its improved bargaining position over the years. There was a phenomenal rise in the sector`s contribution to government revenue in the period 1971-1980 as its dominant role became apparent. It has since remained the backbone and propelling engine of the Nigerian economy such that both the first and second National Development plans were anchored on the revenue projections from the oil sector.

As noted above, a large part of the increase in oil revenues was accounted for by the huge increase in crude oil prices. How far oil prices will continue to be high in the future will depend on the balance between the demand for and the supply of energy-in particular, on the level of economy in energy consumption, and the speed of development of substitute fuels in consuming nations (Odularo, 2008).

2.2 *The Impact of Financial Crisis on Crude Oil Revenue*

Oil revenue is derived from three basic areas: export volume, price per barrel, petroleum profit tax (PPT) and royalties. Nigeria has no control over the first two factors; the Organization of Petroleum Exporting Countries (OPEC) and the intake capacity of the international market can dictate the volume of oil produced. Similarly, the price of crude oil is dictated largely by market forces, hence Nigeria has no control over the activities of speculators on the oil market during a bullish period. Therefore, the federal government should not rely on oil market speculators to determine the directions of its revenue (Gbolahan, 2010).

Nigeria's revenue volatility is directly correlated to its dependence on oil proceeds for the bulk of its fiscal revenues, with over 80 per cent of all federally collected revenues related to oil. The oil revenue accruable to all tiers of government has declined considerably as compared to its rise over the last few years, particularly the immediate period before the crisis` impact hit the oil sector. According to Balouga (2009), oil revenue was N30.894 billion in May 1999, N196.383 billion in May 2004, N746.745 billion in May 2008, and N435.40 billion in January 2009, as compared to the lowly amount of N285.58 billion distributed in February 2009.

The crash in oil prices at the international market has manifested in the depletion of Nigeria's revenue as the nation recorded a drop of N177.52 billion in accruals to the Federation Account in November 2009.

According to a communiqué by the Technical sub-committee of the Federation Account Allocation Committee (FAAC), the revenue that accrued to the Federation Account from oil slumped from N530.86 billion in October 2008 to N353.34 billion in November 2008 (Somali-press, 2008).

According to the Accountant-General of the Federation, the deficit of N35.54 billion in the revenue allocation to the three tiers of government, when compared with revenue shared in January 2009 can be attributed to the decline in crude oil prices in the international market and the reduction in production quota of Nigeria by the Organization of Petroleum Exporting Countries (OPEC) which necessitated Nigeria's production quota to be cut back to 1,673,000 barrels per day (bpd) in January 2009 from 2,050,000 bpd in December 2008. All this is as a result of the global financial and economic environments which have changed drastically due to the global financial crisis (Nduwugwe, 2009).

Records have indeed indicated that the country recorded a shortfall in oil revenue from an average of $2.2 billion monthly recorded in 2008 to about $1 billion in January 2009, representing a 50 percent reduction. This drastic drop is also attributable to the fall in the price of crude in the international market occasioned by the global economic crisis (Babalola, 2009). This have further implication on growth and development in the economy because less funds means less government spending and further lead to low standard of living, due to the importance of government spending in the economy coupled with the fact that government is the largest employer of labour in the country.

3. Methodology

This study adopts the methodology used by Gbolahan (2010).The methodology used is the small sampling theory (sampling distribution of statistics) otherwise called *exact sampling theory*. Small sampling theory is used in this research study because the number of observation is less than 30, that is, (N > 30). The specification is as follows:

$X_1 - X_2$

$\sigma X_1 - X_2 = \sqrt{\sigma^2 X_1 + \sigma^2 X_2}$

$\sigma^2 = \frac{\sum |X - X|}{N}$

$t^* = \frac{X_1 - X_2}{\sigma\sqrt{1/N_1 + 1/N_2}}$ where $\sigma = \sqrt{\frac{N_1 S_1 + N_2 S_2}{N_1 + N_2 - 2}}$

