

Dynamics of Response of the Nigerian Economic Growth to Money Market Trade Instruments

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ABSTRACT: The study investigates the dynamics of response of the Nigerian economic growth to trades in money market instruments during the years 2000 — 2022. Saddled with the objectives to examine the dynamic effect of trade in treasury bills (TB), treasury certificates (TC), development stock (DS), certificate of deposit (CD) and bank acceptance (BA) on economic growth. The study relied on time series data sourced from the publication of the Central Bank of Nigeria. Gross Domestic Product's Growth Rate (GDPGR) was adopted as the dependent variable, while TC, TB, CP, DC, CD, BA and DS were the independent variables. Data diagnostic tests, which include stationarity test, unit root test, heteroskedasticity test for variance of errors, while Augmented Dickey Fuller (ADF) and Kwiatkowski-Philip-Schmidt-Shin (KPSS) unit root tests were employed. Auto Regressive Distributed Lag (ARDL) bound testing methodology, as developed by Pesaran and Shin (1999), was adopted for the co — integration analyses. F-statistics and B coefficients were used to determine the extent to which each of the independent variables affects the dependent variable. It was discovered that in the short run, TB and BA have an insignificant positive relationship with GDP growth rate, CP and DS have a significant negative relationship with GDP growth rate, TC has an insignificant positive relationship with GDP growth rate, while CD has a significant positive relationship with GDP growth rate. In the long run, TB, CP and BA had an insignificant negative relationship with economic growth, and CD, DS and TS had an insignificant positive relationship with economic growth. The study therefore recommends, amongst others, that trade instruments should be redesigned in conformity with those of the emerging and developed economies

KEYWORDS: ARDL, Economic Growth, Money Market, Trade Instruments,

1. INTRODUCTION

The general notion that the indicators of sustainable development and sophistication of the entire financial market (money market, foreign exchange market, capital market and derivative market) determine the degree to which the markets jointly provide support for economic functioning through intermediation, is basically the fundamental reason for the availability of a bulk of empirical investigations, basically from related but non-core financial disciplines. Many of such studies had viewed the effect of intermediation activities of the entire financial market without a microscopic view of trade activities in each of the segregated markets; this could also be traced to inability to separately identify the distinctions and soundness indicators such that are suitable for sector-specific investigations for the capital market, the money market, the foreign exchange market and even the derivative market.

Distinct from other markets, money market is the market for the purchases and sales of large volumes of short-term debt instruments such as commercial papers, treasury bills, purchase agreements, treasury certificates, development stocks and such other products that usually take place between financial institutions, companies and individuals which are viable economic tools for gendering sustainable economic growth (Osamo & Odi 2023). By providing liquidity for the effective functioning of all the entities in an economy, money markets have gained the confidence of economic regulators and that of economic planners globally, having become the pivot on which both the developed and developing economies run.

Theoretically and also operationally, money market trade has an inseparable link with monetary policy which explains the technique of economic management for engendering sustainable economic growth and development, since monetary policy has become the pursuit of nations, the performance of trade instruments at the money market have also gained relevance among researchers, economists and economic planners, so that every economy desires sustainable and steady increase in all productive trade activities. Related empirical studies on Nigerian money market trade include Oregon, Saliu and Ajayi (2020), Mboto et al

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(2023), Uduakobong et al (2023), where some challenging remarks were made in the likes of; in Nigeria, the money market is not yet vibrant and developed; the market is dominated mainly by government instruments such as treasury bills and bonds, with a wide gap of deposit and lending rates or very high cost of borrowing; the money market has lagged in performing its intermediation role of providing funds to deficit investors, and this has further hampered economic growth and development. Findings from some other studies remain diverse in nature, as Pavtar (2016), Krokemen and Eze (2021) found that the money market has no significant impact on economic growth in Nigeria. Some other studies, such as Akarara & Eniekezimene (2018), Mboto et al (2023), had mixed findings.

These developments call for further empirical investigations, such as which prompted the major objective of this study, which is to investigate the dynamics of response of the Nigerian economic growth to money market trade instruments. The specific objectives are to:

- a. Examine the dynamics of response of Nigeria's economic growth to trade in treasury bills.
- b. Analyse the influence of trade in treasury certificates on Nigeria's economic growth.
- c. Examine the dynamics of response of Nigeria's economic growth to trade in development stocks.
- d. Evaluate the influence of trade in certificate of deposits on Nigeria's economic growth
- e. Investigate the dynamics of response of Nigeria's economic growth to trade in commercial papers
- f. Investigate the dynamics of the response of Nigeria's economic growth to trade in bankers' acceptance.

Statement of the Hypotheses

- a. Trade in treasury bills does not have a significant effect on Nigeria's economic growth.
- b. Trade in treasury certificates has no significant effect on Nigeria's economic growth.
- c. Trade in development stocks does not have a significant effect on Nigeria's economic growth.
- d. Trade in certificates of deposits does not have any significant effect on Nigeria's economic growth
- e. Trade in commercial papers does not have a significant effect on Nigeria's economic growth
- f. Trade in banker's acceptance has no significant effect on Nigeria's economic growth.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

Money Market Trade

Money market trade is an indispensable mechanism for liquidity management in the financial system of a country. It plays a crucial role for trades and investments to thrive, thereby accelerating economic growth. Economic growth, which refers to the sustained quantitative increase in the productive capacity of a country evidenced by expansion in products and services, can be achieved when scarce resources are put into productive use. One of these resources is finance, which is capital. The financial market, of which the money market is one, ensures through financial intermediation that loanable funds exchange hands between borrowers and lenders in the market. These funds, when accessed by borrowers and used for investment purposes, have the potential to enhance the productive capacity of the borrowers and the entire economy. As reviewed by Mustapha, Luka and Rabiou (2017), the Money market plays a key role in banks' liquidity management and is 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 liquidity risk of businesses. The banking system and the money market represent the exclusive setting upon which monetary policy operates (Oyedele et al., 2020). A developed, active and efficient interbank market enhances the efficiency of the central bank's monetary policy, transmitting its impulses into the economy

