



Bank-Based Financial Architecture and Bank Performance: Evidence from Nigeria

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Abstract: This study investigated the relationship between bank-based financial architecture and bank performance in Nigeria using quarterly data over the period 2010: Q01 – 2022: Q04. Specifically, the study examined how cash reserve ratio, monetary policy rate, stated lending rate, stated deposit rate, capital adequacy ratio, leverage ratio, and net stable funding ratio influence the rate of credit generated in Nigeria. The study utilized the descriptive statistics, unit root, generalized linear model, Johansen co-integration test, VEC-Granger causality and vector error correction techniques to analyze the data collected from the Central Bank of Nigeria and World Bank Development Indicators Statistics bulletin of various issues at the 5% significance level. The study showed that all the variables were integrated at first difference; thus, requiring the Johansen co-integration that validates the presence of long-run relationship among the variables. The result showed that bank-based financial architecture significantly influences bank performance of Nigeria. Both the short- and long-runs, all the indicators of financial architecture jointly caused substantial performance in banking intermediation operations. The study concluded that the combination of the domestic and international financial architectural postscripts brings about positive and considerable boost to banking intermediation of Nigeria. Thus, amongst others, the study recommended that increasing the net stable funding ratio and leverage ratio to always remain above the established means of 58.02% and 10.07% respectively, would be a policy in the right direction.

Keywords: Intermediation, Structure, Reforms, Credit, Market

1. Introduction

Finance theory and attendant research appear to be somewhat just waking up to the realities and conceivability dilemma of financial architecture. During apparent confusions, misunderstandings and controversies, the need becomes rife to proffer a clear-cut conceptual clarification of the concept to finance literature. Notable among the commentaries is the school of thought that sees financial architecture as if it is the same thing as the financial system itself. For instance, Parker (2023) perceived financial architecture as “a set of rules, conventions, processes, and institutions that govern financial systems”. Financial architecture is, thus, seen as the system of interconnected financial institutions, markets, and laws. Elaborating and breaking it down further, he submitted that it consists of

three major components namely ‘the financial markets, the financial institutions, and the financial regulators’. The above breakdown points to the fact that financial architecture is narrowly the same thing as the financial system and profoundly one and the same as the financial superstructure. In a narrow sense, this school confuses financial architecture with the gamut of financial institutions and markets it creates.

Financial architecture is a product of its processes, confusing it with such terms as financial hubs or centers of countries. Some financial centers like Dubai, Shanghai, and Geneva are regarded as typical financial architecture. The proponents of this viewpoint refer to such terminologies as *open financial architecture*. By this, they invoke the abilities of financial institutions to offer their customers



with both proprietary and external products and services. As they contended, open financial architecture guaranties that a customer can have all their financial needs satisfied in each financial hub. It is also made that the financial institution would act to satisfaction and best interest of their clients. The financial center or supermarket would also do this by recommending financial products that best suit the needs of the customers. They must not necessarily be proprietary products, nonetheless (Mckee & Kagan, 2018; Eyakephovwan, 2023).

For the purposes of this study, the adoption is made of the perception of financial architecture as representing the processes involved in the designing, creation, controlling, and maintenance of the financial structure and superstructures of a country. The emphasis is placed on the controlling role of the financial architects that informs the regulatory and deregulatory postscripts and reforms over time. With concerted regulations, the financial architectural processes tend to enhance financial health and stability of the institutions and markets. The underlying argument, here, is that if the financial architects perform their nominated architectural activities efficiently and effectively, there is no gainsaying that banks, for instance and the entire financial system would be optimally levered to give their best to the economy of any nation. Financial health, development and stability of the entire financial system would be guaranteed. Growth and development of a nation's economy becomes a *sine qua non*. The argument of the development finance theorist that finance leads and boosts growth would hold true and subsist without doubt (Patrick, 1966).

Financial architecture can either be domestically or internationally motivated. Domestic FA refers to the architectural processes that are created, crafted, and implemented at a given home country. The responsible financial architects at the domestic level include the Central Bank of Nigeria (CBN) and the Securities Exchange Commission (SEC), among other creators and regulators. The CBN champions the processes that are targeted at the

banking institutions, for example. The SEC is directly responsible for the creation, controlling, and maintenance of the capital markets, in another instance. At the international setting, the architectural processes that are created, crafted and implemented by international architects represent international financial architecture. The prime international architect for our purposes in this thesis is the Bank for International Settlement (BIS). The BIS midwives the Basel Accords and the incidental regulatory postscripts. It is also important to underscore that both domestic and international dimensions of the FA and its probable effects of performance are covered in this present work.

