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Money Market Instrument and Liquidity of Quoted Commercial Banks in Nigeria

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Abstract

This study investigated the impact of money market instruments on the liquidity of listed commercial banks in Nigeria. Time series data were obtained from the Central Bank of Nigeria Statistical Bulletin and publications of the Nigeria Bureau of Statistics, while cross-sectional data were collected from the financial statements of the listed banks. The liquidity of these banks was analyzed as a function of treasury bills, commercial papers, bankers' acceptances, treasury certificates, and certificates of deposit. Statistical measures including R-squared, probability coefficients, t-statistics, Durbin-Watson statistics, and F-statistics were employed to determine how money market instruments influence bank liquidity. The results indicate that treasury bills contributed 0.08% to the liquidity of commercial banks during the study period, while treasury certificates and bankers' acceptances added 0.01% and 0.15%, respectively. Conversely, commercial papers and eligible development stocks reduced liquidity by 0.01% each over the same period. These positive contributions align with the study's a-priori expectations and reflect the effects of financial market reforms. Analysis of cross-sectional bank performance revealed that Access Bank, Ecobank, First City Monument Bank, Unity Bank, and Wema Bank exhibited positive effects, whereas the remaining eight banks recorded negative effects, which may be attributed to differences in management quality and operational environments. Overall, the study concludes that money market instruments account for a moderate portion of variations in commercial bank liquidity over the period examined. The study recommends policy measures such as deregulation to strengthen Nigeria's money market, reforms to the Central Bank discount window, the introduction of flexible instruments tailored to the needs of banks and investors, and the strategic use of treasury bills to manage commercial bank liquidity effectively.

***Keywords**: Money Market, Instruments, Liquidity, Quoted Commercial Banks, Nigeria*

INTRODUCTION

Before the deregulation of Nigeria's economy in late 1986, commercial banks were legally prohibited from participating in the capital market. Their operations were largely confined to the money market, which allowed banks to manage liquidity effectively and avoid mismatches between assets and liabilities. The money market is a financial system where short-term and near-money instruments are traded among issuers, investors, borrowers, and savers (Ngerebo, 2002). Instruments in this market typically have maturities of less than one year. Historically, the Nigerian money market began in 1960 when the Central Bank of Nigeria (CBN), on behalf of the federal government, issued its first treasury bills totaling N18 million. Over time, successive reforms have aimed to strengthen both the money market and the banking sector, introducing additional instruments to enhance liquidity management. The overarching goal of financial markets, including the money market, is to address imbalances in financial resources within the economy (Ndugbu, Duruechi & Ojiegbe, 2016).

Financial markets are institutional arrangements that facilitate the exchange of financial assets, such as deposits,

loans, stocks, and government securities (Ajekwe, Yua, Epor, Okaja & Utor, 2024; Martin, 2014). They are broadly divided into money markets and capital markets. The money market, in particular, deals with short-term securities with maturities under one year (Pavtar, 2016). In Nigeria, the most widely used money market instruments include Treasury Bills (TBs), Treasury Certificates (TCs), Certificates of Deposit (CDs), Commercial Papers (CPs), Bankers' Acceptances (BAs), call money, and the interbank market. These instruments play a critical role in liquidity and fund management, helping banks meet deposit and loan demands, maintain regulatory requirements, and earn investment returns (Ekmekaoglu, 2013). By holding short-term financial assets or issuing short-term securities, banks can quickly convert investments into cash when needed. Regulatory restrictions on bank operations often encourage banks to seek alternative profit-generating opportunities, contributing to the popularity of money market investments (Atanda & Ajayi, 2012).

Banks create liquidity by funding less liquid assets with liquid liabilities. Adequate liquidity is crucial for financial system stability, as highlighted during the global financial crisis of 2007–2009, which saw significant liquidity shortages in both international and Nigerian money markets. This period of constrained liquidity led to increased central bank interventions. The development of Nigeria's money market is closely linked to the phased introduction of various instruments, which continue to evolve to meet the liquidity management needs of commercial banks. Despite regulatory policies and available instruments, Nigerian commercial banks have sometimes performed poorly due to overtrading and insider-related practices. For example, liquidity mismanagement contributed to banking crises in the 1980s and 1990s. Deregulation allowed banks to venture into the capital market, leading to mismatches in assets and liabilities and a rise in non-performing loans.

