

## The Nexus between Money Market Instruments and Nigeria's Economic Growth: A Time Series Analysis

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### **Abstract**

*This study investigated the nexus between money market and Nigerian economic growth: A time series analysis from 1985-2014. The study adopted the ex-post-facto research design. Data used in the study was sourced from CBN annual statistical bulletin for relevant years. Descriptive statistics and the ordinary least square (OLS) multiple regression techniques were the main statistical tools used in the analysis of data. Additionally, the T-test statistics was used to test the null hypotheses of the study at 5% level of significance for a two tailed test. The study found that Treasury bill, Treasury certificate, Commercial paper does not have any significant effect on the gross domestic product (GDP) of Nigeria while Certificate of deposits was found to significantly impact on the gross domestic product (GDP) of Nigeria. The study recommends amongst others the need for Government to create appropriate macroeconomic policies, legal framework and consolidate and improve on reforms with a holistic view to developing and deepening the market so as to promote productive activities, investments, and ultimately economic growth.*

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**Keywords:** Money Market; Money Market Instruments; Economic Growth.

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### **Introduction**

The money market is an integral part of the Nigeria economy since it plays a vital role in the economic growth process of the country (Kehinde & Adejuwon, 2011), and banks' liquidity management as well as the transmission of monetary policies by providing the appropriate instruments for liquidity trading. The money market also allows the refinancing of short and medium-term to facilitate and mitigate business liquidity and risk (Iwedi & Igbanibo, 2015).

The banking system and the money market represent the exclusive setting in which monetary policy operates. A developed, active and efficient money market enhances the efficiency of central bank's monetary policy and the transmission of its impulses into the economy (Nwosu & Hamman 2008, Ehigiamusoe, 2013). Thus, the development of the money market smoothen the progress of financial intermediation and boosts lending to the economy and improves the country's economic and social welfare. Money market is a market for short-term investible fund where short term financial instruments or liquid assets are traded. Its major significance is that it is the machinery for the mobilization of Nigeria financial resources for economic growth. Investment that promotes liquidity and gives immediate income requires short term funding with maturity of within one year (Oloyede, 1999 and Ikpefan & Osabuohien 2012).

The existence of money market facilitates trading in short-term debt instruments to meet short term needs of large users of funds such as governments, banks, and similar institutions (Ehigiamusoe, 2013). Money market plays a key role in bank's liquidity management and the transmission of monetary policy. By providing the appropriate instruments and partner for liquidity trading, the money market allows the refinancing of short and medium term positions and facilitates the mitigation of business liquidity risks. The banking system and the money market represent the exclusive setting in which monetary policy operates. Developed, active, and efficient interbank and money markets enhance the efficiency of central bank's monetary policy and the transmission of its impulses into the economy. Thus, the development of the money market smoothen the progress of the financial intermediation and boost lending to the economy, and improves the country's economic and social welfare (Ehigiamusoe, 2013).

Well-developed money markets exist in developed countries, particularly in the high income ones, while those in the low income countries mirror the state of their development. In the latter, the markets are narrow, poorly integrated, and in some instances, non-existent in the real sense of it (Nwosu & Hamman, 2008). The level of development of a money market serves as a barometer for measuring the level of development of the economy. They assert that the degree and tempo of development of one reflects the state of development of the other. The money market is one of the categorizations of the financial markets. The other category is the capital market. While the money market deals in short-term funds, the capital market deals in long-term loanable funds (Anyanwu, 1996). The basis of distinction between the money and capital market lies in the degree of liquidity of instruments bought and sold in each of the markets.

In developing economies like Nigeria money markets are still underdeveloped as such the absence of a well-developed money market in these countries poses a challenge in pooling funds large enough to fund private enterprises. Despite that in recent times the Nigeria money market has witnessed robust reforms and expansion, there are still some problems and challenges which the market is confronted with. The Nigeria money market is still superficial when compared to her contemporaries in some advanced and emerging economies; it is also characterized by immature secondary market, undiversified instruments, lack of proper coordination in the issuance of debt instruments, inadequate and deficient information flow among others. Can it be concluded therefore that money market operations contribute or hamper economic growth in Nigeria? This is the question which previous studies have not fully answered. It is therefore the crux of this study to answer this question by examining the nexus between money market operations and economic growth in Nigeria.

### **Research Hypotheses**

This study formulates the following null hypotheses which will be tested in the course of the study to form a basis for a decision to be made.

**H<sub>01</sub>:** Treasury bills does not have any significant on the gross domestic product (GDP) of Nigeria.

**H<sub>02</sub>:** Treasury certificate does not have any significant effect on the gross domestic product (GDP) of Nigeria.

**Ho<sub>3</sub>:** Commercial paper does not have any significant effect on the gross domestic product (GDP) of Nigeria

**Ho<sub>4</sub>:** Certificate of deposits does not have any significant effect on the gross domestic product (GDP) of Nigeria.

## **LITERATURE REVIEW**

### **Concept of Money Market**

The money market is the market where securities of short term nature of not more than one year are bought and sold. It has no central location; businesses are usually transacted on telephone, fax, telex, and so on (Ikpefan & Osabuohien, 2012). Prices of securities dealt with are usually determined by the influence of the Federal Government of Nigeria's monetary policies being issued annually and monitored by the Central Bank. They are of high quality, unsecured but relatively low risks financial assets such as: savings of various forms, negotiable and non-negotiable certificate of deposits, bankers' acceptances, commercial papers, call money, treasury bills and treasury Certificate. The money market is an important institution in a modern economy (Sundharam & Varshney, 1978). The market is of great help in financing industry and commerce. In developed economies, it helps industries in providing their working capital requirements through the system of finance bills, commercial paper, among others. Conditions in the money market and the short-term rates of interest influence the long-term capital market as well as the long-term rates of interest. The existence of a capital market is dependent upon the existence of a well-organized money market and the two markets together play an important role in the economic development of the country (Sundharam and Varshney, 1978).