Regulations and controls are not affecting good financial performance in the view of monetary authorities; instead, they enhance it. It is believed by both domestic and international authorities that financial health as well as goal-oriented intermediation performance moves in the same direction with monetary regulation that are advanced by the financial architecture. Put succinctly, the performance of intermediation would be improved by both the domestic and international architecture. Such performance indicators as the degree of credit generation (DCG) that would bolster national production and output growth should be positively and significantly influenced by the architectural postscripts. The total intermediation index should be positively and considerably affected by the architectural processes. The banks ought to be in good financial health, soundness and stability and put in their best position to serve the nation more creditably. On this pedestal, this study attempts to investigate the effects of both domestic and international financial architecture on bank performance in their intermediation bid.

For the few studies that are centered on financial architecture, a critical look at these studies would reveal that they did not cover those effects of financial architecture on the relevant indicator of the economy such as the real output growth, financial intermediation index, the rate of credit generated in the private sector,



the quantum of savings mobilized and the inflationary trends. This study is aimed at contributing to closing this gap, especially in respect of the financial architectural - economic growth nexus, drawing evidence from Nigeria. In terms of time scope, only a few studies like Erhijakpor, et al., (2022), and Oke and Ikpesu (2022) covered up to 2020 and 2019, respectively. Which also makes them less current despite the fact that most of them had been published currently. Another gap in those studies conducted in Nigeria is that most of them focus on assessing the influence of regulation on financial performance – only very few studies, such as Erhijakpor, et al., (2022) and Salami, et al., (2021) deviate from this pattern. But with the understanding that banking regulations are geared towards enhancing efficiency and the resilience of banks, it becomes quite appropriate that empirical efforts should also be directed at examining attributes of efficiency and resilience than just profitability or financial performance.

2. Literature Review

2.1 Theoretical Framework

2.1.1 Buffer Theory of Capital Adequacy

The theory emphasizes that whenever the capital of a bank is closer to the regulatory minimum threshold, there would be an incentive on the part of the banks to reduce their level of risk as well as to increase their capital level so that possible penalties or costs associated with breaching capital requirements can be avoided (Calem, & Rob, 1999). Capital buffer is defined by Noreen, Alamdar, and Tariq (2016) as: “the Basel capital to risk-weighted assets minus the regulatory requirement”. The maintenance of an adequate capital stock is hinged on the understanding that a highly capitalized bank is better able to withstand shocks arising from monetary and macroeconomic impulses of which are prevalent in the bank’s operating environment. Most banks prefer excess capital to guard against undercapitalization, especially when there is volatility in their risk assets.

Jokipii and Milne (2011) posited that the risk of banks can be reduced when banks maintain excess of capital over the required threshold. By the implication of this theory, banks’ performance can be improved when there is a capital buffer. This is because the capital buffer enables them to relax credit conditions by offering loans and advances to customers at lower rates of interest, which leads to an increased demand for such credit, and ultimately an increase in profitability. On another hand, the maintenance of a higher capital ratio can also reduce the cost of capital, as equity capital may have a lower cost implication than the cost of certain deposits. Thus, the contribution of the capital buffer can lead to a lower cost of funding for banks as well as reducing bank risk. In either case, the profitability of banks is enhanced.

As documented by the BCBS (2020), capital buffers play two major roles in banking operations. In the first instance, capital buffers enable banks to be able to absorb losses whenever they are faced with a financial crisis, without the risk of their capital falling below the stipulated minimum. Thus, the capital buffer is a gauge against losses. Secondly, the capital buffer helps banks to sustain the credit flow, even at times of downturns, especially to individuals and firms of high credit worth. In this regard, capital buffers enhance financial deepening, in that it ensures the continuous delivery of credit in an economy, even when economic conditions are less favorable.

2.2 Empirical Review

Anwar, et al. (2024) examined the factors that influence bank risk-taking in Indonesia from 2010 to 2022, including monetary policy, macroprudential policy, bank-specific factors, and macroeconomic factors. Initially, three POLS (Pooled Ordinary Least Squares) and fixed effect models are computed. Nevertheless, the Durbin Wu-Hausman test revealed the presence of endogeneity problems in the estimated models. The second stage employed a system GMM estimation method to examine the influence of central bank rates and macroprudential policy on the level of risk taken by banks. The results of the Dynamic-GMM



estimations indicate that both the central bank rate and macroprudential policy have a positive effect on the bank's Z-Score. In addition, the study observed that incorporating central bank rate and macroprudential policy into a model resulted in a favourable effect on bank Z-Score.

