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Developments in Money Market Operations and Economic Viability in Nigeria: An Empirical Analysis

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Abstract
Money market provides instruments for effective liquidity management and acts as the core source of raising short-term funds for lubricating economic activities in any nation. This study seeks to empirically explore developments in Money market operations and Economic viability in Nigeria. Economic viability is proxied by Gross Domestic Product (GDP) and represents the explained variable. Core Money market instruments commonly used in Nigeria such as Treasury bills (TB), Treasury Certificate (TC), Certificate of Deposit (CD), Commercial Papers (CP) and Banker Acceptances (BA) served as the explanatory variables. The data used for empirical estimation covered the period 1981 to 2011 and were sourced from CBN statistical Bulletin, 2011. Analysis of data was carried out using Multiple Regression technique parameters. Research findings were robust. The variation in the growth trends of GDP and the explanatory variables in a graphic representation appear to cast doubts on whether Money market operations made significant contributions to GDP in the period under review. However, the results from Pearson correlation coefficient matrix substantially attest to strong linear relationship between the explained and explanatory variables. Besides, the summary statistics of the model as indicated by the Coefficient of determination (R^2) and ANOVA F-Statistics showed that the estimated model passed the test of overall significance at all significant levels, implying that a long run relationship exists between Money market operations and Economic growth in Nigeria. Though, the study data relates solely to the Nigerian economy, it has strong relevance and implications for developing and emerging economies and monetary agencies globally. Therefore, we recommend that monetary authorities should initiate policies to boost Money market operations and be proactive in their surveillance role in order to check practices that are capable of sabotaging market soundness.
Key Words: Developments, Money market, Money market instruments, Economic viability, Gross Domestic Products (GDP), Nigeria

1. Introduction

Financial markets are vital components of the financial system of every country.
In Nigeria, the financial market constitutes primarily of Money and Capital markets. Capital market provides long-term funds with maturity period of over one year through bonds and equity, thus it serves as the mechanism by which the savings of surplus economic units may be used to finance medium and long-term investments. On the other hand, CBN (2007) citing Onyido (1994) opined that the Money market primarily exist as a means of liquidity adjustment, in other words, it provides the mechanism for short-term funds of less than one year The importance of these markets in any modern economy is enormous. The markets afford households, firms and even government the opportunity to raise funds from the savings of surplus economic units. However, for the purpose of this study, our focus is on Money market operations. Essentially, Money market is that segment of a financial market where securities and financial assets with high liquidity and short-term maturity periods are traded. As 'Money' assumes a means of exchange, it become a conduit for borrowing and lending very liquid assets and thus Money market serves as the best place to invest liquid assets in every economy. Major finance firms typically raise funds by issuing large amounts of Money market instruments such as Asset Backed Commercial Papers (ABCP). Usually, ABCP is secured by the pledge of eligible assets such as Mortgage loans while in some cases, large companies employ the services of banks to issue commercial paper on their behalf.. According to Frank et al (2002), various other Money market instruments exist and these include Treasury bills, Commercial paper, Bankers' Acceptances, Deposits, Certificates of Deposit, Bills of Exchange, Repurchase Agreements, Federal funds, and Short-lived mortgage and Asset-Backed Securities. These instruments are considered cash equivalent because they are highly liquid short-term debt securities and can be sold in the market easily at low cost

Participants in the Money market include financial institutions and dealers in Money who wish to either borrow or lend typically for a short periods of time, usually, a year. Currently, the major participants in Money market operations in Nigeria include Banks, Discount Houses, Deposit Money Banks (DMBs) otherwise referred to as

Commercial banks, and Microfinance institutions. These institutions, especially banks carry out the core activity of Money market operations which consists of interbank lending; the segment of the market operating bank-to-bank transactions; in other words, the interbank market consists of banks borrowing and lending to each other. Banks are major players in several segments of the market for the purpose of meeting their reserve requirements and managing day-to-day liquidity needs. They buy and sell short-term uncollateralized loans in the Federal Bonds market. Beside the domestic market which operates within a geo-political area like Nigeria, Money market also operates internationally, for example, banks transact in the Eurodollar market. The Eurodollar market is dollar denominated deposit liabilities of banks utilized to meet serious liquidity requirements. Investors in Money market instruments can sell their holdings prior to maturity since active secondary markets exist for almost all instruments transacted.