In advanced economies, the money market constitutes the most institution for creating liquidity for government, companies and individuals (Ikpefan & Osabuohien, 2012). There are many basic requisites that are germane for the evolution of a developed money market (Sundharam and Varshney, 1978). They are highly organised commercial banking system, presence of central bank, availability of proper credit instruments; existence of a number of sub-markets, availability of ample resources, stable political condition and large volume of international trade. The presence of these factors would enhance the volume of transactions of money market instruments in the discount market and the general economy in general. The Nigerian money market existing is also inadequate and constrained by the absence of sub-markets and availability of adequate credit instruments required for the smooth operations of the market.

According to Oba (1999) money market is a forum where short term capital is sourced. Therefore the corporate body that requires such fund creates instruments with which to source such funds. The life span of such funds ranges from few hours to about twenty-four months or two years. From Olowe's (1997) stand point, money market is the market where money is invested for periods of up to one year maturity. The instrument or securities traded in the market are called money market instruments. Thus, discount money market is the market for trading in short term financial instruments with maturities less than a year. The major players in the money markets include individuals, companies, banks, discount houses and governments.

Odife (1984) stated that money market is the market for financial claims of less than one year to perhaps five years or less for maturity. To him, money market is thus essentially a framework for trading short-term financial instruments. The global economic melt-down is already causing a considerable slowdown in most countries. Governments around the world are trying to manage the crisis, but many suggest the worst is not yet over. For example, stock markets are down more than 40% from their recent highs. Investment banks have also collapsed.

The money market is a wholesale market for low risk, highly liquid, short-term debt instruments. Short-term refers to a tenor of less than one. In Nigeria, the instruments traded in the main are Treasury Bills, Bankers Acceptances and Commercial Papers. The heart of activity in the money market occurs in the dealing rooms of discount houses and banks. Each day, billions of Naira is traded between operators in the money markets (CBN, 2004; Kakawa, 2005). One of the tools used to control the money supply is the open market operations (OMO). It is an indirect monetary policy technique. It involves the sale/purchases of money market instruments in the open market. In Nigeria, the money market instrument used for OMO auctions is held on a weekly basis. Presently, the notice is put out on Wednesday. Banks and other participants forward their bids to the discount houses on Thursday whilst the results are released the following day, Friday. The Discount House submits bids from authorized dealers, including its needs for OMO instruments, to the Central bank and facilitates the payments and settlement of the transaction.

### **Roles of Money Market in the Economy**

Money markets play a key role in banks' liquidity management and the transmission of monetary policy. In normal times, money markets are among the most liquid in the financial sector. By providing the appropriate instruments and partners for liquidity trading, the money market allows the refinancing of short and medium-term positions and facilitates the mitigation of your business' liquidity risk (Puri, 2012).

The banking system and the money market represent the exclusive setting monetary policy operates in. A developed, active and efficient interbank market enhances the efficiency of central bank's monetary policy, transmitting its impulses into the economy best. Thus, the development of the money market smoothers the progress of financial intermediation and boosts lending to economy, hence improving the country's economic and social welfare, therefore, the development of the money market is in all stakeholders' interests: the banking system elf, the Central Bank and the economy on the whole. Puri (2012) discussed the following roles of the Money Market.

#### **i. Producing Information and Allocating Capital**

The information production role of financial systems is explored by Ramakrishnan & Thakor (1984), Bhattacharya & Pfleiderer (1985), Boyd & Prescott (1986), and Allen (1990). They develop models where financial intermediaries arise to produce information and sell this information to savers. Financial intermediaries can improve the ex-ante assessment of investment opportunities with positive ramifications on resource allocation by economizing on information acquisition costs. As Schumpeter (1912) argued, financial systems can enhance growth by spurring technological innovation by identifying and funding entrepreneurs with the best chance of successfully implementing innovative procedures. For sustained growth at the frontier of

technology, acquiring information and strengthening incentives for obtaining information to improve resource allocation become key issues.

## **ii. Risk Sharing**

One of the most important functions of a financial system is to achieve an optimal allocation of risk. There are many studies directly analyzing the interaction of the risk sharing role of financial systems and economic growth. These theoretical analyses clarify the conditions under which financial development that facilitates risk sharing promotes economic growth and welfare. Quite often in these studies, however, authors focus on either markets or intermediaries, or a comparison of the two extreme cases where every financing is conducted by either markets or intermediaries. The intermediate case in which markets and institutions co-exist is rarely analyzed in the context of growth models because the addition of markets can destroy the risk-sharing opportunities provided by intermediaries. In addition, studies focus on the role of financial systems that face diversifiable risks. The implications for financial development and financial structure on economic growth are potentially quite different when markets cannot diversify away all of the risks inherent in the economic environment. One importance of risk sharing on economic growth comes from the fact that while averse agents generally do not like risk, high-return projects tend to be riskier than low return projects. Thus, financial markets that ease risk diversification tend to induce a portfolio shift towards projects with higher expected returns as pointed out by Greenwood & Jovanovic(1990), Saint-Paul (1992), Devereux & Smith (1994) and Obstfeld (1994) as cited in Puri, (2012). King & Levine, (1993) as cited in Puri, (2012) show that cross sectional risk diversification can stimulate risky innovative activity for sufficiently risk-averse agents. The ability to hold a diversified portfolio of innovative projects reduces risk and promotes investment in growth-enhancing innovative activities.