Mateev, Sahyouni, and Al-Masaeid (2024) assessed the impact of efficiency and banking market structure on the performance of banks in the Middle East and North Africa region. The study utilised data from 225 banks across 18 countries in the Middle East and North Africa (MENA) region. It revealed a significant correlation between bank performance and the efficiency level and market power of the banks. In summary, the findings indicate that maintaining a higher level of efficiency is associated with enhanced financial stability. However, it also corresponds to an increased willingness of the bank to undertake greater risks. These findings reinforced the idea that banks that operate efficiently are better able to withstand global financial crises. They also highlighted the significance of regulatory reforms that enhance efficiency in helping banks to mitigate the adverse effects of the recent COVID-19 crisis.

In their research, Saklain and Williams (2024) examined how the financial structure of commercial banks from 126 countries worldwide affects their revenue choices, profitability, and risk. They analyzed a large and diverse sample of banks to draw their conclusions. The study revealed that banks operating in countries with a financial structure that is more oriented towards the market tend to participate in a greater proportion of activities that generate income from sources other than interest. Bank profitability was positively correlated with both non-interest income and a financial structure that is more market-based. However, neither of these factors contributed to an increase in risk. However, there was some evidence indicating that they were reducing the risk. Moreover, the study revealed that in countries with less stringent regulatory restrictions, non-interest income had a positive impact on both bank profits and risk-adjusted profits.

Erhijakpor, Enakirerhi, and Eferakeya (2022) conducted an empirical study to determine the level of influence that macro-prudential indicators have on financial stability, specifically in Nigeria. The study employed the autoregressive distributed lag (ARDL) estimation technique to ascertain the causal relationships between the variables specified in the research model. The ARDL estimation technique found that the capital adequacy ratio has a negative impact on financial stability in both the long and short term, although it is not statistically significant in the long term. Conversely, it was discovered that liquidity has a notable and positive impact on financial stability, both in the short term and the long term.

In their study, Ikpesu (2022) examined how capital adequacy and asset quality influenced the performance of Nigerian commercial banks from 2010 to 2019. The application of the System GMM (SGMM) panel estimation technique revealed that both capital adequacy and nonperforming loans have significant positive effects on the return on equity (ROE) of the banks. The researchers determined that the Capital Adequacy Ratio (CAR) has a positive impact on the banks' performance in Nigeria. They, on the other hand, supported the idea of decreasing the number of nonperforming loans in banks in order to improve the quality of their assets.

Salami, Uthman, and Sanni (2021) examined the impact of bank-specific variables on the financial stability of Nigerian banks. A total of 15 DMBs were selected for analysis, covering a period of 5 years from 2012 to 2016. The data, obtained from the published financial statements of the banks, were analysed using the OLS regression technique. The study discovered that the CAR, as measured by both gross revenue-to-income and leverage ratios, has a significant and positive impact on financial stability in Nigeria.

Gidigbi (2018) examines the relationship between the financial structure and economic growth in Nigeria. The study utilises the Cobb-Douglas form of the production function and calculates the regression equation based on



the specified model. The study revealed that the financial structure plays a crucial role in the economic growth of Nigeria. Furthermore, it was determined that Nigeria's financial structure is predominantly based on banks. The study proposes that policies aimed at enhancing the capital market should be developed and executed to ensure its optimal provision of credit in economic growth and development.

Nyasha and Odhiambo (2017) analyse the influence of both bank-based and market-based financial development on the economic growth of Brazil from 1980 to 2012. In order to include all components of financial development in the regression analysis, the study utilises a technique called means-removed average to create indices for both bank-based and market-based financial development. According to the ARDL approach, the empirical findings indicate a favourable correlation between market-based financial development and long-term economic growth in Brazil. However, this relationship is not observed in the short term. The findings also indicate that the development of the banking sector in Brazil does not contribute positively to economic growth. This applies regardless of whether the regression analysis is conducted in the short term or the long term. Hence, the study concludes that the primary driver of long-term economic growth in Brazil is the stock market, rather than the development of the banking sector.

Puatwoe and Piabuo (2017) examined the influence of financial development on economic growth by analysing time series data in Cameroon. The application of the Auto Regressive Distributive Lag (ARDL) estimation technique revealed a positive short-term correlation between monetary mass (M2), government expenditure, and economic growth. Additionally, a negative short-term correlation was found between bank deposits, private investment, and economic growth. Over time, all measures of financial development consistently demonstrate a favourable and substantial influence on economic growth. This paper provides evidence that all indicators of financial

development have a positive and lasting effect on economic growth through bound test.

