Liquid Liabilities and Growth Finance Nexus: Implications for Nigeria’s Energy Sector

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Abstract: Liquid liabilities are required for the development of key sectors that drive the Nigerian economy by ensuring that credits are made available for investment purposes. However, controversies concerning the effectiveness of investments in fostering economic growth in Nigeria exist. These studies focus on the relationship amid liquid liabilities and finance for growth in Nigeria, with specific insight and implications for Nigeria’s energy sector. In achieving its objective, the study utilizes data from secondary sources from the annual CBN (1980-2018). This study finds that gross domestic savings significantly drive finance for growth in the long-run compared to stock market development and Remittance inflows. The findings imply that to finance growth efficiently in the Nigerian economy, attention should be paid to liquid liability development policies such as driving gross domestic savings by all stakeholders and attention should be paid to the Nigerian energy sector as it possesses the potential to both be a source of liquid liability and a viable investment option.

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1.0. Introduction

Liquid liabilities are required for the development of key sectors that drive the Nigerian Economy by ensuring that excess credits are made available for investment purposes by those who need it. Banks, though, are considered operative in nurturing economic growth when it is able to make credit available to the sectors of the economy that are vital for growth. Three of these sectors are the energy, telecommunications and the manufacturing sectors [1]. Development of these sectors can act as reagents to stimulate growth and spur development. Furthermore, banks need to remain solvent in the long run so as to ensure availability of long-term funds for investments by adequately managing risks that they are exposed to. Therefore, the importance of having a stable and developed banking system in any economy that can withstand external shocks and still plays its role as a financial intermediary cannot be overemphasized.

Literature is brimming with evidence both theoretically as well as empirically with the traditional understanding of financial intermediaries as agents performing roles pertaining to monitoring, screening, selection and diversification of risk while equally supplying credit and liquidity services, [2, 3, 4]. Roles carried out by the financial intermediaries such as liquidity, credit, maturity and liquidity transformation of financial claims involve inherent delicateness. Given the nature of its operations, the intermediaries’ investments are impervious naturally making it difficult to separate the problems affecting an industry as a whole from problems specific to one intermediary.
Hence, financial intermediation activity carries a significant economic risk—potential to disrupt the system [5]. The rationale for which modern financial intermediation activity is thoroughly guided by laws framework is because of the awareness of this risk. And, more specifically, financial intermediaries are restricted to entities that are able to attain explicit corporate authorization and permission from a sole regulatory body; mostly monetary authorities or as appropriate in some economies. Given the potential for systemic risk, there appears the need to cross-examine the role of regulatory agency in ensuring a significant measure, aimed at strengthening investors’ confidence in bank’s intermediation activities [6, 7, 8].

Studies on intermediation in recent times, [9, 10, 11, 12, 13] now posit new narrative; where financial intermediation is not seen as a bank-centered but a decentralized system with non-bank institutions as well as specialized market playing a part in linking supply to the demand of funds that occur along the extended credit intermediation chain. Therefore, it might be necessary to reconsider the regulatory control boundaries since there is a possibility of financial intermediation occurring as non-bank agents. Cognizant, there are studies contending that when nonbank intermediation come into play, banks have actually been supporting its growth [14, 15, 16]. More so, banks continue to provide intermediation and innovative ways of linking supply to demand of funds showing its evolving nature and capacity to adapt to modern processes [5]

It is a valid recommendation to examine the extent underwriters, servicers, trustees and securitization process as issuers has been engaged along the credit intermediation bond. Regulatory roles of monetary authorities (finance for growth) essentially need to come into play in this regard. Cast in the views expressed above, this study by adopting a standard measure of intermediation (from growing strand of finance literature)- liquid liabilities, seeks to probe the economic effect of finance for growth in ensuring a significant measure, aimed at strengthening investors’ confidence in bank’s intermediation activities. This present study arguably contends that; given the intense competition from non-banks financial intermediaries, would it be necessary to rethink the scope of regulatory control and possibly suggest a robust policy response. In achieving this objective of study, the following sections will include review of related literature in section two, data analysis in the third section, discussion of empirical results and presentation in the fourth section and conclusion as well as recommendation in concluding section.