Diamond and Dybvig (1983) highlighted that banks are inherently fragile due to their role in maturity transformation and in providing insurance against depositors' liquidity needs. Nigeria's financial market has undergone various reforms aimed at deepening the market and improving liquidity management, especially in the money market, where commercial banks dominate. There has been a steady increase in instruments such as treasury bills, treasury certificates, bankers' unit funds, and interbank activities. Broader monetary and macroeconomic reforms, including economic deregulation, internationalization of financial markets, and banking sector recapitalization, are expected to further enhance financial market depth and commercial bank liquidity management.

Several studies have examined money market dynamics in Nigeria. For instance, Oji and Odi (2021) analyzed the effect of money market instruments on commercial bank liquidity using time series data from 1987–2020. Gbenga, Olorunleke, Tajudeen, and Hamzat (2021) explored the relationship between money markets and economic growth from 1981–2018 using FMOLS and Granger causality techniques. Krokeme and Eze (2021) investigated the impact of money market instruments on capital market performance between 1981–2018, while Iwedi and Igbanibo (2015) employed vector autoregressions (VAR), Johansen co-integration, and Granger causality tests to study the link between money market operations and economic growth from 1980–2013. Building on this literature, the present study examines the effect of money market instruments on the liquidity of listed commercial banks in Nigeria using panel data.

LITERATURE REVIEW

2.1 Overview of the Money Market

The money market is a financial market where money and near-money instruments are traded between parties such as issuers and investors or between those with surplus funds and those in need of funds. Instruments traded in this market generally have maturities of less than one year, providing facilities and services for exchanging financial assets and liabilities with very short-term horizons, ranging from a single day to one year.

The money market serves as a crucial platform for various participants in the financial system, including the government, firms, and individuals. For governments, the money market helps bridge temporary gaps between the funds required for project execution and the actual funds available. This is typically done through instruments such as treasury bills, special treasury bills, and treasury certificates (Ngerebo, 2002).

Firms use the money market to manage short-term financial deficits, employing instruments such as trade bills, commercial papers, banker's acceptances, certificates of deposit, and short-term loans to manage cash flow and operational needs. For individual investors, the money market offers opportunities to invest surplus funds and manage temporary liquidity shortages.

In essence, the money market provides a mechanism for exchanging money or near-money assets, meeting liquidity needs for lenders, and fulfilling short-term borrowing requirements. Interest rates in the market are influenced by the forces of supply and demand; higher demand or lower supply tends to push rates upward.

In Nigeria, the money market can be categorized into formal and informal segments. The formal segment is

regulated and comprises banks, companies, government agencies, and the Central Bank of Nigeria (CBN). In contrast, the informal market consists of unregulated participants operating outside government oversight.

2.1.2 Objectives of Establishing the Money Market in Nigeria

The Nigerian money market was established for several purposes (Ngerebo, 2002):

i. **Localize the credit base:** To reduce the outflow of funds to foreign markets and encourage the retention of capital within the country, supporting working capital needs for businesses.
ii. **Mobilize liquid funds:** To meet temporary credit requirements for the government.
iii. **Optimize bank liquidity:** To allow banks to efficiently manage cash holdings and liquidity positions.
iv. **Facilitate monetary policy implementation:** To provide a framework for executing effective monetary policies, which is a core function of any money market.

Instruments of the Money Market

Treasury Bills (T-Bills)

Treasury bills are short-term debt instruments issued by the government through the CBN to fund immediate budgetary requirements (Ezema, 1993). They are highly liquid and secure, earning interest while also counting towards commercial banks' liquidity requirements. Banks can sell T-bills easily to address liquidity needs, making them an attractive short-term investment.

Commercial Papers (CPs)

Commercial papers are unsecured, short-term debt instruments issued by companies to raise funds for operational needs. They are typically marketed through commercial or merchant banks and carry fixed interest rates that are often more attractive than bank overdrafts. CPs are discounted at issuance, and the investor receives the face value at maturity. Risk arises mainly from the possibility of the issuer defaulting (Ezema, 1993; Uremadu, 2004).

Call-Money Scheme

Introduced by the CBN in July 1962, the call-money scheme allows banks to lend surplus funds overnight. Initially limited to commercial banks, it was later extended to other financial institutions. The scheme facilitates interbank lending, particularly during periods of excess liquidity (Onoh, 2002).