In their study, Ailemen and Unemhilin (2017) investigated the influence of a market-based financial structure on the economic growth of Nigeria from 1980 to 2014. Econometric techniques are employed to examine the time series characteristics of the data, while the error correction mechanism is utilised to estimate the variables. The results of this study demonstrate that the financial structure based on market mechanisms had a substantial impact on the growth of the Nigerian economy. The combined effects of the variables in the model have a positive impact on economic growth in Nigeria.

In their study, Ezirim, Ezirim, Bassuo, and Eniekezimene (2018) sought to examine the causal impact of geographic factors on the profitability of banks. They analysed average annual data from Nigeria spanning the years 1980 to 2016. The findings suggested a strong and statistically significant relationship between the fluctuations in the overall number of banks operating in Nigeria and the banks' return on assets. The study revealed that the relationship between return on assets and the changes in the number of banks followed a unidirectional causality, with the former influencing the latter, rather than the other way around. The study also discovered that when there was a statistical interaction between changes in the total number of banks (NoBR) and changes in the total number of branches (TBRR), the latter did not show a significant correlation with profitability. However, the NoBR variable did exhibit a significant relationship with profitability. Upon examination of the different types of branch networks in the banking sector, it was discovered that each of the specific categories, namely abroad (ABRR), rural (RURR), and urban (URBR), exhibited notable correlations with the banks' return on assets. There was a one-way causal relationship between return on assets (ROA) and the percentage of bank branches located outside the country, in rural areas, and in urban centres. However, the relationship between the proportion of



branches operated abroad and return on assets (ROA) was such that causality flowed from ROA to the proportion of branches operated abroad. In contrast, for rural branches (RURR) and urban branches (URBR), the causality flowed from RURR and URBR to ROA. The study revealed that the reforms that led to changes in the overall number of banks operating in Nigeria did not, in fact, impact the profitability of the banking institutions.

The study conducted by Arize, Kalu, and Nkwor (2017) examines the correlation between banks and stock markets in the Nigerian financial system, specifically focusing on whether they function as competitors or complements. The study discovered a synergistic rather than adversarial relationship, indicating a simultaneous and interdependent growth in the Nigerian financial system and the provision of financial services.

In their study, Usman and Adeyemi (2017) investigated the correlation and causal relationship between the development of the financial system and the economic growth in Nigeria. The study utilised data from the period of 1970 to 2013, which was acquired from the World Bank database. The time series was assessed for the presence of a unit root using the Augmented Dickey-Fuller and Philips-Perron tests. The Johansen co-integration technique was employed to examine the long-term relationship between the variables, while the Granger causality test was utilised to investigate the causal direction between indicators of financial system development and economic growth. The findings indicated a significant and enduring correlation between advancements in the financial system and the growth of the economy. Furthermore, in Nigeria, there existed a one-way relationship where the development of the financial system directly influenced economic growth, without any reciprocal effect.

Sanogo and Moussa (2017) sought to investigate the correlation between financial development and economic growth in the Ivory Coast during the period from 1961 to 2014. The process entailed performing common

component analysis (CCA) on our time series data to determine the most suitable proxy for financial development. Subsequently, we constructed a vector of control variables for economic growth. Through the implementation of the restricted VAR technique, it was determined that in the Ivory Coast, the progress in financial development is directly linked to the overall economic growth of the nation. This establishes a cause-and-effect relationship between financial development and national economic growth.

3. Methodology

In the course of this study, the finametric causal-comparative research design is adopted. Basically, this procedure of framework looks into the nominated objectives, models implicated relations, after robust and elaborate literature review, collects necessary data, estimates selected models against data generated, analyzes estimated results, compares them with earlier hypothesized general statements, and make informed inferences. Accordingly, in this study, the functional relationships between the bank-based financial architectural (domestic and international) variables as suggested by the Basel regulation and the bank performance in Nigeria are examined. The study population consists of all 26 commercial banks that are operating in Nigeria within the period under purview (i.e., as of May 2024) (Central Bank of Nigeria, 2024). These banks are usually categorized as international, national and regional commercial banks, depending on the scope of their operation. However, this categorization was not followed since we utilized the totals as compiled by CBN. This helps to strengthen the macrofinametric approach adopted herein. Since the Central bank of Nigeria provided aggregated data on various banking indices, the study therefore relies on such aggregated data, and hence does not have the need to select a sample size for the study, nor requires any form of sampling design.