Money Market Trade Instruments

Treasury bills: Treasury bills are short-term money market debt instruments with a maturity date of one year or less. The Federal Government of Nigeria, through the Central Bank of Nigeria, can issue Nigerian Treasury Bills (NTB) with the view to providing short-term Funding of the government budget deficit or projects. Afiemo (2013) posit that TBs are short-term money-market debt securities issued by the government through the central bank, with maturities of one year or below. They are sold at a discount and mature within 3 months to 1 year from the date of issue. The bills serve as the gauge for risk-free instruments in the money market, as they are assured by the government. They provide the government with a highly flexible and competitively cheap means of borrowing funds, and are issued through a competitive bid auction. In Nigeria, Treasury bills (TB) are dispensed by the Central Bank of Nigeria, on the authority of the Debt Management Office (DMO), with tenors of 91, 182, and 365 days.

Commercial Paper: Commercial paper is an unsecured, short-term debt instrument issued by a corporation, typically for the financing of accounts payable and inventories and meeting some short-term liabilities (Osamo & Odi 2024). Maturities on commercial paper rarely range longer than 270 days. According to Pavter (2016), commercial paper refers to short-term

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promissory notes, generally unsecured, which are sold through commercial paper dealers or directly to investors. the investors in commercial papers include banks and other financial institutions.

Banker's acceptance: Banker's acceptance, according to Osamo and Odi (2023), is an instrument representing a future payment by a bank. The payment is accepted and guaranteed by the bank as a time draft to be drawn on a deposit. The draft specifies the amount of funds, the date of the payment, and the entity to which the payment is owed. Bankers' Acceptances (BAs) are used primarily in connection with the financing of imports and exports to foreign countries. They are bills of exchange drawn usually by big and reputable companies on banks. Once accepted, the bank guarantees to pay the value of the bill to the holder at maturity, usually 60days, 90days or 180days (Eze & Nera, 2017).

Certificate of Deposit: A certificate of deposit (CD) is a time deposit, and a financial product commonly sold by commercial banks, thrift institutions, & credit unions. Certificate of Deposits are like savings accounts but have higher returns when compared to normal savings.

Economic Growth

Economic growth is the positive outcome of the process by which a nation's wealth increases over time. The most widely used measures of economic growth are the rate of growth in a country's total output of goods and services, evaluated by the Gross Domestic Product (GDP). This is therefore an indication that economic growth is primarily driven by improvement in productivity, producing more goods and services with the same inputs of labour, capital, energy and materials (Oyedele et al., 2023). Tadaró & Smith (2006) view economic growth as a steady process by which the productive capital of the economy is increased over time to bring about a rising level of national income. Economic growth means an increase in the capacity of an economy to produce goods and services, compared from one period to another (Osamo & Odi, 2024; Fasanmi et al., 2025).

According to Ogbulu and Torbira (2012), Economic growth is a sustained rise in the output of goods, services and employment opportunities with the sole aim of improving the economic and financial welfare of the citizens. As reviewed by. Ofoe ze et al (2018), Hardwick, Khan and Langmead (1994) have also defined economic growth as an increase in a country's productive capacity, identifiable by a sustained rise in real national income. Economic growth is an important issue in economics and is considered one of the necessary conditions to achieve better outcomes on social welfare, which is the main objective of economic policy. It is thus an essential ingredient for sustainable development (Oyedele, 2025). Gross Domestic Product (GDP) has often been adopted as an appropriate surrogate for economic growth. The economic growth, as proxied by GDP, is one of the primary indicators used to gauge the health of a country's economy. It represents the total value of all goods and services produced over a specific time, looking at the size of the economy. Usually, GDP is expressed as a comparison to the previous quarter or year. It is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. GDP is commonly adopted in this study as representing economic growth.

2.2 Theoretical Review

The supply-leading hypothesis view of financial development, which evolved from the works of Goldsmith (1969), Patrick (1966) and McKinnon (1973), who advance that in the early stages of economic development, the financial sector grows substantially faster than economic growth. It is, therefore, important to build financial institutions well in advance of demand for their services and intervention policies put in place to enable finance to become a conduit for real sector development. A contrary view is expressed by economists such as Robinson, (1952) and Robert, (1988) argue that financial development springs from the need for financial services by deficit spending units who attempt to take advantage of investment opportunities as the real sector of the economy grows the supply-leading hypothesis view of financial development states that the presence of efficient financial markets increases the supply of financial services in advance of the demand for them in real sector of the economy.

This hypothesis contends that well-functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilise savings, enhance capital accumulation, transfer resources from traditional sectors to growth-inducing sectors, such as manufacturing and industrial, agricultural and the services sectors and promote competent entrepreneurial response in these sectors of the economy. This study is anchored on the supply lead hypothesis, with the indication that trade sophistication and development in the money market will, in turn, spur economic growth.

2.3 Empirical Review

Mboto et al (2023) examined the effect of money market instruments on the growth of the Nigerian economy. The specific objectives were to: determine the effect of Value of Treasury Bills on the growth of Nigeria's economy, ascertain the effect of Commercial Papers on the growth of Nigeria's economy and evaluate the effect of Bankers' Acceptance on the growth of Nigeria's economy. A secondary source of data collection was employed, and the data were obtained from the Central Bank of Nigeria Statistical Bulletin. The multiple regression technique was employed as a statistical tool in analysing the data. Based on the results of the analysis, the study revealed that the Value of Treasury Bills showed a positive and significant impact on Gross Domestic

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Product (GDP), Commercial Paper showed a positive and significant impact on Gross Domestic Product, and Value of Bankers' Acceptance had a negative and significant impact on GDP

Uduakobong et al (2023) examined the relationship between money market instruments and economic growth in Nigeria for the period 1986 to 2021. Annual time series data for the real gross domestic product, GDP, a measure of economic growth, as well as selected money market instruments of treasury bills, certificates of deposit and commercial papers were extracted from the 2021 CBN bulletin for the study. An autoregressive distributed lag (ARDL) model was adopted for data analysis in the study. The result indicated a statistically significant negative relationship between treasury bills and economic growth in the short run and an insignificant positive relationship in the long run. Certificate of deposit demonstrated a positive, significant relationship with economic growth in the short run and a negative, insignificant relationship with economic growth in the long run. Also, commercial papers showed a significant negative relationship with economic growth in the short run and a positive, insignificant long-run relationship. Findings indicate that the money market does not support economic growth in Nigeria.