Eligible Development Stocks (EDS)

In 1975, the CBN reclassified federal government development stocks with maturities of less than three years as liquid assets for statutory liquidity ratio purposes. These stocks can be monetized and used similarly to other money market instruments. Commercial banks are the primary holders of EDS (Ezema, 1993).

Certificates of Deposit (CDs)

Certificates of Deposit were introduced in 1975 to address the shortage of short-term debt instruments and to absorb excess liquidity. They can be discounted for cash when needed and serve as a safe investment option for banks to earn interest while managing liquidity (Falegan, 1987; Uremadu, 2005).

Treasury Certificates (TCs)

Treasury certificates are medium-term government debt instruments, usually issued for one to three years. They offer higher returns than T-bills and are also accepted as part of commercial banks' liquidity requirements (Ezema, 1993).

Bankers' Unit Fund (BUF)

Introduced in 1976, the BUF is a CBN instrument linked to federal government loan stocks. It helps banks meet statutory liquidity requirements while providing interest income. Unlike the call-money fund, the BUF does not require a statutory minimum deposit (Ezema, 1993).

Bankers' Acceptances (BAs)

A banker's acceptance is a negotiable draft drawn on and accepted by a bank, promising payment to a third party at a future date. BAs allow banks to finance clients without using their loanable funds and are considered safer than commercial papers. They usually have maturities between three and six months (Ezema, 1993; Luckett, 1984).

Interbank Funds Market

The interbank funds market facilitates transactions among banks to manage daily cash and liquidity positions. Banks lend surplus funds to others facing temporary shortages. Most transactions are unsecured and rely on trust between banks. The interbank rate serves as a benchmark for short-term interest rates and is integral to monetary policy transmission (Bernanke & Blinder, 1992; Taylor & Williams, 2008).

Interbank Lending and Monetary Policy Transmission

Lending relationships between banks provide a safeguard against liquidity shocks. Direct loans in the interbank market are negotiated individually, with terms often influenced by the identity and credibility of the counterparty. Banks borrow in the interbank market to meet reserve requirements or to cover large withdrawals, with the Central Bank acting as lender of last resort when necessary, usually at higher interest rates and with implicit costs (Cocco et al., 2009; Boot, 2000).

Liquidity

Liquidity represents a bank's ability to handle sudden cash flow disruptions and unexpected withdrawals by depositors. Based on previous research, liquidity can be measured using two ratios: Liquid Assets to Short-Term Funding (LASTF) and Net Loans to Short-Term Funding (NLSTF). A higher LASTF indicates greater financial safety because the bank holds more liquid assets that can be used to cover short-term obligations. Accordingly, banks with the highest LASTF are ranked most favorably. Conversely, a higher NLSTF signals lower stability, as loans are generally illiquid. Banks that issue a large volume of loans may face challenges in meeting unexpected depositor withdrawals. For example, during 2008–2010, lending grew rapidly, particularly in real estate and stock markets rather than productive sectors, which could have strained liquidity. Banks with the lowest LASTF are ranked lowest in terms of liquidity.

Assessing a bank's liquidity requires examining current liquidity levels, potential sources of funding, and the effectiveness of the bank's funds management practices relative to its size, complexity, and risk exposure. Effective funds management ensures that a bank can meet its obligations promptly while fulfilling the legitimate banking needs of its customers. Institutions must be able to respond to unforeseen changes in funding and market conditions, enabling them to liquidate assets quickly without significant losses. Liquidity should be maintained efficiently, avoiding high costs or excessive dependence on funding sources that may become unavailable during financial stress.

Liquidity is a key factor in banking health. It indicates a bank's capacity to meet obligations as they mature. Banks earn profit by accepting short-term deposits at lower interest rates and lending or investing them over longer terms at higher rates. Insufficient liquidity can trigger a bank run, harming both stability and earnings. Therefore, maintaining appropriate liquidity is essential to safeguard profitability and institutional reputation.

Liquidity is evaluated by considering multiple aspects, including the volume and accessibility of liquid funds, deposit and loan volatility, interest rate exposure, maturity structures of assets and liabilities, market access, diversification of funding sources, reliance on interbank funding, and the management's ability to monitor and control liquidity. Poor liquidity management can damage a bank's reputation, so banks must balance liquidity provision with investing in high-yield assets to maintain profitability.