The typology of required data is secondary data, and as such secondarily sourced from the CBN. This is in view of



the fact that all the data for the variables are already reported in various publications and databases of banking and supervisory financial institutions in Nigeria. These were thereafter documented in the Statistical Bulletins of the Central Bank of Nigeria (CBN) and World Bank Development Indicators. The data utilized in this study, as stated earlier is time series nature. The data relates to observations about the international financial architecture variables of capital adequacy ratio (CAR), leverage ratio (LVR), and net stable funding (NSFR) ratio. As seen, they are cast into ratios. The CBN (DFA) variables of reserve requirements represented by the cash reserve ratio (CRR), monetary policy rate (MPR), standing or stated lending rate (SLR), and standing or stated deposit rate (SDR) are also on rates or ratios. The banking performance indicator

is the degree or rate of credit generated (RCG). This makes the processed data to be uniformly on the same basis or econometric meniscus. The study made use of the Generalized least square, unit root, Johansen co-integration, VEC model, and Granger Causality techniques at the 5% significant level.

Both domestic and international financial architecture agree on the *raison d'être* of their advent on the financial landscape – to improve the performance of the relevant institutions that are being regulated. This being the case, and as claimed by the regulators, the overall banking intermediation performance would be a function of the combined effects of the DFA and IFA, *ceteris paribus*. This study would express the implicated relationships as

$$RCG = f(DFA, IFA) \quad 3.1$$

$$RCG = f(CRR, MPR, SLR, SDR, CAR, LVR, NSFR) \quad 3.2$$

Explicitly,

$$RCG_t = \phi_0 + \phi_1 CRR_t + \phi_2 MPR_t + \phi_3 SLR_t + \phi_4 SDR_t + \phi_5 CAR_t + \phi_6 LVR_t + \phi_7 NSFR_t + E_{t3} \quad 3.3$$
$$\phi_1, \phi_3 < 0; \phi_2, \phi_4, \phi_5, \phi_6, \phi_7 > 0$$

Where, RCG = Rate of credit generated,

CRR = Cash reserve ratio,

MPR = Monetary policy rate,

SLR = Stated lending rate,

SDR = Stated deposit rate,

CAR = Capital adequacy ratio,

LVR = Leverage ratio,

NSFR = Net stable funding

With equation 3.2 the relationship between combined financial architecture and banking intermediation performance can be properly analyzed.



4. Results and Discussion

Table 4.1: Results Financial Architecture Model

Dependent Variable: RCG

Method: Generalized Linear Model (Newton-Raphson / Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
CAR	-1.355927	0.239923	-5.651498	0.0000
LEV	1.136021	0.320773	3.541512	0.0004
NSFR	0.144808	0.049253	2.940074	0.0033
MPR	-1.801448	0.526085	-3.424252	0.0006
SLR	0.449572	0.731906	0.614248	0.5391
SDR	-0.171985	0.644575	-0.266820	0.7896
CRR	0.752881	0.204198	3.687023	0.0002
C	53.08984	5.781112	9.183327	0.0000
Mean dependent var	51.13500	S.D. dependent var	7.012919	
Sum squared resid	771.7084	Log likelihood	-144.2596	
Akaike info criterion	5.856140	Schwarz criterion	6.156332	
Hannan-Quinn criter.	5.971227	Deviance	771.7084	
Deviance statistic	17.53883	Restr. Deviance	2508.233	
LR statistic	99.01030	Prob(LR statistic)	0.000000	
Pearson SSR	771.7084	Pearson statistic	17.53883	
Dispersion	17.53883			

Source: E-views Output

The results of its estimation are shown forth in Table 4.1. Starting from the global utility check for the model, the global statistics estimated for model (3.3) appear to have satisfied the requirements of global usefulness and would be judged to have performed well. This is demonstrated by an observed Pearson statistic of 17.54 and LR stat, of 99.01 [0.00000]. The probability of 0.0000 is less than the critical probability of 0.05 at 5% level of significance. This alludes to the rejection of a null hypothesis of “no good fit” of the data relating to the variables. Looking at the ‘effects’ of the individual predictors belongs to the relative useful tests that this study uses the z-statistics to perform. As considered, the CAR posted a beta coefficient of -1.355 and a z-stat. of -5.65 [0.0000]. The probability of 0.0000 is less than the critical probability of 0,05. With this, CAR would be inferred to negatively but significantly related to

the rate of credit generated (RCG) by banks and lent to boost the fortunes of the economy. It is noteworthy, again, that the CAR and the RCG move in opposite directions, implying that as banks increase in their capital adequacy requirement, as specified by Basel, their ability to have more lendable funds reduces instead of increasing. This is somewhat a matter of grave concern, if the priori expectation is an important theoretical point in this case. For the next LEV variable, the results are also posted in Table 4.5. From the Table, the LEV variable posted a beta coefficient 1.136 and a z-stat of 3.54 [0.0004]. The observed prob. of 0.0004 is less than the critical prob. of 0.05, This suggests that LEV considerably relates with RCG in a significant fashion. Being positive as expected, it stresses that both RCG and LEV variables move in the same direction. This also implies that higher leveraged positions increase the banks’ abilities to extend credit facilities to the private sector of the economy. This is only proper since, out of the increased deposit liabilities, occasioned by higher leverage, the ability and propensity to lend increases.