Krokemen and Eze (2021) examined the effect of money market instruments on capital market performance in Nigeria using time series data over the period 1981-2018. Secondary data were sourced from the Central Bank of Nigeria's statistical bulletin 2018. Descriptive statistics, covariance Analysis, Johansen co-integration and vector error correction model were used in the study. The study is to determine how the trading of commercial paper, Bankers' acceptance and Treasury Bills affects capital market performance in Nigeria for the period under review. The result of the study indicates that treasury bills (TB) are negative at lags 1 and 2; the implication is that an increase in the purchase of treasury bills in the money market would result in a fall in the annual market capitalisation of the Nigerian capital market. Similarly, a negative relationship was also noticed between commercial paper (CP) trading and annual market capitalisation, which implies that an increase in trading on commercial paper will lead to a decrease in the trading of annual market capitalisation. However, a positive relationship was observed between Bankers' Acceptance (BA) and annual market capitalisation. Following the above results, the following recommendations are made. There should be adequate market information for investor in stocks to enable them to transform their stock from the money market to the capital market, depending on the market outlook.

Babarinde et al (2021) investigated the relationship between money market and economic growth and relied on annual time series data for the period 1981-2018 based on Fully Modified Ordinary Least Squares (FMOLS) and Granger causality analysis. Other econometric techniques applied include the ADF unit root test, Pearson correlation, and impulse response and variance decomposition techniques. Empirical findings revealed the existence of a positive, strong and significant correlation between money market and economic growth. The study also found that the money market has a positive and significant impact on economic growth in Nigeria. Causality flows from the money market to economic growth, but not vice versa. The study concluded that the money market constitutes a veritable vehicle for achieving economic growth in Nigeria.

Orugun, Salu and Ajayi (2020) examined the impact of selected Money Market Instruments (Treasury bill, Certificate of Deposit, Commercial Papers, Development Stock) on Economic growth based on time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and National Bureau of Statistics (NBS) publications for the 38 years. The study employed econometric and statistical techniques such as ADF, Unit Root Test, OLS, multiple regression, and Granger Causality Test to analyse data collected for the study covering the period 1989—2019. The study observed that Bank acceptance and Commercial Paper Granger cause gross domestic product. Still, not another way around, but gross domestic product granger causes credit to the private sector and the Treasury bill. Treasury bills and commercial papers have a positive relationship with GDP, but their effect is insignificant in the long run. But Bank acceptance and Credit to the Private sector have a positive and significant effect on GDP in the long run. In contrast, development stock has no significant effect on GDP in the short run and the long run, with no Granger causal relationship with GDP. The study recommended that the Nigerian money market should be reformed in line with the current globalisation trend and internationalisation of the money market to allow a flow of foreign investment into the economy. Uruakpa (2019) investigated the impact of money market reforms on the economic growth of Nigeria from 1990—2017, using the ordinary least squares method. The study used gross domestic product as a measure for economic growth, while Treasury bill rate, Treasury bill issued and money market value are used as parameters to measure money market, obtained from the Central Bank of Nigeria's statistical bulletin. The OLS result of the study found that money market value has a positive and significant effect on GDP, while Treasury bill outstanding has a positive but insignificant effect on gross domestic product. However, the Treasury bill rate has a negative and significant effect on GDP. The F-statistics suggest that all the money market proxies together impacted GDP; the implication is that the money market is a viable financial market in Nigeria. Moreover, the variance decomposition showed that GDP has a decreasing variance with money market value and Treasury bill rate, but an increasing variance with Treasury bill outstanding. The variance impulse showed that GDP responds to the activities or movement in the money market value and the Treasury bill rate. In conclusion, it was observed that money market reform has helped to boost the effect of the market on Nigerian economic growth.

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Umasom (2018) adopted multivariate model to study money market instruments and Nigeria Inflation rate: Inflation Rate (INFR) was used as function of Percentage of Treasury Bills to Gross Domestic Product (TB/GDP), Percentage of Stabilization Securities to Gross Domestic Product (STS/GDP), Percentage of Treasury Certificate to Gross Domestic Product (TC/GDP), Percentage of Eligible Development Stock to Gross Domestic Product (EDS/GDP), Percentage of Central Bank of Nigeria Short Term Fund to Gross Domestic Product (CBNSF/GDP) and Percentage of Call Money Scheme to Gross Domestic Product (CMS/GDP). The integration, Augmented Dickey Fuller Unit Root, Granger Causality Test and Vector Error Correction Model (VECM) were employed to determine the relationship between the money market instruments and Nigerian inflation rate. The results revealed that money market instruments are statistically significant in explaining variation in the Nigerian inflation rate.

Mustapha, Luka and Rabi (2017) examined the impact of money market as a stimulus for economic growth in Nigeria, looking at the performance of money market as a catalyst of economic growth and development in Nigeria from year 1999 to 2017, the main objectives of the study include; evaluating the contribution of the money market to the economic growth and to ascertaining the impact of money market in financial development in Nigeria. The study utilised secondary data from the Central Bank (CBN) statistical bulletin, Federal Bureau of Statistics, CBN and some selected commercial banks' statements of account and annual reports of various years. The methodology used in the research was the ordinary least squares method (OLS), which is quantitative in nature; that is, regression was used to analyse the data. Major findings reveal that the money market immensely contributes to the economic growth and development in Nigeria, albeit there are some factors bedevilling its performance like high rate of interest, devaluation of the Nigerian naira, and inflation. It was concluded that a lot is still required to improve the operational efficiency, enhance the depth and breadth of the market, and build regulatory capacity.