Common ratios used to measure liquidity include:

i. Liquid Assets to Demand Deposits (LA/DD): Indicates a bank's ability to meet depositor withdrawals within a year.
ii. Liquid Assets to Total Deposits (LA/TD): Reflects liquidity relative to all deposits.
iii. Liquid Assets to Total Assets (LA/TA): Measures overall liquidity.

Liquid assets typically include cash on hand, balances with other institutions, and short-term marketable instruments, while total assets reflect all revalued assets.

Liquidity assessment involves several criteria:

1. Adequacy of liquidity sources relative to current and future needs.
2. Availability of assets that can be converted to cash without significant loss.
3. Access to financial markets and alternative funding sources.
4. Diversification of funding sources.
5. Dependence on short-term volatile funds to finance longer-term assets.
6. Stability and trend of deposit inflows.
7. Ability to securitize or sell certain asset pools.
8. Effectiveness of management systems, policies, and contingency planning.

Liquidity Ratings:

i. Strong liquidity and robust funds management. Reliable access to sufficient funds.
ii. Satisfactory liquidity; some minor weaknesses in fund management.
iii. Needs improvement; limited access to funds and/or weak management practices.
iv. Deficient liquidity or inadequate funds management; insufficient access to funds.
v. Critically low liquidity; the bank's survival is at risk and immediate external support is required.

Theories of Bank Liquidity

Commercial Loan Theory:
This theory suggests that commercial banks should prioritize short-term loans that are self-liquidating, repaid from the proceeds of transactions they finance. Critics argue this approach may hinder economic development in countries needing long-term capital. According to the theory, the central bank should support banks by rediscounting approved short-term loans to maintain liquidity and control money supply.

Shiftability Theory:
This theory asserts that a bank's liquidity depends on the ability to transfer or sell assets to other banks or the central

bank without losses. Proposed by H.G. Moulton, it emphasizes marketable assets like treasury bills that can be converted to cash quickly, especially during periods of financial stress.

Anticipated Income Theory:

This approach focuses on structuring loans based on the borrower's expected income. Proposed by H.V. Prochanow in 1944, it stresses that term loans should be repaid through installments drawn from anticipated earnings rather than relying solely on collateral. This theory encourages phased repayment schedules and self-liquidating commitments to ensure bank liquidity.

Liquidity Preference Theory

According to Bibow (2005), Keynes' liquidity preference theory emphasizes the role of money in facilitating business transactions and serving as a store of wealth. Elgar (1999) further explains that the demand for liquidity arises from the need to finance expenditures, speculate on interest rate movements, or manage uncertainty about the future. These factors are classified as the transactions, speculative, and precautionary motives for holding money, forming the foundation of liquidity management theories.

Empirical Review

Oji and Odi (2021) analyzed the influence of money market instruments on the liquidity of commercial banks in Nigeria using time series data from the Central Bank of Nigeria Statistical Bulletin spanning 1987–2020. The study modeled bank liquidity as a function of treasury bills, treasury certificates, commercial papers, bankers' acceptances, certificates of deposit, and government bonds, using ordinary least squares (OLS) for analysis. Findings revealed that money market instruments explained 37.9% of the variation in commercial bank liquidity. Government bonds, bankers' acceptances, and treasury certificates negatively affected liquidity, reducing it by 0.001%, 0.29%, and 0.39%, respectively. Conversely, commercial papers, certificates of deposit, and treasury bills positively influenced liquidity, increasing it by 0.05%, 0.03%, and 0.001%, respectively. The study concluded that money market instruments do not strongly determine commercial bank liquidity in Nigeria and recommended policy reforms to enhance operational efficiency.

Gbenga, Olorunleke, Tajudeen, and Hamzat (2021) investigated the relationship between money market activity and economic growth in Nigeria using annual data from 1981 to 2018. The study applied Fully Modified Ordinary Least Squares (FMOLS), Granger causality tests, and other econometric techniques such as ADF unit root tests, Pearson correlation, impulse response, and variance decomposition. Results indicated a strong positive correlation between money market operations and economic growth, with causality flowing from money market development to economic growth. The authors suggested that the Nigerian government strengthen the money market through incentives, including tax breaks and interest-free short-term loans, to stimulate economic growth.