In Nigeria, the major and most utilized Money market instruments include Treasury bills (TB), Treasury Certificate (TC), Certificate of Deposit (CD), Commercial Papers (CP) and Banker Acceptances (BA).. These instruments may be defined in terms of maturity period, characteristics or usage. Treasury bills (TB) are short-term debt instruments used majorly by the government to borrow short-term funds with maturity period of 90, 180, and 360 days. Nzotta (2004) posits that Treasury bills offer investor zero credit risk and the interest earned are not subject to withholding tax. On the other hand, Treasury certificates are short-term obligation issued by government and have maturity period of 12 to 36 months with interest payable by coupon redemption. Treasury Certificates have similar features to Treasury Bills in all respect, the only difference being their tenure. Certificates of deposit (CDs) are certificates issued by banks against deposited funds for definite period of time ranging from 3, 6, 9 to 12 months. They are one of several types of interest-bearing 'time deposits' offered by banks and are often referred to as 'Fixed Deposit' in Nigeria. CDs are instruments through which, bank customers lend to bank certain amount of money for a fixed period of time, and in exchange, the bank agrees to repay the money with specified interest rate at the end of the time period. Commercial paper refers to unsecured short-term promissory notes with maturities of up to 270 days issued by corporations at discount to face value and redeemed at face value. Typically, Commercial papers are issued by large, well-established and credit-worthy companies with unused lines of bank credit and as well by financial institutions, thus they carry low default risk. On the other hand, Banker Acceptance (BA) is an instrument issued by a corporation but guaranteed by a bank or in the name of a bank, indicating that the bank shall pay the face value of the instrument as at some future time. In other words, a BA is a draft or bill of exchange drawn on and accepted by a bank. Banker Acceptances are regularly used financial instruments in Money market operations and in international trade and may be traded at a discount from face value on the secondary market. In this research study, these Money market instruments constitute our explanatory or independent variables.

The viability of an economy is measured in terms of the growth of Output produced annually, thus economic viability or economic growth has to do with the positive trend in the level of output in that economy. Output signifies the total value of all goods and services produced in a country in a given period of time, usually a year. Blanchard (2011) explained that Output can be measured as total income, or it can be viewed from the productive side and measured as the total value of final goods and services or the sum of all value added in the economy. As a macroeconomic concept, Output is measured in terms of Gross Domestic Product (GDP). The relevance of GDP in every economy is enormous. It is the major indicator of a country economic viability because it is used to gauge the health of a country's economy.. Agbada and Osuji (2013), opined that indeed, the best index to understand a country's economy viability is by looking at its output in terms of Gross Domestic Product (GDP). For this reason, Economic viability is proxied by Gross Domestic Product (GDP) and adopted in this research study as the dependent variable.

1.1 Statement of the Problem

Since the global financial crisis of 2008/2009 which resulted in distresses and liquidation of financial institutions such as banks, nations have been adopting ways to revamp their ailing economies. In Nigeria, fluctuation of prices in the oil and gas sector, coupled with the inability of Small and Medium Enterprises (SMEs) and other micro-economic units to raise funds for productive purposes is hindering the growth of the economy generally. There is consensus in financial and economic literatures that Economic viability in terms of growth in Gross Domestic Product (GDP) is a function of a number of interacting variables in the financial system of a nation. A vibrant Money market serves a pivotal role in the financial system as a core source of raising short-term funds for lubricating economic activities that has the capability of causing positive growth in GDP. Against this backdrop, this paper seeks to empirically explore developments in Money market operations and economic viability or growth in Nigeria.

1.2 Hypothesis Formulation

The hypothesis is deduced from the Statement of the problem and the following null hypothesis is formulated:

Ho 1: There is no relationship between Money market operations and Economics viability (growth) in Nigeria.

1.3 Limitation of Study

This empirical study employed data sourced from the Statistical Bulletin of the Central Bank of Nigeria (CBN), 2011 for the period 1981 to 2011. The data relates solely to the Nigerian economy and so are the study findings. However, the results of the study have important implications for global economies, the reason being that Money market operations and instruments utilized in the study constitute vital components of the financial system of nations cum the international financial system.

This research study is divided into the following segments. Section 1 has the introduction and Section 2 reviews related literatures, Section 3 deals with the methodology and model specification, Section 4 presents data and empirical results and analysis while Section 5 is the summary, conclusion and recommendations.

2 Review of Related Literatures

We deduced from empirical and theoretical literatures that Money market operations provide the mechanism through which short-term securities and other financial assets with maturity period of less than one year are traded. Money market instruments which are highly liquid assets provide facilities and means for short-term lending and borrowing. Ezirim (2005) argued that in line with the general observations on financial markets, Money market may be decomposed into primary markets and secondary markets. The trading of new issues of short-term securities with maturities of one year or less occurs in the primary markets and the trading of existing short-term securities takes place in the secondary markets. Generally, Money market generates the largest proportion of short-term funds for productive economic activities and thus constitutes an awesome segment of every economy of the world. Deudctions from economic theories also have it that a well-developed, smoothly operating Money markets plays crucial roles in contributing to the efficiency and wellness of an economy and thus there is a strong positive relationship between Money market developments and economic growth. According to Rigg and Zibell (2009), Money market plays a key role in bank liquidity management and the transmission of monetary policy; that a developed, active and efficient interbank market enhances the efficiency of central banks' monetary policy, transmitting its positive impulse into the economy. As a matter of fact, the finance-growth nexus have offered a much daring appraisal of the causal relationship at the firm-level and industry-level. Since finance is made available to businesses through Money market operations, it exerts a large, positive impact on economic growth. Efficient Money market influences the direct flow of savings and investment in the economy in ways that facilitate capital accumulation for productive purposes thus impacting positively on GDP. Jalloh (2013) opined that the existence of Money markets facilitate trading in short-term debt instruments to meet short-term financial needs of large users of funds such as governments, banks and allied institutions.