Akarara and Eniekezimene (2018) employed empirical analysis to study Money Market Instruments and Growth of the Nigerian Economy. Using data obtained from the Central Bank of Nigeria Statistical Bulletin 2017. An Autoregressive Distributed Lag (ARDL) Bound Testing approach to co-integration was conducted. Results show no form of convergence among the variables in the long run. It also revealed that money market variables are positively related to economic growth rate both in the short and long run, except for Certificate of Deposit (COD) and Commercial Paper (CPR), which have an inverse relationship with economic growth in the long run. Broad Money Supply (M2G), which does not seem to have a significant relationship with GDP, both in the short and long run, while Treasury Certificate (TRC) has a significant positive impact on GDP in the short run but an insignificant impact on GDP in the long run. It was advised that the Central Bank of Nigeria use Treasury Certificates as a means of managing liquidity in the short run, as its prolonged use would amount to no significant effect in the economy. Also, Certificate of Deposit and Commercial Paper should be used on a short-term basis; otherwise, their impact on the economy will be negative.

Pavtar (2016) investigated the link between the money market and economic growth in Nigeria using time series data for the period 1985-2014 collected from the Central Bank of Nigeria. The study adopted treasury bills (TBs), treasury certificates (TCs), commercial papers (CPs) and certificate of deposits (CDs) as the independent variables and proxies for the money market. At the same time, the gross domestic product (GDP) was used as a proxy for economic growth. The study adopted OLS multiple-regression techniques for data analysis. The findings revealed that TBs, TCs, and CPs did not affect GDP, but CDs had a significant impact on GDP.

Etali and Ayunku (2017) investigated whether money markets spur economic growth in Nigeria. Using a Granger causality approach. The study adopted money market instruments such as treasury bills (TBs), commercial papers (CPs) and bankers acceptances (BAs) as proxies for money market (independent variables), and gross domestic product (GDP) as a proxy for economic growth (the dependent variable). Secondary time series data for the variables were collected from the CBN Statistical Bulletin and the National Bureau of Statistics for the period 1989-2014. The study employed econometric techniques such as ADF, Unit Root Test, OLS, multiple regression and Granger Causality Test to analyse the study data; strong evidence that TBs and CPs had positive and significant influence on GDP, while BAs had positive but insignificant influence on GDP in Nigeria. The Granger causality test result revealed no directional causality relationship between TBs and GDP, meaning that TBs do not Granger-cause GDP and vice versa. There was also no directional causality relationship between CPs and GDP, BAs and GDP. However, there exists a bi-directional relationship running.

3 METHODOLOGY

This study adopts the ex-post facto design and relies on secondary data, which were obtained from the Central Bank of Nigeria's statistical Bulletin. The study is from 2000 to 2022. The dependent variable, which is economic growth, is measured by Gross Domestic Product Growth Rate (GDPGR). While the independent variables were the value of money market trade instruments, treasury bills, treasury certificates, development stocks, certificate of deposits, commercial papers and bankers' acceptance.

To determine the unit root, the Augmented Dickey Fuller (ADF) and the Kwiatkowski-Philip-Schmidt-Shin (KPSS) unit root test was employed. Also, the Auto Regressive Distributed Lag (ARDL) bound testing methodology, as developed by Pesaran and Shin (1999),

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which has been discovered and favoured above the co-integration analysis established by Angle and Granger (1987) and Johansen and Juselius (1990), was used to ensure that there are no spurious results. Following Tokoyan and Adekeye (2021), the study adopted the Granger Pairwise Causality test to determine the causal relationship among the variables. At 5% level of confidence, F-statistics and the B-coefficients were adopted to determine the extent to which the independent variables affect economic growth.

Model Specification

The model adopted for this study was that of Owusu (2016), Tokoyan and Adekeye (2021), which was modified to accommodate money market trade instruments as independent variables in conformity with this study's objective. The model is stated as:

$$GDPGR = f(TB, TC, DS, CD, CP, BA + \mu)$$

The model is econometrically transformed as:

$$GDPGR = \beta_0 + \beta_1 TB_t + \beta_2 TC_t + \beta_3 DS_t + \beta_4 CD_t + \beta_5 CP_t + \beta_6 BA_t + \mu$$

Where GDPGR is the Gross Domestic Product Growth Rate, the Dependent Variable which proxies economic growth, the following are the Independent variables, and proxies for the value of each money market trade instrument.

TB=Treasury bill

TC=Treasury certificate

DS= Development stock

CD=Certificate of deposit

CP=Commercial paper

BA=Bankers acceptance

$\beta_1 - \beta_6$ = Coefficient of parameters

β_0 = intercept or the constant

μ = stochastic or error term

Granger Pairwise Causality Technique

$$GDPT_t = \sum_{i=1}^n \beta_i TB_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} + u_t \quad (1)$$

$$TB_t = \sum_{i=1}^n \beta_i TB_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (2)$$

$$GDPT_t = \sum_{i=1}^n \beta_i TC_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (3)$$

$$TC_t = \sum_{i=1}^n \beta_i TC_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (4)$$

$$GDPT_t = \sum_{i=1}^n \beta_i DS_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (5)$$

$$DS_t = \sum_{i=1}^n \beta_i DS_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (6)$$

$$GDPT_t = \sum_{i=1}^n \beta_i CD_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (7)$$

$$CD_t = \sum_{i=1}^n \beta_i CD_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (8)$$

$$GDPT_t = \sum_{i=1}^n \beta_i CP_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (9)$$

$$CP_t = \sum_{i=1}^n \beta_i CP_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (10)$$

$$GDPT_t = \sum_{i=1}^n \beta_i BA_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (11)$$

$$BA_t = \sum_{i=1}^n \beta_i BA_{t-i} + \sum_{j=1}^n \alpha_j GDPT_{t-j} \quad (12)$$

The Granger Pair wise causality test enables researchers to test whether a change in a variable will cause a change in another variable. Causality when obtained may be non-directional, directional, bi-directional or no relation at all.