## **iii. Liquidity**

Money market funds provide valuable liquidity by investing in commercial paper, municipal securities and repurchase agreements: Money market funds are significant participants in the commercial paper, municipal securities and repurchase agreement (or repo) markets. Money market funds hold almost 40% of all outstanding commercial paper, which is now the primary source for short-term funding for corporations, who issue commercial paper as a lower-cost alternative to short-term bank loans. The repo market is an important means by which the Federal Reserve conducts monetary policy and provides daily liquidity to global financial institutions. Quantum of liquidity in the banking system is of paramount importance, as it is an important determinant of the inflation rate as well as the creation of credit by the banks in the economy. Market forces generally indicate the need for borrowing or liquidity and the money market adjusts itself to such calls. RBI facilitates such adjustments with monetary policy tools available with it. Heavy call for funds overnight indicates that the banks are in need of short term funds and in case of liquidity crunch, the interest rates would go up.

## **iv. Diversification**

For both individual and institutional investors, money market mutual funds provide a commercially attractive alternative to bank deposits. Money market funds offer greater investment diversification, are less susceptible to collapse than banks and offer investors greater disclosure on the nature of their investments and the underlying assets than traditional bank deposits. For the financial system generally, money market mutual funds reduce pressure on the FDI, reduce systemic risk and provide essential liquidity to capital markets because of the funds' investments in commercial paper, municipal securities and repurchase agreements.

**v. Encouragements to Saving and Investment**

Money market has encouraged investors to save which results in encouragement to investment in the economy. The savings and investment equilibrium of demand and supply of loanable funds helps in the allocation of resources.

**vi. Controls the Price Line in Economy**

Inflation is one of the severe economic problems that all the developing economies have to face every now and then. Cyclical fluctuations do influence the price level differently depending upon the demand and supply situation at the given point of time. Money market rates play a main role in controlling the price line. Higher rates in the money markets decrease the liquidity in the economy and have the effect of reducing the economic activity in the system. Reduced rates on the other hand increase the liquidity in the market and bring down the cost of capital considerably, thereby raising the investment. This function also assists the CBN to control the general money supply in the economy.

**vii. Helps In Correcting the Imbalances in Economy**

Financial policy on the other hand, has longer term perspective and aims at correcting the imbalances in the economy. Credit policy and the financial policy both balance each other to achieve the long term goals strong-minded by the government. It not only maintains total control over the credit creation by the banks, but also keeps a close watch over it. The instruments of financial policy counting the repo rate cash reserve ratio and bank rate are used by the Central Bank of the country to give the necessary direction to the monetary policy.

**viii. Regulates the Flow of Credit and Credit Rates**

Money markets are one of the most significant mechanisms of any developing financial system. In its place of just ensure that the money market in India regulate the flow of credit and credit rates, this instrument has emerge as one of the significant policy tools with the government and the RBI to control the financial policy, money supply, credit creation and control, inflation rate and overall economic policy of the State. Therefore the first and the leading function of the money market mechanism are regulatory in nature. While determining the total volume of credit plan for the six monthly periods, the credit policy also aims at directing the flow of credit as per the priorities fixed by the government according to the requirements of the economy. Credit policy as an instrument is important to ensure the availability of the credit in sufficient volumes; it also caters to the credit needs of various sectors of the economy. The CBN assist the government to realize its policies related to the credit plans throughout its statutory control over the banking system of the country.

**ix. Transmission of Monetary Policy**

The money market forms the first and foremost link in the transmission of monetary policy impulses to the real economy. Policy interventions by the central bank along with its market operations influence the decisions of households and firms through the monetary policy transmission mechanism. The key to this mechanism is the total claim of the economy on the central bank, commonly known as the monetary base or high-powered money in the economy. Among the constituents of the monetary base, the most important constituent is bank reserves, i.e., the claims that banks hold in the form of deposits with the central bank. The banks' need for these reserves depends on the overall level of economic activity. This is governed by several factors:

- Banks hold such reserves in proportion to the volume of deposits in many countries, known as reserve requirements, which influence their ability to extend credit and create deposits, thereby limiting the volume of transactions to be handled by the bank;

- bank's ability to make loans (asset of the bank) depends on its ability to mobilize deposits (liability of the bank) as total assets and liabilities of the bank need to match and expand/contract together; and
- Banks' need to hold balances at the central bank for settlement of claims within the banking system as these transactions are settled through the accounts of banks maintained with the central bank. Therefore, the daily functioning of a modern economy and its financial system creates a demand for central bank reserves which increases along with an expansion in overall economic activity (Friedman, 2000b) as cited in Puri, (2012).

### **Characteristics of Money Market Instruments**

Money market instruments channel money from investors to borrowers who need money, for an investment to qualify as a money market instrument, lenders must be able to get their money back in a year or less, choosing among short terms securities issued by banks, companies or governments (Raja & Mahalakshmi, 2015). Investors make their purchases through brokers, at auction or from other institutions. The different types of money market instruments share basic characteristics, but they also have important differences.