One of the primary uses of Money market instruments is the control of inflation. Monetary policy focuses on how a country determines the size and rate of growth of its money supply in order to check or control inflation. Thus, formulating a nation's monetary policy is extremely crucial particularly when it comes to promoting sustainable economic growth in a country. To control inflation, monetary authorities trade Money market instruments which are largely liquid assets or securities in Open Market Operation (OMO) activities. The Central Bank of Nigeria (CBN) buys and sells government security assets which are Money market instruments such as Treasury bills, Treasury certificates; FGN bonds et cetera to regulate the level of the money supply. Depending on its goal, CBN at one time buys securities from banks and pump money into the system to increase productive economic activities and at another time sells security assets to banks which consequently reduce funds for credits and resultantly leads to limiting access to capital. Ultimately, this slows down economic growth with implication for GDP as investments decrease.

Again, we reiterate that Money market operations constitute an integral part of a nation's financial market and indeed the financial system. Accessing Money market for capital through an efficient functioning financial system has the capability to lessens a country's reliance on foreign aid and other forms of external borrowing. Thus, an efficient Money market has the potential to stimulate additional savings and/or investments, guarantee efficient intermediation process, provides short term liquidity for productive purposes and ultimately, the enhancement of the welfare of participating economic units. Pedro and Erwan (2004) opined that Money market development raises Output by increasing the working capital used in production and by ensuring that capital is made available with ease and relatively low cost. According to Tharawanji (2007), countries with deeper financial markets face less severe business cycle, Output (GDP) contraction and lower chances of an economic downturn compared to those with less developed financial market.

Globally, the evolution of International Money Market (IMM) has increased world trade since inception. According toTwomey (2010) IMM, a division of the Chicago Mercantile Exchange (CME) has added a new dimension to world trade because it deals with the trading of currency and interest rate futures and options. In the opinion of Twomey (2010), the primary purpose of IMM is to trade currency futures, a relatively new product previously studied by academics as a way to open a freely traded exchange market to facilitate trade among nations . Roosa (2013) contends that since 1944 most of the countries that have domestic Money markets or that play a role in the International Money Market (IMM) have been joined together in the International Monetary Fund (IMF) and that involves pooling of part of the foreign exchange reserves (including gold) of more than 100 member countries. Drawings on the pool may be made by member countries to meet some of the reserve drains arising from balance of payments deficits and in amounts related to the quota that each has subscribed'. Jalloh (2013) affirmed that a well functioning financial market is very crucial for the promotion of global financial integration. An efficient functioning domestic financial market can better position a country's competitiveness in the markets for global capital. The ultimate goal of the International Money Market (IMM) is to help boost world trade and thus facilitate economic growth (GDP) levels of participating nations.

Deductions from the literatures reviewed above shows that while nations domestic Money markets promotes and strengthens growth in domestic economies, the International Money Market (IMM) helps to boost world trade and thus facilitate growth in global economies. Nieuwerbugh et al (2005) summed up their conclusion after a study on the long term relationship between economic growth and financial market developments that financial market and indeed Money market developments substantially affect economic growth. A well-developed Money market facilitates several economic benefits. Fundamentally, this include the provion of liquidity for businesses which ultimately leads to increased productivity growth and hence increase in Gross Domestic Product (GDP). According to Dudley and Hubbard (2004), by raising the productivity growth rate, the development of the capital markets (and indeed Money market) has enabled the economy to operate at a lower unemployment rate; leads to faster gains in real wages and reduces the volatility of the economy and as a result, recessions are less frequent and milder. Finally, we conclude that a well developed financial system operating efficient Money market operations is a spur to micro and macroeconomic variables' performance and thus inspires a more rapid growth in Gross Domestic Product (GDP). By

3.0 METHODOLOGY

3.1 Variables and Data for the Regression Estimation

This research study seeks to investigate the relationship between Developments in Money market operations and Economic viability in Nigeria. Economic viability is proxied by Gross Domestic Product (GDP), and represents our dependent or explained variable. On the other hand, the various Money market instruments used commonly in Nigeria are our independent or explanatory variables. These include: Treasury bills (TB), Treasury Certificate (TC), Certificates of Deposit (CD),Commercial papers (CP) and Bankers' Acceptances (BA). The data utilized for the regression estimation were secondary data sourced from the 2011 edition of the Statistical Bulletin of the Central Bank of Nigeria (CBN) for the period 1981 to 2011.

3.2 Specification of the Econometric Model

The statistical technique of Multiple Regression analysis was used to obtain the estimates; employing IBM Statistical Package for Social Science (SPSS) Statistics 20. The mathematical expression of the regression model is given as:

$$Y = f(X_1, X_2, X_3, X_4, X_5,) \quad \text{.....(Eqn 1)}$$

Where: Y = Dependent variable and

$X_1, X_2, X_3, X_4, X_5,$ =. Independent variables

According to Ojamieruaye and Oaikhenan; (2001;53) regression theory postulates that there exist a stochastic relationship between a variable Y and a set of other variables (say, X_1; X_2;.....X_k). In other words, Y referred to as the dependent or explained variable depends on other observed variables, (X_1; X_2; .....; X_k) called the explanatory variables, and an unobserved disturbance or error term usually denoted by 'μ'. The disturbance or error term signifies that the relationship between economic variables are generally inexact.. For the purpose of this research study, the econometric version of the Multiple Regression Model is expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu \quad \text{.....(Eqn 2)}$$

Where: Y = Dependent variable and

$X_1, X_2, X_3, X_4, X_5,$ =. Independent variables

$\beta_1; \beta_2 \ldots\ldots \beta_5$ = The parameters of the independent variables of the model or slope coefficients

β_0 = The intercept (the expected value of Y when all the explanatory variables assume zero as value.