2. Insights from Literature
In investigating the trends of Output and financial intermediation in Nigeria, [17] utilized data during the financial crisis beginning from 1981 to 2011. The study used variables such as Time/Savings Deposit and Demand deposits and Credits (Loan and Overdraft) to capture financial intermediation while Output was captured with Gross Domestic Product. The result displayed the presence of a negative short run connection amid intermediation of financial sector and Output in Nigeria despite presence of positive relationship. Global financial crisis leading to financial institutions suffering from unforeseen financial shocks could perhaps be the reason for the elements of negative relationship in the analysis.

Similarly, the study carried out by [18] exhibited negative and positive signs after the variables were lagged twice. The study equally revealed that economic growth and financial intermediation indicators have a long run equilibrium. The results were deduced from the time series data for the duration of 1970 to 2015 using Johanssen Cointegration technique, VAR testing approach then the Engle Granger Causality test. This examination further utilizing data from 1970 to 2015 utilized the VAR testing technique in studying the dynamic short-run and long-run of financial intermediation in addition to economic growth in Nigeria. The results from the investigation uncovered the long-run presence in the relationship amid the indicators for financial intermediation and economic growth with economic growth clearly proxied by GDP is more impacted by financial...
intermediaries indicator proxied by Money Supply than the Credit towards private sector subsequent to utilizing the Johansen Cointegration in the addition to Engle-Granger causality test.

While modelling possibilities of a likely relationship that could occur amid economic growth and banks intermediation roles, [19] using a selection of data from 1970 to 2014 used banks deposit liabilities, credit to private sector and money supply for bank financial intermediation functions. The result evidently showed long-run relationship amid economic growth and financial intermediation. In like manner, the investigation completed via the investigation of [20] showed the presence of a highly percent connection amid economic growth and the financial sector after analyzing data from 1988 to 2013 trying to comprehend the connection amongst economic development and financial intermediation in Nigeria.

Worthy is the finance in terms of gross domestic savings, remittance inflows and market capitalization are necessary for driving the energy sector performance. This transmission into liquid liability is necessary. [21] studies the nexus on how economic growth has been harnessed from extraction of natural resources in Nigeria. A positive impact was observed by the study for the region of Niger Delta. [22] looked at the carbon emission’s emission impact on crop production in Nigeria. Such contributions from the energy sector are made available through finance for growth and liquid liability given the highly capital-intensive nature of the energy industry.

In entirety, there are divergent outcomes on finance-growth nexus with explicit reference to financial related intermediation. Some contend expanding the extent of financial intermediation in an economy by means for having more prominent number of firms comprised while some studies argue otherwise. Such differences in findings and assumptions could be related to the fact that there are numerous metrics available to capture the stock market and financial development as well as the diverse estimation technique that are present and diversity in country variable and volume of the sample size and survey data. This study differs by presenting a country specific aiming to probe how the conduct of regulatory policies by monetary authorities affect functioning of financial intermediation. In this manner, a huge commitment of this investigation is the acknowledgment that finance for growth may influence fluid liabilities of banks, through the procedure of credit channels, some of which rely upon the regulatory framework of monetary establishments, while others rely upon the degree of movement in budgetary foundations.