$X^2 = \frac{NS}{\sigma} = \frac{(X_1 - X) + (X_2 - X)}{\sigma}$

$V = N - 1$

Definition of Sampling Equations**;**

X_1 : mean of sampling distribution of sample statistic I (X_1)

X_2: mean of sampling distribution of sample statistic II (X_2)

$X_1 - X_2$: sampling distribution of differences of means (sample I and II)

$X_1 - X_2$: difference between revenue earnings before and during the global financial crisis

$\sigma X_1 - X_2$: sampling distribution of differences of standard deviation (sample I and II)

$S_1^2 = \sigma^2 X_1$: variance of sampling distribution of sample statistic I

$S_2^2 = \sigma^2 X_2$: variance of sampling distribution of sample statistic II

t*: t- distribution for test of hypothesis and significance under students t-test

X^2: chi-square distribution for test of hypothesis and significance

N_1: number of sample size I

N_2: number of sample size II

V: degree of freedom

4. Data Analysis

Bonny Light is Nigeria's reference crude oil in the international oil market. Its price on the table is the monthly average spot price; the current ask or bid price for Bonny Light in the market. Production is the estimated average output of crude in millions of barrels of all oil drilling and exploration companies on a day to day basis. Exports constitute the portion of crude that is shipped outside the country after a part is separated for distribution to the domestic refineries for eventual local consumption (Gbolahan, 2010).

In order to analyze the significant impact of the 21st century global financial crisis on the Nigerian crude oil revenue in the absence of readily available data of revenue gotten from the sales of crude oil in the international market, we have thus computed the revenue of crude oil for each month by multiplying the price and export of crude oil, therefore crude oil revenue in the tables below is the outcome of price and export.

The data are presented in two tables; the first table shows the data for price, export and crude oil revenue before the crisis from August 2006 to July 2008, while the second table shows the data for price, export and crude oil revenue during the crisis from August 2008 to July 2010.

The month before August 2008 is chosen as the period before the crisis because as at then, the global financial crisis which started in July 2007 has not yet affected the Nigerian economy, most especially the Nigerian oil sector because it was not yet global in scope. The crisis began to affect the Nigerian oil sector during the third quarter of the year 2008 (Gbolahan, 2010).

In the data below; crude oil price is in US dollar per barrel (US$/Barrel), export of crude oil is in millions of barrels per day (mbd), while the crude oil revenue is in millions of dollars.

4. 1 Estimation of Sample Equations

After the specification of the sampling equations, we proceed by estimating the equations. The estimation stage requires a good knowledge of statistical analysis with particular reference to small sampling theory. Thus, given our sampling equations, the estimates computed and obtained (see appendix) are presented as follows:

$\sum X_1 = 3329.55$ $\sum X_2 = 2780.74$

$X_1 = 138.73$ $X_2 = 115.86$

$S_1^2 = \sigma^2 X_1 = 791.32$ $S_2^2 = \sigma^2 X_2 = 1427.91$

$\sigma X_1 - X_2 = 47.10$ $t^* = 2.32$

$EX_1 - E X_2 = 548.81$ $X_1 - X_2 = 22.87$

$X^2 = 46.02$ $V = 23$

4.2 Interpretation of Results

From the estimation of the equations above, it is clear that the total summation of crude oil revenue before the crisis ($\sum X_1$ = $3329.55 million) is higher than the revenue earned during the crisis ($\sum X_2$ = $2780.74) by $548.81 million. This implies that the revenue earned during the global financial crisis has fallen by 16.48 percent. This result is actually lower than the figure reported by Gbolahan (2010) by $300 or 27.52%.

Also, the sampling distribution of differences of mean ($X_1 – X_2 = 22.87$) is positive thereby strengthening the result above which shows that the revenue earned during the crisis has declined as compared to the period before the crisis. Even though the result is lower than reported by Gbolahan (2010) – who reported a difference of 70.