μ = Disturbance or error term (a random or stochastic variable)

Substituting Economic viability and Money market variables into the above Multiple Regression Model (MRM), we specify a model to link the explained variable, Gross Domestic Product (GDP) and the explanatory variables, Treasury Bills, (TB), Treasury Certificate (TC), Certificates of Deposit (CD), Commercial papers (CP) and Bankers' Acceptances (BA) as follows.

$GDP = \beta_0 + \beta_1 TB + \beta_2 TC + \beta_3 CD + \beta_4 CP + \beta_5 BA + \mu$ …… …..(Eqn 3)

Where: GDP = Gross domestic product (Output); TB = Treasury Bills; TC = Treasury Certificate; CD = Certificates of Deposit; CP = Commercial papers and BA = Bankers' Acceptances.

$\beta_1; \beta_2; \ldots\ldots\beta_5$ = The parameters for the independent variables or slope coefficients

β_0 = The intercept; the expected value of GDP when all the explanatory variables assume zero as value.

μ = Disturbance or error term (a random or stochastic variable)

4.0 Presentation and Analysis of Empirical Results

4.1 Presentation and Description of Results

The data for the empirical estimation sourced from the 2011 and 2012 editions of Central Bank of Nigeria (CBN) Statistical Bulletin for the period 1981 to 2011 as per Table 1 in the Appendix are presented on Figures 4.1 and 4,2 below for ease of discussion of the trends in the data.

4.1.1 Graphic Representation of Data

Our data were presented in a tabular form in Appendix 1 below. However figure 4.1 presents the graphic representations of the data.

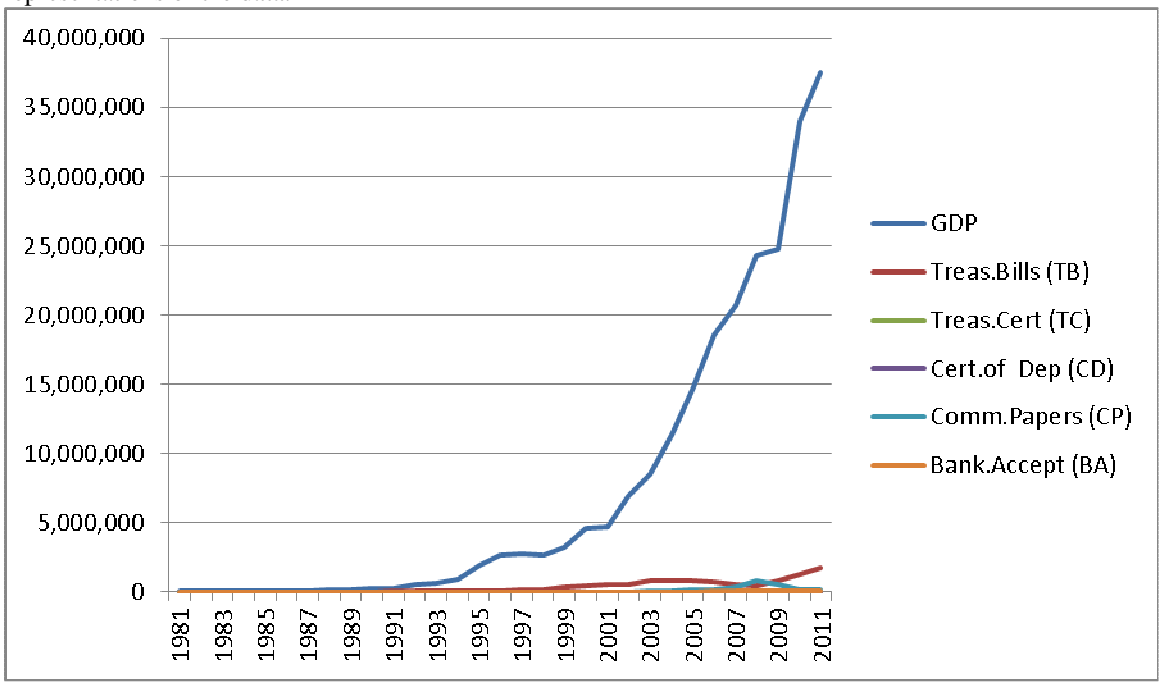

Figure 4.1: GDP and Value of Individual Money Market Instruments Outstanding for the period 1981 – 2011.
Source: Author;s graphical representation of GDP and Value of Individual Money Market Instruments Outstanding for the period 1981 – 2011. (2014)