Variety, Money market instruments according to Raja & Mahalakshmi, (2015) include short terms and certificates of deposit (CDs), municipal bonds, Treasury bills and other government securities. More sophisticated examples include commercial paper, repurchase agreement and banker's acceptances. Individual investors most commonly invest in money market deposit accounts and money market mutual funds.

A money market deposit account is a special type of bank or savings account that allows check writing. A money market mutual fund is not a bank account even if a bank sells it. It is a mutual fund investing in money market instruments. Raja & Mahalakshmi, (2015) discuss the following as the characteristics of money market instruments: liquidity, return, safety, risk and disadvantages.

- i. Liquidity:** Liquidity of an investment refers to how quickly, and easily investors can access their money. Money market instruments are relatively liquid by definition because the money is available in a year or less. Fixed terms range from one day to one year. Money market deposit accounts and money market mutual funds have high liquidity, as depositors may access money by check when they need it. Some money market instruments also permit resale to secondary buyers if the investor needs the principal before maturity. Treasury bills and some special CDs fall into this category.
- ii. Return:** Money market instruments pay interest to the lender. Bank money market accounts, for example, add interest on each monthly statement. Other instruments, including Treasury bills, pay interest only at maturity. A few types of money market investments pay interest exempt from federal income tax. Short-term exempt bills issued by municipal and state governments fall into this category.
- iii. Safety:** Money market investments are safer than most due to their liquidity. Their liquidity minimizes long - term uncertainties about companies and governments and helps protect against interest rate increases. Instruments such as Treasury bills gain additional safety from their federal government backing. Government – insured money market deposit accounts also have protection against bank failure if their balances fall within insurance guidelines. As of the date of publication, individual accounts are federally insured for up to \$250,000. Money market mutual funds do not carry government insurance, so depositors can lose money if the share price falls below \$1.00.

- iv. Risks and Disadvantages:** The various money market instruments have some disadvantages. The most serious risk for any investment is default. If the business or government issuing the instrument fails, the investor can lose part or all of his money. Locking up money for a relatively long period, such as one year, also increases the risk of rising interest rates. Usually investors must pay a penalty to cash out a CD ahead of time. Banks also charge fees for exceeding the allowed number of checks in a money market deposit account; Money market mutual funds typically charge a management fee of 1 percent.

### **Functions of Money Market**

A well –developed money market is essential for a modern economy. Though, historically, money market has developed as a result of industrial and commercial progress, it also has important role to play in the process of industrialization and economic development of a country. Importance of a developed money market and its various functions as examined by Raja & Mahalakshmi, (2015) are discussed below:

- i. Financing Trade:** Money Market plays crucial role in financing both internal as well as international trade. Commercial finance is made available to the traders through bills of exchange, which are discounted by the bill market. The acceptance house and discount markets help in financing foreign trade.
- ii. Financing Industry:** Money market contributes to the growth of industries in two ways.
  - a) Money market helps the industries in securing short – term loans to meet their working capital requirements through the system of finance bills, commercial papers, etc.
  - b) Industries generally need long-term loans, which are provided in the capital market. However, capital market depends upon the nature of and the conditions in the money market. The short-term interest rates of the money market influence the long – term interest rates of the capital market. Thus, money market indirectly helps the industries through its link with and influence on long –term capital market.
- iii. Profitable Investment:** Money market enables the commercial banks to use their excess reserves in profitable investment. The main objectives as well as maintain liquidity to meet the uncertain cash demand of the depositors. In the money market, the excess reserves of the commercial banks are invested in near – money assets (e.g. short-term bills of exchange) which are highly liquid and can be easily converted into cash. Thus, the commercial banks earn profits without losing liquidity.
- iv. Self-Sufficiency of Commercial Bank:** Developed money market helps the commercial banks to become self. In the situation of emergency, when the commercial banks have scarcity of funds, they need not approach the central bank and borrow at a higher interest rate. On the other hand, they can meet their requirements by recalling their old short – run loans from the money market.
- v. Help to Central Bank:** Though the central bank can function and influence the banking system in the absence of a money market, the existence of a developed money market smoothens the functioning and increases the efficiency of the central bank. Money market helps the central bank in two ways:
  - a) The short –run interest rates of the money market serves as an indicator of the monetary and banking conditions in the country and, in this way, guide the central bank to adopt an appropriate banking policy.



- b) The sensitive and integrated money market helps his central bank to secure quick and widespread influence on the sub- markets, and thus achieve effective.

### **Review of Empirical Studies**

Iwedi & Igbanibo, (2015) empirically examine the nexus of money market operations on economic growth in Nigeria. The study made use of secondary data which were obtained from the Central bank of Nigeria Statistical Bulletin (2013). The data were collected for a period of thirty three years (1980-2013). The descriptive statistical tools and sophisticated econometric tools of the vector auto-regressions (VAR), Johansen Co-integration, and Granger causality tests was employed in the analysis of the data. It was found among other things that there is a positive significant short-run and long-run relationship between money market operations and economic growth in Nigeria. The result shows that causality flows from economic growth proxy by GDP to money market operations but not vice versa. Based on the empirical analysis, it is concluded that money market operations delivers short term growth tendencies and can help to ensure long run impressive and steady growth rates in Nigeria as it is a key component of the financial system, a fulcrum of monetary operations conducted by the central bank in its pursuit of monetary policy objectives. It is recommended that, the government should both in short and long-run prioritized policies geared towards increasing/developing money markets operations in Nigeria in order to make the economy more stable.