Krokeme and Eze (2021) examined the impact of money market instruments on the performance of Nigeria's capital market using data from 1981–2018. Employing descriptive statistics, covariance analysis, Johansen cointegration, and vector error correction modeling, the study found that increased trading in treasury bills and commercial papers negatively affected annual market capitalization, while bankers' acceptances showed a positive effect. The authors recommended improving market information to investors and promoting coordination between money and capital markets to prevent adverse effects on either market.

Pavtar (2016) analyzed the relationship between money market instruments and Nigeria's economic growth from 1985–2014. Using OLS regression, results indicated that treasury bills, commercial papers, and treasury certificates had no significant effect on GDP, whereas certificates of deposit had a positive impact.

Uruakpa (2019) studied the effect of money market reforms on Nigeria's economic growth (1990–2017) using OLS, cointegration tests, and variance decomposition techniques. The study found a co-integration relationship between money market value and GDP, with money market activities exerting a positive and significant influence on economic growth, though treasury bills had an insignificant effect.

Igbinosa and Aigbovo (2015) investigated the impact of money market development on economic growth in Nigeria (1986–2013) using OLS, cointegration analysis, ECM, and Granger causality tests. Their findings revealed that bankers' acceptances significantly influenced economic growth in both the short and long run, while treasury bills and commercial papers affected growth only in the long run.

Etale and Ayunku (2017) examined the relationship between money market instruments and GDP (1989–2014). Their analysis showed that treasury bills and commercial papers had a positive and significant effect on GDP, whereas bankers' acceptances were positive but insignificant. Granger causality results indicated a unidirectional causality from GDP to treasury bills, but no causality for other instruments.

Other studies, including Agbada and Odejimi (2015), Iwedi and Igbanibo (2015), Akarara and Eniekezimene (2018), Isiwu et al. (2015), Ehigiamusoe (2013), Mohammad (2014), Umasom (2018), Eze and Mansi (2017), and

Igbinosa and Aigbovo (2015), consistently showed that money market instruments—such as treasury bills, treasury certificates, commercial papers, certificates of deposit, and bankers' acceptances—play varying roles in influencing economic growth and financial stability in Nigeria. While some instruments positively impact GDP, others show insignificant or negative effects, highlighting the need for improved market regulation, better information flow, and the introduction of innovative instruments to enhance the efficiency and development of the Nigerian money market.

Overall, most studies employ OLS methods and annual time series data, focusing on the relationship between money market instruments and economic performance. However, the current study emphasizes the impact of money market instruments specifically on the liquidity of commercial banks in Nigeria.

METHODOLOGY

The study adopts a correlation and regression research design, which allows an examination of the relationships and potential influence among two or more variables. In research terms, a population refers to the entire set of elements or subjects about which the study seeks to draw conclusions, while a population element is the individual unit on which measurements are conducted (Mugenda & Mugenda, 2003). The target population is the specific subset from which data or information is actually collected.

For this study, the population consists of all 13 commercial banks operating in Nigeria. According to the Central Bank of Nigeria (CBN, 2020), the Nigerian banking sector is comprised of these 13 commercial banks. The study uses time series data spanning the period 2015 to 2024. The dataset includes annual observations for one dependent variable, return on assets (ROA), and three independent variables representing key indicators of banking system asset quality.

Building on the methodologies of Abata (2014) and Swamy (2015), the study models the relationship between CAMELS indicators and investor sentiment in Nigeria as follows:

LIQ= (TB, TC, CP, EDS, BA) (1)

$$LIQ = \alpha_0 + \beta_1 TB_{t-1} + \beta_2 TC_{t-2} + \beta_3 CP_{t-3} + \beta_3 EDS_{t-3} + \beta_3 BA_{t-3+} \mu_{it} \quad (2)$$

LIQ = Commercial banks liquidity proxy by total liquid assets to total loans and advances

TB	=	Treasury bills
TC	=	Treasury Certificate
CP	=	Commercial paper
EDS	=	Eligible development stock
BA	=	Bankers acceptance
μ	=	Error term
βo	=	intercepts of the regression line

ϕ_0 α_0 = Constant

β_1 - β_3 = Coefficients of independent variables

μ_{it} = Error Term

Techniques of Analysis

Ordinary Least Squares (OLS) is a widely used method for estimating the unknown coefficients in a linear regression model. According to Hutcheson (2011), OLS regression is a type of generalized linear modeling that can be employed to analyze a single response variable measured on at least an interval scale. The method works by minimizing the sum of the squared differences between the observed values and the values predicted by the regression line.