The graphs depict trends in the growth of GDP and Money market instruments that represent our independent variables namely; Treasury bills (TB), Treasury Certificate (TC), Certificates of Deposit (CD), Commercial papers (CP) and Bankers' Acceptances (BA). The graphs gave very robust and distinct information on the growth relationship between GDP and individual Money market instruments or variables in the period under review. The growth trends in all the variables were very low between the periods 1981 to 1983 but thereafter, GDP grew at a faster rate to 2001 from which point it sloped sharply up compared to Money market operations whose growth trends for most instruments under investigation craw along the X-axis and retarded drastically by 2011. A close look of the graphs reveals that GDP growth experienced a little distortion in 2007 to 2008 which appear to reflect the impact of the global financial crises that occurred in most economies of the world at that time. The impact of the financial crises appeared to have hindered Money market operations severely resulting in a downwards growth movement of some instruments outstanding balances thereafter.

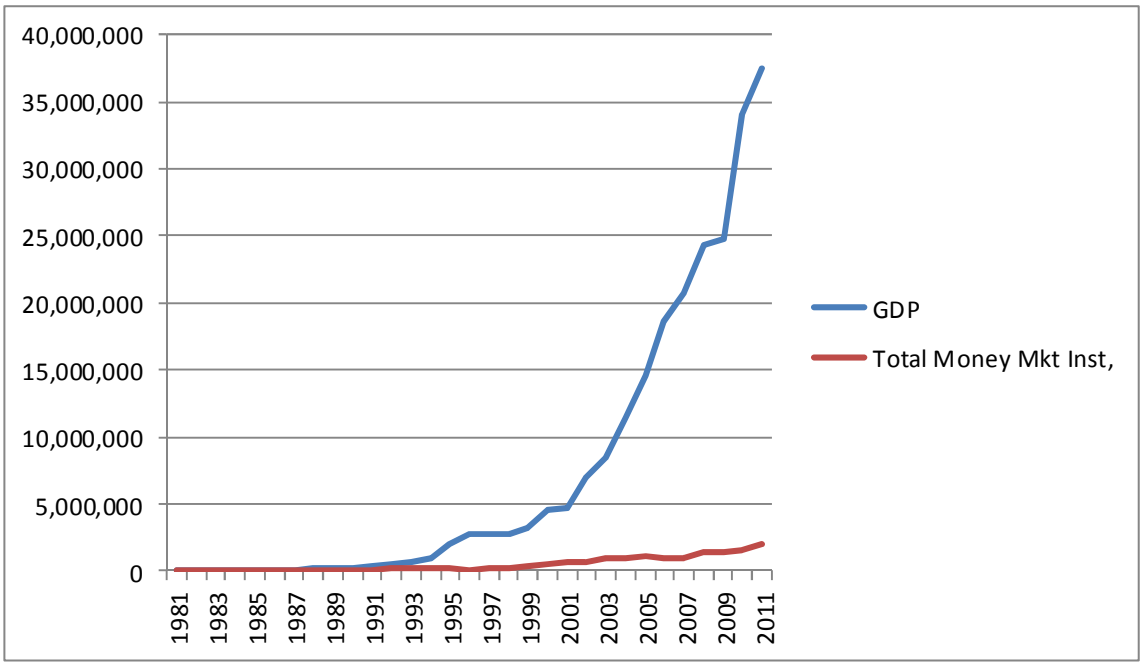

Figure 4.2: GDP and Value of Total Money Market Instruments Outstanding for the period 1981 – 2011.

Source: Author's graphical representation of GDP and Value of Total Money Market Instruments Outstanding for the period 1981 – 2011. (2014)

In order to properly comprehend the relationship in the growth trends of GDP and money market instruments, figure 4.2 presents the graphic representation of of GDP and total value of all Money Market instruments outstanding for the period under investigation. The graphs also revealed that while the growth of GDP sloped sharply up excessively, the total outstanding balances of all Money market instruments sloped relatively low gaving credence to the fact Money market activities was very low during the period under review to have impacted significantly on GDP growth. From the foregoing findings, the contrast in the growth trends of GDP and the explanatory variables appear to suggest a non-correlation relationship and also cast doubts on whether Money market operations made significant contributions to GDP in the period under review.

4.2: Empirical Analysis of Results

For the purpose of the analysis of results the study has utilized: the Pearson correlation coefficient, the t-statistics parameters or slope coefficients of the independent variables the F-statistics of the Analysis of Variance (ANOVA) and the Coefficient of Determination otherwise referred to as the adjusted R square (R^2).

4.2.1 Pearson Correlation Coefficient Matrix

The coefficients shown in the Pearson Correlation Coefficient matrix in table 4.2 indicates the strength of the linear relationship between the variables. From the Pearson Correlation Coefficient Matrix table, it is observed that the correlation coefficients between GDP and most of the explanatory variables are relatively very high suggesting a strong relationship between them. For example, the correlation coefficient between Gross Domestic Product (GDP) and Banker acceptances, and Treasury Bills stood at .943 and .894 indicating that the linear relationship between GDP and those explanatory variables are 94.30% and 89.40% respectively. The correlation coefficient between GDP and Commercial Papers (CP) standing at .729 meaning a linear relationship of 72.9% is also outstanding. However, the coefficient between GDP and Treasury Certificate had a negative sign at -.019 which appears to suggest that the relationship is weak. This result counters apriori expectation and the reason for this may be for the fact that Treasury certificate were converted into treasury bonds with effect from 16th March 1996, from which date treasury certificate outstanding had a nil balance.