Okpe, (2013) examine the impact of money market on the Nigerian economic development The study examine the contribution of money market to the growth of small and medium scale enterprises during the period of 1987-2007 with special emphasis on the performance appraisal of the stock market. The result from the empirical analysis carried out using the ordinary least squares estimation technique reveals that the Nigeria stock exchange has contributed to some extent in financing small and medium scale enterprises. However, the prospect of the market appears to be bright considering the current position of the government and players in the industry in the area of formulation and implementation of favourable policies.

Ikpefan & Osabuohien, (2012) investigates the interactions between discount houses, money market instruments and economic growth in Nigeria. The study captured their performance indicators and employed time series data obtained from Central Bank of Nigeria. Employing co-integration and vector error correction techniques, it was established, among others, that a long-run relationship exists between discount houses operations and economic growth on one hand and money market instruments, on the other. This implies that discount houses can serve as a veritable stimulant in Nigeria especially in this era of global economic melt-down that is biting hard on the Nigerian stock market.

Ehigiamusoe, (2013) examines the impact of money market on economic growth in Nigeria using data for the period 1980-2012. Econometrics techniques such as Ordinary Least Squares Method, Johanson's Co-integration Test and Vector Error Correction Model were used to examine both the long-run and short-run relationship. Evidence from the study suggest that though a long-run relationship exists between money market and economic growth, but the present state of the Nigerian money market is significantly and negatively related to economic growth. The link between the money market and the real sector of the economy remains very weak. This implies that the market is not yet developed enough to produce the needed growth that will propel the Nigerian economy because of several challenges. It was therefore recommended that government should create the appropriate macroeconomic policies, legal

framework and sustain the present reforms with a view to developing the market so as to promote productive activities, investments, and ultimately economic growth.

Maduka & Onwuka, (2013) investigate both the long run and short run relationships between financial structure and economic growth using time series data. The presence of a unit root in the time series data was tested using Augmented Dickey–Fuller and Philips–Perron tests. The long run relationship among the variables is estimated using Johansen & Juselius (1990) maximum likelihood procedure. While the vector error correction model is used to estimate short run the dynamic coefficients. The main results reveal that financial market structure has a negative and significant effect on economic growth based on Nigeria data. This suggests a low level of development of the country’s financial sector. The study therefore recommends that there is a need to put appropriate financial policies in place that will encourage the growth per capita GDP.

### RESEARCH METHODOLOGY

This study adopts the ex-post facto research design. This research design is adopted for this study because of its strengths as the most appropriate design to use when it is impossible to select, control and manipulate all or any of the independent variables or when laboratory control will be impracticable, costly or ethically questionable (Akpa and Angahar, 1999).

The major data for this study are obtained through the secondary source. Secondary data were extracted from the CBN annual statistical bulletin from the period 1985-2014. Descriptive statistics and multiple regression statistics were used in the analysis of data. The multiple regression using the ordinary least squares (OLS) method was adopted for the analysis. The OLS method was preferred because it minimizes the errors between the points on the line and the actual observed points of the regression line by giving the best fit.

The following model has been formulated to guide the researcher in the investigation.

$$GDP = \alpha + \beta_1TB + \beta_2TC + \beta_3CP + \beta_4CD + u$$

Where,

**GDP** = Gross domestic product, **TB** = Treasury bills, **TC**= Treasury certificates, **CD** = Commercial deposits

‘ **$\alpha$** ’ = alpha, represent the model constant

**$\beta_1 - \beta_4$**  = Beta, representing the coefficients of variables used in the model.

**u** = is the stochastic variable representing the error term in the model. It is usually estimated at 5% (0.05) level of significance.

### DATA PRESENTATION AND ANALYSIS

This section of the chapter focuses on the presentation of the data that was extracted from the central bank of Nigeria (CBN) annual statistical bulletin (see data in appendix I) in respect to gross domestic product (GDP), and four independent variables: treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD). The data covers a period of 28 years, spanning from 1985-2012. All the values in respect to the study variables are

graduated in billions. Data in respect to the study's independent variables were regressed with a common dependent variable and the result is herein presented in the subsequent sections.

### Test of Data Validity

In order to ensure that these results are robust, several diagnostic tests such as Durbin Watson test, variance inflation factor (VIF) and Tolerance statistics were computed as shown in Table 4.2 and 4.3

The Durbin Watson is estimated 0. W844 which is very less than 2 indicating the absence of auto-correlation (see table 4.2). The Durbin Watson statistics ensures that the residuals of the proceeding and succeeding sets of data do not affect each other to cause the problem of auto-correlation.

The Variance Inflation Factor (VIF) statistics for all the independent variables consistently fall below 4. This indicates the absence of multicollinearity problems among the variables under investigation (see Berenson and Levine, 1996). This statistics ensures that the independent variables are not so correlated to the point of distorting the results and assists in filtering out those ones which are likely to impede the robustness of the model. There is no formal VIF value for determining presence of multicollinearity. Values of VIF that exceed 10 are often regarded as indicating multicollinearity, but in weaker models values above 2.5 may be a cause for concern (Kousoyiannis, 1977; Gujarati and Sangeetha, 2007). Thus, this model exhibit low risk of potential multicollinearity problems as all the independent variables have a variance inflation factor (VIF) below 10 (Myers, 1990). This shows the appropriateness of fitting of the model of the study with the four (4) independent variables.

In addition the tolerance values consistently lies between 0.254 and 0.985 (see table 4.3). Menard (1995) suggested that a tolerance value of less than 0.1 almost certainly indicates a serious collinearity problem. In this study, the tolerance values are more than 0.1; this further substantiates the absence of multicollinearity problems among the explanatory variables.