Furthermore, standard deviation which measures the dispersion between statistics shows that the crude oil revenue during the crisis ($\sigma^2 X_2 = S_2^2 = 1427.91$) has further dispersed than the period before the crisis ($\sigma^2 X_1 = S_1^2 = 791.32$), which also shows that the crude oil revenue earned during the crisis has declined by not moving in the direction (that is, increasing) of the revenue earned before the crisis. Thus, it shows that the global financial crisis has negatively affected the Nigerian crude oil revenue.

4.3 Test of Hypothesis

The test of hypothesis employed by this research study are the student`s T-test and the Chi-square test which are meant to test the hypothesis, differences of mean (that samples comes from the same population) and the significance of the population sample.

The Student's T-Test (T*)

The student`s T-test is employed because the sample size of this research is less than 30 (N > 30). Using a one sided test at 95% level of significance with degree of freedom as 23 (V = N-1) and decision rule as:

If t* (t - calculated) is greater than the t_{table} (t - tabulated), we reject the null hypothesis. If otherwise, we accept the null hypothesis.

The t* is 2.32 and t_{table} is 1.71, and since the t* is greater than the t-table (2.32 > 1.71), we therefore reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1) which says that the global financial crisis has a significant impact on the Nigerian crude oil revenue. Thus, we conclude that our population samples are statistically significant.

The Chi-Square Test **(X^2)**

The employment of the chi-square test in this research is to further test the hypothesis and significance of the population samples. Using a one sided test at 95% level of significance, with degree of freedom as 23 (V = N-1) and decision rule as:

If the calculated chi-square (X^2) is greater than the chi square table (X^2_{table}), we reject the null hypothesis. If otherwise, we accept the null hypothesis.

The X^2 is 46.02 and X^2_{table} is 35.2, since the X^2 is greater than the X^2_{table} (46.02 > 35.2), we therefore reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1) which says that the global financial crisis has a significant impact on the Nigerian crude oil revenue. Thus, we conclude by saying also that our population samples are significantly different hence global financial crisis has significantly affected the Nigerian oil revenue.

4.4 Graphical Representation and Analysis

The line graph below pictorially depicts the impact of the global financial crisis on the oil sector through the fall in crude oil earnings. This covers a period of 24 months each from August 2006 to July 2008 when the oil sector was in a boom, and from August 2008 to July 2010 when the impact took its toll on the price of crude oil.

From the graph below (Figure 1), we can clearly see the upward movement in the revenue from crude oil from August 2006 to July 2008. This increase is as a result of the unprecedented rise in the price of crude oil as presented in the statistics from the CBN.

The graph below (Figure 2), however shows the adverse effect of the impact of the global financial crisis on the oil sector through the decline in revenue. The impact precisely hit the oil sector during the month of August 2008 and led to a continuous decline in the revenue from crude oil up to the end of the first quarter of 2009. The implication of these movements is further reflected negatively on the gross domestic product (GDP), foreign exchange reserve as well as the budget. According to Gbolahan(2010), there was a relative stability in the price of crude oil in the first quarter of 2009 due to Organization of Petroleum Exporting Countries (OPEC) cut in the quota allocations to member nations and this led to an improvement in crude oil earnings during the same period. Crude oil revenue started increasing upwards until October 2009 when it decline a bit before picking up in December 2009. The trend in revenue then was up and down but relatively stable.

4.7 Discussion of Findings

From the analysis, it can be seen that global financial crisis significantly affected the Nigerian economy through a decline in revenue. The positive nature of the sampling distribution of differences of mean shows that the revenue earned during the period of the financial crisis has declined as compared to the period before it. Even though the difference is lower than earlier reported by Gbolahan (2010). The implication of this is that there will be less finance for the economic activities, particularly the budget.