4 EMPIRICAL ANALYSES AND RESULTS

This part of the study unveiled the generated statistical data: Gross Domestic Product Growth Rates (GDPGR), Treasury Bills (TB), Treasury Certificate (TC), Development Stocks (DS), Certificates of Deposit (CD), Commercial Papers (CP) and Bankers Assurance (BA). The annual time series data are presented in the Appendix

Figure 1: Trend Analysis of Variables

The diagrams show the graphical nature of the time series data over the period of observation. The analysis facilitates an understanding of the nature of the movement of the data used in the study.

Table 1: Descriptive Statistics

	BA	CD	CP	DS	GDP	TB	TC
Mean	39.77300	23.47050	532.1725	0.448000	5.741500	1868.967	3.485500
Median	32.43500	1.250000	36.16500	0.090000	6.185000	1502.505	0.000000

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Maximum	81.83000	75.70000	8012.000	1.830000	15.33000	4300.220	39.71000
Minimum	8.760000	0.000000	0.490000	0.000000	0.810000	471.9300	0.000000
Std. Dev.	21.58790	28.39812	1773.392	0.617274	3.368364	1257.432	10.84316
Skewness	0.697606	0.534653	4.034174	1.141040	0.771855	0.461924	2.770614
Kurtosis	2.440083	1.562394	17.53880	2.870221	4.517019	1.781774	8.892350
Jarque-Bera	1.883436	2.675106	230.3959	4.353940	3.903657	1.947974	54.52083
Probability	0.389957	0.262487	0.000000	0.113385	0.142014	0.377575	0.000000
Sum	795.4600	469.4100	10643.45	8.960000	114.8300	37379.33	69.71000
Sum Sq. Dev.	8854.713	15322.61	59753471	7.239520	215.5717	30041588	2233.910
Observations	22	22	22	22	22	22	22

Source: Authors' Computation (2025)

The Jarque-Bera, Skewness and Kurtosis shown in the descriptive statistics indicate that the data were not normally distributed, being platykurtic (low peaked), the probability value of Jarque-Bera was less than 0.05, and others were higher. The Skewness was outside the range of -1 to +1. Also, the value of the Kurtosis fell outside the stable range. The data is positively skewed, having all the mean values higher than the median.

UNIT ROOT TEST

Table 2: Test for Stationarity of Data (ADF and KPSS Unit Root Test)

Variable	URT@ Level			URT@ First Differences			ADFs		URT @LEVEL			KPSSs	Order of Integration	Result
	ADF Stat	T-Stat	5% Critical value	ADF Stat	T-Stat	5% Critical Value	Order of Integration		KPSS T-Stat	5% Critical Value				
GD P	-4.463181	-	3.673616	-	-	-	1(0)		0.425055	0.146000		I(0)		Stationary
TB	-4.282016	-	3.733200				I(0)		0.248407	0.146000		I(0)		Stationary
TC	-3.723113	-	3.029970	-	-	-3.040391	I(1)		0.654131	0.146000		I(0)		Stationary
DS	-2.153870	-	3.081002	-	-	-3.791172	I(1)		-1.912407	0.146000		I(0)		Stationary
CD	-4.735301	--	3.690814	-	-	-	1(0)		4.909278	0.146000		I(0)		Stationary
CP	-2.579403	-	3.759743	-	-	-3.081002	I(0)		1.342031	0.463000		I(0)		Stationary
BA	-4.834363	-	3.081002	-	-	-	I(0)		6.647095	0.463000		I(0)		Stationary

Source: Authors' Computation (2025)

The above table shows that using the ADF test, the variables are stationary at the level except TC and DS, which are stationary at the first difference. Adopting the KPSS, the variables are all stationary at the level.

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Test of Hypotheses

The table below shows the ARDL result

Table 4.2.2: ARDL (Short Run) and (Long Run) Relationship Results. Dependent Variable

Variable	Coefficient	T-Statistics	Probability
Panel (a) OLS Short Run Relationship			
TB	-0.000197	-0.168871	0.8701
CP	-0.001903	-6.092869	0.0003
CD	0.023976	1.972153	0.0841
BA	-0.023578	-0.622409	0.5510
DS	-3.283980	-1.210082	0.2608
TC	0.016975	0.646700	0.5359
C	0.095351	0.016475	0.9873
R-squared	0.910808		
F-statistic	9.077170		0.002458
Panel (b) ARDL Long Run Relationship			
TB	-0.001359	-0.244728	0.8128
CP	-0.019298	-0.440461	0.6713
CD	0.165491	0.442487	0.6699
BA	-0.162742	-0.559048	0.5914
DS	44.285159	0.413301	0.6902
TC	0.117169	0.273816	0.7912
C	0.658136	0.017058	0.9868

Source: Authors' Computation (2025)

From the ARDL, TB had an insignificant negative effect on economic growth at the short run, and at the long run, CP had a negative and significant effect on economic growth at the short run and at the long run, it has a negative but significant effect on economic growth. CD had a significant positive effect on economic growth in the short run and a positive but insignificant effect on economic growth in the long run.

BA had an insignificant negative effect on economic growth in the short run and in the long run. DS had a negative but insignificant effect on economic growth in the short run, but an insignificant positive effect in the long run. TC had a positive and insignificant effect on economic growth in the short run and in the long run.