**Table 4.1: Descriptive Statistics for all variables**

	Mean	Std. Deviation	N
GDP	5.7477	.94558	30
TB	1353.5300	2893.66580	30
TC	9.1533	14.57115	30
CD	10.0400	29.31698	30
CP	101.7900	182.49342	30

*Source: SPSS Version 20*

Table 4.1 presents the descriptive statistics of all the variables. N represents the number of paired observations and therefore the number of paired observation for the study is 30. The gross domestic product (GDP) reflects a low mean of ₦559371billion with fluctuations of just 8.8223 (i.e. taking the natural antilog of 5.7477 and 0.94558 respectively). This means that on average, the gross domestic product (GDP) at market price stood at ₦559371billion. This reveals poor performance of the Nigerian economy. The reason for this could be attributed to poor

mismanagement of the Nigerian economy by both the military and political class and the impact of the global financial crises.

Treasury bills (TB) at the end of the year has an average of ₦ 1353.5300 billion with a fluctuation of 2893.66580 billion.

The result also reveals that, treasury certificate (TC) reflects a mean of ₦ 9.1533 billion with a deviation of ₦ 14.57115.

More so, the result further reflects a mean of ₦ 10.400 billion in respect to certificate of deposit (CD) with a fluctuation of ₦ 29.31698.

Finally, the mean commercial paper (CP) is estimated at 101.7900 million with a low variation of ₦ 182.4934 billion.

#### 4.2.2 Presentation of Regression Results

Regression analysis is the main tool used for data analysis in this study. Regression analysis shows how one variable relates with another. The result of the regression is here by presented in this section.

**Table 4.2: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.622 <sub>a</sub>	.387	.288	.79763	.387	3.939	4	25	.013	.844

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

b. Dependent Variable: GDP

*Source: SPSS Version 20*

Table 4.2 presents the model summary of the predictor variables: treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD) regressed with the dependent variable: gross domestic product (GDP). The results of the computed statistics are explained in the subsequent paragraphs.

The model reflects an R value of 0.622. This indicates that, there is a strong relationship between the dependent and independent variables.

Also the coefficient of determination otherwise known as the  $R^2$  was estimated at 0.387. The  $R^2$  measures the percentage of the total change in the dependent variable: gross domestic product (GDP) that can be explained by the independent variables: treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD). Thus an  $R^2$  value of 0.387 indicates that, treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD) accounts for 38.7% of the total variation in the total gross domestic product (GDP) while the remaining 61.3% of the variation could be explained by other variables not included in this model.

The implication of this result is that treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD) are very responsive to the gross domestic product (GDP). This is why it accounts very high for the variation.

The adjusted  $R^2$  of 0.288 or 28.8% indicates that if the entire population is considered for this study, this result will deviate from it by only 0.3% (i.e. %38.7 – 28.8%). This result is therefore considered valid since the difference between the population and the result is insignificant.

The F-statistics is also estimated at 3.93. This indicates that the predictor variable was as a whole contributing to the variation in the dependent variable and that there exist a statistically significant relationship at 0.013 between gross domestic product (GDP) and treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD). This further implies that the overall equation is significant at 0.0% which is below the 5% generally acceptable level of significant in social sciences.

**Table 4.3: Model Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Beta	Lower Bound	Upper Bound	Tolerance
(Constant)	6.211	.213		29.123	.000	5.772	6.651		
1 TB	5.989E-005	.000	-.183	-.590	.560	.000	.000	.254	3.931
TC	-.007	.011	-.106	-.647	.523	-.029	.015	.917	1.091
CD	-.005	.010	-.165	-.539	.595	-.026	.015	.262	3.822
CP	-.003	.001	-.505	-3.199	.004	-.004	-.001	.985	1.015

a. Dependent Variable: GDP

*Source: SPSS Version 20*

Table 4.3 above presents the model coefficients for the dependent and explanatory variable. The explanatory or independent variables are statistically significant at 5% level of significance for a two tail test.

The regression results as presented in table 4.3 above to determine the relationship between the dependent and independent variables show that when the independent variables are held stationary; the gross domestic product is estimated at ₦ 1625548 billion (i.e. taking the natural antilog of 5.599). This simply implies that when all the other variables are not considered, there will be a significant increase in the gross domestic product (GDP) up to the tune of ₦ 1625548 billion occasioned by factors not incorporated in this study. Thus, a unit reduction in treasury bills (TB), treasury certificates (TC), commercial papers (CP) and

certificate of deposit (CD) will lead to a reduction in the gross domestic product (GDP) by 0.183, 0.106, 165, and units respectively.

It therefore followed from the above analysis that for the gross domestic product (GDP) to be improved, government and other stake holders in the Nigerian money market should from time to time monitor the performance of the market through its instruments treasury bills (TB), treasury certificates (TC), commercial papers (CP) and certificate of deposit (CD).

### **Test of Research Hypotheses**

This section of the chapter provides a test of research hypotheses. This was done using the beta coefficients and their level of significance. The researcher here will examine the level of significance or insignificance of each beta coefficient in respect to each hypothesis so as to enable a decision to be made as to whether to accept or reject the study's formulated null hypotheses. The result of this study (see table 4.3) provides absolute evidence for the acceptance of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> null hypotheses and subsequent rejection of the 4<sup>th</sup> null hypothesis of the study. The study therefore concludes that: Treasury bills, Treasury certificate, Commercial paper does not have any significant effect on the gross domestic product (GDP) of Nigeria While Certificate of deposits have a significant effect on the gross domestic product (GDP) of Nigeria.