The statistical tests conducted, the student`s t-test and the chi-square test all rejected the null hypothesis. This implies that our population samples are statistically significant, thus the global financial crisis significantly affects the earnings from crude oil. The standard deviation also shows that the dispersion in crude earnings during the global financial crisis is far greater than the period before it. The summation of the total crude oil earnings during the first twenty four months of the financial crisis revealed a 16.48% reduction compared to the revenue in the period preceeding the effect This figure is lower than the one reported earlier by gbolahan(2010) who found a decrease of 44%

5. Summary and conclusion

This paper examined the impact of the recent global financial crisis on the Nigerian oil revenue. Using small sampling theory and descriptive analysis, the null hypothesis that global financial crisis has no effect

on oil revenue in Nigeria was rejected in favour of the alternative that global financial crisis has significant impact on oil revenue in Nigeria.

The study shows that the effect has reduced from the position that was last reported hence indicative of easing of the effect of the crisis in Nigeria. It should be the goal of policy makers to reduce the overdependence on crude oil by diversifying the economy to reduce the magnitude of the negative impact ,as such, there should be stiffer control and regulation of the financial system so as to reduce risk within the financial sector and the economy at large.

References

Adamu, A. (2009). *The Effect of the Global Financial Crisis on Nigeria.*

Ajakaiye, O. and Fakiyesi, T. (2009). *Global Financial Crisis Discussion Series Paper 8*: Nigeria.

Avgouleas, E. (2008) *'Financial Regulation, Behavior Finance, and the Financial Credit Crisis in Search of a New Regulatory Model'* Retrieved from http://papers.ssrn.com on April 20, 2010.

Babalola, R. (2009). Boosting Government Revenue through Non-Oil Taxes.

Balouga, J. (2009). The Global Financial Crisis and the Oil and Gas Sector of the Nigerian Economy. *International Association for Energy Economics Journal.* Retrieved from http://www.iaee.org/en/ on April 13, 2010.

Dike, V.E. (2009). *Global Economic Crisis and Power Productivity.* Retrieved from http://www.nigeriavillagesquare.com/articles/victor-dike/global-economic-crisis-and-power-of-productivity.html on May 01, 2010.

Eichengreen, B. (2004). *Global Crises, Global Solutions.* Cambridge: Cambridge University Press, Cambridge. pp. 251-272.

Gbolahan, A.A. (2010). The 21st Century Global Financial Crisis and the Nigerian Oil Sector. Thesis, University of Jos, Nigeria.

Jhingan, M.L. (2003). *Macro-Economic Theory.* Delhi: Vrinda Publications (P) Ltd. Pp 479-493.

Kaufman, G. and Scott, K. (2003). 'What is systemic risk, and do bank regulators retard or contribute to it?' *The Independent Review* 7 (3).

Krugman, P. (2008). 'The widening gyre', New York Times, March. 27, 2010.

Kubeyinje, K and Nezianya, T. (June 1999). Oil a mixed blessing for Nigerian economy. Africa Recovery Journal, Vol.13#1 pg. 10. Retrieved Feb 22, 2010, from http://www.un.org/ecosocdev/geninfo/afrec/vol13no2/sept99.html

Madujibeya, S. A. (1976), "Oil and Nigeria's Economic Development", *African Affairs*, Vol. 75, No. 300, pp. 284-316.

New York Times. (2008). 'Don't blame the New Deal', Editorial. New York Times. April. 28, 2010.

Nduwugwe, J. (2009). Nigeria: FG, States, LGs Share N250 Billion Revenue. Retrieved from http://allafrica.com/stories/200903161714.html on June 20, 2010.

Odularo, G. O. (2008), "Crude Oil and Nigerian Economic Performance", *Oil and Gas Business.*

Ogbonna, B.M. (2004). *An Analytical Structure of Nigerian Economy*. Lagos: Natural Print Limited. Pp. 319,335.

Soludo, C. (2009). Global Financial and Economic Crisis: How Vulnerable is Nigeria?

Stiglitz, J. (2008). Reversal of Fortune. New-York: Vanity Fair.

Strauss-Kahn, D. (2008). 'A systemic crisis demands systemic solutions', *The Financial Times*, Sept, 25, 2008.