3.0 Methodology
3.1 Model Specification
The study adopts the model of the study by [21] on finance literature:

$$ LL_t = \alpha_0 + \alpha_1 DGS_t + \alpha_2 SM_C_t + \alpha_3 RINFI_t + \epsilon_{it} \tag{1} $$

Equations (1) specified above show the long run nexus amid FI measure (Gross Domestic Savings, Stock Market Capitalization and Remittances Inflow) and FFG measures (Liquid liabilities). However, before estimating Long-run model, existence of Long-run relationship must be established. Following [22, 23, 24, 25] an ARDL specification of equation (2) is as specified below:

$$ LL_t = \tau_0 + \tau_1 LL_{t-1} + \tau_2 DGS_{t-1} + \tau_3 SM_{C_{t-1}} + \tau_4 RINFI_{t-1} + \sum_{l=0}^{p} \beta_i \Delta LL_{t-l} + \sum_{i=0}^{d} \delta_i \Delta SM_{C_{t-l}} + \sum_{l=0}^{d} \theta_{i} \Delta RINFI_{t-l} + \epsilon_{it} \tag{2} $$

Where:
- $\epsilon_{it}$ represents white error noise term, $\Delta$ is the first difference operator, $LL_t$ is limited liabilities (% of GDP), $DGS_t$ ‘ gross domestic savings’ (% of GDP), $SM_{Ct}$ is stock market capitalization limited liabilities (% of GDP), $RINFI_t$ is remittance inflow (% of GDP). This model has been assessed by
means of OLS technique, \((p + 1)(q1 + 1)(q2 + 1)(q3 + 1)\) amount of regressions assessed to obtain optimal lag lengths for the choice of the equation amid different lag lengths will be completed either through Schwarz or Akaike information criteria (AIC). Schwarz information criterion (SIC) is ideal compared to Akaike information criteria as it inclines to a more defined parsimonious conditions [26, 27].

### 3.2. Technique of Estimation

In evaluating the impact of finance for growth and liquid liabilities in Nigeria, this study will utilize the ARDL. According to [25, 28], the model provides, the model gives a clear and dependable way to deal with portrayal of data, in area forecast, structural inference, and policy analysis. It ought to be noted, nonetheless, this model would be proper for this investigation in order to cater for integrating difference and un-difference series. In addition to this, preliminary analyses which includes stationarity test was also done in this study.

The initial phase in the ARDL method is to decide the non-stationarity of the data by deciding every order of integrated variable undergoing investigation. ARDL procedure isn't pertinent if the order of integrated variables is more prominent than one. Checking for non-stationary data is significant according to another perspective as it helps in avoiding spurious results, a problem frequently connected with the utilization of nonstationary data. Through the ARDL technique, the possibility of various variables have distinctive optimal lags, by the impossibility of regular test of cointegration. Moreover, this ARDL strategy gives unbiased evaluations modelling long-run and valid t-statistics by the consideration of dynamics in the model, in any event, when a portion of the regressors are endogenous. At the point when contrasted with other elective procedures, the ARDL strategy performs better with a simple sample. The ARDL technique as indicated by [22, 29] is represented by the following equation:

\[
\alpha(L,p)y_t = \alpha_0 + \sum_{i=1}^{k} \beta_i(L,q)x_{i,t} + \epsilon_t.
\]

As \(\alpha\) represents a constant term, \(y_t\) signifies the variables that are significant, \(L\) represents a lag operator, \(x_{i,t}\) is the vector of regressors of which \((1 = 1, 2, 3, ..., k)\), \(L, p\) are dependent variables and \(\epsilon_t\) is the disturbance term.

### 3.3. Data sources

Annual data which are time series covered from 1980 to 2018 duration, was be utilized in this study. The data is majorly obtained from CBN annual bulletins and while minorly obtained from Economic surveys and Statistical bulletins for the same period.

| Variable | Descriptions and Sources |
|----------|--------------------------|
| The stock market capitalization to GDP ratio, denoted by SMC | Equivalents the estimation of recorded offers partitioned by GDP. Market capitalization (value of market) representing the offer value multiplied by the quantity of offers remaining. Recorded local organizations are the locally incorporated organizations recorded on the country's stock exchange toward the year's end. This data is scoured from the CBN yearly bulletin (2018). |
| Gross domestic savings (GDS) as a share of GDP (DGS) | GDS are determined as GDP subtracted from final consumption expenditure also depicted as consumption in summation. This data is scoured from Central Bank of Nigeria yearly reports and yearly statistical bulletin (2018). |
Remittance inflows to GDP (RINF) This contains Workers’ settlements and remuneration of representatives, current exchanges through workers whom are migrants and wages, in addition to pay rates gotten from workers whom are non-resident. Central Bank of Nigeria annual reports and annual statistical bulletins (2018).