### **Discussion of Findings**

This study's first objective was concerned with examining the extent to which treasury bills impacts on the gross domestic product. A null hypothesis was formulated in line with this objective and was tested using the t-test statistics at 5% level of significance for a two tail test. Findings from this test reveal that treasury bills of the Nigerian money market do not significantly influence the gross domestic product of Nigeria. The result also revealed a negative coefficient in respect to Treasury bill indicating that a change in the value of Treasury bill will bring about an insignificant decrease in the gross domestic product of Nigeria.

Also considering the second objectives of this study which was interested in examining the extent to which treasury certificate traded in the Nigerian money market influence the gross domestic product of Nigeria, Consequently, a null hypothesis was also formulated in line with this objective and was tested using the t-test statistics at 5% level of significant for a two tail test. Findings from this study reveal that treasury certificates do not significantly influence the gross domestic product of Nigeria. The result also revealed a negative coefficient in respect to the treasury certificates. This suggests that a change in treasury certificates of the Nigerian money market will lead to an insignificant decrease in the gross domestic product of Nigeria.

In the third objective of this study which was also interested in investigating the extent to which commercial papers of the Nigerian money market influence the gross domestic product. Consequently, the null hypothesis was also formulated in line with this objective and was tested using the t-test statistics at 5% level of significance for a two tail test. Findings from this study reveal that the commercial papers do not significantly influences the gross domestic product of Nigeria. In addition, the result also revealed a negative coefficient in respect to commercial papers, thus indicating that a change in commercial papers of the Nigerian money market will lead to an insignificant downward trend in the gross domestic product of Nigeria.

Finally, in the fourth objective of this study which aimed at examining the extent to which certificates of deposit impacts on the gross domestic product of Nigeria. Consequently, the null hypothesis was also formulated in line with this objective and was tested using the t-test statistics at 5% level of significance for a two tail test. Findings from this study reveal that the certificate of deposit significantly impacts on the gross domestic product of Nigerian. However, the result also revealed a negative coefficient in respect to certificate of deposits, thus indicating that a change in value of certificate of deposits will lead to a significant downward trend in the gross domestic product of Nigeria.

These findings are consistent with findings of Ehigiamusoe, (2013) *who* examine the impact of money market on economic growth in Nigeria using data for the period 1980-2012 and conclude that though a long-run relationship exists between money market and economic growth, but the present state of the Nigerian money market is significantly and negatively related to economic growth. The link between the money market and the real sector of the economy remains very weak. This implies that the market is not yet developed enough to produce the needed growth that will propel the Nigerian economy because of several challenges.

The findings also agrees with Maduka and Onwuka, (2013) who investigate both the long run and short run relationships between financial structure and economic growth using time series data and found that financial market structure has a negative and significant effect on economic growth based on Nigeria data. This suggests a low level of development of the country's financial sector.

#### **Summary of Findings**

This study seeks to examine the impact of money market on the economic development of Nigeria. The analyses are performed using data from CBN statistical bulletin, for a period of 30 years (1985-2014). The ordinary least square regression technique and descriptive statistics were used to analyze the data. The following are the summary of the major findings of this study arrived at through the test of the research hypotheses.

- i. Treasury bill does not have any significant impact on the gross domestic product (GDP) of Nigeria.
- ii. Treasury certificate does not have any significant effect on the gross domestic product (GDP) of Nigeria.
- iii. Commercial paper does not have any significant effect on the gross domestic product (GDP) of Nigeria.
- iv. Certificate of deposits have a significant effect on the gross domestic product (GDP) of Nigeria.

#### **Conclusions and Recommendations**

The study empirically examined the impact of money market on economic growth in Nigeria. A growth model was constructed using the indicators of the money market as the explanatory variables and gross domestic product as a proxy for economic growth. The money market indicators used as explanatory variables in the study include; Treasury bills, Treasury certificate, Commercial Papers and certificate of deposit. The study employed the ordinary least squares method to examine the impact of these variables on economic growth. Time series data for the study covering the period 1985-2014 were sourced from the Central Bank of Nigeria Statistical Bulletins. The study discovered that the present state of the Nigerian money market does not have significant impact on economic growth. All the money variables used failed to

show positive evidence and significant impact on economic growth. This shows that the Nigeria money market is not yet developed enough to produce the needed growth that will propel the economy. The link between the money market and the real sector of the economy remains very weak and, thus cannot propel the needed growth in the economy.

In conformance with the findings of this study, the following recommendations become imperative.

- i. Government should create the appropriate macroeconomic policies, legal framework and sustain the present reforms with a view to developing the market so as to promote productive activities, investments, and ultimately economic growth.
- ii. The government should both in short and long-run prioritized policies geared towards increasing/developing money markets operations in Nigeria in order to make the economy more stable.
- iii. The study therefore recommends that there is a need to put appropriate financial policies in place that will encourage the growth per capita GDP.
- iv. There should be an improvement in the declining market capitalization by encouraging more foreign investors to participate in the market, maintain state of the art technology like automated trading and settlement practices, electronic fund clearance and eliminate physical transfer of shares. There is also need to restore confidence to the market by regulatory authorities through ensuring transparency and fair trading transactions and dealings in the stock exchange. It must also address the reported cases of abuses and sharp practices by some companies in the market.
- v. The cost of raising funds in the Nigerian money market is however, regarded to be very high. There should be a down ward review of the cost so as to enhance competitiveness and improve the attractiveness as a major source of raising funds.
- vi. Given the present political dispensation, all tiers of government should be encouraged to fund their realistic developmental programmes through the Nigerian money market. This will serve as a lee way to freeing the resources that may be used in other sphere of the economy.