U.N.E.C.A. (2009). *The Global Financial Crisis: Impact, Responses and Way Forward.* United Nations Economic Commission for Africa Retrieved from www.uno.org/gobal-financial-crisis-impact-responses-and-way-forward.html on February 25, 2010.

Usman, S. (2007). Nigeria: Scorching the Natural Resource Curse. Nigeria.

Wikipedia (2008) 'Subprime Mortgage Crisis' retrieved from on March 10, 2010.

http://en.wikipedia.org/wiki/subprimemortgage.crisis

www.oecd.org

www.cenbank.org

www.cenbank.org/rates/crudeoil.asp?year

APPENDIX

RESULTS OF THE ESTIMATION OF SAMPLING EQUATIONS

TABLE 1 - Sample Period Before The Crisis Comprising Of Monthly Crude Oil Prices (Us$/Barrel), Export (Mbd) And Crude Oil Revenue (`Million Us$), August 2006 – July 2008. (Sample Statistics I)

MONTH/YEAR	PRICE (P)	EXPORT (Q)	REVENUE (PQ)
AUG-2006	75.15	1.95	146.54
SEPT-2006	63.46	1.95	123.74
OCT-2006	59.44	1.93	114.71
NOV-2006	60.10	1.89	113.58
DEC-2006	65.46	1.91	105.92
JAN-2007	55.57	1.87	103.91
FEB-2007	59.97	1.86	111.54

MAR-2007	58.47	1.69	98.81
APR-2007	70.46	1.71	120.48
MAY-2007	70.40	1.51	106.30
JUN-2007	73.39	1.63	119.62
JUL-2007	79.62	1.72	136.94
AUG-2007	73.90	1.75	129.32
SEPT-2007	79.81	1.65	131.68
OCT-2007	83.73	1.67	139.82
NOV-2007	95.05	1.67	158.73
DEC-2007	93.40	1.76	164.38
JAN-2008	94.26	1.65	155.52
FEB-2008	98.15	1.60	157.04
MAR-2008	103.73	1.55	160.78
APR-2008	116.73	1.36	158.75
MAY-2008	126.57	1.41	178.46
JUN-2008	138.74	1.35	187.29
JUL-2008	141.86	1.45	205.69

Source: www.cenbank.org/rates/crudeoil.asp?year

TABLE 2 - Sample Period During The Crisis Comprising Of Monthly Crude Oil Prices (Us$/Barrel), Export (Mbd) And Crude Oil Revenue (`Million Us$), August 2008 – July 2010. (Sample Statistics II)

MONTH/YEAR	**PRICE (P)**	**EXPORT (Q)**	**REVENUE (PQ)**
AUG-2008	115.84	1.51	174.91
SEPT-2008	103.83	1.45	150.55

OCT-2008	75.31	1.48	111.45
NOV-2008	54.31	1.40	76.03
DEC-2008	44.36	1.45	64.32
JAN-2009	44.95	1.30	58.43
FEB-2009	46.52	1.35	62.88
MAR-2009	49.70	1.33	66.10
APR-2009	51.16	1.26	64.46
MAY-2009	60.02	1.25	75.02
JUN-2009	72.24	1.28	92.46
JUL-2009	66.52	1.29	82.48
AUG-2009	74.00	1.67	123.58
SEPT-2009	70.22	1.73	121.48
OCT- 2009	78.25	1.83	143.19
NOV-2009	78.11	1.70	132.78
DEC-2009	75.11	1.60	120.17
JAN-2010	77.62	1.88	145.92
FEB-2010	75.06	1.94	145.61
MAR-2010	80.27	1.99	159.73
APR-2010	85.29	1.96	167.16
MAY-2010	77.54	1.96	151.97
JUN-2010	75.79	1.76	133.39
JUL-2010	77.18	2.03	156.67