Table 5: Causality Test Results

Null Hypothesis	Obs	F-Statistics	Prob.
TB does not Granger-cause GDP	22	4.43720	0.0361
GDP does not Granger-cause TB		0.03803	0.9628
CP does not Granger-cause GDP	22	0.27275	0.7659
GDP does not Granger-cause CP		18.8713	0.0002
CD does not Granger-cause GDP	22	0.46244	0.6405
GDP does not Granger-cause CD		4.71006	0.0309
BA does not Granger-cause GDP		0.64595	0.5415
GDP does not Granger-cause BA	22	0.43827	0.6551
DS does not Granger-cause GDP		0.15782	0.8557
GDP does not Granger-cause DS	22	4.03716	0.0456
TC does not Granger-cause GDP	22	1.58028	0.2459
GDP does not Granger-cause TC		0.54482	0.5936

Source: Authors' Computation (2025)

The table above shows the result of the causality test, indicating that treasury bills, commercial paper, and certificates of deposit have unidirectional causality with economic growth, evidence that the behaviour of each of the variables causes a change in the

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behaviour of economic growth. Bankers' acceptance and treasury certificates have no causal relationship with economic growth, an indication that treasury certificates and Bankers' acceptance are both independent of economic growth.

DISCUSSION ON FINDINGS

Evidence from the data diagnostic tests that were employed for testing the stationarity of the data used, ADF shows that the study's explanatory variables were stationary at the level, except for treasury bills and development stock, which became stationary at the first difference. The same test via the KPSS revealed that all variables were stable at the level.

Granger Pair-wise Causality test shows that there is unidirectional causality between Treasury bills, Commercial paper, Certificate of deposit and Development stock, but Bankers acceptance and Treasury certificates have no causal relationship with economic growth. These findings corroborate the findings in Pavtar (2016); Iheanacho (2016); Orungu, Saliu and Ajayi (2020), but the result is at variance with Uruakpa (2019) and Babarinde et al(2021).

Empirical findings from tests using the Auto Regressive Distributed Lag (ARDL) show the following;

- a. Treasury bills have a negative and insignificant effect on economic growth in the short run and in the long run.
- b. Commercial papers display a negative and insignificant effect on economic growth in the short run, but become significantly negative in the long run
- c. Certificates of deposits have a significant positive effect on economic growth in the short run, but turned out to be insignificantly negative in the long run.
- d. Bankers' acceptance demonstrated a significant negative effect on economic growth both in the short run and in the long run.
- e. Development stocks displayed an insignificant negative effect on economic growth in the short run but became insignificant positive in the long run.
- f. Treasury certificates showed an insignificant positive effect on economic growth in the short run and in the long run.

From the Causality test, there is unidirectional causality between Treasury bills, Commercial paper, Certificate of deposit and Development stock, but Bankers acceptance and Treasury certificates have no causal relationship with economic growth. Also, the effect of the study's independent variables on economic growth is itemised below:

- a. Treasury bills have a negative and insignificant effect on economic growth in the short run and in the long run.
- b. Commercial papers display a negative and insignificant effect on economic growth in the short run, but become significantly negative in the long run
- c. Certificates of deposits have a significant positive effect on economic growth in the short run, but turned out to be insignificantly negative in the long run.
- d. Bankers' acceptance demonstrated a significant negative effect on economic growth both in the short run and in the long run.
- e. Development stocks displayed an insignificant negative effect on economic growth in the short run but became insignificant positive in the long run.
- f. Treasury certificates showed an insignificant positive effect on economic growth in the short run and in the long run.

5 CONCLUSION AND RECOMMENDATIONS

Nigeria's economic growth did not respond suitably during the study period, not at an acceptable level of statistical trend to money market trade instruments; therefore, long and short-term measures are needed ardently to transform trade instruments at the money market.

This study recommends diversification as an alternative to prolong trade in money market instruments that have no relationship with economic growth in their behaviour, for example, commercial paper and bankers' acceptance, which have no causal relationship with economic growth. Even though the Treasury bill grew to become a prominent instrument in the Nigerian money market, it shows a causal relationship but displays an insignificant negative effect on economic growth both in the long run and in the short run. It is therefore recommended that Treasury bills and all the short-term investment components of the money market should be re-branded via a policy framework and operational rules. Patronage of Development stock and treasury certificates should be encouraged through incentives to attract all interested investors.

As a long-term measure, regulatory efforts should be redirected toward speedy economic growth, such that all the money market trade instruments in Nigeria are redesigned in conformity with those of the emerging and developed economies