The net stable funding ratio (NSFR), another IFA variable, posted a beta coeff. of 0.1448 and a z-stat. of 2.94 [0.0033]. Comparing the probabilities ($0.0033 < 0.05$), thus, NSFR is significant given that its probability is less than the critical probability. It is also positive, as *a priori* expected, showing that, as the net stable funding of banks (NSFR) improve, their ability to generate and extend credit facilities increases, simultaneously. From the angle of the domestic financial architecture (DFA), the MPR is observed to depict a beta coefficient of -1.80 and a z-stat. of -3.42 [0.0006]. The probability of 0.0006 is less than the critical probability of 0.05 and suggests that the MPR negatively but significantly relates with the RCG. This speaks of something in the manner that, in the midst of interactions between international, domestic FAs and RCG, the behavior of the MPR turns negative in its relationship with the RCG. Thus, on the aggregate, the ability of banks to channel credits to the producing private



sector is reduced when the MPR is increased dramatically. This can be explained in the point where the MPR is overly high, this will limit the banks from successfully borrowing from the Central Bank (CBN). This limitation equally transfers to the volume available to lend to credit customers. The DFA variable, SLR, is the standing rate at which banks borrow facilities, at short-time notice (such as over-night), from the CBN, to cover temporary liquidity shortages. The temporary shortages may arise from the need to satisfy emergencies on the part of their credit customers. From Table 4.5, the SLR variable is observed to have a beta coeff. of 0.4495 and a z-stat of 0.6142 [0.539]. This prob. of 0.539, being greater than the critical prob. of 0.05, suggests that SLR does not relate with RCG in a significant manner. More remarkably, however, it turned positive, showing that both variables move in the same direction, in the midst of the interactions with the IFA variables. This is contrary to expectation, but however can be explained in the condition that higher charges of SLR do not discourage banks from borrowing from the CBN to meet the financing needs of highly profitable but emergency credit proposals from their customers. The banks would borrow and borrow if the conditions are right for them to make a good profit, so increased costs of sourcing the funds are no deterrents.

The SDR predictor, which stands as the rate at which banks deposit funds with the CBN or 'lends' to reduce excess cash and to take advantage of quick 'profits' (interest). Thus, instead of lying idle, the excess cash earns something, even at short notice and for a very short time, from the Apex Bank or other banks. The SDR posted a beta

coefficient of -0.1719 and a z-stat. of -0.2668 [0.7896]. It is not significant since it depicts a probability greater than the critical probability ($0.609 > 0.05$). It is also positive, as *a priori* expected. The reserve requirement variable, CRR, exhibited a beta coefficient of 0.75288 a z-stat of 3.687 [0.0002]. This is significant at the 5% level seeing that the observed probability of 0.0002 is less than the critical probability of 0.05. Remarkably, the positive implication is not as expected, since the cash reserve ratio (CRR) is a normally expressed limiting factor against the ability of banks to lend out money. This again happened in the midst of interactions with the international architectural variables. It is important, at this juncture, to consider the result of the constant term. This, as earlier explained, captures the magnitude 'effect' and direction of other factors that are not recognized overtly as major arguments in the present model. Thus, the other unmodelled factors posted a beta coeff. of 53.09 and a z-stat. of 9.183 [0.0000]. They are significant, since the observed probability of 0.0000 is less than 0.05. Thus, these 'others' that are not presently modelled also relate to RCG very considerably and significantly. They are also positive in their relations, showing that they move in the same direction, mostly, with RCG. Apart from the presently selected DFAs and IFAs, there might be other FA factors that are not included to bring out the more complete picture. Perhaps, the picture can be better if the FA variables that did not do well in this estimation are substituted with the 'significant others'. The search for those 'significant others' is beyond the objectives proposed in this study.