## References

- Akpa, B. & Angahar, A., (1999). *Essentials of Research Methodology*, Makurdi: Aboki Publishers.
- Allen, F., (1985). Contracts to Sell Information. *Working Paper*, 12-85. Rodney L. White Centre, University of Pennsylvania.
- Anyanwu, J.C., (1996). *Monetary Economics*. Lagos, Heinemann Educational Books (Nigeria) Plc. 247–274.
- Berenson, M. L. and D. M. Levine (1996), *Basic Business Statistics*, 6th ed., Englewood Cliffs, New Jersey: Prentice Hall International Inc.
- Bhattacharya, S. & Pfleiderer, P., (1985). Delegated Portfolio Management. *Journal of Economics Theory*, 36(1): 275-87.
- Boyd J. H. & Prescott, E. C., (1986). Financial Intermediary-Coalitions. *Journal of Economic Theory* 38, 211-232.
- Central Bank of Nigeria-CBN (2002-2007). *Annual Report and Statement of Accounts*, Abuja: CBN.



- Devereux, M. B., and G. W. Smith, (1994). International Risk Sharing and Economic Growth”, *International Economic Review*, 35, 535-50.
- Ehigiamusoe, U. K., (2013). The Link between Money Market and Economic Growth in Nigeria: Vector Error Correction Model Approach. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*. 7(12): 3076-3084.
- Greenwood, J. & Jovanovic, B., (1990). Financial Development, Growth, and the Distribution of Income. *The Journal of Political Economy*, 98 (5): 1076-1107.
- Gujarati, D. N. & Sangeetha (2007). Basic Econometrics, 4th Ed. New Delhi. Tata McGraw. Hill publisher. Co. Ltd.
- Ikpefan, O.A. and Osabuohien, E. (2012). Discount Houses, Money Market and Economic Growth in Nigeria: *Economic Insights- Trends and Challenges* 1(3): 19-30.
- Iwedi, M. & Igbani, D. S. (2015). The Nexus between Money Market Operations and Economic Growth in Nigeria: An Empirical Investigation. *International Journal of Banking and Finance Research*. 1(2):1-17
- Johansen, S., Juselius, K. (1990). Maximum likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money, *Oxford Bulletin of Economics and Statistics*, 52 (2), 169-210.
- Kakawa Discount House Limited, (2005). *Discount houses in Nigeria*, available at <http://www.kakawa.com/resources/pdfs/Kakawa%20Corporate%20Account%20Forms%20PDF.pdf>, accessed on August, 2006,1-8
- Kehinde, J. S. & Adejuwon, K. D. (2011). Financial Institutions as Catalyst to Economic Development: The Nigerian Experience. *European Journal of Humanities and Social Sciences*. 8 (1), 322-334.
- King, R.G. & Levine, R. (1993). Finance and Growth: Schumpeter might be right. *Quarterly Journal of Economics* 108:717-737.
- Koutsoyiannis, A. (1977). *Theory of Econometrics: An Introductory Exposition of Econometrics Methods*. 2<sup>nd</sup>. Ed. The MacMillan publisher ltd London.
- Maduka, A.C., and Onwuka, K.O. (2013). Financial Market Structure and Economic Growth: Evidence from Nigeria Data. *Asian Economic and Financial Review*. 3(1): 75-98.
- Menard, S. (1995). *Applied Logistic Regression Analysis. Quantitative Applications in the Social Sciences*, No. 106: Sage, London.
- Nwosu, C. P & Hamman, H. M.(2008). The Nigerian Money Market: Issues and Challenges: *Bullion, Publication of the Central Bank of Nigeria*, 32(2):51-66.
- Oba , E. (1999). *Basic understanding of capital market operations*, Lagos: Oba Ekiran, 4-6.
- Obstfeld, M., (1994). Risk-taking, global diversification, and growth”, *American Economic Review*, 84, 1310-1329.
- Odife, D. (1984). *Understanding the Nigerian stock market*. New York: Vantage Press Inc.
- Okpe I. I., (2013). Money Market on the Nigerian Economic Development. *Journal of Economics and Sustainable Development*. 4(5)5
- Olowe, R. A. (1977). *Financial management: concepts analysis and capital investments*, Lagos: Brierly Jones.
- Oloyede, B. (1999). *Principles of money and banking*, Yaba: Forthright Educational Publishers.
- Puri, N. (2012). Role of Money Market in Context to Growth of Indian Economy. *International Journal of Marketing, Financial Services and Management Research*. 1(9) 2277-3622.

- Raja, P. & Mahalakshmi, M. (2015). Impact of Money Market in Indian Economic Development in Present Scenario. *International Journal of Advanced Scientific Research & Development. Volume 02, Issue 01, PP 108 – 117*
- Saint Paul, G., (1992). Technological Choice, Financial Markets, and Economic Development”, *European Economic Review*, 36, 763-781.
- Schumpeter, J. (1912). The Theory of Economics Development: An inquiry into profits, capital, credit, interest and the Business Cycle, Cambridge: *Harvard University Press*
- Sundharam, K.P.M. & Varshney , P.N (1978). *Banking theory, law and practice*, New Delhi: Sultan Chand and Son.