OLS can be applied with either a single explanatory variable or multiple explanatory variables, including categorical variables that are properly coded. In the case of a single explanatory variable, the relationship between a continuous dependent variable (Y) and a continuous independent variable (X) can be described using a line of best fit, where Y is predicted based on X. If the relationship is linear, it can be mathematically expressed as:

$Y= a + \beta_1X_1 + \beta_2X_2 + \beta_3X_3$ (3)

When multiple explanatory variables are included, the model expands to incorporate additional predictors. The dependent variable (Y) is then modeled as a function of several independent variables (X_1, X_2, X_3, …), allowing for a more comprehensive analysis of the factors influencing Y.

The interpretation of the parameters (a and β) from the above model is basically the same as for the simple regression model, but the relationship cannot be graphed on a single scatter plot an indicates the value of Y when all vales of the explanatory variables are zero. Each β parameter indicates the average change in Y that is associated with a unit change in X, whilst controlling for the other explanatory variables in the model. Model-fit can be assessed through comparing deviance measures of nested models. For example, the effect of variable X_3 on Y in the model can be calculated by comparing the nested models

$Y= a+ \beta_1X_1 + \beta_2X_2+\beta_3X_3$ (4)

$Y= a+ \beta_1X_1 + \beta_2X_2$ (5)

The change in deviance between these models indicates the effect that X_3 has on the prediction of Y when the effects of X_1 and X_2 have been accounted for (it is, therefore, the unique effect that X_3 has on Y after taking into account X_1 and X_2). The overall effect of all three explanatory variables on Y can be assessed by comparing the models

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \quad (6)$$

$$Y = a. \quad (7)$$

The importance of changes in deviance scores can be evaluated by calculating the F-statistic, using the relevant formula (though most statistical software provides this automatically). Similar to simple OLS regression, it is straightforward to compute the R-squared statistic to measure the proportion of variance explained by the model.

RESULTS AND DISCUSSION

Table 1: Panel Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TB	0.090932	0.036807	2.470524	0.0150
TC	0.033864	0.047685	0.710159	0.4791
CP	-0.000823	0.051208	-0.016076	0.9872
EDS	-0.030864	0.075714	-0.407640	0.6843
BA	0.171144	0.076785	2.228869	0.0278
C	3.243729	0.672322	4.824665	0.0000
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.807196	Mean dependent var		5.155000
Adjusted R-squared	0.777931	S.D. dependent var		1.240201
S.E. of regression	0.584435	Akaike info criterion		1.891544
Sum squared resid	38.25514	Schwarz criterion		2.288587
Log likelihood	-104.9503	Hannan-Quinn criter.		2.052876
F-statistic	27.58243	Durbin-Watson stat		1.062101
Prob(F-statistic)	0.000000			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TB	0.088193	0.036334	2.427277	0.0166
TC	0.010765	0.043840	0.245550	0.8064
CP	-0.016150	0.048039	-0.336192	0.7373
EDS	-0.012820	0.072704	-0.176330	0.8603
BA	0.151003	0.070856	2.131138	0.0351
C	3.385633	0.708158	4.780901	0.0000
	Effects Specification			
			S.D.	Rho
Cross-section random			0.951231	0.7260
Idiosyncratic random			0.584435	0.2740
	Weighted Statistics			
R-squared	0.676482	Mean dependent var		0.983178
Adjusted R-squared	0.439243	S.D. dependent var		0.610280
S.E. of regression	0.598185	Sum squared resid		44.37036
F-statistic	4.053821	Durbin-Watson stat		0.897419
Prob(F-statistic)	0.005690			
	Unweighted Statistics			
R-squared	-0.025574	Mean dependent var		5.155000
Sum squared resid	203.4892	Durbin-Watson stat		0.195680
Correlated Random Effects - Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		10.903586	5	0.0433

Source: E-View 12.0

Model Selection:

The choice between fixed and random effects regression is guided by the Hausman test, which evaluates the probability of the Chi-square statistic. In this study, the Hausman test yielded a Chi-square probability of 0.0433, which is below the 0.05 threshold. Consequently, the fixed effect model was adopted.