Table 4.2: Group Unit Root Test Results for RCG Model

Group unit root test: Summary

Series: RCG, CAR, LEV, NSFRR, MPR, SLR, SDR, CRR

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.24802	0.0006	8	402
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.04181	0.0012	8	402
ADF - Fisher Chi-square	36.1180	0.0028	8	402
PP - Fisher Chi-square	35.4178	0.0035	8	408

Source: Eviews Output

As can be seen in Table 4.2, which depicts the group-unit-root tests for the combined RCG or bank performance model, the observed values of all the test-statistics are commendable. First, the Levin-Lin-&-Chu-t-stat posted a value of -3.248 [0.0006] and a p-value of $0.0006 < 0.05$. Similarly, the Im-Pesaran-and-Shin-W-stat recorded a value of -3.04181 [0.0012] and a p-value of 0.05. Equally, the ADF-Fisher-Chi-sq.-stat documented a value of 36.118 [0.0028] and a p-value of $0.0028 < 0.05$. Finally, the result of the PP-Fisher-Chi-Sq.-stat crowns it all with an observed value of 35.418 [0.0035] and a p-value of $0.0035 < 0.05$. Thus, the null hypothesis of the variables having unit root is rejected.

At most 4	0.298103	37.50131	47.85613	0.3243
At most 5	0.241677	19.80285	29.79707	0.4363
At most 6	0.067227	5.970587	15.49471	0.6990
At most 7	0.048598	2.490932	3.841466	0.1145

Panel B: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	No. of CE(s)	Eigenvalue	Statistic	Max-Eigen	0.05	Critical Value	Prob.**
None *		0.848309	94.29553	52.36261		52.36261	0.0000
At most 1		0.578341	43.17786	46.23142		46.23142	0.1026
At most 2		0.471849	31.91865	40.07757		40.07757	0.3075
At most 3		0.326435	19.75856	33.87687		33.87687	0.7731
At most 4		0.298103	17.69846	27.58434		27.58434	0.5204
At most 5		0.241677	13.83226	21.13162		21.13162	0.3790
At most 6		0.067227	3.479655	14.26460		14.26460	0.9098
At most 7		0.048598	2.490932	3.841466		3.841466	0.1145

Source: Eviews Output

Table 4.3: Cointegration Test Results of the RCG Model

Panel A: Unrestricted Cointegration Rank Test (Trace)

Trend assumption: Linear deterministic trend

Series: RCG CAR LEV NSFRR MPR SLR SDR CRR

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.848309	226.6519	159.5297	0.0000
At most 1 *	0.578341	132.3564	125.6154	0.0182
At most 2	0.471849	89.17852	95.75366	0.1301
At most 3	0.326435	57.25987	69.81889	0.3290

The results of the trace and the Max-eigen show the presence of two and one co-integrating equations respectively. This shows that there is the presence of long-run form among the model



Table 4.4 ECM Result

Short-run Variables	Short-run Stats	Long—run Variables	Long-run Stas
D(MPR(-1))	-1.277750 (1.71590) [-0.74465]	MPR(-1)	9.987872 (1.14976) [8.68692]
D(SLR(-1))	1.926552 (2.13565) [0.90209]	SLR (-1)	-5.908661 (1.12538) [-5.25039]
D(SDR(-1))	-0.088627 (0.89449) [-0.09908]	SDR(-1)	-1.441888 (0.44150) [-3.26587]
D(CRR(-1))	-0.530347 (0.32923) [-1.61086]	CRR(-1)	-1.940672 (0.15082) [-12.8677]
D(CAR(-1))	-0.081491 (0.60811) [-0.13401]	CAR(-1)	0.530196 (0.19548) [2.71231]
D(LEV(-1))	0.314625 (0.62426) [0.50400]	LER(-1)	-1.041375 (0.25348) [-4.10833]
D(NSFRR(-1))	-0.028539 (0.05161) [-0.55293]	NSFRR(-1)	-0.027773 (0.04429) [-0.62711]
VECM CointEq1	-0.257969 (0.12166) [-2.12047]		
C	-0.421043	C	-37.89333

(1.22984)

[-

0.34236]

Source: E-view

The VECM parameter posted a beta coefficient of -0.257969 and a t-stat value of -2.12047, which is significant at 5% level (-2.12047 > 1.96 critical t at 5%). These values satisfy the requirements of VECM that the coefficient must be negative and significant. When these conditions are satisfied in any relations, then, at least three situations would prevail. First, for the RCG model, the already-found cointegration and long-run relations as in Table 4.20 is established and confirmed, Second, there is tenability and certainty of the correction and adjustment of short-run errors in the long-run.