Liquid Liabilities (LL) Compares liquid liabilities of the financial related framework (cash in addition to request and liabilities that bear interests of banks and financial intermediaries from nonbank) with GDP dividing through. It is usually a typical measurement of financial profundity also the general scope of intermediation from the financial division (King and Levine, 1993a). Along these lines, the investigation plans to utilize it as one proportion of money related middle person improvement. This is sourced from CBN yearly statistical bulletins (2018).

Private Credit (CPS) Equivalents the estimation of credits by means of financial intermediation toward the private segment divided through GDP. This measurement of financial intermediation is beyond a simple degree of the size of financial sector. This is sourced from CBN yearly statistical bulletins (2018).

4.0 Empirical Results and Discussions:

4.1 Stationarity Test

In table 2, it is reported that the unit root test results for the series in above model ‘xx’. In all the four methods, the results clearly show that the null hypotheses of DGS has unit roots are stationary, this mean the series is stationary at level. I (0) at level of significant of 5%. Conversely, the null hypotheses that the Liquid Liabilities (LL), Remittances Inflow (RINF) and Stock Market Capitalization (SMC) have unit roots are stationary would not be rejected at level within the 1% and 10% conventional under at least three test approaches. In order word the series integrating of order one I (1). It is vital to note that series possess various orders of integration, both in I (0) and I (1) and study proceedings toward bounds testing of ARDL technique to study both short and long run relationships amid the series.

Table 2: Stationarity Test

| Variables | @LEVEL | @1ST Diff. |
|-----------|--------|------------|
|           | No trend | Trend | No trend | Trend | Order of Integration of |
|           | Augmented | Dickey-Fuller (ADF) | Augmented | Dickey-Fuller (ADF) | |
| DGS       | -4.471*** | -4.601*** | I(0) |
| LL        | -1.776    | -2.702    | -4.308*** | -4.242** | I(1) |
| RINF      | -2.036    | -2.581    | -6.404*** | -6.323*** | I(1) |
| SMC       | -1.871    | -3.238*   | -6.576*** | -5.000*** | I(1) |
| Phillips-Perron (PP) | |
| DGS       | -4.556*** | -4.623*** | I(0) |
| LL        | -1.928    | -2.858    | -4.309*** | -4.243*** | I(1) |
| RINF      | -2.055    | -2.582    | -6.404*** | -6.323*** | I(1) |
| SMC       | -1.886    | -3.254*   | -6.574*** | -6.473*** | I(1) |
| Dickey – Fuller GLS (DF-GLS) | |
| DGS       | -3.736*** | -4.518*** | I(0) |
| LL        | -1.616*   | -2.762    | -4.370*** | -4.365*** | I(1) |
Bound Co-Integration Test for Liquid Liabilities and Finance for Growth Indicators

Table 2 depicts the unit root result, the study employed ARDL co-integration method which is bound test to investigate if there is a long-run relationship amid the variable(s). The test conducted on the variables considered in this model with result presented in Table 1. With the result in Table 3, value of computed F-statistic is 4.393 which is greater than the upper critical bound values of 4.35. At a significant level of 5 percent, it suggests rejection of null hypothesis of no cointegration and concluding with the presence of cointegration. Alternatively, the presence of long run relationship amid the variables is present.