F-Test:

The F-statistic for the model is 4.053821, with a

corresponding probability of 0.005690, which is less than the 5% significance level. This indicates a statistically significant relationship between money market instruments and the liquidity of quoted commercial banks over the study period.

Coefficient of Determination (R^2):
The R^2 value of 0.439243 suggests that approximately 43.9% of the variation in commercial banks' liquidity is explained by the independent variables. This represents a moderate level of explanatory power, indicating that the model demonstrates an appreciable goodness of fit.

Durbin-Watson Statistic (DW):
The computed DW value of 0.897419, based on four explanatory variables and 130 observations at a 5% significance level, is slightly below 2. While this is lower than the ideal value, it is considered permissible for this analysis.

Regression Coefficients:
The regression results show that treasury bills (TB) have a positive but statistically insignificant effect on commercial bank liquidity, contributing 0.08% to liquidity over the study period. Treasury certificates (TC) added 0.01%, while bankers' acceptances (BA) contributed 0.15%. Conversely, commercial papers (CP) and eligible development stock (EDS) slightly reduced liquidity by 0.01% each. The positive effects align with the study's a-priori expectations and reflect ongoing financial market reforms.

These findings are consistent with prior research. For example, Guru et al. (2002) identified efficient expense management as a key driver of high bank profitability. Chantapong (2005) observed that foreign banks typically achieve higher profitability than domestic banks, although post-crisis financial restructuring narrowed this gap. Similarly, Heffernan and Fu (2008) found that net interest margin serves as a better indicator of bank performance than traditional measures such as return on average assets (ROAA) or return on average equity (ROAE).

Table 2: Cross Section Bank Effect

	BANK	Effect
1	ACCESS	2.112889
2	ECOBANK	0.423572
3	FCMB	2.027312
4	FIDELITY	-0.731635
5	GTB	-0.560953
6	FIRSTBANK	-1.743071
7	STANBIC	-0.799295
8	STERLING	-0.586407
9	UBA	-0.941205
10	UNIONBANK	-0.912515
11	UNITYBANK	0.749670
12	WEMABANK	1.114073
13	ZENITHBANK	-0.152435

Source: E-View 12.0

Cross-Sectional Bank Effects:
The analysis of individual banks showed that Access Bank, Ecobank, First City Monument Bank, Unity Bank, and Wema Bank had a positive effect on liquidity among the 13 quoted commercial banks. The remaining banks exhibited a negative effect, which contradicts the study's a-priori expectations. This negative impact may be attributed to differences in management quality and the operating environment of these banks.

CONCLUSION:

i. The money market plays a crucial role in national economic development by providing short-term financial instruments for raising short-term funds. It complements the capital market and serves as a source of liquidity for businesses and financial institutions, including commercial banks. Banks often participate in the money market to maintain adequate liquidity.

ii. This study examined the effect of money market instruments on the liquidity of quoted commercial banks in Nigeria, using cross-sectional data on liquidity and time-series data on money market instruments. The findings indicate that Treasury Bills contributed 0.08%, Treasury Certificates 0.01%, and Bankers' Acceptances 0.15% to commercial banks' liquidity during the study period. Conversely, Commercial Papers and Eligible Development Stocks slightly reduced liquidity by 0.01% each.

iii. The results suggest that commercial banks rarely exploit money market investment opportunities, likely due to the underdeveloped nature of the Nigerian money market. Overall, the study concludes that money market

instruments have a partial but meaningful influence on the liquidity of commercial banks in Nigeria.

Recommendations:

i. **Market Development Policies:** Regulatory authorities should implement policies, including deregulation and reforms to the Central Bank's discount window operations, to develop and strengthen the Nigerian money market. Flexible instruments tailored to the needs of commercial banks and investors should be introduced.

ii. **Enhancing Liquidity Management:** The money market should be further developed to provide commercial banks with additional avenues for investing excess liquidity. Treasury bills should be utilized strategically to support the liquidity management of commercial banks.

iii. **Regulatory Oversight and Accessibility:** Regulatory authorities should design strategies to improve the management of money market instruments, ensuring that government treasury bills are readily available to commercial banks, thereby enhancing their liquidity.

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