For the RCG model, the rate of this correction and adjustment is 25.8% every quarter. This is indeed a very fast rate or speed of correction. Thirdly, there exist a joint-long-run causality, which flows from the independent (MPR, SLR, SDR, CCR, CAR, LEV, and NSFRR) variables to the dependent (RCG) variable. This implies that the predictors (put together) do actually cause or substantially influence bank performance in Nigeria, jointly in the long-run. This is an important result.

Table 4.5: VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(RCG)

Excluded	Chi-sq	Df	Prob.
D(CAR)	22.75817	3	0.0000
D(LEV)	14.49538	3	0.0023
D(NSFRR)	11.42945	3	0.0096
D(MPR)	6.543657	3	0.0880
D(SLR)	5.150835	3	0.1611
D(SDR)	11.61257	3	0.0088
D(CRR)	2.982682	3	0.3943
All	53.69824	21	0.0001

Source: E-views Output



The results are set forth on Table 4.5. In the Table, it is seen that, first, on a joint note, there is evidence for joint-short-run causality also flowing from the predictor (MPR, SLR, SDR, CCR, CAR, LEV, and NSFR) variables to the bank performance (RCG) variable. The reported chi-sq. of 53.698 [0.0001] is significant at 10%.

At the individual levels, considerable causality is seen flowing from CAR to RCG with the posting of the Chi-sq. stat of 22.758 [0.0000]. A close look reveals that the observed prob is less than the default probability of 0.10 at 10% significance level. This being the case, a null hypothesis that CAR does not cause RCG in the short-run would be rejected. Similarly, LEV has a Chi-sq. of 14.495 [0.0023] and with the observed prob. ($0.0023 < 0.10$), it is easy to see that it causes RCG quite significantly, as well. The NSFR variable recorded a Chi-sq. of 11.43 [0.0096]. This prob, being less than the default would amount to the rejection of the notion that it does not significantly cause RCG. Emphatically, NSFR causes RCG, in the short-run. By these inferences, all the international financial architecture (IFA) variables cause RCG in the short-run.

The MPR variable posting a Chi-sq. of 6.54 [0.0880] is equally causal in its relation with RCG. It is easy to see that the posted prob of $0.088 < 0.10$ (default prob), which makes for the rejection of a null hypothesis of no significant causality. MPR causes RCG. The study cannot say the same thing for the SLR variable, which posts a Chi-Sq. values of 5.15 [0.1611]. The study finds reason to accept the null hypothesis of no significant causality since the observed $0.1611 > 0.10$. SLR on its own does not cause RCG, in the short-run. For the SDR variable, the case appears different with a computed Chi-sq. of 11.612 [0.0080]. With this result, the study fails to accept the null hypothesis that SDR does not cause RCG in the short-run. SDR causes RCG. The last of the DFAs is the CRR variable, which has a Chi-sq. value of 2.9826 [0.3943].

5. Conclusion and Recommendations

The robust analyses done in this study revealed very interesting points. Domestic financial architecture affects

and charts causative paths for banking intermediation performance of Nigeria. Secondly, international financial architecture causally influences Nigerian banks in their intermediation performance. Put together, the combination of the domestic and international financial architectural postscripts actually bring about positive and considerable boost to banking intermediation of Nigeria.

Flowing from the results of the analysis done, herein, the study recommends as follows:

1. First, it was uncovered that the capital adequacy ratio posted negatively directed effects on both banking intermediation performance (BIP) and economy-level performance (ELP). Whatever that makes such an important determinant to produce negative relations must be associated with inherent over-provisioning and over-emphasis on capital being majorly a buffer stock than an accessible flow quantity that would beef up the volume of lendable funds. In respect of the buffer stock analogy, over-emphasis on risk management and less regard for funding availability would help free capital funds to assist in financial accommodation. Frustrating the ability to augment lendable funds with capital funds would be a ban on their lending operations. Some refinements along the lines of reducing the tightness of the policy prescription on capital adequacy, especially in terms of the so-called buffer phenomenon, becomes an important policy emphasis. Capital funds can be made freer to serve, and when once is done, it would behave as required. If this is not tenable then a lid should be placed on it not to exceed its observed mean of 13.97% in view of the highly negative effects, it elicits.
2. Secondly, the leverage (LEV) requirements displayed positive and strong causation of performances. This indicates the need to continue with the prescriptions as stated, or to increase the prescribed ratio, in order to boost performance. It



can be increased with caution, noting that it interacts with other variables. The only thing not to contemplate is the reduction of the leverage ratio. Instead, this study proposes that it should be made to remain above the mean % of 10.07%.

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