### Table 3: ARDL Bounds Test for Liquid Liabilities and Finance for Growth Indicators

| Test Statistic | Value | k |
|----------------|-------|---|
| F-statistic    | 4.39  | 3 |

| Significance   | I0 Bound | I1 Bound |
|----------------|----------|----------|
| 10%            | 2.72     | 3.77     |
| 5%             | 3.23     | 4.35     |
| 2.5%           | 3.69     | 4.89     |
| 1%             | 4.29     | 5.61     |

Source: Authors’ Computation using EViews 10 Software

Long Run Model for Liquid Liabilities and Finance for Growth Indicators

The result in Table 4 below displays the long-run dynamics of the relationship amid Liquid Liabilities Ratio (LL) and finance for growth indicators. As seen in the result, a positive also significant relationship occurs amid Gross Domestic Savings Ratio (GDS) and Liquid Liabilities Ratio (LL) at 10% significance level. This suggests a unit increase in DGS causes LL to increase by 0.4729 units. Stock Market Capitalization Ratio (SMC) exhibits positive relationship with Liquid Liabilities Ratio (LL) and the positive relationship is not significant, the coefficient of Remittance Inflows Ratio (RINF) is positive and insignificant (coeff. = 2.851; p-value = 0.165) and insignificant. Overall, the results show that the major determinants of Liquid Liabilities Ratio (LL) in the long-run are Gross Domestic Savings Ratio (GDS).

### Table 4: Long Run Model for Liquid Liabilities and Finance for Growth Indicators

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| GDS      | 0.472955    | 0.270514   | 1.748357    | 0.0914 |
| SMC      | 0.000732    | 0.000598   | 1.224833    | 0.2308 |
| RINF     | 2.851298    | 2.003182   | 1.423384    | 0.1657 |
with regards toward implications regarding findings for the energy sector, the intensive capital needs of the energy companies are met due to liquidity availability through financial intermediation. This provision enables research for clean energy extraction [30], development [31], energy production and distribution. Furthermore, the availability of funds enables efficient management of extractive processes which could result in carbon dioxide emissions in the atmosphere [32]. In addition, these implications transmit into inclusive growth [33, 34, 35] and overall sustainable development which is one of the major goals to be achieved by Nigeria [36].

5. Conclusion and Recommendations
The study examines the liquid liabilities and finances for the growth nexus in Nigeria with specific insight and implications for Nigeria’s energy sector. In achieving its objective, the study utilizes the Auto Regressive Distributed Lag (ARDL) method of estimation on secondary sources of CBN (1980-2018). Present study finds the GDS significantly drive finance for growth for the long run compared to development of stock market and Remittance inflows. The findings for growth efficiently in the Nigeria economy, attention should be paid to liquid development policies such as driving GDS by all stakeholders and attention should be paid to the Nigerian energy sector as it possesses the potential to both be a source of liquid liability and a viable investment option.

There has been rising enthusiasm for both development and monetary writing on the connection amid budgetary turn of events and financial development. The general accord is that improved money related part advancement advances development by proficiently distributing assets. Be that as it may, little is known on the impacts account for development on fluid liabilities of banks. The degree of money related area management has a direction on the requirement of bank guidelines and the adequacy with which administrative attentiveness is applied to manage the diverting of assets. National Banks are best positioned to go about as moneylenders after all other options have run out and providing satisfactory liquidity to the monetary and genuine parts of the economy.

Conclusion from this investigation stating the connection amid account for development and fluid liabilities in Nigeria following the" request following", "criticism", or "impartial" speculations and not the "gracefully driving theory" The approach ramifications of this finding is that to channel credit more for investible purposes, consideration must be given to the degree of administrative structure which fund for development underlines. This is relied upon to help the capital gathering proficieny or potentially increment the degree of reserve funds and in this manner speculation, as recommended by McKinnon (1973) and Shaw (1967). The administration ought to energize financial specialists like the Central Bank of Nigeria to fortify the administrative system in credit directing with the goal that planned speculators can expand their venture and raise the country's creation limit. This can be accomplished through low liquidity prerequisites and satisfactory physical and money related frameworks to evacuate the hindrances that lead to a hole amid the investment funds and loaning rate. This is on the grounds that the financing cost is the animating variable in reserve funds and venture choices in the economy.
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