REFERENCES

- 1) Afiemo, O. O. (2013). The Nigerian money market, understanding monetary policy series no 27. Central Bank of Nigeria.
- 2) Akarara, E. A., & Eniekezimene, A. F. (2018). Money market instruments and growth of the Nigerian economy: An empirical analysis. *Pakistan Journal of Humanities and Social Sciences*, 6(1), 30—43.
- 3) Akoto, D. (2021). The relationship between interest rates and inflation in Ghana and their impact on economic growth for the Period 2006-2019. *Journal of Finance and Economics*, 9(1), 34-41.
- 4) Ampofo, J. A. (2020). The nature of mortgage repayment plans in Ghana. *Finance and Accounting Research Journal*, 2(3), 91-104.
- 5) Ayunku, D.L. (2017,). Does money market spur economic growth Central Bank Of Nigeria (2019). Statistical Bulletin. Abuja: Central Bank of Nigeria.
- 6) Central Bank of Nigeria (2018-2022). Statistical Bulletin. Abuja: Author.
- 7) Dickey, D.A & Fuller, W. A (1981) likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica* 49(1): 1057-1072 economic growth viability in Nigeria: An empirical analysis. *European Journal of Business*
- 8) Dickey, D.A & Fuller, W. A (1981) likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica* 49(1), 1057-1072.
- 9) Engle, R.F & Granger, C.W.J (1987). Co integration and Error Correction Representation: Econometric Models and Sectoral Methods. *Econom* 76.
- 10) Etale, L. M., & Ayunku, P. E. (2017). Does money market spur economic growth in Nigeria? Granger causality approach. *International Journal of Development and Economic Sustainability*, 5(7), 28-37.
- 11) Eze, G. P., & Nera, M. (2017). Money market and economic growth in Nigeria: A causality analysis. *Online Journal of Arts, Management and Social Sciences*, 2(1), 140—163.
- 12) Fasanmi O.O, Adeniyi, B.C, & Oyenuga M.O(2025). Exploring the Role of Innovation on Economic Performance of Manufacturing Firms in Nigeria. *Journal of Economics, Finance and Management Studies* 8(1), 694-706
<https://doi.org/10.47191/ijefms/v8-i1-67>
- 13) Iyaji, D & Onotaniyohwo, O. F. (2021). Savings and economic growth causality in Nigeria. *Journal of Economics and Allied Research*.6(4)
- 14) Igbinosa, S. O., & Aigbovo, O. (2015). The Nigerian money market and national economic development. *Journal of Business and Value Creation*, 4(2), 114-135.
- 15) Iwedi, M, & Igbanibo, D. S. (2015). The nexus between money market operations and economic growth in Nigeria: An empirical investigation. *IIARD International Journal of Banking and Finance Research*, 1(8), 117-129.
- 16) Mboto, H.W, Akeh, M. U, Emmanuel, I. J & Nkamare S.R. (2023). Effect of money market instruments on the growth of Nigeria economy. *Journal of Accounting and Finance*, 2(2), 2971-5881.
- 17) Mustapha, T.A. Luka, M.B. & Rabiu A. (2017). An appraisal of the performance of money market as a catalyst of economic growth in Nigeria. *CARD Journal of Management Studies, Business Entrepreneurship Research* 2(4), 145-169.
- 18) Orogun , F.I. Saliu. H.T. & Ajayi, S.O. (2020). Impact of selected money market instruments of Nigerian economic growth (1981 -2019). *Ilorin Journal of Human Recourses Management IJIRM* 4 1 131-143
- 19) Ogbulu, O. M. & Torbira, L. L., “Budgetary Operations and Economic Growth: The Nigerian Perspective,” *British Journal of Arts and Social Sciences*, 4(2), (2012): 180-194. Retrieved from <http://www.bjournal.co.uk/BJASS.aspx>.
- 20) Onwumere, J. U. J., Okore, A. O., & Ibe, I. G. (2012). The impact of interest rate liberalization on savings and investment: Evidence from Nigeria. *Research Journal of Finance and Accounting*, 3, (10), 130-136.
- 21) Osamo, C. K. & Odi N.(2023). Money market trade instruments and the Nigerian economic growth: an empirical investigation. Paper presented at the Africa Social Economic Development Dialogue (ASEDD2023.). University of Abuja, Nigeria.
- 22) Osamo, C. K. & Odi N. (2024). Saving mobilization effort of the Nigerian money market and economic growth. *Rowter Journal* 3(1) 21-34. <https://doi.org/10.33258/rowter.v3i1.1051>
- 23) Owusu, E L (2016). Stock market and sustainable economic growth in Nigeria. *Economies* 4(25), 1-13
- 24) Oyedele M.O, Jelili, B., & Bulugbe K.(2020). E-banking and customer satisfaction in the banking industry. *Nigeria Journal of Business Administration*. Vol.18(1),112-132 <https://apiir.unilag.edu.ng/server/api/core/bitstreams/53eb4271-c536-4c99-8910-64622549ba98/content#page=120>
- 25) Oyedele M.O, Andah R.A & Nduji R. (2023). Employee participation and Organisational Performance in an Emerging Economy. *Konfrontasi Journal: Culture, Economy and Social Changes*, 10(2), 91-105
<https://doi.org/10.33258/konfrontasi2.v10i3.281>

Dynamics of Response of the Nigerian Economic Growth to Money Market Trade Instruments

- 26) Oyedele, O.M. (2025). The Cobra Effect: Exploring the Dark Side of Innovation and Environmental Sustainability in Developing Nations. In: Singh, R., Joshi, A., Filho, W.L., Khan, S. (eds) Zero Carbon Industry, Eco-Innovation and Environmental Sustainability. World Sustainability Series. Springer, Cham. https://doi.org/10.1007/978-3-031-80220-1_15
- 27) Pavtar, A. (2016). The nexus between money market instruments and Nigerian economic growth: A time series analysis. Journal of Accounting and Financial Management, Accounting and Financial Management, 2 (3), 22-39.
- 28) Tokoyan, O. B & Adekeye, A. S (2021) .Relationship between stock prices and economic growth in Nigeria; A casual investigation. Central Bank of Nigeria Bullion 45(1), 58-71
- 29) Tursoy, T. (2019). The interaction between stock prices and interest rates in Turkey: Empirical evidence from ARDL bounds test cointegration. Financial Innovation, 5(7), 1-12.
- 30) Uduakobong, I. Ezenna, C. A. Aniekan E B, & Iniobong, A. (2023). Risk to economic growth in Nigeria; focus on money market instruments. International Journal of Research and Innovation in Social Science, 7(11), 244-255
- 31) Uruakpa, P. C. (2019). Impact of money market reforms on economic growth of Nigeria: 1990— 2017. Archives of Business Research, 7(SP), 122-134