Source: www.cenbank.org/rates/crudeoil.asp?year

TABLE 3: Estimation of Mean - Sampling Distribution of Sample Statistic I

MONTH/YEAR	**REVENUE (PQ)**	**(X_1-X_1)**	**$(X_1-X_1)^2$**
AUG-2006	146.54	7.81	60.9961
SEPT-2006	123.74	-14.99	224.7001
OCT-2006	114.71	-24.02	576.9604
NOV-2006	113.58	-25.15	632.5225
DEC-2006	105.92	-32.81	1076.496
JAN-2007	103.91	-34.82	1212.432
FEB-2007	111.54	-27.19	739.2961
MAR-2007	98.81	-39.92	1593.606
APR-2007	120.48	-18.25	333.0625
MAY-2007	106.30	-32.43	1051.705
JUN-2007	119.62	-19.11	365.1921
JUL-2007	136.94	-1.79	3.2041
AUG-2007	129.32	-9.41	88.5481
SEPT-2007	131.68	-7.05	49.7025
OCT-2007	139.82	1.09	1.1881
NOV-2007	158.73	20	400
DEC-2007	164.38	25.65	657.9225
JAN-2008	155.52	16.79	281.9041
FEB-2008	157.04	18.31	335.2561
MAR-2008	160.78	22.05	486.2025
APR-2008	158.75	20.02	400.8004
MAY-2008	178.46	39.73	1578.473
JUN-2008	187.29	48.56	2358.074

JUL-2008	205.69	66.96	4483.642

$\sum(X_1 - X_2)^2 = 18{,}991.89$

TABLE 4 - Estimation of Mean - Sampling Distribution of Sample Statistic II

MONTH/YEAR	**REVENUE**	**(X_2-X_2)**	**$(X_2-X_2)^2$**
AUG – 2008	174.91	59.05	3486.903
SEPT – 2008	150.55	34.69	1203.396
OCT – 2008	111.45	-4.41	19.4481
NOV – 2008	76.03	-39.83	1586.429
DEC – 2008	64.32	-51.54	2656.372
JAN – 2009	58.43	-57.43	3298.205
FEB – 2009	62.88	-52.98	2806.88
MAR – 2009	66.10	-49.76	2476.058
APR – 2009	64.46	-51.4	2641.96
MAY – 2009	75.02	-40.84	1667.906
JUN – 2009	92.46	-23.4	547.56
JUL – 2009	82.48	-33.38	1114.224
AUG-2009	123.58	7.72	59.5984
SEPT-2009	121.48	5.62	31.5844
OCT- 2009	143.19	27.33	746.9289
NOV-2009	132.78	16.92	286.2864
DEC-2009	120.17	4.31	18.5761
JAN-2010	145.92	30.06	903.6036
FEB-2010	145.61	29.75	885.0625

MAR-2010	159.73	43.87	1924.577
APR-2010	167.16	51.3	2631.69
MAY-2010	151.97	36.11	1303.932
JUN-2010	133.39	17.53	307.3009
JUL-2010	156.67	40.81	1665.456

$\sum (X_2 . X_2)^2 = 34{,}269.94$

$S_1^2 = \sigma^2 X_1 = \frac{\sum |X_1 - X_1|2}{N_1}$ 18991.89/24= 791.32

$S_2^2 = \sigma^2 X_2 = \frac{\sum |X_1 - X_2|2}{N_2}$ –=34269.94/24=1427.91

$\sigma X_1 - X_2 = \sqrt{\sigma^2 X_1 + \sigma^2 X_2}$

$= \sqrt{791.32 + 1427.91}$

$= \sqrt{2219.32}$

$= 47.10$

$V = N - 1$

$= 24 - 1$

$= 23$

$t^* = \frac{X_1 - X_2}{\sigma\sqrt{1/N_1 + 1/N_2}}$ where $\sigma = \sqrt{\frac{N_1 S_1 + N_2 S_2}{N_1 + N_2 - 2}}$

$= 2.3287$ $= 34.02$

$\sum X_1 - \sum X_2 = 3329.55 - 2780.74$

$= 548.81$

$X_1 - X_2 = 138.73 - 115.86$

$= 22.87$

$X^2 = \frac{NS}{\sigma} = \frac{(X_1 - X) + (X_2 - X)}{\sigma}$

$= \frac{18991.89 + 34269.94}{(34.02)2}$

= 46.02

Figure 2: Monthly Movement of Crude Oil Price and Earnings, Aug 2006 – Jul 2008.