Table 4. 2: Pearson Correlation Coefficient Matrix of variables

	GDP	Treasury bills TB	Treasury Certificate TC	Certificate of Deposit CD	Commercial Papers CP	Banker Acceptances BA
GDP.	1					
TB	.894	1				
TC	-.019	-.226	1			
CD	.307	.181	.475	1		
CP	.729	.455	.339	.438	1	
BA	.943	.849	-.080	.292	.757	1

Source: Author's computation using IBM SPSS Statistics 21; 2014

From the results of the Pearson correlation coefficient matrix which exhibited high coefficients, attesting to strong linear relationship, we reject the Null hypothesis of no relationship and accept the Alternative hypothesis of a relationship. We therefore conclude that there is a strong linear relationship between Money market operations and Economic viability (GDP) in Nigeria.

4.2.2 Regression Analysis: Hypothesis Testing.

In the empirical estimation, GDP was regressed on its determinants, namely: Treasury bills (TB), Treasury Certificate (TC), Certificates of Deposit (CD), Commercial papers (CP) and Bankers' Acceptances (BA) and the results are as displayed in tables 4.3; 4.4 and 4.5 below.

Table 4.3 displays the slope coefficients of the independent variables, otherwise referred to as the t-statistics parameters or slope coefficients of the independent variables. The t-test attests to the significance and relevance of each of the independent variables. Generally, the empirical results appeared robust and impressive. Some of the independent variables exhibited high t-test coefficients indicating a strong linear relationship with GDP. In particular, Treasury Bills and Banker Acceptances with t-test coefficients of 4.638 and 2.331 respectively passed the test of significance at 5% significant level showing that they are relevant in formulating policies that affect GDP. However, the t-test coefficient of some other independent variables such as Treasury Certificate standing at .891; Certificate of Deposit at -.179 and Commercial Paper at 1.936 counter apriori expectation because their coefficients exhibit weak relationship with GDP. That-not-withstanding, the positive sign of variables such as Treasury Certificate (TC) and Commercial Paper (CP) conformed to apriori expectation suggesting that though these variables exhibit low coefficients, they passed the test of statistical significance because they indicate positive relationship and that qualifies them as relevant for formulating policy that affect GDP.

Table 4.3 Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1930982.294	910992.431		-2.120	.044
	TB	12.515	2.699	.504	4.638	.000
	TC	39.794	44.662	.060	.891	.381
	CD	-12.481	69.688	-.011	-.179	.859
	CP	12.102	6.251	.205	1.936	.064
	BA	147.244	63.164	.368	2.331	.028

a. Dependent Variable: GDP
b. Predictors: (Constant), BA, TC, CD, CP, TB

Source: Regression Analysis Report using IBM SPSS Statistics 21; 2014

The negative sign of the variable Certificate of Deposit (CD) indicate that it failed the test of significance at 5% significant level and as such, it may not be relevant in formulating policy that affect GDP. This result truly counters apriori expectation because CDs constitutes an important element in the process of capital accumulation for productive purposes. However, the data obtained revealed that CD recorded relatively low amount for most of the years under review and in particular for the periods 1991, 1997 – 2006, 2008 and 2010 – 2011 in which nothing was recorded. The implication of this is that most economic units in Nigeria were unable to invest through CD such that its contribution to capital accumulation and thus GDP was extremely minimal.

Table 4.5 shows the results of the Analysis of Variance (ANOVA). The F-statistics of ANOVA attests to the overall significance of the model. In other words, in this study, the ANOVA F-statistics result indicates the overall effect of all Money market variables on GDP, the variable utilized to proxy Economic viability.

Table 4.5 ANOVA (a)

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3219910763343522.000	5	643982152668704.200	81.621	.000[b]
	Residual	1972484687377806.120	25	7889938749512.245		
	Total	3417159232081328.000	30			

a. Dependent Variable: GDP

c. Predictors: (Constant), BA, TC, CD, CP, TB

Source: Regression Analysis Report using IBM SPSS Statistics 21; 2014.

The ANOVA, F-statistics standing at 81.621 is considered very high and significant. It indicates the overall significance of the model. The ANOVA statistics indicates that the problem of serial correlation was not severe enough to weaken the results of our empirical estimations. Based on this result, we reject the null hypothesis of no relationship and accept the alternative hypothesis of a relationship. Indeed, the F – statistic value of 81.621 shows that the estimated model passed the test of overall significance at 5% significant level.

Table 4.4 shows the results of the model summary; the coefficient of determination otherwise referred to as the adjusted R square (R^2) which according to Barenson and Levine (1998) is the indicator of the proportion of variation in the dependent variable explained by the independent variables in the regression estimation.

Table 4.4 Model Summary (b)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.971[a]	.942	.931	2808903.478	.588

a. Predictors: (Constant), BA, TC, CD, CP, TB

b. Dependent Variable: GDP

Source: Regression Analysis Report using IBM SPSS Statistics 21; 2014.

The Coefficient of determination (R^2) in this study indicates .931, meaning that the explanatory variables were able to account for 93.10% of total systematic variation in GDP. In other words, 93% of the variation in the GDP can be explained by Money market instruments serving as our explanatory variables. This result further lends support to reasons for the rejection of the null hypothesis of no relationship and acceptance of the alternative hypothesis of a relationship and thus affirming that there is a strong linear relationship between Money market operations and Economic viability (GDP). However, while the empirical result affirmed true in general terms that there is a strong linear relationship between Money market operations and Economic viability (GDP), the data obtained relating to the Nigerian economy revealed that the magnitude or value in money of Money market operations in Nigeria is relatively low and do not appear to have strong impact on GDP as evidenced by some variables.

5 Summary, Conclusion and Recommendation

This research study empirically investigates developments in Money market Operations and Economic viability in Nigeria. While Economic viability was proxied by Gross Domestic Product (GDP), the study examined the relationship between GDP and Money market instruments namely, Treasury bills (TB), Treasury Certificate (TC), Certificates of Deposit (CD), Commercial papers (CP) and Bankers' Acceptances (BA) in the Nigerian economy for the period 1981 to 2011. Deductions from theoretical and empirical literatures affirmed that Money market operations provides instruments for effective liquidity management globally and acts as the core source of raising short-term funds for lubricating economics activities in any nation. For this sumptuous role, the importance of Money market operations particularly in developing and emerging financial systems and economies cannot be over-emphasized. The Data for the study were analyzed using the Multiple Regression techniques and empirical estimation was carried out using IBM SPSS statistics 21. The findings showed robust evidence of linear relationship. In particular, the summary statistics of the model as indicated by the adjusted R

square, otherwise referred to as the Coefficient of determination (R^2) accounted for 93.10% of total systematic variation in GDP. In addition, the very high value of ANOVA F-Statistic which stood at 81.621 shows that the estimated model passed the test of overall significance at 5% significant levels.

The results rejected the null hypothesis, thus affirming that the overall estimated model is significant. Though, in contrast, the graph appears to cast doubts on whether Money market operations actually made significant contributions to GDP growth in the period under review. The model summary as indicated by the Coefficient of determination (R^2) and ANOVA F-Statistics showed the overall model is significant. Based on the empirical results, it is concluded that there is a linear relationship between Money market operations and Economic economic growth in Nigeria. .

Against this backdrop, we strongly recommend that monetary authority should initiate policies that would encourage Money market operations and also be proactive in CBN surveillance role in order to check practices that could undermine or sabotage market integrity and soundness. For effectiveness, policies must include means of effective implementation, monitoring and sanctions. It is also recommended that all economic stakeholders, monetary, regulatory and practitioners should combine efforts aimed at improving Money market operations, entrench modalities for achieving set economic goals that are favourable for a productive-based economy that ensures growth in GDP. The role of government is crucial in any economy; therefore, it is recommend that government should deliberately and consciously provide the enabling environment for a vibrant and efficient financial system that promote short-term lending opportunities amongst economic units and financial institutions in particular. Finally, training and re-training of the workforce operating the system is strongly recommended because the advent of Information and Communication Technologies (ICT) has brought forward new innovations and methodologies for facilitating business transactions efficiently.

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Appendix 1

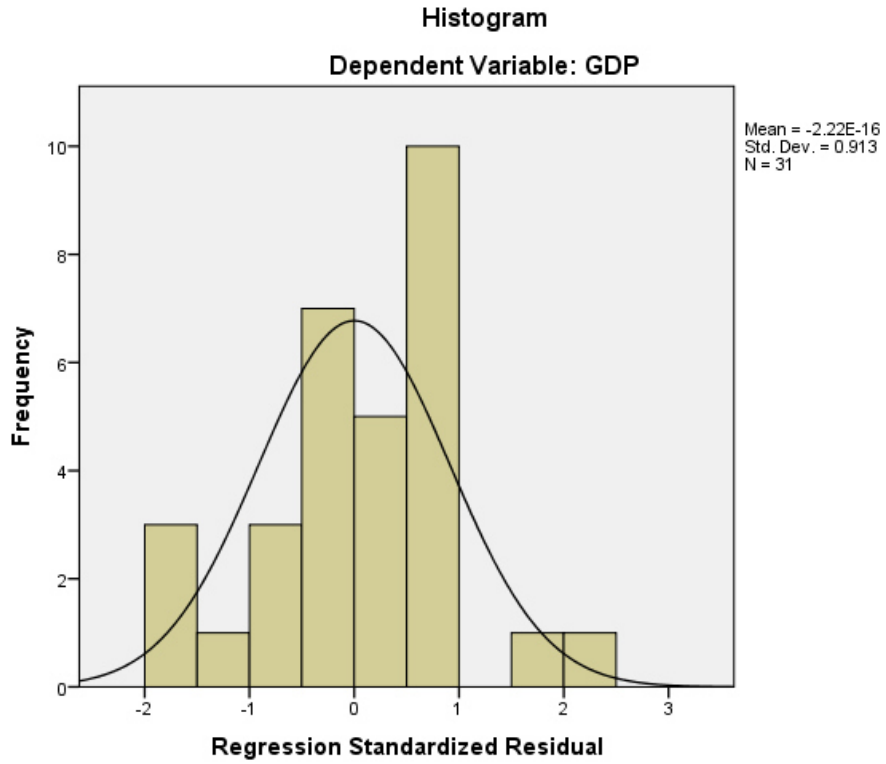
Table 1: GDP and Value of Money Market Instruments Outstanding for the period 1981 – 2011.

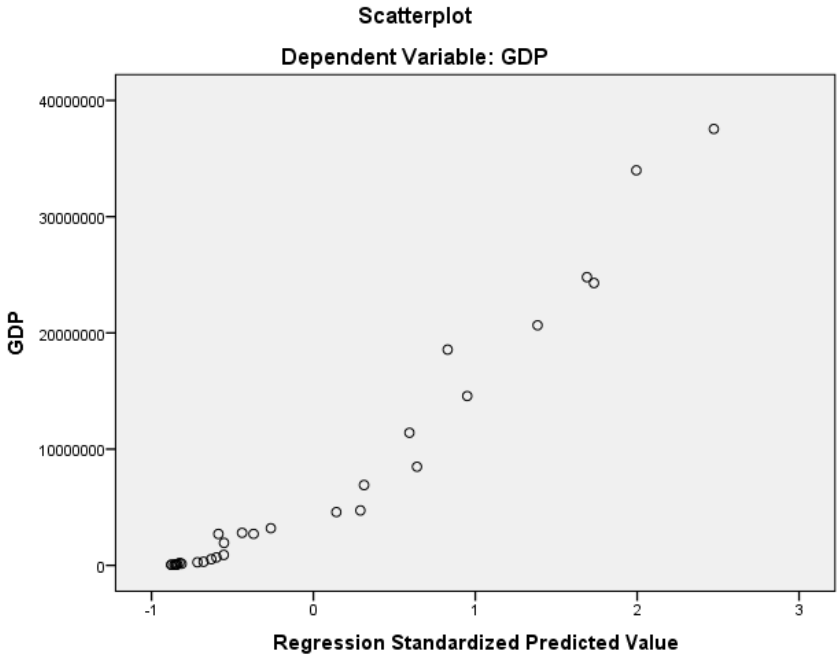
Period	GDP at Current Basic Prices N'Million	Treasury Bils (TB) N'Million (a)	Treasury Certificates (TC) N'Million (b)	Certificate of Deposit (CD) N'Million (c)	Commercial papers (CP) N'Million (d)	Banker Acceptances (BA) N'Million (e)	*Total Money Market Instruments N'Million (a – e)
1981	47,620	5,782	2,308	169	73	19	8351
1982	49,069	9,782	1,669	346	110	21	11928
1983	53,107	13,476	4,894	419	153	18	18960
1984	59,623	15,476	6,413	261	157	19	22326
1985	67,909	16,976	6,644	212	218	20	24070
1986	69,147	16,976	6,655	262	259	18	24170
1987	105,222	25,226	6,664	1,328	496	9	33723
1988	139,085	35,476	6,795	38	1,861	669	44839
1989	216,798	24,126	6,945	12	1310	737	33130
1990	267,550	25,476	34,215	4	1743	953	36915
1991	312,140	56,728	34,215	0	1,107	1,032	93082
1992	532,614	103,327	35,241	537	1,575	128	140808
1993	683,870	103,327	36,584	91	3,372	1,858	145232
1994	899,863	103,327	37,343	15	5,253	4,660	150598
1995	1,933,212	103,327	23,596	48	10,035	8,102	145108
1996	2,702,719	103,327	0	105	8,024	12,200	123656
1997	2,801,973	221,801	0	0	13,595	11,956	247352
1998	2,708,431	221,802	0	0	7,252	17,474	246528
1999	3,194,015	361,758	0	0	20,476	11,972	394206
2000	4,582,127	465,536	0	0	19,003	31,774	516313
2001	4,725,086	584,536	0	0	35,348	30,753	650637
2002	6,912,381	584,536	0	0	36,978	32,214	653728
2003	8,487,032	825,055	0	0	47,569	33,900	906524
2004	11,411,067	871,577	0	0	80,115	24,003	975695
2005	14,572,239	854,828	0	0	194591	41,124	1090543
2006	18,564,595	701,400	0	0	193,512	45,744	940656
2007	20,657,318	574,929	0	2,498	363,370	81,834	1022631
2008	24,296,329	471,930	39,706	-	822,701	66,399	1400736
2009	24,794,239	797,483	52,577	50,500	509,079	62,244	1471883
2010	33,984,754	1,277,100	0	0	189,216	79,172	1545488
2011	37,543,655	1,727,914	0	0	203,008	73,406	2004328

Source: CBN Statistical Bulletin, December, 2011 & 2012
*Total Money Market Instruments: Author's computation from the table.

Appendix 2

Charts





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