APPENDIX I

Year	GDPGR	TB	TC	DS	CD	CP	BA
2001	5.02	584.54	0	1.83	0	35.35	30.75
2002	5.92	733.76	0	1.63	0	36.98	32.21
2003	15.33	825.05	0	1.47	0	47.57	33.9
2004	7.35	871.58	0	1.25	0	8012	24
2005	9.25	854.83	0	0.18	0	194.56	41.12
2006	6.44	701.4	0	0.72	0	193.51	45.74
2007	6.06	574.93	0	0.62	2.5	363.37	81.83
2008	6.59	471.93	39.71	0.52	0	822.7	66.4
2009	6.76	797.48	0	0.52	50.5	509.08	62.24
2010	8.04	1,277.10	0	0.22	0	189.22	79.17
2011	8.01	1727.91	0	0	0	203.01	73.41
2012	5.31	2122.93	0	0	34	1.05	9.86
2013	4.23	2581.55	0	0	20.5	9.32	20.47
2014	6.67	2815.52	0	0	50.95	9.82	8.76
2015	6.31	2772.87	0	0	75.7	6.29	28.42
2016	2.65	3277.28	0	0	0	0.49	27.8
2017	1.62	3579.8	0	0	59.59	2.07	34.25
2018	0.81	2735.97	0	0	62.21	2.03	32.66
2019	0.93	4300.22	0	0	53.33	3.01	31.92
2020	1.53	3772.68	30	0	60.13	2.02	30.55
2021	1.55	3761.66	30	0	60.32	2	30.54
2022	1.33	3551.3	25	0	50.2	1	25.4

Sources: Central Bank of Nigeria Statistical Bulletin 2000, 2010.....and 2022

Table 1: Descriptive Statistics

	BA	CD	CP	DS	GDP	TB	TC
Mean	39.77300	23.47050	532.1725	0.448000	5.741500	1868.967	3.485500
Median	32.43500	1.250000	36.16500	0.090000	6.185000	1502.505	0.000000
Maximum	81.83000	75.70000	8012.000	1.830000	15.33000	4300.220	39.71000
Minimum	8.760000	0.000000	0.490000	0.000000	0.810000	471.9300	0.000000
Std. Dev.	21.58790	28.39812	1773.392	0.617274	3.368364	1257.432	10.84316

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Skewness	0.697606	0.534653	4.034174	1.141040	0.771855	0.461924	2.770614
Kurtosis	2.440083	1.562394	17.53880	2.870221	4.517019	1.781774	8.892350
Jarque-Bera	1.883436	2.675106	230.3959	4.353940	3.903657	1.947974	54.52083
Probability	0.389957	0.262487	0.000000	0.113385	0.142014	0.377575	0.000000
Sum	795.4600	469.4100	10643.45	8.960000	114.8300	37379.33	69.71000
Sum Sq. Dev.	8854.713	15322.61	59753471	7.239520	215.5717	30041588	2233.910
Observations	22	22	22	22	22	22	22

Sources: Authors' Computation (2025)

Table 2: Test for Stationarity of Data (ADF and KPSS Unit Root Test)

Variable	URT@ Level		URT@ First Differences		ADFs	URT @LEVEL		KPSSs
	ADF Stat	T-5% Critical value	ADF Stat	T-5% Critical Value	Order of Integration	KPSS T-Stat	5% Critical Value	Order of Integration
GDP	-4.463181	-3.673616	-	-	1(0)	0.425055	0.146000	I(0)
TB	-4.282016	-3.733200	-	-	-I(0)	0.248407	0.146000	I(0)
TC	-3.723113	-3.029970	-5.942287	-3.040391	I(1)	0.654131	0.146000	I(0)
DS	-2.153870	-3.081002	-6.260779	-3.791172	I(1)	-1.912407	0.146000	I(0)
CD	-4.735301	-3.690814	-	-	1(0)	4.909278	0.146000	I(0)
CP	-2.579403	-3.759743	-4.834363	-3.081002	I(0)	1.342031	0.463000	I(0)
BA	-4.834363	-3.081002	-	-	I(0)	6.647095	0.463000	I(0)

Source: Authors Computation (2025)

Table 3: ARDL (Short Run) and (Long Run) Relationship Results. Dependent Variable

Variable	Coefficient	T-Statistics	Probability
Panel (a) OLS Short Run Relationship			
TB	-0.000197	-0.168871	0.8701
CP	-0.001903	-6.092869	0.0003
CD	0.023976	1.972153	0.0841
BA	-0.023578	-0.622409	0.5510
DS	-3.283980	-1.210082	0.2608
TC	0.016975	0.646700	0.5359
C	0.095351	0.016475	0.9873
R-squared	0.910808		
F-statistic	9.077170		0.002458
Panel (b) ARDL Long Run Relationship			
TB	-0.001359	-0.244728	0.8128
CP	-0.019298	-0.440461	0.6713
CD	0.165491	0.442487	0.6699
BA	-0.162742	-0.559048	0.5914
DS	44.285159	0.413301	0.6902
TC	0.117169	0.273816	0.7912
C	0.658136	0.017058	0.9868

Source: Authors Computation (2025)

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Figure 1: Diagnostic Tests

The diagnostic tests for reliability of the analyses (Table) include the LM serial correlation test for the presence of autocorrelation, the heteroskedasticity test for variance of errors across observation due to bulk or paucity of estimated standard error, the normally test for normal distribution of the data, the Ramsey Reset for functionality and the CUSUM test was used to test for stability of the data.

Table 4: Post Estimation Diagnostic Test

Serial Correlation		Heteroskedasticity		Ramsey Reset Test		Normality Test	
Statistics	Prob	Statistics	Prob	Statistics	Prob	JB Stat	Prob
0.390877	0.6864	3.078132	0.6864	0.179553	0.8608	4.80	0.090323
						8719	

Figure 2: Table 5: Causality Test Results

Null Hypothesis	Obs	F-Statistics	Prob.
TB does not Granger Cause GDP	17	4.43720	0.0361
GDP does not Granger Cause TB		0.03803	0.9628
CP does not Granger Cause GDP	17	0.27275	0.7659
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GDP does not Granger Cause DS	17	4.03716	0.0456
TC does not Granger Cause GDP	17	1.58028	0.2459
GDP does not Granger Cause TC		0.54482	0.5936

Source: Authors Computation (2025)



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