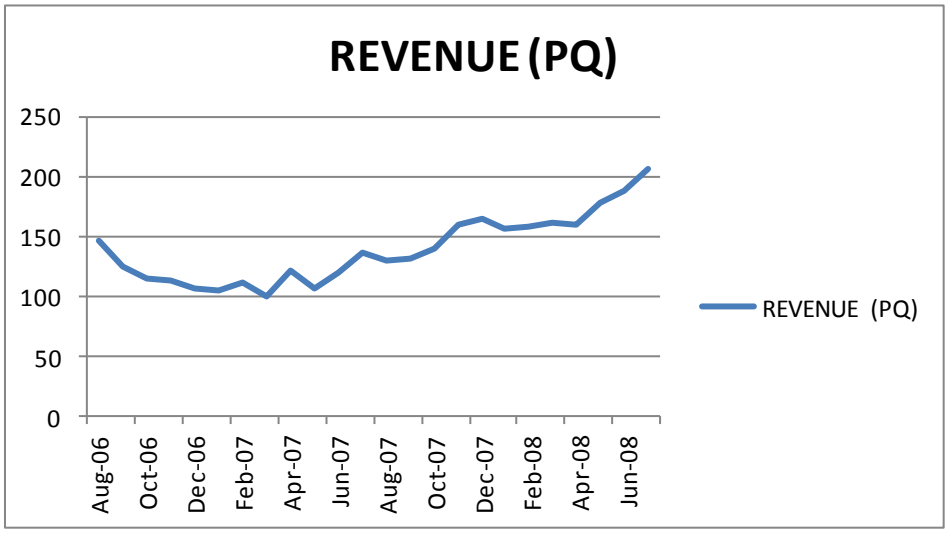
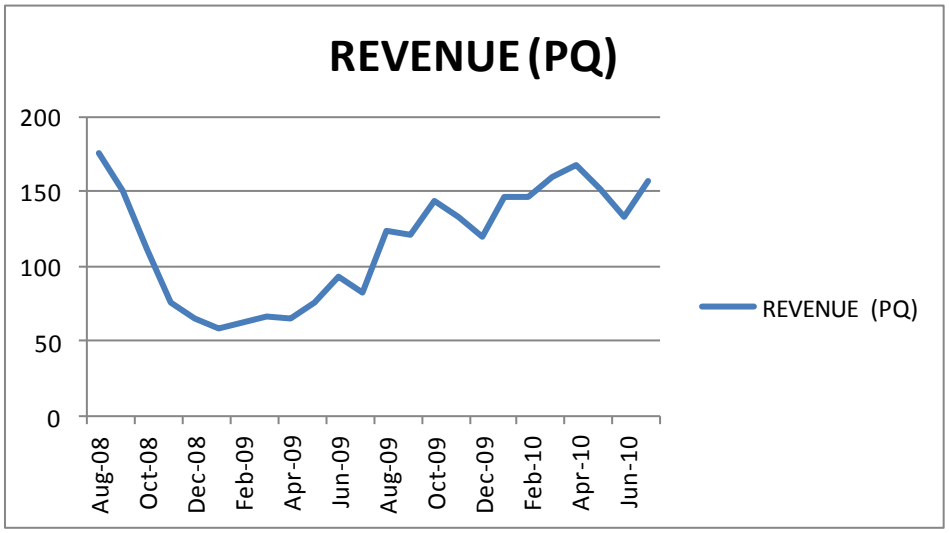


Figure 3: Monthly Movement of Crude Oil Price and Earnings, Aug 2008 – Jul 2010.



This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:
http://www.iiste.org

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a fast manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar