

**STRATEGIC FINANCIAL MANAGEMENT AND CORPORATE PERFORMANCE:
A BANKING SYSTEM ANALYSIS OF NIGERIA**

BY

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Abstract

The increased need for deposit security and profitable performance of banks across the globe is commonly perceived as one of the leading policy and theoretical discussions. Many countries have experienced intensive financial sector reforms to prevent crisis and failures. Banks play pivotal role in overall health and growth of the macro economy. This empirical research joins the current discussions through the channel of strategic financial management by examining it influences on corporate performances which cuts across profit dimension and financial soundness of the banks which has been reinforced by development of macro prudential guidelines.

We isolate sample set of 22 Nigerian banks and proceed to collect data from publicly reported financial statements. The unbalanced panel data is estimated using standard Generalized Method of Moments and Fixed effects estimators on multiple model specifications covering profitability and financial stability measures.

Specifically, principal performance indicators are net interest margin, capital adequacy ratio and nonperformance loans whose lagged values represent internal instrument. Our key findings show that risk-weighted capital adequacy ratio and liquidity ratio all exceeded regulatory statutory requirement. Net interest margin experiences depletion in an environment of rising banking industry liquidity rate. The financing policy decision on bank capital leads to a decline in the quantum of net interest margin especially when debts appeared to be rising while simultaneously equating to share capital. Financing also reduces the size of nonperforming loans in the banking system.

There is a considerable degree of influence of business cycle on various performance variables through various measures of financial management decisions. Several of these including liquidity and investing decisions diminish net interest margin. Financing and liquidity management of the banks improve capital adequacy ratio. Risk associated with increase in nonperforming loans substantially grows with fluctuations in liquidity but declines with increased financing and investing strategies. Statistical estimates further confirm model over identification of parameters in the endogenous relationships.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial system is an extremely controlled sector. Although the banks are most regulated and highly supervised through government representative institutions (Papadimitriou, Gogas and Agrapetidou, 2022; CBN, 2024), it presents investment opportunities alongside challenges. Everywhere around the world robust banking system is ideal for supplying required liquidity to manufacturing sector. International economies run on extensive usage of financial institutions credits. Beyond financial resources supply, financial system provides vehicles for managing risks. The entire component of the Nigerian banking industry sustains operation through its efficient network of payment system. Groundbreaking reform in 2004 introduce professionalism in the way banking operations are conducted in the country (Soludo, 2004; Madichie, 2007; Ojong et al. 2014). Competition which had vanished for decades returned as an essential business practice for all thriving banks in the environment of full market forces.

Reforms and reconstruction of the industry continue to change the dynamics of banking business (Sanusi, 2010). For instance, rather than policy-based mergers and acquisitions (M&As), market and industry competition are current drivers of consolidation exercises (Access Bank, 2021). M&As processes and structural changes are expected to produce opportunities for newly consolidated firms to cut costs when formalized. Consequently, few big banks who emerged in post- recapitalization dominate the system. While the market is yet to lose its oligopolistic landscape, setting clear strategic policy could help second tier banks proceed to the top.

The elite bank could further expand investment portfolio into new economies without risk of crisis. Evidently, industry leadership is heavily contested by banks in the first-tier category (United Bank for Africa, 2020; FBN, 2020; GTCO, 2022; Access Bank, 2023; Zenith Bank, 2023). First bank controls the largest banking assets whereas Zenith bank and Guaranty holding company are likely most profitable.

Executive managers have to confront changing and challenging business environment (Ecobank, 2022, p.19; Kennerley and Neely, 2003). On the domestic front, Nigeria economy faces persistent challenges stemming from a high-interest environment, protracted FX illiquidity, and mounting inflationary pressures (GTCO, 2023:p.53). Economy's downturn can

set financial firms on route to increase moments of crisis and failures. Swamy (2011); Ruza, de la Cuesta-González and Paredes-Gazquez, (2019) financial system resilience is an increasingly important objective for government and the institutions. The Central Bank of Nigeria has highlighted the need for new capital injection. The case for recapitalization is premised on a necessity to strengthen bank resilience that mitigates systemic risks with strong implication for wider economy. PwC (2024) indicates that strategic pathway in complying with the new capital adequacy policy requires raising funds from equity and debt, restructure, exit the industry or divest to be fully recapitalized. Crucial decisions from sound judgment about the industry is important in order to design actions that affects long term organizational performance. In the current state financial system and the banks in focus are more vulnerable to financial crisis. Even though most Nigerian banks exceeded 10 per cent minimum capital ratio requirement, currency depreciation weakens capacity of domestic banks to absorb shocks. Exchange rate floats around N1,350/USD. For financial system stability, current reform policy raised minimum statutory capital to a range of N50 to N500 billion according to license category of commercial banks (KPMG, 2024a).

Economic shocks are detrimental to banking business by deteriorating value of minimum capital requirement. Proactive steps to insulate and absorb shocks while still maintaining a sustainable supply of credit to the real economy is a top executive and regulatory issue. One strategic step at the disposal of Central Banks and top management is to build resilience through creation of Counter Cyclical Capital Buffers (CCYB) to be released in times of financial and economic distress (De Nora, O'Brien and O'Brien, 2020). In the reverse, adverse shocks emanating from the financial system can transmit risky feedbacks into the vast economy. Banks and rest of other financial institutions have to undergo significant stress testing as a regular condition (Federal Reserve, 2023).

Despite the economic state of a country, investors are interested in the immediate and long-term maximization of value for firms limited by shares. Other stakeholders could hold different view. Strategic financial management could generate strategic progress in creating and delivering value to shareholders. Sizeable group of Nigerian banks and the public are not only interested in bank's earnings prospects but their viability assessable based on macro prudential principles. Corporate strategy is advancing whereas mode of financing operations is a choice decided by top management. Literature provides popular finance theories to guide management in taking strategic decisions to optimize the firm's position. All banks are expected to apply significant

caution in general operations. Public doubt about the health of any financial firm increases reputational risks. Non-residents in export-import agreements with clients of financial institutions could suffer counterparty risk which spills into the vast economy as manufacturing inputs become scarce. Financial firms discount bills for clients in a trust relationship.

The present study explicitly undertakes empirical investigations of popular strategic financial management policy decisions in an effort to sustaining high corporate value in a tensely competitive oligopolistic market, and to ensure invested and sustainable profit volumes.

1.2 Statement of the Problem

Achieving the status of industry leadership with sound international profile are prominent visions of many financial institutions in Nigeria. Effort by formerly classified second tier banking firms, for instance, have yielded positive impact. Evidence is seen in several branch extensions to the West African markets and creation of different subsidiary in the UK and in other foreign markets (FCMB, 2020:p.18). This is a fundamental strategy in adding to corporate earnings through wider customer reach. Maximizing profits have been strategic objective of some companies especially those at the growth stage. However, theories and practical evidence highlight differences in corporate objective of firms with mixed financing structure (Jensen and Meckling, 1979) and separation of ownership from control (Institute of Chartered Accountants of Nigeria, 2019: p. 22). Our review of several literature indicates that variety of studies produce controversial conclusions on endpoint advantage of strategic financial decisions of high-ranking executives.

We enter this debate in view of the contemporary Nigerian banking system where unorthodox bank management practices have been sufficiently eliminated in the last decade. Board members are often concerned about earnings ability of the company. This shapes corporate governance approach in financial firms. Huge earnings stream obtained by consistent re-investing of profits organically increases the size of the firm at the expense of long-term share value. However, it is relatively rare to observe simultaneous convergence of shareholders and senior executives' interest in the firm. We do know that as regards to a sensitive industry as broad as the financial sector, CAMELS framework represents universally accepted performance objective (IMF, 2000; BIS, 2005; Aspal and Nazneen, 2014). We adopt performance proxies that are consistent with CAMELS compositions. Specifically, safety and solvency are soundness performance metrics for banks (Altermatt, van Buggenum and Voellmy, 2022). In

the overall, the tendency for single bank liquidation and systemic runs are hindered.

Moreover, practitioners and theorists are further at a lost on what comprehensive objective of the firm is ideal and the components of strategic initiatives that are reliably supportive of shareholders' interest. Van Horne and Wachowicz (2000) support wealth maximization proposition. Growing corporate sector profits is an aspect of sound performance among the Nordic banks (Nordic banks, 2006). There is practical challenge in selecting plausible measurement of growth in shareholders' wealth. Often practitioners' financial targets of profit maximization and growth in earnings per share have been adopted (Institute of Chartered Accountant Nigeria, 2019: p. 12). Static trade-off theory of capital structure shows that optimal mix of equity and debt increases the value of the firm (Ezirim, Ezirim and Momodu, 2017). Seminal studies of Miller and Modigliani (MM hereafter) proves that except on tax shield advantage of debts any combination of equity and debt has no effect in improving market value of firms.

Therefore, it is time to produce new evidence since home-grown Nigerian banks have returned to the stock market for further recapitalization (Central Bank of Nigeria, 2024; Deloitte, 2025). We conspicuously depart from existing literature on corporate finance and firms' most essential objective but rather consider going in the direction of independent assessment of fundamental strategic financial policy decisions vis-à-vis profit parameter of the bank as well as its macro prudential soundness according to Basel capital prescriptions. Previous studies skipped this aspect of investigation (Amihud and Mendelson, 2008; Arnold, Borio, Ellis and Moshirian, 2012; Handriani and Robiyanto, 2018; Andersen et al 2019). To this end, we employ net interest margin as appropriate earnings capacity metric as well as macro prudential policy factors that could propagate disruptive implications that impede banking system stability using dynamic approach. We feel that this empirical aspect is largely neglected which calls for our attention but precisely focusing on the Nigerian banking system.

1.3 Research Objectives

It is well known that given stringent regulatory requirements and supervisory actions all banks are bound by rules governing financial sector operation to take reasonable investment risks without running into liquidity troubles. Our major concern is to produce systematic evidence linking strategic financial management decisions as an innovative corporate approach available to top executives in achieving greater business performance. This is important in the management of financial institutions operating in the Nigerian financial market under the control by few powerful banking entities. Strategic management choices direct high-ranking managerial policymakers in their plans to lead the industry. Our aim is to investigate whether strategic decisions could have contributed immensely in the emergence of few banks into corporate financial institutions with international profile. Hence, we set out to make appropriate comparison. We use a unique firm-level database peculiar to banks with Nigeria license to consider the following specific objectives:

- i. Provide economic explanations showing causal influence of strategic financing structure policy decision and net interest margins of Nigerian banks.
- ii. Explore the relationship between investing decision of banks vis-à-vis their corporate net interest margins.
- iii. Present a linkage between management apportionment decision and net interest margin of banks in the industry.
- iv. Contribute to empirical discussions on the degree of influence of liquidity management among some banks and net interest margin from their investments.
- v. Analyze in domestic Nigeria context the causal response of net interest margins to changes in risk management strategy in the banks.

1.4 Research Questions

Our study explores financial management as it relates to issues of corporate performance which is one of the most popular concerns among financial institutions. At the end current study provides empirical answers to the following research questions:

- i. Why do some bank executives financing structure decisions essentially impact on net interest margin of banks?
- ii. What possible extent does strategic investing decisions introduce changes in net interest margins of banks?
- iii. How does apportionment of business proceeds as a policy appear to reflect in the

magnitude of banking system net interest margin?

- iv. To what extent does liquidity management influences net interest margin of banks?
- v. To what degree does risk management impacts on net interest margin of banks?

1.5 Significance of the Study

Research studies are essential in presenting new knowledge discoveries to enrich theoretical understanding of observable phenomena. The outcome of the current research does not fall short of such prominent expectation. Strategic financial management is an improvement on how organizations are hitherto regulated and controlled while standing on usual financial theories prevalent in corporate finance. We adapt those theories in analysis of a system with few powerful rival firms aggressively prospecting to control the market. Our conclusions and suggestions for policy could serve practical advantage to managers and shareholders.

Furthermore, our study serves policy advantage to policymakers working as local players in the sector. With pressure to comply with new minimum capital or downgrade before the end of 2025, our findings direct discussions on theoretical implications of strategic capital choice that affects value of the firm. Through statistical interpretation dictated by a priori expectation our study has a possibility of producing a counterfactual on existing banking business practice of engaging in long term concentrated credit facility. Concentrated lending by key banks to oil & gas energy sector presently taking bulk of bank credits can prove to be a costly policy mistake against banking stability. Turbulence in the world economy could diminish quality of performing loans and perhaps technically causing them to go bad. The impact is expected to be more damaging to Nigeria whose economy has consistently weakened by macroeconomic disturbances. Through several literature covering banks and financial system soundness we could stumble at different solutions for different scenarios that would likely be of immense benefits in fixing potential problems in the industry.

While the regulators have extensive directives detailing banks to consistently raise credits portfolio, our analysis could produce different view from the outputs. This is because excessive credit growth can induce pro cyclical in the economy. We show that bank executives and government representatives can come to definitive agreement to properly manage the economy. The aim is to assist in sharpening strategic guiding objective to create and deliver sustainable value to shareholders.

1.6 Scope/Coverage/Delimitation

Our empirical research is domiciled in the understanding and usefulness of strategic financial management which represents an innovative approach and perhaps new and improved theoretical policy approach in directing corporations' profitable operation in the business environment. It is a bigger and more advanced financial management decisions. Thus, the scope of our study is in the field of corporate finance where technical decisions carried in strategic financial management have profound effect. Corporate finance is an aspect of finance that involves decision making in private and public liability companies. Financial institutions are component parts of the private and public liability companies. This is where our policy suggestions are vastly applicable.

On the issue of coverage, we know the banks are the focus of current empirical research. We know there are substantial number of banks in Nigeria where the number of microfinance institutions run into several hundred registered institutions (721 MFIs). However, we consider spreading investigations around financial institutions regarded as banking firms. It cuts across commercial banks segment of the industry with 27 deposit money banks. We integrate this sum with 32 primary mortgage institutions (PMIs) and 6 development finance institutions representing all the PMIs and DFIs covering these sub units of the industry. Hence, the entire banking industry is reasonably covered. Furthermore, considering the time boundary of the study, we peg baseline analysis beginning with 2013 as year of origin to be extended to at least year 2023.

The research boundary does not extend beyond the financial sector of the Nigerian financial system. We explicitly exclude finance companies because of their lack of engagement in conventional deposit taking and redistribution. Another critical limitation if included in our battery of analyses is the obvious absence of historically available information at the public domain, hence, their rejection from sample candidates.

1.7 Definition of Terms

Wealth maximization: Exciting increase in the market worth of investments owned by shareholders of a firm which represents the market value of the firm.

Strategic Financial Management: Large scale financial management with longer gestation period.

Liquidity decision: Management of current assets of a company with the aim of having handy resources to clear obligations. Liquidity measures a company's ability to meet its short-term obligations.

Financing decision: Manager's choice of selecting cost effective funding sources and determination of its structure of capital for assets purchases.

Investment Decision: An organized plan to commit limited capital to specific profitable projects that generate almost magnitude of expected returns in the midst of inherent risks.

Allocation/Dividend: Implies distribution of business proceeds to different funding sources.

CHAPTER TWO

LITERATURE REVIEWS

This chapter reviews modest details around the concept of strategic financial management. Likewise, this extends to understanding of corporate values of corporates which proxies the performance of firms in general and industrial setting and in the financial industry to be specific. This part further builds on theoretical foundations around core finance managers' fundamental decisions. We trace theoretical linkages between strategic financial management policy decisions and corporate value. This allows managers gain comprehensive knowledge on the impact of their strategic actions on the current and perhaps future market worth of the firms. Review of streams of related empirical literature on strategic financial management vis-à-vis corporate performance that are available till date.

2.1 Conceptual Clarification of Strategic Financial Management

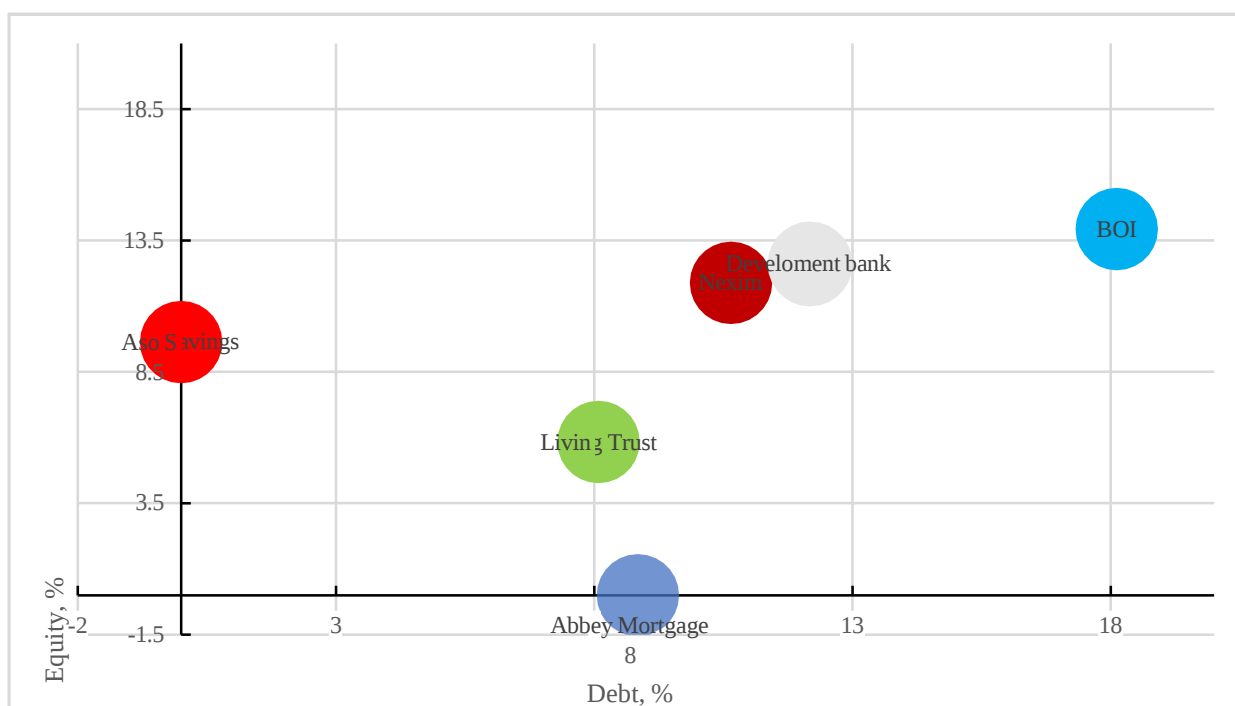
Strategic financial management is an emerging aspect of financial management for complete control of financial affairs of an organization. It is speedily emerging as a mantra in company board. In fact, with the increasing emergence of this aspect of organizational practice, strategic financial management is an amalgam of principles of strategic management in combinations with strategic elements from finance. The outcome is strategic business finance (SBF). Precise strategic understanding of business conditions empowers the manager to play proactive role in directing the affairs of the entity. This is in view of the future. Mistaken action can cause liquidation of a profitable firm. It empowers executives in taking excellent initiatives to ensure the corporation achieves set corporate objectives in the industry. Application of solution-oriented approaches to business problems keep firms from encountering going concern problem. Beyond conventional thinking top management isolates critical success factors that add value to the company. Deposit money banks key success criteria is increase in customer investments as well as safety of valuables in the custody.

Standard literature provides prominent discussions on various theoretical information surrounding the concept. For a certain, strategic financial management is concerned with financial matters. Organizational resources are usually below worth of profitable investment values. Augmenting available resource or foregoing an impressive investment for an alternative is usually influenced by financial constraints. On the other hand, there is likely policy resolve to venture into sourcing optimum funding needs from avenues with viable cost.

This forms part of strategic approach to grow investors' value expectation. Ward and Grundy (1996) argue from the perspective of strategic business finance. The authors discern four main areas within strategic business finance: (1) corporate financial strategy (2) strategic management accounting (3) strategic value management (4) strategic financial accounting. Standard texts conceptual clarification explains strategic financial management on the basis of its scopes (Sofat and Hiro, 2015:29. p). The scope incorporates strategic liquidity management in firm's balance sheet besides three conventional decisional basics.

In this study we conceptualize strategic financial management anchored on policy fundamentals. Strategic investment management, strategic financial management, strategic liquidity management, apportionment of contributed capital resources from various investors to the firm and risk management.

Figure 2.1: Conventional Capital Components in Development Banks



2.1(A) Source: Author's plot using natural logarithm of equity and debt data from company balance sheet

Capital decision among corporations is usually sourced from owners of equity augmented by borrowing. Banks can borrow from the Central Bank of Nigeria or through the capital market by floating debts instrument. Option of private debt placements are well known. Recent strategic pathway to recapitalization permits banks under holding company structure raise debt capital to achieve new capital minimum from the holding company arrangement. Figure 2.1(a) indicates comparative size of development bank capital in Nigeria. It is evident that debt and equity have minimum differences in size. All banks seem to exhibit common equity-to-debt threshold. Regulators in Nigeria provide a definition of capital to include only paid-up capital and share premium. The definition explicitly excludes banking industry's available substantial retained earnings as well as other forms of capital such as risk reserves to absorb losses.

Table 2.1(B): Minimum Capital Requirement

Banks	License category	<u>Minimum capital (₦'bn)</u>	
		Old	New
Commercial	International	50	500
	National	25	200
	Region	10	50
Merchant	National	15	50
Non-interest	National	10	20
	Regional	5	10

Source: KPMG (2024b)

Table 2.1 provides succinct classification of banks according to the immediate minimum capital requirements. International banks provide the largest capital base to cover for shocks from domestic and international business front. Poorly capitalized banks with concentrated business history can be fragile on joining the class of banks recognized to form part of Global Systemically Important Banks (G-SIB). On the table minimum capital can reclassify banks. Merchant and national commercial banks are required to comply with capital provision of ₦50 billion.

2.11 Corporate Performance under strategic Financial Management

Top performing companies in the banking industry could be recognized following different specific or industry metrics. Industry criteria are important for comparison in estimating single firm's market share. Generally, performance and value of firms are inseparable. Strong performance is a reflection of this fact. Strategic determination of financial worth of a firm follows computation of its historical earnings, assets value and market value are indicative of performance

status of corporations (ICSI, 2014: p.233-237). The bottom line is the final objective of value creation which is the comprehensive interest of the shareholders. Various financial ratios present easy hints in assessing a company and its performance information. Liquidity is an essential factor explaining the capacity of banks to cover up unexpected obligations to customers who operate demand deposit accounts. Nevertheless, management has eyes on profit making capacity of company assets. Unprofitable banks in Nigeria are subject to regulator's takeover of management. Dissolved board of the bank is followed by quick conversion to bridge bank. The idea is to make losing making financial firm profitable in the long run prior to complete sell off to new acquirer. Thus, gross earnings from interest bearing facilities and other legitimate businesses of organizations matter a lot to capital owners.

Strategic value creation enhances the image of the company. This is point of attraction for future investors while at the same time it commits current shareholding public to jealously maintain shareholding. By this the market status of a commercial bank is largely enhanced. High performing companies are known for selling unit shares at relatively expensive market price due to investors' sentiment about the future state of the company. Higher share price in capital market creates the desired value of investment in the long run.

Corporate value may have initiated the debate on optimal capital structure contradiction between the static traditional theorists and Miller and Modigliani irrelevance hypothesis propositions. Simply put, corporate value represents economic worth of a company if there is an offer for purchase. The cost heads are the financial value of the assets and liabilities of the organization. On the other hand, Ward and Grundy (1996); Andersen and Roggi (2012) defines corporate value as present value of future cash generation adjusted to their equivalent net present values. Comprehensive value of firms, especially financial corporations incorporate financial worth of component firms constituting the Group. Value can either be derived from effective risk management that minimizes bankruptcy costs or via the channel of growth in future cash flows from positive net present value projects.

In less unexpected circumstances corporate value is not identical to shareholder's value even though theories lay considerable emphasis on shareholder value. Regular share price appreciation in the long term represents value from the perspective of shareholding investor. Taking shareholder value in focus is more likely to defend shareholders' investment from probable agency conflicts of interests. Shareholder value measures financial worth placed on a firm by the stock market based on asymmetric information operating in an environment of imperfect competitive market economy.

2.1.2 Strategic System of Management Among Banking Firms in Nigeria Market

Strategically management of banking institutions does not completely depend on the unique objective plans and objective as well as technical professionalism of body expert staff. Rather there are critical influencing factors that impact strategic financial management of banks. Ideally these have been incorporated as part of the mainstream inputs for the longevity and profitable operation of the firms. Sustainability committee are formed integrated as part of governance of firms. This safeguards the interest of internal stakeholders without sidelining the desires of parties external to firm who desired its eternal existence. This is weaved into Corporate Social Responsibility (CSR) of firms. Notable among such generally available strategic management form is the popular Environmental, Social & Governance (ESG). ESG strategy is often intricately aligned with the relevant United Nations Sustainable Development Goals. This means banks have taken option of developing and operating well-structured initiatives to achieve meaningful outcomes such as promoting decent work, fostering economic growth, reducing inequalities, and enhancing overall well-being (United Bank for Africa, 2023).

In a technical sense, corporations willingly undertake and accommodate both specific institution competitive measures balanced with social and environmental recognition in formulating progressive plans for business development and survival. For instance, Ecobank deploys Social and Environmental Management System (SEMS) and group-wide policy guidelines that govern project financing and other credits. This is in line with the policy of clean and green environment. As a matter of operational strategy, the Pan African bank- Ecobank, through its Environmental and Social (E&S) assessments are carried out on lending proposals to ensure policy compliance (Ecobank, 2020).

Union bank Nigeria have amplified numerous initiatives in this regard. It has covered material themes as part of its corporate strategy across such socially important areas such as: Poverty and Hunger; Life on Land; Good Health & Well-Being; Education; Sustainable Cities; Gender Equality; Clean Water and Sanitation; Economic Growth; and Reduced Inequalities (Union Bank Nigeria, 2020). Wema Bank is among them. Part of its ESG is adopted to avert business disruptions. To combat poverty Wema uses digital platform: ALAT is adopted to extend and quicken account opening and usage for diverse population of persons classified as the underbanked. Thus, financial inclusion is a regulatory policy strategic method of expanding usage of banking products and services to wider household, especially among the youth population. For instance, the number of unbanked individuals who received financial services through Wema Bank for the first time in 2021

was over 200,000 (Wema Bank, 2021). This is closely backed by popularizing financial literacy. In addition to building sustainable business, agency banking network is being expanded with over 15,000 agents across the country.

2.1.3 Net Interest Margin as Performance Metrics Among Nigerian banks

The net interest margin (NIM for short) is widely adopted among the players in the Nigerian market space. On this basis our current study applies NIM as an essential performance indicator. Accordingly, net interest margin is net interest income expressed as a percentage of average total assets excluding derivative assets. Net interest income is a business returns earned from interest on loans, advances and investments less interest paid on customer deposits and other funding sources. The movement in benchmark lending rates such as the prime lending rate in Nigeria impacts significantly on the net interest margin (Stanbic IBTC, 2023).

This metric tests the capacity of bank assets to perform creditably well for yielding appropriate returns irrespective of the credit risks. It indicates that interest rate is an essential determinant. Hikes in prime lending rates in the current serves the advantage of improving NIM of banks. It could as well be detrimental as it triggers defaults risks as borrowers find it more challenging to service obligations.

2.2 Theoretical Background of Strategic Financial Management

Discussing theoretical backbone of the current study is not quite straightforward unlike when conventional corporate finance is discussed. Prominent stories guiding corporate choices on capital constitution of firms ranges from traditional theory where capital component of firms influence firms' value to Miller-Modigliani capital structure irrelevance hypothesis then to Pecking order theory. With the inclusion of signaling theory and other vast arrays of supporting theories, all these form part of accumulated helpful insights for avoidance of sub optimal decision about capital structure vis-à-vis firm value relation. In our study financing as a strategic decision is acknowledged to originate from two principal sources of equity and debts.

Theoretical background as already documented in several groundbreaking literature revolves around usual decisions that managers managing firms have to make in the interest of returns optimization. Capital structure is rather explained in the context of a puzzle to practitioners. An important theoretical contribution in this respect begins with capital structure contradictions that advanced corporate finance. Point of intense controversy is the combination of equity and debt financing in a well-structured composition that adds to market value of private and public

companies. Traditional MM, static-tradeoff proposition and pecking order theory provide fundamental logical views that help in evaluating manager's financing decision. Like in every theoretical evolution, specific arbitrary assumptions provide foundational insight concerning the performance validity of the new narrative in reference to the presence or absence of certain conditions that have been claimed to be relevant for the mechanics of the theory. Classical economics foundation is hinged on a theoretical assumption of a perfect market (Stiglitz and Greenwald, 1987; Hoover, 1994; Mariolis and Tsoulfidis, 2016). This has been influential in modern financial and economic theory developments. By assuming perfect market condition, MM (1958, 1963) produced novel idea that influenced Chief Financial Officer's (CFO) significant attention on choosing the best overall mixture of funding options for takeoff and running company operations (Ahmadimousaabad *et al.* 2013). A mixture of debt and equity in an optimal way is argued to causally determine the market value of firm in static tradeoff theoretical proposition (Serrasqueiro and Caetano, 2015). Tradeoff predicts the cost and benefit analysis of debt financing to achieve optimal capital structure. The implication of the theory is that debt enhances profit magnitude of the company. We provide detail accounts on relevant theories that capture the dynamics of current research.

2.2.1 Bird in hand Theory of Dividend

Apportionment is popularly known as dividend theory. It is the last decision management has to take. However, companies borrow to finance investment or simply have debts in their capital structure. Suppliers of credit requires reimbursement of creditors and payment of interest on all interest maturing loans. Managers pay interest on loans to creditors. Defaulting is a risk to the borrower firm reputation. They make a choice to pay dividend to shareholders according to the proportion of number of shares bought from a company. There are several theories especially on dividend policy to direct manager's action on distribution of earnings of the corporation. However, Miller and Modigliani have impacts in dividend decision. In taking apportionment decision rationality is essential. The rationality is on whether especially in large public corporations the after-tax corporate profit is distributed or kept back for taking further investments advantage. Due to uncertainty, top executive's decision to retained earnings could find its route into wasteful investment where full payout ratio would have been preferred than current regret. An exciting argument on dividend policy to which Miller and Modigliani championed is the issue surrounding optimal payout ratio. Bird-in-hand theory is an opposite of MM irrelevance.

The bird-in hand theory was developed having considered condition of uncertainty associated with expected future capital gain. Developed by Gordon and Lintner (1962), the theoretical model implies that the value of the company (the price of its shares respectively) is positively related to and determined by the payout of dividends. Any attempt to retain earnings for reinvestment for bigger future gains does not have perfect certainty. This is where bird-in-hand theory assumes a risk management strategy. The future cannot be predicted with impressive accuracy. The business environment is increasingly turbulent. Therefore, receiving portion of recorded earnings today is assured than the less known expectation about maximum wealth.

Bird-in hand argues that with the increase in dividend payments in time, the value of company's shares will increase dramatically (Tanushev, 2013). Robinson (2006) argued that investor financial managers in Barbados seem to take a "bird in the hand" view of dividends and retain a strong commitment to paying dividends, and legal restrictions aside, do not vie share repurchases as an alternative to dividends, as a means of providing cash for investors. Hence, investors would prefer the "bird-in hand" (cash dividends) to "two-in-the-bush" (future capital gains). Walter (1963) analyzed the influence of the dividend policy of a firm and the changes in value just like Miller & Modigliani. Walter concludes that we do live in a world with imperfections and those imperfections lead to differences in firm value, which contrasts with Miller & Modigliani's irrelevance theorem. The first set of key supporters of the theory are James Walter, Myron Gordon, and John Lintner. These theorists adopted the logic: if market conditions are uncertain and the information is asymmetric, then dividends are evaluated differently from capital gains. The concept is summarized by the proverb "a bird in the hand is worth two in the bush". Under this theory, investors prefer dividends, and the more of its earnings the company pays out, the higher its stock price and the lower its cost of equity.

2.2.2 Dividend Irrelevance Hypothesis

Irrelevance hypothesis originated in MM did not end in capital structure. Rather optimality in Miller and Modigliani (1958) maintained similar standing on irrelevance. Is there an optimum payout ratio or range of ratios that maximizes current value of its shares? It extends to dividend policy a firm could adopt in view of the present worth of company shares. Miller and Modigliani (1961) notably provided explicit view that transcend into security valuation under dividend valuation model. Miller (1986) observes anomalies on dividend due to tax on accumulated unpaid earnings of the firm. MM concludes that dividend is irrelevant in the midst of available promising investments.

2.3 Empirical Reviews of Prior Literature on Strategic Financial Management

There are vast number of finance and economics literatures documenting various studies that bother on corporate finance. These studies take different analytical perspectives as it affects smooth company operations that impacts on value. Long standing literature is inexhaustible beginning from hypothetical presentations of MM on capital and corporate value among firms. However, the aspect of financial research covering strategic policy actions is scant in the literature. Or on a wider perspective, literature on strategic financial management as an evolving advanced corporate finance field is not quite in surplus especially when considering its proactive role on performance objective of the firm. Rather, we find considerable galaxy of research investigations flowing from challenges militating against the success of strategic financial management on business ventures in Small and Medium Scale Enterprises (SMEs) sector. Outstanding discussions such as Karadag (2015); Kourtis *et al.*, (2021); Pronoza, Kuzenko and Sablina (2022) have extensively influenced strategic financial management in firms with potential of growing into complex enterprises. We strive to visit some available statistical conclusions in this regard. Delkhosh and Mousavi (2016) present insightful views on the role of strategic financial management in the financial success of an organization. It further reveals some evolving areas of strategic financial management. First, the study shows that strategic financial management covers investment strategy management, the financial provision and ultimately the profitability and the optimal combination of the three strategies. The study concludes that development of service provision for the customers is a strategic factor that influences organizational success.

2.3.1 Studies on Multinational Financial Conglomerates and Company Values

Afande (2013) investigates the relationship between strategic management practices and firm performance in Postbank in Kenya. Author applied correlation regression analytical method. Finding indicates that show that vigorous pursuit of cost reductions is one aspect of competitive strategies used by Postbank. The study concludes that the strategies adopted by postbank to cope with the competitive environment include pursuit of cost reductions, providing outstanding customer service, improving operational efficiency, controlling quality of products/services, intense supervision of frontline personnel, developing brand or company name identification, targeting a specific market niche.

Korhonen (2001) conducts discuss on a multi-stage programming approach to strategic financial management using a multi-company financial conglomerate. The study presents different scenarios for managing financial institutions. The study concludes that management of financial institutions

to apply multiple scenario analysis which accommodates wide range of eventualities.

Walker (2000) investigates strategic objectives and stock price performance of acquiring firms. The study focused on acquisition formalized and fully completed between January 1, 1980 and December 31, 1996 with a sample primarily drawn from all industries delisted from CRSP tapes with the exception of utility companies. The author applies standard method of Ordinary Least square to estimate multiplicity of regressors (relative size of the transaction (size), dummy variables that act as control measure for the method of payment (cash or stock), mode of acquisition (tender offer), industry relatedness (same two- digit SIC code), multiple bidders, and strategic objectives) as well as cumulative market-adjusted return (CMAR) or matched-firm-adjusted return (CMFAR) for the time frame between -2 days to +2 days relative to the takeover announcement date. Evidence supports asymmetric information hypotheses where the acquiring firm stockholders tend to earn higher returns due to cash offers. Beyond the asymmetric information hypothesis, the study finds evidence to also support strategic alignment hypothesis where shareholders in the acquiring firm tend to earn higher returns following in the instant of corporate takeovers that aids in the expansion of the firm both geographically and high increase in its market share.

2.3.2 Studies Based on Strategic Financial Performance and Factors

Pratama, Safariah and Anas (2024) explore the impact of strategic financial management and financial planning and analysis on competitive advantage in Bank Syariah Indonesia KC Ternate. The study has focus on understanding the mediating role of financial decision-making quality. Using Smart Partial Least Square findings indicate significant direct effects of strategic financial management and financial planning and analysis on competitive advantage. The study concludes by highlighting the critical role of high-quality financial decision-making in facilitating bank competitive advantage. Using indicative model to assess financial stability, Klaas and Daryakin (2016) test financial stability of the Russian banking system. Methodology incorporates the use of correlational-regression analysis to detect factors that define financial stability in Russia. Findings show the presence of capital adequacy ratio; the share of assets that yield interest in the gross assets, current arrears rate, return on total assets.

Bayrakdaroğlu and Yalçın (2012) evaluate Turkish industrial companies floated on Istanbul Stock Exchange 30 (ISE-30) in respect to seven strategic financial performance value-based measures. The popular measures include Equity Economic Value Added, Economic Value Added, Refined Economic Value Added, True Value Added, Market Value Added, Cash Flow Return on Investment and Cash Value Added. All measures are collected within the period of 1998 to 2011

for 17 industrial companies. By using Multi Criteria Decision-Making methods expressed in Fuzzy Analytic Hierarchy Process (FAHP) and VIKOR (VI_sekriterijumsko KOmpromisno Rangiranje). VIKOR method is used to conduct the ranking. Mean estimate of each performance measure for the companies generated mixed findings. For instance, economic value added (EVA) for all companies except DOHOL and VESTL within analytical context are found to be negative. DOHOL and VESTL carry the highest positive EVA coefficient. Equity Economic Value Added (E-EVA) of candidate companies are all negative.

Finally, the study concludes that none of firms listed under ISE-30 can create positive value since the companies are unsuccessful in creating shareholders value. In the context of UAE banking system on sustainability as performance metric, Alketbi, Ellili, and Nobanee (2022) investigate the moderating effect of sustainability performance on the relationship between firm strategy (FS) and financial performance (FP) in the context of the UAE's banking system. The panel data regression technique evidence confirms that financial performance has direct link indicating enhancement of performance by the bank's strategy. This conclusively suggests that if bank's sustainability performance is high then it does not seem that firm strategy to have any statistically significant impact on financial performance. Thus, the finding highlights the moderating role played by sustainability performance in forging a relationship between firm strategy and financial performance.

Rajnoha, Lesníková and Korauš, (2016) conduct a multi-study analysis. The authors analyze several phases of measuring and managing business performance. It further measures the impact of the selected measurement tools of performance management on the overall business performance of Slovak enterprises. Using primary database of 1,457 enterprises from selected industries a Chi-squared test supported with Pearson Chi-square test. The result shows evidence of significant impact of financial variables on performance of business. The paper concludes by highlighting important link between business strategy and system of measuring corporate performance. Gutiérrez-García and Sadaba-Garraza (2012) offer an analysis of the virtues of stakeholder management theory in the banking industry, in order to find out whether the management of relationships is integrally an important factor for adaptation and competitiveness in the business environment. Using descriptive approach, the authors theorize that communication is inseparable from strategic management and administration in the banking industry. Consequently, the study concludes that communication is a key channel of interlocution that allows information flow collected from the environment to become knowledge. In addition, communication management can become an agent of transformation within an organization. Vaduva (2013) answer three critical questions: 1.

What do we know about strategy and strategic management in banking? 2. Which are the main objectives of the Romanian banking system? 3. What can they do, as strategic approach, in the context of the new global realities? The authors exploit spectrum of extant literature, critical analysis and expert experience of the author in development and provision of fitting responses to the key questions specific to Romanian banking system.

Hensel (2003) examines the role of cost efficiencies on efficient management of branch networks in the contemporary European commercial banking industry. Paper employs likelihood ratio test. The cross-country findings indicate that larger banks are likely to have heavily utilized branch networks in contrast to smaller banks and to exhibit fewer cost efficiencies from building more branches. Specific finding suggests that within each country the role of internal firm size regardless of competitive conditions is prominent. It further suggests the impact of such factors as market structure, concentration and type of non-price competition. The study concludes that larger banks have capacity to generate per unit assets deployed. Aremu and Oyinloye (2014) evaluate the significant relationship between strategic management and organizational performance in the context of business environment trend. Authors mobilized primary data whose analysis involves multiple regression and T-test after the survey of five banks located in Ilorin metropolis of Kwara State, Nigeria. Findings report that strategic management affects organizational performance. Again, it further obtained information that irrespective of how a plan is well-structured and organized without implementation would likely lead to business failure.

Nevertheless, there is a pressing need for sustainability in the development of organizations in an unstable external environment. Ashmarina, Zotova & Smolina (2016) in a Russian study concludes that financial sustainability is ideal for all business identity and has proven to be a significant factor of sustainable development. The authors show that index of financial leverage influences the enterprises capital structure which also has a great impact on financial sustainability of Russian organization. This is done using Russian biggest automobile company in the industry. The analysis is performed in conformity with European approach.

Krylov (2015) in a written paper considers theoretical aspects of the applied strategic financial analysis. The analysis is developed in reference to the elements present in balanced score card which the paper adopted as its methodological framework. Findings from the analysis reveal that strategic financial analysis helps in long term, medium term and short term optimal managerial decisions in the field of organizations financial activities. Lastly, the conclusion drawn is that the application or applied strategic financial analysis remains a sound innovative and sufficiently

effective instrument to research strategic aspects of an entity's financial activity and to develop analytical support for its strategic financial management.

2.3.3 Studies Involving Strategic Utilization of Human Efforts

Strategic management and strategic financial management are quite inseparable concept as contained in the literature. The human aspect provides plausible insight. For instance, in a Middle East study of business enterprises in Kuwait, Hussaini (2019) adopts a combination of descriptive and traditional linear regression modelling techniques to investigate the relationship between strategic planning as an aspect of business management and financial management practices. The author observed employees from various establishments in Kuwait using structured questionnaire consisting of 15 items of strategic planning and 5 for financial management practices on a sample of 276 respondents. Empirical evidence suggests that various strategic planning items are significantly correlated with financial management constructs cutting across staff turnover, safeguarding physical and financial assets, and development of financial budgets in selected firms. The findings are pre-tested using model specification for the 5 line items in financial management. However, according to the author sample size is an outstanding limitation in the application of traditional analytical technique.

Banmore *et al.* (2019) investigates the effect of strategic leadership components on competitive advantage of selected quoted insurance companies in Nigeria market by employing survey research design on 20 listed insurance corporations. Analytical data were aided by using inferential statistics. The Cronbach's alpha reliability coefficients ranged between 0.710 and 0.881 were tested to confirm reliability position of the result. All the variance inflation factor (VIF) shows that the variables are free from multicollinearity. According to the findings, estimation shows that strategic direction, ethical practices, strategic control, strategic vision and strategic intent were all have positive effect on competitive advantage of selected quoted insurance companies in Nigeria. The study concluded that strategic leadership components have positive and significant effect on competitive advantage.

2.3.4 Literature Covering Innovations in Strategic Management Issues

Technological advancement is changing the way businesses are conducted and presents enterprises with strategic formula to survive and dominate the industry. FinTech is a new financial solution adopted by several countries in the financial intermediation roles among new firms competing in the mainstream banking business of credits and savings. Technology of this nature presents

attractions to CFOs of firms as it constitutes threats from new entrants. Several literatures are written to advance discussions on the place of innovative creations in the industry. Notably, Knights and Morgan (1995) provides earlier investigation on the relationship between strategic financial management and information technology in financial services subject to organizational theory on corporate strategy. The study further analyzes different forms strategy in specific financial industry as insurance. Findings show that when there is a contradiction between agreed strategy for information telecommunication systems for renewal and the objective of sustaining market share in pensions distribution, the information telecommunication strategy is put last for consideration. The authors observe that corporate strategy has significant impact on organizational stakeholders.

Mwangi (2015) considers critical challenges facing implementation of strategic plan in Blue Shield insurance companies. By analyzing interviews and questionnaires the author concludes that while lack of expertise is notable core challenges affecting implementation of strategic plan include inadequacy of resources which are mainly financial in nature. These were found to be imperative.

Ashta and Biot-Paquerot (2018) take closer view of Fintech revolution capturing such new technological devices such as blockchains and mobile telecom. The authors provide historic evolution of popular advances and technical innovations that impact on finance. Although the paper relied on reviewing case study of information telecommunication case studies. The paper asserts that technologies which support Fintech are already creating value in the financial marketplace. This because of efficiency such that costs are dramatically cut both for the banks and in other transactions. In developing countries technology has made it possible that customers no longer carry cash around as more transactions are done electronically. The paper concludes that opportunity created by innovations in technology drives value but is also disruptive.

Elliot, Cavazos and Ngugi (2022) in Ghanaian market highlights the impact of digital financial services as enhancing the capacity of development goals as well as social sustainability using 70 managers using sample from Ghanaian financial service providers and microenterprise customers. The paper deploys transcribed interviews, field notes, photographs, and case analyses. The study shows that digital financial services and strategic financial management for financial service firms and microenterprises in African market have multiplicity of benefits ranging from study highlights digital financial services can be deployed to facilitate the emotional and psychological consumer wellbeing and to strengthen business relationships, meeting joint goals of market share expansion, brand image enhancement and profitability.

2.3.5 Studies Explicitly Focusing on Banking Sector of Countries

Mutai and Miroga (2023) seek to determine the effect of financial management practices on the financial performance of commercial banks operating in Kenya. The study specifically targets bank capital structure management practices, their liquidity management skills, credit risk management policy actions, and working capital management practices. Sample includes 39 operational banks in Kenya as the target population, running for the span of five years from 2017- 2021. According finding from the multiple methods of Panel data framework whose assumptions are formulated in the Gauss-Markov theorem coupled with variance inflation factors (VIF), there is evidence of insignificant liquidity management practices. On credit risk management practices, the finding suggest it has a negative relationship with returns on assets. The author concludes that commercial banks with high degree of credit risk and low non-performing loans are more profitable than the others. There is also a positive relationship between capital structure management practices and the financial performance of commercial banks in Kenya. It also highlights that working capital management practices exhibits a significant positive relationship with the financial performance of commercial banks in Kenya. Sadiq and Nosheen (2021) study how strategic financial management decision influences on firms especially its performance which covers a time span of year 2008 to 2018. The paper specifically tests a hypothesis that risk exposure of banking resources contributes to intellectual capital and competitive advantage. The study also determines the impact of risk exposure measured as solvency and credit risks captured by Z-score among commercial banks in operating in Pakistan, Sri Lanka and Bangladesh. For robustness test estimation CAMELS rating is adopted while value is measured with Tobins Q. The study established that judging from a performance perspective, risk management can guarantee sustainability and longevity in a business. On the other hand, a practical perspective confirms that survival in any industry duly requires fixing and maintaining a competitive advantage. Finding suggests that insolvency risk does not have any impact on overall intellectual capital but has a positive impact on HCVA so also is credit risk. The study concludes that banks who maintain higher competitive positions are less likely to be exposed to insolvency risk.

Moretti, Dobler and Chavarri (2020) study managing of systemic banking crisis. The paper discovers the employment of bridge bank to overcome crisis in the bank. This means a resolution of authority moves performing assets and some section of liabilities from field bank into a bank temporarily owned by the government. The authors recognize system-wide diagnostics. The study also identifies the application of bail-in which has gained extensive attention since global financial crisis (GFC). Evidence further suggests the transfer of assets and liabilities and system-wide

restructuring and resolution of banking industry. However, at the banks that have seen signs of failure or likely to fail reliable assets valuation and liabilities are essential strategic management finances in the bank and attendant risk elements orchestrating failure.

Because of the growing need for stabilization of banks and insurance firms which has witnessed era of unprecedented change, Al-Khalifah (2018) examines strategic stabilization of private banks and insurance companies. Using literature review the author observes that with the opening of financial sector of Algeria and the entry of many industry players, consolidation has led to a greater concentration of payment and settlement flows among fewer parties. Also, that future bancassurance model in Algeria must be defined by a complex combination of strategic choices on each of the three axes. The study further concludes that consolidation tends to lead to the emergence of very large financial entities and non-insurance service providers that specialize in providing a wide range of insurance services to third parties. Omarova (2016) propose a golden share approach for bank governance and systemic stability. The author concludes that golden share regime is that manager of last resort. That part of institutional design is accountability and funding mechanism which are vital considerations to safeguard stability.

2.3.6 Studies Explicitly Focusing on Insurance industry operating in Several Economies

Studies focusing on issues in the industry have been documented (Mkamunduli, Ojera and Aila 2015). However, in actuary businesses, Mariathasan and Rains (1993) consider strategic financial management in a general insurance company. The authors conclude that it is suggested that the actuary should form only one part of an integrated strategic management team. Pellissier and Kruger (2011) in a South African study in an investigation explore the extent to which strategic intelligence utilization within the insurance market and whether it could be utilized for threat and opportunity identification from the global environment. The study obtains data from qualitative views and opinions from 82 registered insurance companies listed on the Johannesburg Securities Exchange within the Life Assurance Sector. The study concludes that identification and utilization of the most important factors of a strategic intelligence most potentially foster global company decision making that result in competitive financial advantage and frequent innovation.

Mekonnen (2015) applies qualitative data from Ethiopian firms through interviewing of people involved in strategic management. This is mixed with quantitative data to make assessment of strategic management practices. In addition, the study compares such practices with the widely accepted theoretical concepts in the field. Finding reveal strong aspects of the strategic management

process and also loopholes in the process.

Ngamau (2015) studies strategic partnership arrangements between two insurance firms as combine consolidate assets and capabilities which influences performance of insurance companies. The research was conducted via a survey of study targeting operation managers for the 51 insurance companies licensed by IRA to operate in Kenya. Using multiple linear regression to analyze questionnaire data to obtain information on strategic partnerships and effectiveness of strategic partnerships on organizational performance metric, the finding show that strategic partnerships contributed seriously towards organizational performance of insurance companies in the country. Considering the benefits of the strategic partnership, the study disclosed the advantage of higher profitability, larger network of distribution of insurance product and services, higher retention rates of customers were some outcomes identified.

2.3.7 Studies on Strategic Financial Management for Global Systemically Important Banks

Global systemically important banks (G-SIB for short) have been expanding their numbers. They form part of multination corporations but specifically for the financial industry. This class of banks are tightly managed with wider geographic business reach with high degree of interconnectedness. G-SIB carries cross-border risks that diffuses into other banking systems formerly under sound equilibrium. G-SIBs are prone to some surcharges in their operations especially in the capital. Berry, Khan and Rezende (2024) examines how G-SIB lowers capital surcharges for the US firms. The authors show that US G-SIBs reduces their surcharges by minimizing an important indicator being the notional amount of over-the-counter (OTC) derivatives in the last quarter of each year. This reduction is largely driven by interest rate swaps.

Dzhagityan and Orekhov (2022) is among numerous studies considering risk management in G-SIBs. The authors investigate whether G-SIB still pose risks to financial stability following financial crisis of 2007-09. The study observes evidence of certain decline in G-SIBs' systemic risks. This according to them is attributable to further strengthening of their market discipline proving the importance of international regulatory policy. Similarly, the study further finds evidence of that the stress resilience of G-SIBs, a product of the application of Basel III capital buffers and the total loss-absorbing capacity standard, substantially added to financial stability at a level sufficient not only for the integrity of G-SIBs' and declines the risk of banking systems failure.

Ndebele (2020) incorporate corporate social responsibility as a capital structure determinant in the strategic management of G-SIBs. Evidence from panel data analytical framework from 28 G-SIB between 2009 and 2018 indicates that socially responsible banks appear to be less levered in contrast

to those that are socially irresponsible arising from CSR positive influence on equity financing from the lower costs of capital. Alternatively, there is no significant relationship between CSR and bank leverage. This tend to assert that governance in the banks is impacting on their capital structure decisions. Again, bank size has no effect on the relation. The author also finds that reporting of CSR performance has become largely important as more investors integrate information about the social behaviour of firms in their investment decisions. Thus, the implication from the findings concludes the return of public trust as perhaps a critical aspect and outcome of excellent strategic financial management.

Pyka and Pyka (2019) write to identify some specific features of the new regulatory order with regard to global and other systemically important institutions that operate in the European Union. The result suggests that expanding the extent of supervision over activities undertaken by Global systemically important financial institutions (G-SIFI) and the introduction of new prudential regulations, such as resolution regimes, failed to guarantee the security and the stability of European Union's financial market. McConnell (2012) uses Anglo-Saxon model of corporate governance to analyze considers the governance of strategic risk in 18 of the world's largest 'Systemically Important Banks using a cross-sectional study of statutory disclosures in their various annual reports. The study also discloses though from enquiries into the collapse of some large banks during the Global Financial Crisis (GFC). First, finding from the enquiries reveal that strategic risk is one of the greatest risks facing any firm. However, McConnell finds that systemically important banks as studied did not seem to pay sufficient attention to such most essential area despite regulators' identification of strategic risk as warranting extra supervision in an intrusive way.

The study having recognized deficiencies of governance in their numbers concludes that, apart from few notable exceptions, the strategies disclosed in Annual Reports are not coherent. This is typically expressed in Citigroup in 2010 annual report which has vagueness. It is also disclosed that only fewer banks disclose that they have robust processes for determining the risks in its strategic positioning. Lastly, there appears to be lack of consistent oversight in the management of strategic risk.

Anwar (2012) analyzes management of systemically important financial institutions especially in emerging market economies. The study concludes that to reduce the probability of collapse systemically important financial institutions and reduce the risk to financial stability and the real economy, it is imperative to strengthen the regulatory framework and enhance supervisory capacity for dealing with such class financial institutions. However, the study observes that over the years

financial authorities have taken option of diversification for large banks against such idiosyncratic risk.

2.3.8 Studies on Macprudential Framework and Financial System Stability

With exceptionally rising interest in bank stability across the world, Morris and Hoenig (2011) advocate for restructuring of the banking system to improve safety and soundness. The study concludes that created safety net solves problem of instability but also creates incentives to take excessive risk.

Almahadin, Kaddumi and Qais (2020) apply fully modified Ordinary Least Square (FMOLS) to investigate the relationship between financial stability and banking soundness in Jordan. The finding indicates that capital adequacy ratio is the most significant factor that positively affects financial stability with the highest estimated coefficient but in contrast nonperforming loans ratio in the banks adversely impacted on financial stability which indicates that rising nonperforming loans threatens the stability of the financial system.

Abusharbeh (2020) evaluates financial soundness of the Palestinian banking system using CAMELS standard. Using content analysis on sample of 6 local banks the empirical test indicates that Palestinian banks complied with the Basel Committee standards across financial stability metric of capital adequacy and that the banks exhibit features of profitability and liquidity. It further concludes that operational efficiency of the banks being evaluated is somewhat fairly managed but there is a substantial difference among Palestinian banks when assessment is conducted using CAMELS rating system when tracking performance.

Salina, Zhang. and Hassan (2021) extensively consider the financial soundness of banks by considering it in the context of the financial crisis of year 2007/008 and proceed to investigate the financial soundness of the Kazakh banking sector considered as among the sector with highest nonperforming loans in the world as of year 2012. Using data about all Kazakh banks over the period January 01, 2008 to January 01, 2014 the study adopted Principal Component Analysis (PCA). The outcome from the PCA is further used in a cluster analysis to group Kazakh banks into sound, risky and unsound banks at two points in time ranging between January 01, 2008 and January 01, 2014. Finding indicates that 15 selected financial ratios were initially adopted wherein 12 indicators are isolated by the PCA. This according to the authors explains 5 PCAs of profitability, asset quality, liquidity capital adequacy, return on assets and leverage. Lastly, the study concludes that in 2014 a new group of banks appeared to be financially unsound banks.

Ginevičius and Podvieszko, (2013) conduct a study on Lithuania banks by evaluating soundness and

stability of banks in the country using several multiple criteria. The study reports fluctuations associated with the levels of soundness and stability of commercial banks. Similarly, a simultaneous use of different multiplicity of criteria to evaluate soundness and stability of deposit money banks which increases robustness in the evaluation.

Rahman (2017) fails to employ CAMELS or CLSA-Stress test but rather adopted Bankometer to evaluate financial soundness of banks in Bangladesh. The study period spans between 2010 to 2015. The evidence shows that all the banks have guaranteed sound financial condition on individual basis and the entire banking industry and has always been in favorable position during the studied period. The research concludes that “Bankometer” model will definitely help the internal administration of any commercial bank in detecting insolvency conditions and removing the shortcoming generated from the problem of inefficiency in banking operations. Ouma and Kirori (2019) replicated the bankometer model in a Kenyan analysis. The study investigates financial soundness of 16 small and medium-sized commercial banks for the period between 2014 and 2017. The soundness variable is proxied using S-score. One of the strong findings of the study is that both the small and medium-sized commercial banks in Kenya are financially sound during the period.

2.3.9 The Nigerian Banking System and its Components

The Nigerian banking system is not quite bulky in structure and this is evident in limited number of conventional banks. The category of banks supervised by the Central Bank of Nigeria consists:

- i. Commercial banks
- ii. Primary mortgage banks
- iii. Microfinance banks
- iv. Merchant banks
- v. Non-interest banks
- vi. Payment service banks

A complicated classification in the mix is the development finance institutions structured as follows:

- a. Bank of industry
- b. Bank of industry
- c. Development bank of Nigeria
- d. Federal mortgage bank of Nigeria
- e. Nigeria export-import bank
- f. The infrastructure bank.

Recent report show that Nigerian banking system comprises of 36 licensed deposit money banks (DMBs) as of September 2023 whose total assets worth ₦100,537.39 billion. A breakdown reports a total 26 commercial banks; 6 are merchant banks; and 4 are non-interest bank (NIBs) (see for details Nigerian Deposit Insurance Corporation (NDIC, 2023).

The Nigerian banks remained well-capitalized and sustains soundness for several periods. All the banks in their categories do not have equal size and capacity to compete in the market. Beginning with the commercial banks the industry has 7 holding companies under the supervisory purview of the central bank. These constitute the top 5 and top 10 banks holding held 57.1 per cent and 79.8 per cent of total assets in 2019. In terms of gross loans and advances the top 5 and top 10 banks held 58.8 per cent and 82.5 per cent, respectively, of the industry total loans and advances at end-December 2019 (Central Bank of Nigeria, 2019).

The Nigerian banking industry has incorporated Islamic banking variant which is a non-interest taking bank. Jaiz bank is a lead Islamic bank in the Nigerian market. Jaiz has been in operation since November 2011 but with full operation in the next year (Jaiz,2015). Thus, by their practice Jaiz bank has integration of Islamic principles into mainstream banking practice different from conventional methods of financial corporations. For instance, profit sharing is a strategic banking practice amongst firms subscribing to Islamic tenet. Moreover, funds of depositors are ethically managed in compliance to Islamic ethics. Thus, usury is fully eliminated in servicing the majority of the Nigerian market segment subscribing to avoidance of usury (Riba being Islamic term) which extends to persons of all religious background.

2.4 Development Finance Institutions Operations and Economic Mandate

Development financial institutions in this scenario are banks established by the government of the federation for the purpose of providing relevant resources to spur development in the economy. Their core mandate is outside the deposit mobilization from the public. Usually in Nigeria and in every country, development finance institutions (DFIs for short) are state owned enterprises (SOE thereafter) founded to promote growth and development. Karani and Gantscho (2007); Francisco (2008); Jouanjean, Massa and Ve Velde (2015); Lemma (2018) form part of numerous authors have noted, development finance institutions are for economic transformation according to state's social objectives of structural transformation. Adesoye, and Atanda (2012) argue that developmental obligation of DFIs emphasizes project approach.

The responsibility of DFIs emerged to cover the funding vacuum left by conventional deposit

money banks. Their principal activity especially Development Bank of Nigeria (DBN) and the others bridges this vacuum. This is ideally to the advantage of micro and small enterprises. In addition, DBN assists in incentivizing DMBs and microfinance institutions (MFIs) to lend to the manufacturing sector by providing them with funding through technical assistance (Development Bank of Nigeria, 2017). That is why the SOE aspect of DFIs have their own unique business norms as government financing engine for macroeconomic development in necessary and targeted sectors. Bank of Industry of Nigeria is established to catalyze development by transforming the industrial sector of the economy (Bank of Industry, 2023). However, Development Bank of Nigeria (DBN) functions to improve access to finance by playing focal and catalytic role in proving funding and risk-sharing facilities to Micro Small and Medium Scale Enterprises (MSMEs) on longer tenure. All DFIs are funded by the government. Their strategic management is structured with government influence or representatives. In addition, DFIs do not receive customer deposits rather they finance essential developmental projects.

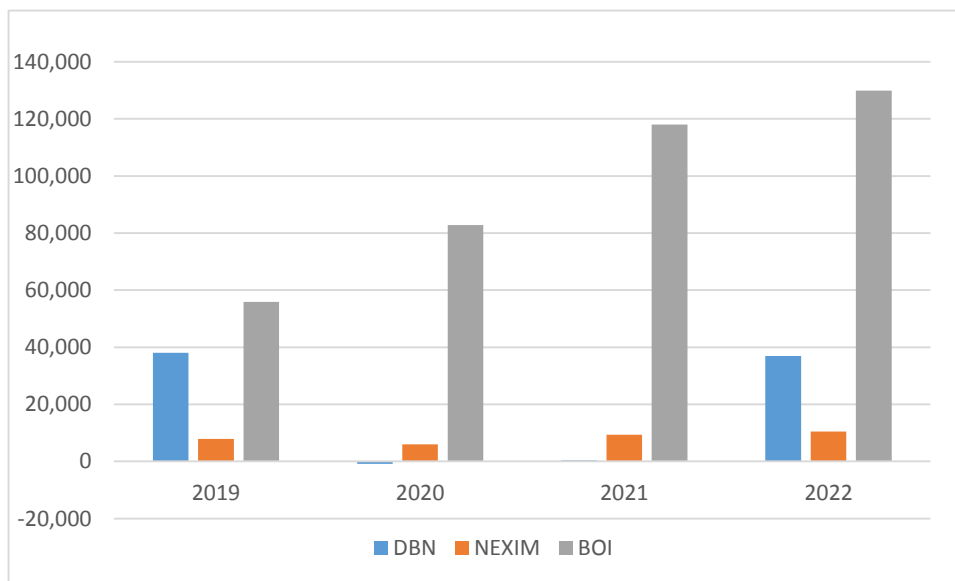


Figure 2.4.1: Net interest income of development finance institutions

The Nigerian government also pursues development through export and import. The Nigerian export-import bank (NEXIM) promotes foreign trade development. NEXIM was established to carry on business of export credit guarantee and insurance facilities to clients. It also thrives in maintaining foreign exchange revolving funds, although it provides credit in local currency in support of export.

Clearly, the popular DFIs in Nigeria have unique business channel but all engage in profit making.

This is seen in their various company reports. Figure 2.3.1 shows net interest income (NII) of three major DFIs. In year 2019 development bank of Nigeria (DBN) recorded impressive amount in its NII although slightly lower than Bank of Industry (BOI). The least performing is NEXIM bank. The figure summarily shows a negative NII for DBN in 2020. Thus, operation was adversely impacted by the global pandemic. Across the periods BOI maintains outstanding performance in its NII while NEXIM exceeded DBN in years of 2020 to 2022.

2.4.2 Market share and Performance of Major Deposit Money Banks

Since the last major banking sector reform, the competitive atmosphere in the industry continues to grow in complexity. The powerful banks have been growing speedily in line with the discovery and entry into new markets. This underscores the competitive Nigerian environment which has been further reinforced by globalization. The key banks have engaged in almost identical strategic moves to outclass each other. For instance, agent banking has been widely embraced by Access banks, Zenith and First Bank Nigeria. This method expands accessibility of financial services even in the most difficult terrains in a country. Access bank has scaled this service to Access bank's subsidiaries with broadened impact across regions (Access Bank, 2023). Most of the banks sustain growth through inorganic process. Access Holding has in consolidation former Diamond bank plc. as a member in the merger.

Zenith bank is one of the key important Nigerian banks operating in the foreign environment. With its creation of Foreign Subsidiaries Department the bank has intensified its interface between it and its offshore subsidiaries, this department supervises growth and implementation of Zenith bank's global expansion strategy into new territories/regions (Zenith Bank, 2023). Thus, the bank currently controls six subsidiary entities.

Guaranty Trust bank which is now a holding company like the others as a Group had eight (8) international banking subsidiaries and two (2) sub-subsidiaries. The company thrives in agent banking business to capture underserved markets. With continuous expansion in the agent banking business this strategic method yielded a maximum deposit of about N6.5 billion in 2019. Agent banking is further supported by the introduction of "Quick Credit" for Non-Salary Earners (NSE) in April 2019. In conjunction with other products in place such as food and fashion granted at competitive interest rate without collateral a total of N1.73 billion is the bank's exposure (Guaranty Trust Bank, 2019). Beyond the domestic banks, ESG has formed part of policy backbone of banks designated as global systemically important bank (G-SIB). Iannuzzi *et al.* (2023) in a sample of 30 global systemically important banks disclose the importance of ESG and the controversies

surrounding the constitution of its nomination committee in European G-SIB.

United Bank for Africa (UBA) seems to have widely dispersed operation. Currently, UBA hold a record of operating in 20 African countries which could be logically concluded to be having almost exclusive dominance on African markets. It also operates beyond the African market. Its 2023 financials have shown the rival powers of UBA in the industry. Operating income of the bank in 2023 grew to 168 per cent having recorded a total of N1.6 trillion (United Bank of Africa, 2023).

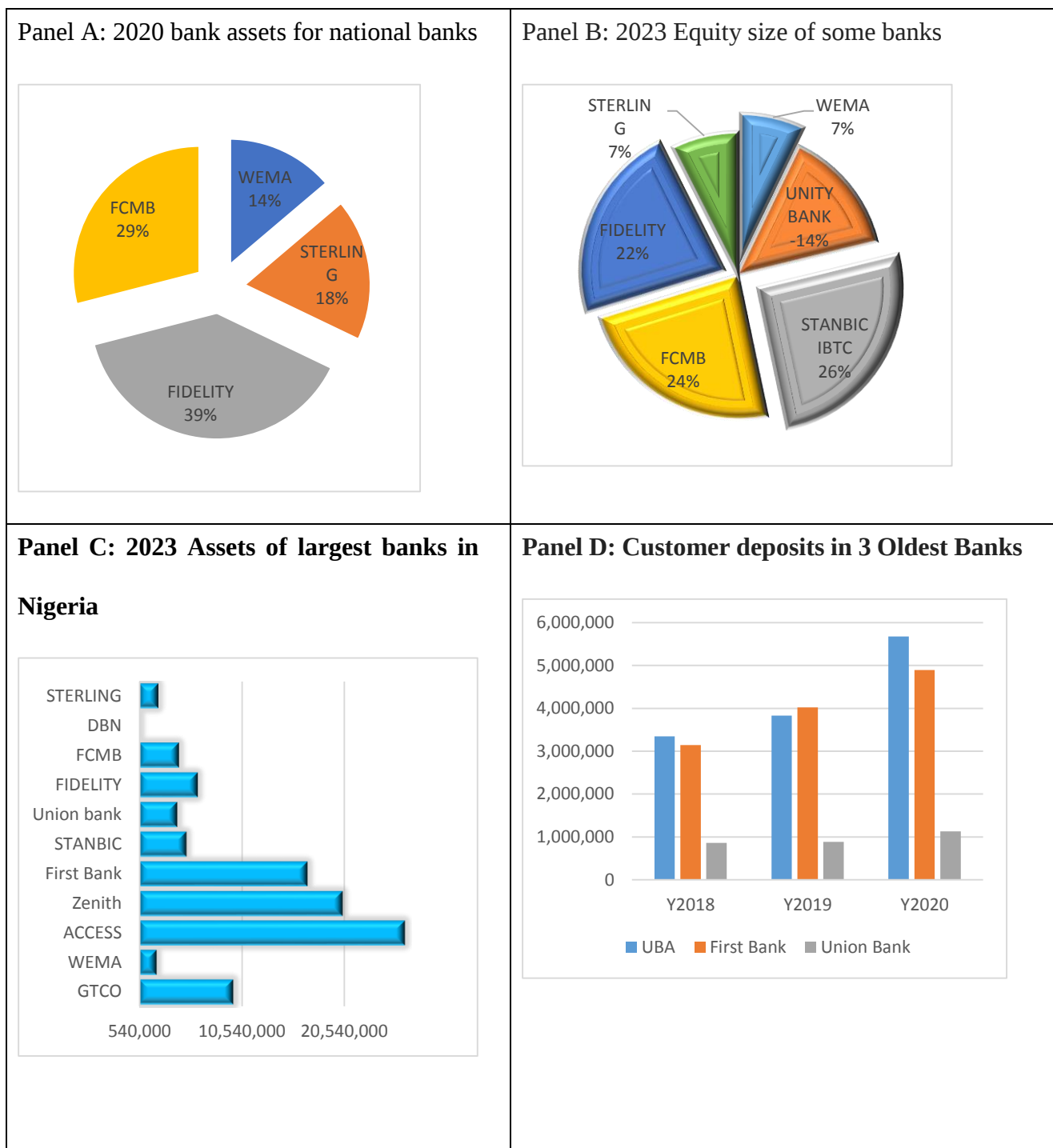
Table 2.4.4: Major Commercial Banks with International Subsidiaries

Access Bank	Zenith Bank	GTCO	UBA	Ecobank	First Bank Nigeria (FBN)
Nigeria	Ghana	Gambia	UBA Ghana	Cameroon	FBNBank (UK)
Cameroon	Gambia	Ghana	UBA Cameroon	Chad	FBNBank (DRC)
Namibia	UAE	Sierra Leone	UBA Chad	Central African Rep.	FBNBank (Ghana)
Kenya	China	Liberia	UBA Cote d'Ivoire	Côte d'Ivoire	FBNBank (Gambia)
Gambia	UK	Uganda	UBA Mozambique	Guinea	FBNBank (Guinea)
Sierra Leone	Sierra Leone	UK	UBA Congo DR	Niger	FBNBank (Sierra Leone)
Rwanda	Nigeria	Tanzania	UBA Sierra Leone	Togo	FBNBank (Senegal)
Ghana		Rwanda	UBA Tanzania	Nigeria	
Mozambique		Kenya	UBA Nigeria	Senegal	
DR Congo		Ivory Coast	UBA UAE		
Botswana		Nigeria	UBA USA		

Source: Annual Reports

The banks in table 2.4 exhibit different managerial capabilities evident in their number of international outlets. UBA and GTCO have numerous offshore subsidiaries akin to Access banks plc. UBA specifically operates in 20 African countries as part of its global footprint in distant markets. Likewise, there is clear reflection of competitive capacity although large number of international subsidiaries and affiliated organizations to each bank may not imply market leadership in banking business or greater assets size compared to the others. Numerous foreign outlets moderately imply excellent performance orchestrated by development of internal capacity proposed in resource-based view (RBV). A foremost influential idea in resource-based view is that sustained competitive advantage flows from exploiting: internal strengths, through responding to environmental opportunities, while overcoming external threats and avoiding internal weakness (Barney, 1991:99). Entry of mega Nigerian banks into foreign markets suggests these banks have developed sustained capacity to navigate foreign banking sector through strategic management of resources.

Figure 2.4: Assets and equity size of some nationally operating banks



Source: Author: **Note:** panel B is a presented equity of some banks with more of national business operation. Data is from annual report and accounts.

The assets of some banks with national business credential in Nigerian market. Fidelity bank in that class has the largest assets size in 2020 with 39 per cent. However, WEMA bank has the lowest assets profile of 14 per cent due to perhaps, its model of business. WEMA bank does not operate across the Nigerian region but is restricted to South West and South-South geopolitical regions in southern Nigeria. Thus, it has limited business reach. On the other hand, Sterling bank

plc although it has since few years ago metamorphosed to holding company has 18 per cent of assets. First City Monument Bank (FCMB thereafter) is second largest bank (figure 2.4 panel A).

The equity of the banks in the panel A of figure 2.4 reveal wider capital differences among the banks in common national category. Stanbic IBTC has 26 per cent value of equity in its books compared to 22 and 24 per cents in Fidelity bank and FCMB. Whereas Sterling and Wema banks have equal equity size of 7 per cent each in year 2023. Quite unfortunately, Unity bank plc has negative equity value in same period.

Similarly, in 2023 assets of major banks in the industry indicates the competitive capacity of Access bank holding company. It is the largest. It is closely followed by Zenith bank plc. and First bank Nigeria. Zenith bank has been a high-ranking deposit money bank in Nigeria. It emerged very strong in the aftermath of 2004/05 banking sector reform.

Moreover, the oldest banks in Nigeria- United Bank for Africa (UBA), Union Bank Nigeria (UBN) and First Bank Nigeria (FBN) have been operating the Nigerian market since the colonial era. Fig. 2.4 panel D discloses different capacities of these banks to mobilize deposits from the public. Union bank appears to be the least in the midst of three banks. First Bank and UBA are almost at par although there is exception in year 2020. It exceeded FBN with wider margin in deposit mobilization and this evidence is undisputed. This implies that Nigerian oldest banks likely engage in intensive competition especially between FBN and UBA. The magnitude of deposits mobilized by Union bank might reveal inherent strategic weakness in the market.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The current chapter is written to provide modest details on our analytical strategy. It therefore begins with research design where consideration is given to plans to assemble necessary datasets and appropriate method of estimation. It also covers the population and sample as well as sampling technique. The chapters in robustness checks from the dynamic panel data framework.

3.1 Research Design

The objective of this study is to evaluate the impact of strategic financial management on the corporate performance in banking system. This sub chapter sets forth the methods and associated bank-level quantitative longitudinal datasets required to conduct standardized empirical tests. Considering our empirical strategy, we assemble requisite data from across candidate 13 banks from 2013 to 2023. The process requires compiling data from annual company report and financial statements. On the basis of time index and cross section of banking firms. Paeleman, Vanacker and Devigne (2010); Oesterle and Richta (2013); de Mello, da Rocha and da Silva (2019); Etemad, Gurau and Dana (2021) show that longitudinal design represents the best design methodology whose datasets combine features of time and cross section conditions. This reinforces our conviction that longitudinal research study design is an ideal empirical strategy in this context. At the same time empiricism provides fitting philosophical validity. The objective is to rely on deployment of scientific method to arrive at new knowledge (Marczyk, DeMatteo and Festinger, 2010). Essentially, we maintain strict adherence to scientific processes and traditions portrayed in empiricism in order to exploit such systematic process to draw plausible inferences through observation and hypothesis. Aside of longitudinal study design, key proxies of study constructs are numeric quantities. The current study further benefits by adopting quantitative study designs.

3.2 Area of Study

This study covers the corporate aspect of finance as a discipline. The banks are essential business corporations whose performance are of utmost interest to the general economy although it operates in the financial sector. However, specifics imply that the study explores an emerging corporate finance branch being strategic financial management.

3.3 Population of the Study

The financial sector of Nigeria comprises of all deposit taking and non-deposit taking institutions. Detailed statistics classified firms in the sector to comprise of 11 categories of entities in the industry

Table 3.2: Financial Institutions in Nigeria

S/N	Financial institution
1	Commercial Banks
2	Development finance institutions (DFI)
3	Discount Houses
4	Finance Companies (FC)
5	Holding Companies (HC)
6	Merchant Banks
7	Micro-Finance Banks
8	Non-interest Banks
9	Primary Mortgage Banks (PMB)
10	Payment Service Banks (PSBs)
11	Mobile Money Operators (MMO)

Source: Central Bank of Nigeria

Table 3.2 presents classification of institutions in the financial sector. This represents population of current study. To be specific, target population consists of all 721 microfinance banks (MFBs) in Nigeria, 27 deposit taking banking firms in the Nigerian market; 32 primary mortgage institutions (PMIs) and 6 development finance institutions (DFIs). The rests are 4 non-interest banks and 5 merchant banks. Going by the division of Nigeria financial institutions into different categories on consideration of line of business the present study population comprises of financial institutions licensed as banks irrespective of nature of banking business.

3.4 Sample and Sampling Procedure

The sample size consists of 13 commercial banks and banks in the mortgage sector in Nigeria some of which have international licenses whereas others are in national license category. Sample further contains additional segment consisting of development bank institutions bringing our sample to 18 banking corporations. Information availability detects our choice of sample as some of the banks are yet to emerge as public liability companies. The mode of selection follows convenience method of sampling to facilitate easy data collection. As it is well known, bank- level data are archived in annual reports and accounts. We exploit the advantage of public information availability found in financial highlights and comprehensive statements. Concerning timing we arbitrarily take a cutoff

year from the period ranging between years 2013 and 2023. Year 2013 marked second phase reforms that characterized compulsory sacking of former bank CEOs violating regulatory compliance. Hence, the compulsory takeover of faulty banks via mergers and acquisitions.

Since the number of cross sections is N and the number of time series is T , then the sample size would be resultantly $N \times T$. In this study, a total of 22 banks (22 deposit money banks, mortgage and development banks are under empirical investigation over the period of 11 years from 2013 to 2023. Therefore, the sample size is 242 (22×11) which is theoretically considered sufficient for asymptotic inference and generalization. Variables to appear in the model are provided with different quantities. Data on risk management is quantified with regulatory risk reserves in company balance sheet. Equity and debts cover financing decision. Liquidity is represented using current ratio or liquidity ratio reported by some banks. Investing decision is covered using investment in financial and non-financial assets balance sheet item. We obtain individual values and sum them up. Data on the multiple dependent variables and explanatory factors are collected from financial statements.

3.5 Instrumentation

The current study does not involve the use of instrument of questionnaire since it does not rely on primary data collection from respondents. Rather the analytical data are sourced from terminal publications of the sample banks across several periods. Therefore, the available publications mean that instrumentation is of no necessity as it finds no application in the subject of discussion. We rely on information made publicly available by the banks.

3.6 Pilot Study

Rather than engage in pilot study we opt to carry on with full-scale analysis of the current work. However, we supplant pilot study with its resemblance expressed in robustness checks analysis. Ultimately the nature of our study does not emphasize preliminary conduct of research on small scale basis, yet, we could assemble narrow number of banks from the full sample to perform empirical tests prior to a comprehensive analysis.

3.7 Recruitment/Appointment and Training of Research Assistant

There are standing professionals recruited for this research. The few numbers of recruits have been modestly trained for the current need. Hence, we have approached such professional hands for necessary assistance on data gathering and other related responsibilities in the project. Moreover, beyond data gathering, the team of recruited staff are employed to help direct and cross check computer outputs on econometric estimation. Furthermore, ad hoc staff are temporarily employed to support the recruits and research supervisors to key in the assembled datasets from various bank

sources into the excel compute file.

3.8 Procedure for Data Collection

The data collection procedure involves gaining access to financial statements and annual report and accounts of banks. As the nature of the datasets are secondary, we apply convenience and archival procedure to obtain necessary data across all variables from all the banks. The same procedure is applied in the data extraction on business cycle by obtaining Nigerian constant GDP decomposed into its cyclical component and long run growth statistics.

3.9 Procedure for Administration of Research Instrument

Our study is not administering instrument to respondents, hence, neither email, WhatsApp nor direct administration approach and social media outlet is adopted procedure to gather necessary data catalogue.

3.10 Method of Data Analyses

Mainstream econometric literature describes specific statistical methods fitting for a particular analysis. Longitudinal and quantitative study designs direct and detect what econometric method is appropriate. Panel data features are in conformity with the two designs. Fundamental selection criterion is informed by the nature of study datasets and the need to improve efficiency of estimates. As already established our data come from longitudinal surveys on fixed repeated date period. The list of variables include equity, debts, dividend, investments, returns on equity. Prior works in the field such as Torres-Reyna (2007); Baltagi and Baltagi, (2008) present panel data technique as reliable estimator to make inference about relationship of two variates. Data series containing cross-section, time element and time invariant characteristics is better explained using panel data technique. As adopted by large majority of active research analysts to account for time invariant heterogeneity found in cross section of institutions the same is applicable in current study.

The strength of panel data lies in the capacity of a study to embark on short statistical collections but across several subjects in order to sustain asymptotic property in econometric estimation. Hsiao (2022) shows that panel data essential merits in financial research over conventional cross-sectional or time-series data sets is that it gives the researcher a large number of observations, increase the degrees of freedom and reducing the collinearity among explanatory variables. Thus, it provides

robust information about several economic parameters which ordinarily would have been omitted when considering cross-sectional survey in isolation or where time series parameters are focus of econometric analysis. Cross-section distribution overtime reveals some adjustment dynamics which rarely hides multitude of changes carried in macroeconomics. When it is singly adopted cross-section is successful in measuring proportion of the population of researched data on target variable at a point in time. The multiple periods carried in panel data makes it more powerful in producing consistent and efficient statistics as data contain details of sectorial and economic dynamics. Unfortunately, panel data use makes estimation prone to participant drop outs due to incomplete survey expressed in unbalanced panel data. As a timely signal data scarcity across all candidate banks implies that we are constrained to the adoption of unbalanced panel data technique. As explained in Brooks (2014), an unbalanced panel would have some cross-sectional elements with fewer observations or observations at different times to others. It identifies with missing observations in some variables from specific cross sections. This has potential to lead to biased estimates and a decline in statistical power. In Fixed Effects there could be imprecise standard errors and misleading p -values. In addition, collecting panel data component variables are quite expensive and time consuming although it permits econometricians construct and test complicated behavioural models. For simplicity, we begin with functional model in the form:

$$\text{Corporate performs}_{i,t} = f(\text{Financing}_{i,t}, \text{Investing}_{i,t}, \text{Liquidity}_{i,t}, \text{Apport}_{i,t}, \text{Risk}_{i,t}) \quad (3.1)$$

Corporate performances are functionally modelled in a manner that indicates variations in financing decision, investing decisions, liquidity and apportionment of proceeds decision which represents strategic financial management as determinants of corporate performances. We control for variables that capture all key fundamental strategic financial management proxies as well as the risk aspect. The study also controls for variable that denotes corporate performances of single banks.

We further substitute equation (3.1) into a reduced simple econometric specification. Hence, for expository convenience the general specification of panel data estimation while despising heterogeneity of cross section as in our sample banks is expressed in the following pooled regression equation set-up:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it} \quad (3.2)$$

Where;

Subscript i and t depict banks of all categories and time respectively. Whereas α is the constant term of the equation. An μ_{it} implies stochastic error term. βX_{it} represents parameter corresponding to marginal changes in the battery of explanatory variables consisting of strategic financial management. Y_{it} denotes dependent variables of interest that denotes corporate performance. An

interpretation of equation (3.2) is that corporate performance is modelled as a function of banks strategic financial management variables represented by decision proxies (in equation 3.1)) such as- financing decision is explained by the equity and debt structure with the exclusion of retained earnings reserves. This is in line with the current definition of the Central Bank of Nigeria on what constitute the current minimum capital requirement in Nigerian banks. In the wake of the current central bank recapitalization policy, minimum capital requirement in the Nigerian banks includes only paid-up capital and share premium (KPMG, 2024). Summation of paid-up and share premium forms the equity part of the capital structure in sample bank balance sheet.

Furthermore, extant literature requires that panel data estimation extends specification to account for certain features in the data. A critical feature is unique and fixed factor inherent in the cross section under a within estimation framework. By deploying fixed effect (FE) we incorporate time-invariant specific company factor. Babihuga (2007); Huizinga, Laeven and Nicodeme (2008); Kaur, Yadav and Gautam (2013); Serrasqueiro and Caetano (2015); Jiménez (2017); Li and He (2023) are outstanding examples of studies integrating FE regression for encapsulating variables that affect the dependent variable cross sectionally but does not vary over time. Therefore, we are bound to rewrite equation (2) and proceed to decompose the original stochastic error term into an individual specific error, μ_i and the residual aspect of the error term is set at, v_{it} , indicating a variable that varies over time and entities (capturing everything that is left unexplained about, Y_{it}). This is summarily estimated in the following simple equation:

$$\mu_{it} = \mu_i + v_{it} \quad (3.3)$$

We could expand equation (3.3) by substituting the μ_{it} into a new equation to derive the equation

$$Y_{it} = \beta X_{it} + \mu_i + v_{it} \quad (3.4)$$

Moreover, there is huge possibility that the model has time-fixed effect rather than entity-fixed effects model. We would use time-fixed effect model considering the fact that average value of Y_{it} varies over time but not cross-sectionally. As a standard convention in a time-fixed effects, an intercept inclusion into the model is allowed to vary over time on the assumption that the intercept is the same across entities at each given point in time. We could write a time-fixed effects model specification in the form:

$$Y_{it} = \alpha + \beta X_{it} + \psi_t + v_{it} \quad (3.5)$$

where ψ_t indicates time varying intercept that captures all the variables that affect the dependent variable, Y_{it} , that varies over time but are cross-sectionally constant. We allow the intercept in time-fixed effect to vary in similar manner found in entity-fixed effect specification framework. We incorporate time-fixed effect having observed waves of market induced mergers and acquisitions

(M&A) in industry which brings about changes part-way through sample period. We fix the individual variables into a multiple regression model in equation (3.6) below using net interest margin of the banks:

$$NIM_{i,t} = \alpha NIM_{-it} + \beta_1 Financing_{i,t} + \beta_2 Investing_{i,t} + \beta_3 Liquidity_{i,t} + \beta_4 Apport_{i,t} + \beta_5 Risk_{i,t} + \varepsilon_{it} \quad (3.6)$$

Where the parameters αNIM_{-it} indicates dynamic net interest margin with a persistent parameter to depict competitive performance. $\beta_1 - \beta_5$ are known parameters estimating the variables; ε_{it} represents the error term in the equation. *Apport* Implies apportionment representing the payment of interest to debt instruments and sharing of profit after tax (PAT for short) to shareholders in the form of dividend. *Risk_{i,t}* Means risk associated with carrying of percentage of non-performing loans in the books of the banks. *Financing_{i,t}* Implies financing decision which is a combination of equity and debts instruments in the balance sheets. On the other hand, net interest margin (NIM) is not always made available in annual reports of our sample banks, however, we shall perform computation using the formula in equation (3.7) as found in First Bank annual reports. The NIM equation is expressed as follows:

$$NIM = Net\ interest\ income \div Total\ interest\ income \quad (3.7)$$

Nevertheless, we advance the model using capital adequacy ratio to test for the stability of the banks associated with its strategic financial management. Financial stability of banks in the economy is an interesting issue across various jurisdictions and globally. This is embedded in the macroprudential policies adopted as part of system regulation in the industry (Galati and Moessner, 2010; Orlov, Zryumov and Skrzypacz, 2018; Budnik *et al* 2019) to tame banking sector and financial system vulnerability (Guttentag and Herring, 1984). Systemic crises have been recorded in the Nigerian banking system in between 1989 and 1998, which many linked to the withdrawal of government sector deposits from the banks, which consequently exposed the weak financial condition of most financial institutions whose financial fragility had been hidden by a combination of factors (Lamido, 2010). The power to implement remains primarily with national authorities (Gjedrem, 2005; Nijathaworn, 2010; European Central Banks, 2019; Committee on the Global Financial System (CGFS), 2023). We incorporate capital adequacy ratio (CAR) into equation (3.8) expressed below:

$$CAR_{i,t} = \alpha CAR_{-i,t} + \beta_1 Financing_{i,t} + \beta_2 Investing_{i,t} + \beta_3 Liquidity_{i,t} + \beta_4 Apport_{i,t} + \beta_5 Risk_{i,t} + \varepsilon_{it} \quad (3.8)$$

By *a priori* we expect the parameters of $\beta_1, \beta_2, \beta_3, \beta_4 > 0$ to indicate positive support for banking

system stability, however, β_5 on risk is expected to be negative. Theoretically, non-performing loans represents substantial risks to banking system soundness and stability such that it could trigger runs.

3.10.1 Dynamic Panel Data Methodology and Instrumental Variable

A dynamic methodology is applicable to current study in comparison to contemporaneous specification in order to evaluate the influence of history in the responses of our dependent variables. Of greater importance is that dynamic panel data models introduce two econometric issues which weaken the powers of traditional Ordinary Least Square (OLS for short), between Fixed effect and Random Effect (RE) statistical estimators inconsistent and biased. A likely centre and perhaps source of bias in the statistical output evolves from correlation between vector of explanatory variables, X_{it} , in this instance our lagged net profit margin representing endogenous variable, *Netinterest margin_{it}* and autoregressive terms in the error term. Instrumental Variable (IV) is a standard solution where an IV is strictly instrumental in the regression on the condition that it has no correlation with the unobserved error variable. This method under the framework of panel Generalized Method of Moment (GMM) which could either be differenced- GMM or system-GMM is suitable to eliminate endogeneity that influences efficiency of estimates which economic signs may not be theoretically appealing.

Potential source of endogeneity is in the sample banks. Specifically, First Bank Nigeria (FBN) holding company also has merchant bank arm of business as FBN merchant bank to supply modelled data from various variables. An effective instrumental variable corrects for this problem. Bitar, Hassan and Walker, (2017) apply instrumental variable (IV) technique procedure in a banking system soundness. Standard IV procedure suggests an internal instrument. This is proxied in the form of lagged dependent variable as internal instrument. Kirimi, Kariuki and Ocharo (2022); Dima, Dincă and Spulbăr, (2014) used lagged dependent variable as IV. In our case we expect endogeneity to be present in the estimation when explanatory variables are correlated with error term. We control endogeneity using moment conditions in the Generalized Method of Moment (D-GMM) framework although the nature of the data determines the choice of method. As it is the standard prescription in Arellano and Bond (1991), we introduce instrumental variable subject to the satisfaction of basic conditions: (1) highly correlated with regressor, (2) orthogonal to the error term. We compare lagged value of dependent variable on Pooled Ordinary Least Square estimate with Fixed Effects regression result and the persistent parameter in GMM estimate.

Fixed Effect specification is applied in Jiménez *et al.* (2014). This provides guidance on mode of result selection that indicates greater consistency and efficiency, denotes vector of endogenous regressor obtained from the operational environment of the banks; the vector of endogenous regressors include the four variables measuring strategic financial management. The GMM equation is expressed in the general form below:

$$Y_{it} = \alpha Y_{it-1} + \beta X_{it} + \omega_i + \varepsilon_{it} \quad (3.10)$$

where,

Y_{it} depicts corporate performance; i ($i=1, \dots, N$); at time, t ($t=1, \dots, T$), thus, we set the parameters at ($N=1, \dots, 18$) and ($T=1, \dots, 11$). Y_{it-1} lagged dependent variable as internal instrument.

3.10.2 Robustness Test Checks

We conventionally expect the banks to use more debts when interest rate is low and vice versa when it's high in its rational financing decision. Expectedly this is a usual response among the banks. On the other hand, the banks operate under environmental turbulence which the business has to confront. The turbulence instigates negative business cycles that impact strategic managerial approaches and outcome especially in their investments and corporate performance. We interact business cycle macroeconomics with our various performance indicators with inclusion of investments of the banks. As argued in Borio, Furfine and Lowe (2001) risk which is an intrinsic issue moves in the course of business cycle. Presence of cyclicalities has added to validity of research outcomes. It has been vastly employed in large European, United States and emerging markets (Luginbuhl and Koopman, 2004; Zarnowitz and Ozyildirim, 2006; Perron and Wada, 2009; Moskalkenko and Mitev, 2020). Thus, cyclicalities have expanded macroeconomic discussions in several research studies due to its impacts on the business environments and their outcomes on corporate performance. Thus, in an extreme cyclicalities performing loans could be severely impaired and eventually turns bad. Traditional econometrics suggests the decomposition of real gross domestic product (GDP) into its steady-state long run quantity and cyclical components. We employ Hodrick-Prescott (HP) on real GDP to extract cyclical component proposed by Hodrick and Prescott (1997) implemented in Kemp (2015); Hodrick, (2020) in trend-cycle decomposition. HP has been largely applied in decomposing the cyclical element in credit-GDP relations to obtain gap from financial cycle (Ibrahim, 2016; Drehmann and Yetman, 2018; Galán, 2019). We thus, obtain new equation accommodating interaction term specified as:

$$bcycle * Netinterest\ margin_{it} = \alpha + \beta X_{it} * (Bcycle) + \mu_{it} \quad (3.11)$$

where, $\beta X_{it} * (Bcycle)$ implies interaction of business cycle component with vector of explanatory variables. Other parameters are as already explained; *Netinterest margin* is a corporate performance indicator among the banks. Global turmoil from COVID-19 adversely impacted on all businesses. It is expected that capital constructions and rest of other strategic financial decisions could react to conditions set by COVID-19 lockdowns which existed for extended periods. This is relevant for financial institutions. Hence, we perform robustness checks to assess shorter period comprising for instance (year 2020-2023). Power of the model could be improved by adding further variables from firms into existing sample and retest in a new regression.

Furthermore, we subject model specification in equation (3.8) into a robustness check by eliminating capital adequacy ratio as dependent variable to be substituted with non-performing loans as risk element. Nonperforming loan (NPL) is widely identified across different financial systems as financial soundness indicator (Central Bank of Egypt, 2022). Strategic financial management in the banks takes into account of adverse scenarios due to large externalities imposed from the rest of the economy. Suárez and Sánchez Serrano (2018); Koju, Koju and Wang (2018); Macháček, Melecký and Šulganová (2018); Ahmed, Majeed, Thalassinis and Thalassinis (2021); Gashi, Tafa and Bajrami (2022) are notable studies on nonperforming loans to investigate financial system performance in terms of soundness. Such fundamentals affect assets portfolio quality and can translate into financial soundness risk for individual bank. Suárez and Sánchez Serrano, (2018). Rising magnitude of nonperforming loans adversely affects the resilience of the banking observed in poor robustness of banking system balance sheet. By theoretical *a priori*, all econometric parameters are expected to be negatively associated with non-performing loans. We interact the right-hand side equation with business cycle. This decision is informed by the intuition that business cycle is a macroeconomic driver of nonperforming loans.

$$\begin{aligned}
 NPL_{i,t} = & \alpha NPL_{-i,t} + \beta_1 Financing_{i,t} * (Bcycle) + \beta_2 Investing_{i,t} * (Bcycle) + \beta_3 Liquidity_{i,t} \\
 & * (Bcycle) + \beta_4 Apport_{i,t} \\
 & + \varepsilon_{it}
 \end{aligned}
 \tag{3.12}$$

Where; NPL is nonperforming loans. Others are as already explained in the previous equations.

Table 3.2: Variables description and Economic Expected Sign

*SFM: Strategic financial management

Construct *(SFM)	Variable	Description	Expected Effect	Explanation
Investment decision	Investment	Investments in Associates; subsidiaries, Investment property	+ve	Investments in associates and assets boost corporate performance and firm value considering MM hypothesis or irrelevance
Financing decision	Capital	Equity and debt investments capital from paid-up share share premium (equity), Debt, long-term borrowing	+ve	strong capital base absorbs shock; increases international credibility positioning deepens financial inclusion by creating new market for new customer it is expected to stimulate inflow of FDI
Liquidity decision	Current ratio	liquid assets to deposit liabilities	+ve	makes the system less susceptible to losses makes bank runs highly unlikely
Business cycle	hp-filtered Cyclical gdp component	detrended-GDP	-ve	in downturn: (1) banks take precautionary measures by holding greater capital (2) household defaults on debt
Apportionment	dividend/interest expense	payment from PAT/ gross earnings	ambiguous	banks pay debts for credit rating dividend improves image of the firm
Risk	nonperforming loan	credits without interest Principal payments above 365 days	-ve	Triggers damaging vulnerability disrupts banking system operations
Corporate governance the bank business	board size	number of Executive and non-executive directors	ambiguous	depends whether large board size implies greater expertise in directing

CHAPTER FOUR

DATA PRESENTATION, RESULTS ANALYSES AND DISCUSSIONS

Bank-level data have been collected for analysis. Details information about the collected data are found in the various panel data series presented in appendices. We have collected data on financing decisions of the banks being a summation of equity and debts from statement of financial positions. Others are on investing from the cashflow statements. Apportionment consists of interest payment and dividend available in cashflow statements. Liquidity ratio, capital adequacy ratio and risk (nonperforming loans) are in the standard CEO reports on the status of the company.

4.1 Descriptive Statistics and Empirical Results

In this sub-chapter we present individual descriptive statistics to test means and distribution of each series. We compare the outputs to regulatory minimums fixed by the Central Bank of Nigeria. This is done to track possible deviation of bank report information to minimum requirements by national jurisdiction. Major variables with regulatory minimums are liquidity ratios where banks present annual maximums and minimums as well as end year ratio. We opt for comparison using the year end value. Another variable of interest is the risk-weighted capital adequacy ratio fixed in compliance to Basel II accords. Where the mean exceeds regulatory minimum values then a logical implication is that the bank is safe.

Table 4.1A. Summary Statistics from 2013 to 2023 on Capital Adequacy Ratio

	25th percentiles	50 th percentile	99 th percentile	Standard (σ) Dev.	Skewness (S)	Kurtosis (K)	Obs
First bank	13.54	16.34	26.63	4.67834	0.5184	2.0283	11
Union Bank	13.3	15.91	24.8	7.607	-0.97169	3.06489	11
United Bank for Africa	20	22.4	32.6	4.5763	0.6879	2.67812	10
Zenith Bank	21	22.5	27	7.0763	-2.1500	6.6116	10
Fidelity Bank	17	18.29	24.21	3.0161	0.2976	1.5937	11
Access Bank	16.07	19.5	24.52	2.8298	0.1562	2.2814	11
Guaranty Trust	20.66	23.39	28.14	2.8314	0.1763	2.5188	11
Sterling Bank	13.3	14.17	18.03	6.9096	0.4027	2.6614	11
First City Monument	11.16	15.518	19	6.9096	-1.1978	2.8193	10
Jaiz	0	16.44	33	12.311	0.0365	1.55	11
Abbey	42	54	60	9.9309	-0.8959	2.4824	11
FSDH	20.18	26.81	49.15	9.3939	0.8530	4.4689	11
WEMA	12.695	14.32	27	4.395	1.8460	5.7988	11
Stanbic IBTC	18	19.2	24.5	2.6159	0.4083	1.8477	11
Development Bank	62.58	64.21	415.13	148.877	0.8744	2.2095	11
Bank of Industry	33.5	47.67	54.05	19.7649	-1.3822	3.237	11
Ecobank	14.3	16.13	21.44	5.6208	-1.9220	6.4047	11

Note: NEXIM bank, Living Trust, Aso save, Rand and Greenwich Merchant Bank are missing in the capital adequacy

From the table 4.1A above the minimum magnitude of capital adequacy (CAR) expressed in its 25th percentile is excess of Basel III regulatory minimum as well as from those of the Nigerian regulatory authorities. There is clear indication that First bank Nigeria surpassed the Basel benchmark. The benchmark is an incorporation of Basel II Pillar 1 framework containing credit, operational and market risk are regularly measured and monitored. For instance, national and regional banks fixed at 10 per cent determined by the Central Bank of Nigeria while at the same time international and domestically systemic important banks (DSIBs) has a minimum benchmark of 15 per cent as capital adequacy ratio (see for example Greenwich Merchant bank, 2021). By the minimum ratio, First Bank Nigeria plc holds greater capital for its operational safety. This is because higher quality of capital than under the earlier Basel II rules.

The 25th percentile benchmark has a parameter of 13.54 per cent while the mean capital adequacy ratio marked at 50th percentile of 16.54 per cent and 99th percentile at 26.63 per cent all clearly indicates solid capital ratio. However, the mean of regulatory minimum capital adequacy requirement ratio pegged at 15 per cent in 2020 (see for instance, United Bank for Africa, 2020) is almost equivalent to 15.91 of Union bank and 15.518 for First City Monument bank in the 50th percentile. This indicates that both banks risk-weighted capital is marginally above regulatory minimum. Conversely, WEMA bank CAR marginally dropped below 15 per cent. The standard deviation (σ) is 4.678 indicating modest variability. First bank CAR is skewed to the right with a kurtosis below 3 standard coefficient indicating leptokurtic distribution.

Generally, all the candidate banks show signs of strong CAR. However, Development Bank Nigeria has excessively high capital adequacy ratio. Its 25th percentile of CAR is 62.58 per cent but with a maximum of 99th percentile of 415.13 per cent. The bank though a State-Owned Enterprises (SOE) is capitally fortified to overcome stress of any sorts and magnitude. Furthermore, Development Bank of Nigeria has excessively high standard deviation (σ) of approximately 148.877. On the other hand, Bank of Industry owned by the Nigerian state has impressive capital adequacy ratio to cover risks from credits, operational and market side risks. This value is negatively skewed ($\mathcal{S}$) at -1.3822 with optimum mesokurtic distribution of 3.237.

Table 4.1B. Descriptive Statistics on Liquidity Ratio

	Mean ($\bar{x}$)	Minimum	Maximum	Standard (σ) Dev.	Obs
First bank	15.37273	0	91.92	28.21119	11
Union Bank	17	0	41	18.494324	8
United Bank for Africa	54.417	38.57	68.3	9.756836	10
Zenith Bank	68.6333	57.3	75	6.263758	6
Fidelity Bank	39.15714	35	45.3	3.195756	7
Access Bank	38.15	25	46	9.385627	4
Guaranty Trust	42.98778	31.08	50.31	6.657917	9
Sterling Bank	36.3825	32.41	42.17	3.352094	8
First City Monument	38.325	34.2	49	7.13086	4
Jaiz	25.2975	0	43.06	16.23448	8
FSDH	71.36	20	136.3	39.24031	9
WEMA	35.86444	26.25	76.61	15.46431	9
Stanbic IBTC	93.18818	47.1	149	28.35053	11

Note: NEXIM bank, Living Trust, Aso save, Abbey, Ecobank, Development bank of Nigeria, Bank of Industry, Rand and Nexim and Greenwich Merchant Bank are missing in the liquidity ratio descriptive statistics. This is due to obvious gaps and none explicit computation of the liquidity ratio in some years across some banks or non-computation of liquidity ratio across all periods.

Fidelity bank in its category of domestically important bank in Nigeria showed impressive liquidity status like other banks. Apparently, it is among the highest performing in terms of keeping its liquid position strong against vulnerabilities. The latest report of the bank can be effectively compared with descriptive statistical computation. The mean ($\bar{x}$) liquidity ratio of the bank is 39.157 per cent with a minimum of 35 per cent compared with a maximum of 45.3 per cent. These clearly surpassed 30 per cent regulatory minimum financial year (Fidelity bank, 2023). The Fidelity group meets its liquidity needs under going concern and stressed market conditions.

The liquidity ratio of many banks show disparities but the tabular evidence vindicates all the candidate banks from suspicious liquidity crunch. However, bank records extensively point in the direction of a constant regulatory liquidity ratio pegged at 30 per cent (Fidelity bank, 2014, 2021; Stanbic IBTC, 2011). Union bank Nigeria (UBN) appears to struggle with liquidity given the fact that its liquidity ratio often coincides with regulatory minimum of 30 per cent. This implies vulnerability even though regulatory minimum of 30 per cent considers bank in this threshold to be safe and secure without recourse to panics. A succinct example is that in year 2019 liquidity ratio of the bank was 30 per cent which is akin to regulatory demand for Nigerian banks (Union Bank Nigeria, 2019). In fact, the bank tended to be retaining this liquidity magnitude across the years as it remained unchanged from year 2017 (Union Bank Nigeria, 2017). In the table above the mean ($\bar{x}$) of Union bank plc liquidity ratio is estimated at 17 per cent with a nil minimum and a 41 per

cent maximum. At 17 per cent mean value the bank is experiencing tremendous stress and may likely suffer constraints converting its liabilities. Below 30 per cent public confidence in the safety of the bank trapped in liquidity trouble is in significant doubt such that future deposits tilt towards jeopardy. With a standard deviation (σ) of 18.494 the risk associated with Union bank sustaining a solid liquid position based on maximum value is extremely high.

We acknowledge there are recorded gaps in the time series liquidity ratio collection. It is anticipated that this impacts our analysis and objective conclusion about the liquid status of Nigerian banks. Thus, caution is being reasonably applied as gaps conceal vital information that influence analytical views. Management of liquidity of financial institutions have been a strategic focus to protect civil confidence in the capacity of the firms to survive demands from account holders. Commencing with First bank Nigeria the mean ($\bar{x}$) of its liquidity ratio is 15.37273 per cent. The First bank group seems to be having sufficient financial resources needed to fund liquid asset positions. Usual strategy adopted is the maintenance of growing volume of marketable securities that can be easily disposed to ensure that all anticipated financing commitments are met at specified due date. The maximum liquidity ratio is 91.92 per cent from a zero minimum in the period. Although it is clear that standard deviation (σ) of 28.21119 is quite extensive.

Another critical holding component domestically important to the Nigerian economy is Guaranty trust holding company. Its mean liquidity ratio is 42.98778 ($\bar{x}$) per cent although minimum and maximum rates are 31.08 and 50.31 per cents respectively. The ratios are in excess of 30 per cent regulatory requirement which remained unchanged from 2018 to 2019. These amounts comparatively suggest strong liquid position. As it can be observed in some years like 2018 and 2019, the average for the year was 48.07 in 2018 and 44.43 per cent in the next financial year. These are slightly higher than the mean ($\bar{x}$) of 42.98 per cent but above minimum of 38.58 and 36.80 per cent (Guaranty Trust, 2019). The bank enjoys liquidity risk tendencies which is most preferred by local currency depositors.

Zenith bank being one of the strongest and powerful in the Nigerian banking space has strong liquidity profile. The table shows it accumulated and sustained fine liquid position in the industry though as low as 57.3 per cent. Zenith bank mean ($\bar{x}$) value being 68.633 and this rate is close to its maximum ratio of 75 per cent. It is clear from its annual reports that maximum liquidity ratio and mean and minimum exceeds regulatory requirement of 30 per cent in year 2022 (Zenith bank, 2022). This is an indication of safety. This implies that the group maintains liquid assets and marketable securities adequate within regulatory limits to manage liquidity stress situation. To

effectively protect this position Zenith bank management may have strived within reasonable organizational capacity to ensure that the group holds liquid assets comprising cash and cash equivalents, and debt securities issued by sovereigns, which can be readily remarketed to meet liquidity requirements in moments of challenge (Zenith Bank plc, 2016). In the midst of the impressive liquid position, the bank is also confronted by standard deviation of 6.263 magnitude of variation from its mean position for the 6 observations available. It can be reasonably implied that Zenith bank properly matches its cash inflows with cash outflows which positions it to meet with obligations that fall due which could be done at moderate cost.

United bank for Africa (UBA) displays impressive high liquidity percentage level. Its mean for all period liquidity ratio on average remained at 68.633 percent but indicates an increase to the magnitude of 68.3 percent. But it has a risk of high standard deviation comparing the gap between the maximum and minimum coefficients. The mean is a key reflection of the liquidity ratio of the bank in 2022. In that year the ratio proved to be 68.3 per cent as seen in its financial highlights (see for instance, United Bank for Africa, 2022). With a standard deviation of 9.756836 there is evidence of fluctuation of this variable in UBA. The liquidity ratio underscores the class of UBA group network among other banks in the industry. The bank is not vulnerable at least from its liquid angle. This helps the group to confidently operate in varieties of adverse circumstances without incurring depositors' fears.

4.1.1 Bivariate Statistical Analysis of Correlation of Interest payment to Investors

Table 4.1.1: Correlation Result

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
First Bank Nigeria (1)	1.000																		
Union Bank Nigeria (2)	-0.631	1.000																	
United Bank for Africa (3)	-0.152	0.458	1.000																
Zenith bank (4)	0.488	-0.142	0.085	1.000															
Fidelity bank (5)	0.960	-0.754	-0.133	0.519	1.000														
Access Bank (6)	0.735	-0.258	-0.164	0.265	0.821	1.000													
Guaranty Trust (7)	0.612	-0.140	0.169	0.341	0.774	0.267	1.000												
Sterling bank (8)	0.158	-0.021	0.922	-0.080	0.179	-0.249	0.267	1.000											
First City Monument (9)	-0.775	0.781	0.401	-0.061	-0.888	0.581	-0.246	0.165	1.000										
Abbey (10)	0.685	-0.302	-0.278	0.828	0.717	0.421	0.581	-0.269	-0.728	1.000									
FSDH (11)	0.329	-0.345	0.321	0.215	0.538	-0.219	0.421	0.538	-0.205	0.198	1.000								
WEMA (12)	0.219	-0.219	-0.077	0.772	-0.415	-0.054	1.000	-0.054	0.804	0.803	-0.540	1.000							
Stanbic IBTC (13)	0.933	-0.410	-0.032	-0.082	0.840	0.631	0.632	0.148	-0.658	0.780	0.460	-0.349	1.000						
Development Bank (14)	0.265	0.289	0.154	0.135	0.307	0.469	0.469	-0.013	-0.283	0.613	-0.106	-0.000	0.329	1.000					
Bank of industry (15)	0.863	-0.623	-0.311	-0.366	0.914	0.617	0.617	-0.132	-0.877	0.927	0.255	-0.742	1.000	-0.647	1.000				
Ecobank plc (16)	-0.210	-0.256	-0.294	-0.296	-0.412	-0.021	-0.021	-0.293	0.104	-0.161	-0.436	-0.341	-0.472	1.000	0.438	1.000			
Greenwich (17)	0.779	-0.454	-0.272	-0.152	0.939	0.519	0.519	-0.210	-0.854	0.965	0.274	-0.513	0.969	-0.237	-0.361	0.273			
Aso Save (18)	-0.139	0.136	-0.055	-0.193	-0.490	-0.201	0.639	-0.044	0.518	-0.158	-0.127	0.227	-0.314	0.564	-0.408	0.523			
NEXIM bank (19)	-0.832	0.896	0.540	-0.368	-0.786	0.102	-0.053	-0.314	0.531	0.341	-0.351	0.524	-0.299	-0.154	-0.008	0.022	1.000		

component of rewards for investing in a firm being interest paid by the banks out of corporate gross income. This is domiciled in the cash flow statement. With regulation of interest rate in the banking system investors reasonably expect banks to correlate on this ground. However, the economy can impact each bank differently just as strategic investment could drive the disposition of bank to interest payment from its business earnings. Similarly, organizational culture plays significant role in dictating the evidence estimates presented in table 4.1.1. As it is already known our candidate banks are a soft mix of holding companies and systemically domestic important banks. The oldest banks in the economy: First bank, Nigeria, Union bank and United bank for Africa indicates weak correlation coefficient. For instance, the coefficient between Union bank Nigeria and First bank Nigeria is -0.631 resultantly showing modest negative correlation despite belonging to the category of first generation banks. However, with a coefficient of 0.458 shows weak but positive correlation between United bank for Africa and Union bank Nigeria.

The correlation is poorest between United bank for Africa and First bank Nigeria plc. Despite privilege of being forerunners to full-fledged conventional banking in the country, there corporate philosophies could be tending towards aggressive rivalry for the market. Or given legal origin of First bank which has British root and UBA with French inclination and birth, these banks would likely stand and operate as powerful old-fashioned rivals which survives to future contemporary years. This might imply lack of common competitive grounds in the banking business for the two colonially founded banks. Conversely, a negative correlation coefficient of -0.631 between Union bank Nigeria and First bank further reveals deep competitive animosity from banks with common ancestral origin. Nevertheless, this what free market economy climate fairly presents in different industries.

Major new generation banks: Zenith bank, Access bank and Guaranty trust holding company hold different correlation coefficients based on arithmetic signs. Zenith bank has wide disparity between it and First bank Nigeria plc. Access bank Nigeria and First bank Nigeria has a coefficient of 0.735. However, there is high positive correlation between Access bank and Fidelity bank at 0.821. Guaranty trust holding company is highly correlated with Fidelity bank. Incidentally, Fidelity bank high correlation with First bank, Access and Guaranty trust holding company seems to be well positioned in having mutual business relationship. However, Sterling bank in the group of modest domestic banks seems to be a fundamental outlier. All its coefficients vis-à-vis other banks majorly of new generation deposit money banks and first generation DMBs are extremely weak. The weakest in terms of negative and positive correlations expressed in the coefficients of -0.021 vis-à-vis with Union bank; -0.249 with Access bank plc. It seems that Sterling operates from a different

business space that massively detached it from rest of firms in the industry. On its coefficient with positive sign the magnitudes remain very low against First bank Nigeria, Fidelity bank and Guaranty trust holding company. On the contrary Sterling bank plc has almost perfect positive correlation with United bank for Africa at a value of 0.922. This evidence is quite anomalous although a normative expectation is that Sterling bank should have greater degree of association with First bank plc and Zenith bank since there is business understanding with these two old entities. This understanding involves as revealed in Sterling bank (2014) pledging of some of the bank's assets that are on its statement of financial position in various day-to-day transactions that are conducted under the usual terms and conditions applying to such agreements as pledging of its assets as collateral security for borrowings from Citibank International Plc., Goldman Sachs International and clearing activities with First Bank Plc. In addition, it has mutual understanding in placing of cash collateral for letters of credit and visa card through Zenith Bank Plc. However, the weak correlation seems the business dealings are not sufficient to lead to strong correlation coefficient since the year 2014.

The result further reveals high level degree of association between some old generation banks and the new generation deposit money banks (DMBs). In the table the coefficient between Fidelity bank plc and First bank Nigeria has a coefficient of 0.960 which is an extremely near perfect positive correlation. This is a high degree of association. A correlation coefficient of -0.754 between Fidelity bank and Union bank but this is weak and negative between Fidelity bank and United bank for Africa at -0.133.

4.1.2 Pairwise correlation and Analysis of Development Banks

Development in banks in Nigeria to fund economic development of the country are few state-owned enterprises (SOEs). Therefore, expected correlation coefficient is likely to be positive and large. However, these banks do not operate in clear isolation from the rest of DMBs. Table 4.1.1 Development Bank Nigeria (DBN) show poor correlation with first three pioneer banks. Evidently, the least is 0.154 between DBN and United Bank for Africa. Its highest positive correlation is with Abbey mortgage bank plc. at 0.613 which though is not part of development finance bank owned by the government.

Bank of industry shows different patterns of correlation by producing high correlational estimates with some banks but not in the class of development financing SOEs. The reason could flow from its mandates of industrial support although exclusively directed at helping firms in a service providing industry. Bank of industry has high correlation with Abbey Mortgage bank given a

coefficient of 0.927 which is comparable to 0.914 with Fidelity bank. There is high degree of association between these banks and Bank of industry which indicates certain level of similarities in interest payment history. Bank of industry also relates with First bank Nigeria given a coefficient of 0.863. This similarity is traceable to the board of DBN where former board members at First bank of Nigeria holds a position of non-executive director in DBN (Development Bank of Nigeria, 2019). Crossbreed of ideas expressed in policy of DBN is likely to be a reflection of the culture thriving in First bank Nigeria. Bank of industry is vastly negatively correlated with several other banks. The Nigerian bank for export and import has correlation coefficient that distances it from the rest of development banks. NEXIM bank highest positive correlation is 0.896 with Union bank Nigeria.

4.1.3 Mortgage banking firms and Merchant Banks Correlation Analysis

Classic bank firms in mortgage subsector of the banking industry are Aso savings & Loans operating as primary mortgage institute and Abbey mortgage bank. In table 4.1.1 we find evidence of weak negative and positive correlation between our mortgage banks and rest of the banks in the industry in different business and within themselves. Also save plc has -0.055 correlation coefficient with United bank for Africa. The nature of mortgage business is by this result indicating a strong disparity between it and rest of conventional banking business. Aso save with a coefficient of 0.518 positively correlates with Guaranty trust holding company.

Merchant banks in interest payment analysis include: Greenwich and FSDH group (note that Rand merchant bank is not on the table). From the table we observe a strong positive correlation between Greenwich merchant bank and Abbey mortgage in interest payment which is an apportionment strategic decision. FSDH correlation with counterpart merchant bank and the rest of banks in the mix shows very low coefficients. This is a reflection of the fact that FSDH is unique but could also reveal its competitive strength and tendencies to be influenced by dominant economic and micro prudential factors impacting on merchant bank business. Merchant bank business package in Nigeria primarily revolves around rendering such financial services that principally involve transactional products and structuring of finance, money market activities including trading and holding of marketable securities such as treasury bills, government bonds, commercial bills and other eligible instruments. These businesses are the fundamental corporate interest of FSDH holding company limited (FSDH holding, 2019). On the other hand, Greenwich merchant bank has a high correlation coefficient of 0.779 with First bank, but the highest coefficients are 0.939, 0.965 and 0.969 with Fidelity bank, Abbey mortgage and Stanbic IBTC. Thus, such strong positive correlation

likely stems from the leadership of the bank. Evidence in this regard fairly directs attention to the board of Greenwich were one among its consummate staff formerly with First bank now sits on the board of company. It is instructive to know that Greenwich interest payments or distribution of earnings policy in the bank could be partly a reflection of First bank plc strategy.

4.1.4 Analysis of Pairwise Correlation on Investment of Nigerian Bank

Table 4.1.4A: Correlation coefficient of Investment for major deposit money banks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
First Bank Nigeria (1)	1.0000											
Union Bank Nigeria (2)	0.1839	1.0000										
United Bank for Africa (3)	0.4333	0.8627	1.0000									
Zenith bank (4)	0.3431	0.4042	0.3603	1.0000								
Fidelity bank (5)	0.4249	0.6983	0.5911	0.2038	1.0000							
Access Bank (6)	0.6668	0.1909	0.4650	-0.0517	0.4138	1.0000						
Guaranty Trust Company (7)	0.4459	0.7865	0.6684	0.6030	0.8939	0.2581	1.0000					
Sterling bank (8)	0.3286	0.8789	0.7169	0.5624	0.8350	0.0910	0.9577	1.0000				
First City Monument (9)	0.2698	-0.3049	-0.3788	0.4264	0.1822	0.0476	0.2534	0.0598	1.0000			
WEMA (10)	0.1958	0.9627	0.8412	0.2474	0.7656	0.2545	0.7779	0.8638	-0.3454	1.0000		
Stanbic IBTC (11)	0.3299	0.4805	0.3823	0.9806	0.3208	-0.1046	0.6954	0.6691	0.4290	0.3390	1.0000	
Ecobank plc (12)	-0.8763	-0.1849	-0.4218	-0.2278	-0.3547	-0.4030	-0.3546	-0.3288	-0.0779	-0.1997	-0.2237	1.0000

Eco bank pan African institution produced negative coefficient vis-à-vis other banks. At a coefficient of 0.8763 with First bank Nigeria it implies that investments of these two bank firms are tending to be in the opposite. Eco bank is a pan-African bank whose management rests on several experts from signatory West African countries. Therefore, its organizational culture seems to be influenced by the mixture of Anglophone and francophone cultures. Eco bank invests in the purchase of subsidiaries. On the one hand, Eco bankers invest mainly in people and technology. Again, it performs corporate and investment, domestic bank and treasury services. Zenith bank investment has weak correlation coefficient with rest of other banks. All figures are far from unity although they are all positively correlated. As a relationship with Union bank Nigeria with a coefficient of -0.1849 which is close to zero, Eco bank and Union bank Nigeria investing strategies are not related.

In the table 4.1.4a, we have estimated correlation coefficient of investment decisions of different

banks. By expectation the correlations coefficients should be a mirror reflection of each other for underlying reasoning. The dominant and highly profitable industry in Nigeria is the oil and gas. The prospect for high profit sways chief credit officers' investing decision of banks to favour investment concentration with its attendant risk elements. United Bank for Africa major investments s domiciled in Oil & Gas such that it total loans and advances worth 110,721 and 242,387 million naira respectively in year 2010 and 2019 respectively (United Bank for Africa, 2010, 2019). The values so far remained in excess of every investment worth committed into other industries. Access bank follows almost similar trajectory. It massively engages in funding oil and gas project development. Its sum of investment in oil and gas worth 344,639,361 million naira divided along- upstream, midstream, downstream and crude refining (Access bank, 2015). Except its massive loans to the government other industries have received lesser loans package. However, the board of banks has powers to set the lending limits and conduct prompt review of risks as part of Groups credit strategy and credit risks tolerance. Investment portfolio concentration can trigger macro prudential risks leading to systemic crisis if risk suddenly crystalizes. In addition, the banks tend to follow related patterns of investment in the economy expressed in acquisitions: (1) acquisition of investment securities (2) acquisition of property and equipment (3) acquisition of intangible assets. Virtually all banks in the Nigerian industry space races after putting money in technology projects for greater corporate efficiency especially investment in information technology has been a crucial project for firms (Union bank, 2020; Wema bank, 2021). Apart from physical capital investments, several banks gear up in funding and investing in financial literacy project and financial inclusion to improve unrestricted access to modest and exotic financial services. Nevertheless, hidden macro and micro conditions could produce differing outcomes in the table above. From the first generation banks, we observe significant weak correlation coefficient among these first three banks. The correlation coefficient between First bank Nigeria and Union bank plc is 0.1839 which shows extremely large disparity of these banks in their investment focus. Union bank Nigeria has extraordinary success in investing and financing agriculture in Nigeria more than any other banking firm. However, there is a strong positive correlation between United bank for Africa and Union bank given a coefficient of 0.8627.

First city monument bank (FCMB) is among the promising banks in the country. Its positive correlation coefficient of 0.0476 and 0.0598 though extremely weak with Access and Sterling banks plc showed almost zero degree of association. There is no near similarity in their investment strategies or interest in certain related assets. The reason might be obvious. On the other hand, Sterling bank strategic investment focus is different. For instance, the firm's applies what it termed

“Heart Strategy” (meaning health, education, agriculture, renewable energy and transportation) prior to year 2020 global pandemic troubles (Sterling bank, 2018) and further prioritize this focus in the middle of the pandemic through massive investment in the health sector of Nigeria. On the other hand, FCMB operates Special Purpose Entities (SPE) which has been invented to accomplish a narrow and well defined objective such as the execution of a specific borrowing or lending transaction. From every indication it is likely that sterling bank has deep admiration for health care financing. According to the bank demand for health care outweighs its supply. Thus, for years Sterling bank focuses on improved health care delivery infrastructure through equipment financing (Sterling bank, 2020). It also has massive investment interest in agriculture as the country holds vast agricultural potential due to its large domestic market from abundant arable land. As regards to correlation with Access bank, it is understandable that Access bank is hugely robust in terms of capacity and size. The reality is that managerial philosophy of Access bank could differ from FCMB tradition.

Table 4.1.4B: Pairwise Correlation of Development and Other Special Banks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Abbey Mortgage (1)	1.0000								
FSDH (2)	0.6172	1.0000							
DBN (3)	0.2209	0.3756	1.0000						
BOI (4)	0.6271	0.5948	0.7891	1.0000					
Greenwich Merchant (5)	-0.0955	-0.6723	-0.1691	-0.2154	1.0000				
NEXIM (6)	-0.2934	-0.0721	0.6330	0.1119	-0.2163	1.0000			
Jaiz (7)	-0.0948	-0.6732	-0.1964	-0.2005	0.9892	-0.2207	1.0000		
Aso Save (8)	-0.3118	0.0020	-0.3830	-0.2324	-0.4389	-0.2244	-0.4070	1.0000	
Living Trust (9)	0.1535	0.0518	-0.3183	-0.3111	0.3771	-0.2279	0.3139	-0.4419	1.0000

On the table 4.1.4b we present specialized banking firms mainly of mortgage bank, Nigeria export import (NEXIM) banks and a single Islamic bank (Jaiz bank). From the bottom of the table Living trust produced correlation that suggests the nature of its business. We duly expect development banks to show signs of closeness in their component of correlation. Living trust coefficient is generally poor with other banks. With a coefficient of 0.1535 it differs generally from Abbey Mortgage bank in the same model of investment. Aso save has almost zero (0.002) coefficient with FSDH merchant bank. Beyond FSDH all the coefficients associated with Aso save are negatively

correlating with other banks.

Jaiz bank showed quite significant disparity with Abbey Mortgage bank by -0.0948 and it further has relationships with the rest of the banks are weak and negative. An exception is 0.9892 which is significantly close to unity with Greenwich merchant bank. The reason underlining the coefficients could be due to the nature of the Jaiz bank business. It has to locate businesses it funds without usury according to Islamic precepts. Therefore, the investment practice of Jaiz bank has impact that defects influence which sways or reflects Jaiz Islamic bank or other banks. NEXIM bank has 0.6330 as a relationship with Development Bank Nigeria which is the closest. Similarly, Bank of Industry has a coefficient of 0.7891 with Development bank Nigeria. Generally, the content of the table reveals wide differences in the investment behaviours of banks in a specialized group of banking firms.

4.2 Dynamic Unbalanced Panel Data Model Regression Results for Net Interest Margin

The table 4.2 below is an unbalanced panel data model of regression result due to data vacuums in specific years for some of the variables. It represents implementation of Arellano-Bond and Blundell-Bond generalized method of moments (GMM) estimation for linear dynamic panel data models. Obviously, our study has modest T and n cross sectional components. From the table below, dynamic panel autoregressive coefficient with Pooled regression has a coefficient of 0.8099 which is close to unity unlike the autoregressive coefficients in fixed effects and difference-GMM. Our primary focus is on the relationship between strategic financial management and the corporate performance of banks in Nigeria of 11year period 2013 to 2023.

Table 4.2 Dynamic Baseline Regression Results on Net Interest Margin

	<u>Pooled OLS</u>	<u>Within Group</u>	<u>Differenced-GMM</u>
NIM(-1)	0.809901 (0.0000)	0.680901 (0.0000)	0.498633 (0.0000)
Ln investing	-0.163929 (0.5175)	-0.096049 (0.6779)	-0.113081(0.3711)
Ln Financing	-0.089245 (0.7003)	-0.195788 (0.4545)	-0.066078 (0.8021)
Ln apportionment	-0.141378 (0.6288)	0.513075 (0.1143)	1.401144 (0.1834)
Risk	-0.016713 (0.8343)	-0.013223 (0.8437)	0.266219 (0.0000)
Liquidity	0.142295 (0.0000)	0.022050 (0.3923)	-0.050210 (0.0083)
R-squared	0.7967	0.904394	

*significant at 10%; **significant at 5%; ***significant at 1% () indicates p -value

As argued in Han and Phillips (2010) when the time span in fixed effect is small the usual fixed effects estimator is inconsistent (Nickell, 1981) which is akin to Ordinary Least Square (OLS) estimator based on taking first differences. Under such condition, the instrumental variable (IV) method (Anderson and Hsiao, 1981) and generalized method of moments (GMM) estimator (Arellano and Bond, 1991) are both widely applied although as noted by Blundell and Bond (1998), these estimators both suffer from a weak instrument problem when the dynamic panel autoregressive coefficient (ρ) approaches unity. Following Ullah, Akhtar and Zaefarian (2018) views, our comparative model results comprising Pooled OLS, Within group and D-difference GMM indicates substantial differences in reported findings across those models due to endogeneity bias and unobserved heterogeneity. Viewing statistical estimation in this way is convenient for comparing estimators that display greater power in estimating a model. Given this guideline, we opt for difference GMM baseline regression for economic and hypothetical analyses since its autoregressive parameter is 0.4986. Another reason is that the persistent parameter (autoregressive net interest margin) failed to exceed pooled OLS despite the inclusion of time invariant condition unique to each firm. Similarly, all the lagged net interest income parameters across the 3 methods are highly significant at 1% significant level with a positive sign.

In the lagged net interest margin the autoregressive coefficient indicates that first order lagged value of net interest margin is a plausible instrumental variable to overcome problem of endogeneity. The coefficients of the explanatory variables show the dynamic short term relationship between the strategic financial management determinants and net interest margin performance of banks. Similarly, empirical evidence across all the variables in net interest margin remains robust confirmed by test of over identification evident on uncorrelated error.

Considering strategic investment action of the firm the coefficient of this variable is -0.113081 which is insignificant indicating an adverse scenario. It is apparent that the relationship between investing strategic management and net interest margin is negative by approximately 0.113 per cent. The *p-value* of 0.3711 shows that the magnitude of the negative effect of investing decision on net interest margin is low. This is in clear violation of economic expectation (see for instance table 3.2) or theoretically grounded notions which suggests that investments of firms aid in the growth of market value of corporations, hence, very relevant. Miller and Modigliani (1958) postulation claimed that investment is a relevant factor in growing firm value. However, investing policy strategy of bank firms leads to weak decline in the net interest margin even though market value of the firm is the principal argument in MM. We know business environment matters which means bank investments failed to add positive value to its expected earnings. The 22 banks have in their

investment portfolio huge volume of non-interest income-generating investments such as acquisition of subsidiaries, affiliates and associate firms. Technically, this represents profitable strategic investing formular that are anticipated to yield significant income returns that facilitates growth in net interest margin. The result failed to prove ideal expectation to be empirically so. In the long run the result may become positive.

What is more evident is that strategic liquidity decision of the firms appears negative at -0.050210 with a *p-value* of 0.0083. This is significant indicating substantial decline in net interest margin of the banks. It could perhaps reveal system susceptibility to liquidity challenges. An increase in liquid profiles of the banks reduces net interest margin by approximately 0.0502 per cent. This negative coefficient could be accelerated by possessing huge deposit liabilities over shrinking volume of liquid assets. Often in the banking system tightened monetary conditions by the Central Bank of Nigeria (CBN) repeatedly seeks to rein on liquidity. Tighter measures on monetary policy by the CBN implies that the banking sector aggressively defends current deposits while mobilizing new liabilities. Thus, tight policy environment could lead to negative net interest margin. This is for safety of the banking environment. Diamond and Dybvig (1986) show that regulators' acts are for prevention of bank runs. This ensures that depositors confidently sustain their ability to cash in one's assets early without sacrificing too much value. The negative result is a pointer that there is extreme emphasis on banking sector solvency for public confidence. And also, there is foreseeable chance for bankruptcy and failure of any of the institutions. This means banks have less difficulties raising funds but it at the same time foregoes an option of short-term assets expansion for greater net interest income in the Nigerian market economy. Through careful descriptions and historical reference, Caprio and Klingebiel (1996) provided substantial insight into the issue surrounding bank insolvency from the perspective of bad policy or bad banking. Thus, Central bank of Nigeria seems to be aggressively keen in using monetary policy tools on cash reserve requirements, monetary policy rate and liquidity to sustain a healthy banking industry without fear of failures on liability conversion. Thus, a tradeoff is observed between liquidity and rising trend of net interest margin wherein central bank policies positions it as the taker of strategic liquidity decision but left for implementation by bank management.

As we had shown initially the relationship between apportionment and net interest margin is normatively ambiguous to standing theories (table 3.2). However, interest payment could in practice prove otherwise. For instance, interest expense is both an expenditure and cash outflow that decreases gross revenue to the bank. In the light of this, a negative outcome is theoretically expected. In the category of banks analyzed, we acknowledge that not all firms involve in dividend

payment or interest payment on principal (Jaiz interest-free Islamic bank in the mix is a principal example). Some firms that pay do not do so on regular basis (appendix III). The reason from the perspective of Baker and Smith (2006) is that some firms pay dividend because of their sizable magnitude, more profitable in business, more liquid and less highly levered. Apportionment or distribution of bank returns to appropriate capital suppliers has a coefficient of 1.40114 indicating positive consequence on net interest margin. But being insignificant might be informative. Net interest income as theorized in International Monetary Fund (2023) may appear to be insensitive to interest rates at the level of the banking system even as several individual banks have huge debts (appendix 1 panel A, B, C).

The decision to make dividend payment is a residual consideration explained in residual theory of dividend policy. However, the result supports Osegbue, Ifurueze and Ifurueze (2014) whose finding indicates none significant relationship between apportionment and bank performance. Our finding rather corroborates with Agyei and Marfo-Yiadom (2011) that dividend paying banks benefit through the channel of performance enhancement. Recent evidence also stands in conformity as shown in Bhimavarapu and Rastogi (2021) Indian evidence. This though is a matter of promising expected future financial performance. Theoretically, the positive result tends to be justified by signaling theory. Banks make appropriate distribution to equity and debt holders as a signal that the banks have adequate resources to pay capital providers. It fundamentally highlights the positive implication of dividend and interest payments to capital suppliers. The positive effect could be due to the facts that banks despite under stringent regulation may have relative advantage in lending at a more profitable rate while it pays depositors at an insignificant cost. It therefore implies that banks are unconcerned about the cost of raising external fund. The strategic apportionment decision is usually informed out of a need for defense of firm's reputation (Budagaga, 2020) through consistent dividend policy of paying from surplus earnings.

An evaluation of financing strategic decision produce similar outcome. Net interest margin is seen to decline by 0.066 per cent due to unit change in financing composition of firms. Financing of bank capital is a summation of debt and equity components. The chart in appendix 1 shows the growth in debts and equity. The coefficient of -0.066078 validates MM theory of capital structure irrelevance hypothesis. Thus, the financing sources seemed to be costly in the cost of capital of the banks. Sourcing capital at exorbitant rate especially cost of debt increases charges on gross earnings of the banks. This in turn declines net interest margin rather than stimulates it. The outcome does not suggest that the capital position of Nigerian banks is not solid enough to absorb shocks and risks

materialization in the industry it rather implies that certain component of its capital is “swallowing” significant portion of earnings. A likely reason could also be as a result of low net interest income recorded on several financial years. Given a *p-value* of 0.8021 the relationship is insignificant. Likewise, some of the banks have been highly levered in the past (see for instance appendix 1). For instance, Zenith bank plc, Fidelity and First City Monument bank were almost over geared between year 2013 and 2020. Often First City Monument bank debt exceeded the equity value while Zenith bank debt appeared to share capital between 2018 and 2019. Obviously, the debts need principal and interests needed to be serviced which may decline net interest margin as gross income drops due to interest expense and payments. As response Zenith bank resorted to the market between August 1, 2024 and September 23, 2024 to raise new equity using method of combined Right Issue and Public Offering to raise the sum of N350 billion (Zenith bank, 2024; Financial Times, 2024). First City Monument Bank followed the same trajectory to source for fresh capital of N110 billion from the market. The new issues underscore the dire capital needs of these banks of reliance on debt could lead to potential bankruptcy unless huge debt is capitalized along with its interest (Myers, 1977; Bowen, Noreen and Lacey, 1981; Leland, 1994; Schippers, 2015; Kreß, Eierle and Tsalavoutas, 2019). Corporate debts capitalization is a strategic approach to debt management in companies.

4.2.1 Hypothesis Testing on net interest margin and strategic Financial Management

H1: Strategic investing decision has no significant relationship with net interest margin of banks.

Test: The *p-value* of strategic investing decision of the bank is 0.3711 (37.11 per cent) which is greater than 5 per cent ($P > 0.05$), hence, based on decision criterion the null is validly accepted. Conclusively, there is absence of significant relationship between strategic investing decision and net interest margin.

H2: Strategic financing decision has no significant relationship with net interest margin of banks.

Test: The *p-value* of strategic investing decision of the bank is 0.8021 (80.21 per cent) which is greater than 5 per cent ($P > 0.05$), hence, based on decision criterion the null is validly accepted. Conclusively, there is absence of significant relationship between strategic financing decision and net interest margin.

H3: Strategic apportionment decision has no significant relationship with net interest margin of banks.

Test: The *p-value* of strategic apportionment decision of the bank is 0.1834 (18.34 per cent) which is greater than 5 per cent ($P > 0.05$), hence, based on decision criterion the null is accepted. Conclusively, there is absence of significant relationship between strategic apportionment decision

and net interest margin.

H4: Strategic liquidity management decision has no significant relationship with net interest margin of banks.

Test: The *p-value* of strategic liquidity management of bank is 0.0083 (0.83 per cent) which is less than 1, 5, 10 per cents ($P < 0.01, 0.05, 0.1$), hence, based on decision criterion the null is unaccepted as the result validates alternative hypothesis. Conclusively, there is significant relationship between strategic liquidity management and net interest margin.

H5: Risk associated with nonperforming loans management decision has no significant relationship with net interest margin of banks.

Test: The *p-value* of strategic risk management associated with nonperforming loans management of the bank is 0.0000 (0.00 per cent) which is less than 1, 5, 10 per cents ($P < 0.01, 0.05, 0.1$), hence, based on decision criterion the null is unaccepted as the result validates alternative hypothesis. Conclusively, there is a significant relationship between strategic nonperforming loans management and net interest margin.

4.2.1.1 Robustness Check with Business cycle on Net Interest Margin of Banks

We must clearly state prior to analyzing the current result that *a priori* expectation is influenced by the status of business phase in the economy. Company managements adjust their decisions according to business phase of the economy. In economic booms, firms especially the large ones rationally prefer to finance capital from debts issuance as expanded business and productivity can generate adequate resources to payback debts (Zetlin-Jones and Shourideh, 2017; Begenau and Salomao, 2019). Based on this practical policy flexibility the standard pecking order theory of capital structure is corroborated in this result. Like previous conclusion in Al-Zoubi, O'Sullivan and Alwathnani (2018), in an environment of business cycle pecking order theory predictively suggests that leverage is persistent. Myers and Majluf (1984) provide foundation for pecking order theory in corporate finance in capital structure. In recession equity becomes the chosen financing option. Thus, interpretation requires consideration of these circumstances. Thus, expectation might be technically relegated to ambiguity. Because of the magnitude of the persistent parameter (lagged value of net interest margin), panel GMM/IV model provides plausible estimation assuming no second order correlation. In the overall, the study shows that explanatory variables have various impacts on net interest margin when interacted with business cycle (table 4.2.2.2). This is because economic cycles switches from one form to another at regular intervals. For instance, investing activities have negative relationship with net interest margin. This means during rough business cycles banks expectedly move in the direction taking precautionary measures as action could be

counterproductive. Banks logically tend to withhold capital; move to halt loan portfolio expansion with negative consequences on bank profitability (net interest margin). It implies that business environment tends to be toxic, hence, banks are forced to cleave to unusual indulgence in capital accumulation rather than capital investment. Accordingly, Albertazzi and Gambacorta (2009) shows that business cycle fluctuation is an important element in macro prudential analysis confirming existing link between business cycle fluctuations and banking sector profitability.

Table 4.2.1.2: Robustness Test of Net Interest Margin

Dependent variable: Net Interest margin			
	Pooled OLS	Fixed Effects	Differenced-GMM
Lagged NIM	0.533398*** (0.030801)	0.537205*** (0.035471)	0.674307*** (0.125187)
Investing*bcycle	0.0000337*** (8.74E-10)	-0.00000346*** (1.02E-09)	-0.00001408*** (2.32E-10)
Financing*bycle	0.00000317*** (0.00000734)	0.00000321*** (8.53E-10)	0.0000126*** (1.97E-10)
Apportionment	193.8103 (142.1890)	343.1237 (230.3514)	56.07955 (14.23875)
Liquidity*bcycle	-0.0000297 (4.68E-11)	0.00000305 (5.50E-11)	-0.0000785 (3.46E-12)
Risk*bcycle	0.0009946 (0.006178)	0.012440 (0.084867)	-0.199018*** (0.08108)

*significant at 10%; **significant at 5%; ***significant at 1% () denotes standard error

Financing interacted with business cycle indicates a significant influence on net interest margin (0.0000126 per cent significant at 1 per cent critical level of hypothesis). It is logical to theorize that financing over the business cycle could face frictions for firms irrespective of their industrial inclination. By *a priori* expectation there is a theoretical compliance if we pegged the expectation subject to economic upturn. Financing influenced by business cycle positively increases net interest margin. The result perhaps seems to portray financing to be positively influenced by economic trends if the business cycle sustains its natural long run trend or swings above it. We think that in economic downturn banks face strong difficulties in raising capital from financing sources. In reality the Nigerian economy was plunged to economic recession since 2015/16 and has battled to rebound to its previous growth in trend. That episode which has persisted appeared not to diminish the profit-making capacity of the Nigerian banks as financing coefficient has shown. But from the tabulated result, financing policy reacting to business cycle shocks seems not to be so deeply impacted to transfer negative consequences to net interest profit margin in the banks. The result could imply that business cycle in any of its forms when interacted with bank financing policy produced positive outcome on net interest margin simply because of management flexibility in adopting either counter measures when recession is propagated or procyclical strategy during

economic recovery and boom.

Assessing the liquidity ratio, there is noteworthy expected result. This contradicts Slimi (2012) finding on liquidity in relation with business cycle in the case of Jordan. In the author's finding, estimation indicates a significant positive association with the returns on assets (ROA) during expansions and more during recessions. In our case liquidity interacted with business cycle has a negative influence on net interest margin. Thus, business cycle impacts on bank liquidity passes on to bank performance by declining its net interest margin by approximately 0.00000785 per cent. This suggests that business cycle in liquid position of the banks produces deterioration in net interest margin, although evidence suggests that the outcome is not substantial. Risk indicates adverse condition for bank earnings. The significant hypothesis shows how deeply impacted influence of business cycle on nonperforming is transferred to net interest margin.

4.2.1.3 Residual Diagnostic test on Net Interest Margin interacted with Business Cycle

Below is a postestimation test result due to implementation of panel GMM/IV test technique. In table 4.2.1.2, we present a model specification test result. We have done so to test if our model is correctly specified (Ullah, Zaefarian and Ullah, 2021).

Table 4.2.1.3: Cross-section fixed on Estimated first Differences

S.E. of regression	18066.25
J-statistics	16.32235
Prob(J-statistic)	0.294088
Instrument rank	19
Arellano-Bond AR(-2)	-
Arellano-Bond AR(-1)	0.9154

The J-statistics probability is 0.294088 which exceeds 0.01, 0.05 and 0.1 conventional statistical benchmark. Conventional econometric test statistic in GMM estimation tests the validity of overidentifying restrictions in a statistical model. In other words, the validity implies uncorrelated errors. The standard null is that overidentifying restrictions are valid. As we can see in the table above *J*-statistic is 16.32235 which is low compared to a high *Prob(J-statistic)* of 0.294088 (29.4088 per cent). Decision criterion indicates acceptance of null hypothesis which proves the validity of the instruments. Therefore, overidentifying restrictions is valid confirming robustness of our estimation.

4.3 Capital Adequacy Ratio and Summary Descriptive Statistics Analyses

We assess the relationship between strategic finance management and capital adequacy for testing the robustness and soundness of the banking entities to shock. Especially on the influence of bank managerial practices on capital adequacy of the banks based on weights of its risky assets (aggregate risk-based capital ratio being the ratio of capital to risk-adjusted assets). However, because this aspect is internationally influenced from Basel II, we commence with understanding of the detecting dispersions from conventional Basel II and Central Bank of Nigeria minimum risk-weighted capital adequacy ratio using summary descriptive statistics.

Table 4.3: Summary Statistics for Bank Capital Adequacy Ratio

	Obs	Mean ($\bar{x}$)	Standard (σ) Dev.	Minimum	Maximum
First bank	11	16.05273	7.01595	0	26.63
Union bank	11	14.08818	7.607091	0	24.8
United Bank for Africa	10	23.18	4.739854	17	32.6
Zenith bank	10	20.993	7.076286	1.93	27
Fidelity bank	9	18.87111	2.71014	16	24.21
Access bank	9	18.78889	2.963518	15.46	24.52
Sterling bank	11	14.36273	2.034596	11.16	18.03
First City Monument	9	12.22889	7.263614	0	19
Abbey mortgage	10	50.2	10.04213	31	60
FSDH	9	26.89556	10.49325	11	49.15
Wema	11	12.83727	7.65407	0	27
Stanbic IBTC	11	20.09091	2.615895	16.8	24.5
Development bank	11	133.1636	148.8773	0	415.13
Bank of Industry	11	38.38636	19.76487	0	54.05
Ecobank	11	15.38364	5.620805	0	21.44
Greenwich	11	.01605	.040644	0	.13168
Jaiz	11	13.75	12.31121	0	33
Living Trust	11	18.66273	26.2861	0	60.13

Source: Author computed with STATA

In the table 4.2.2 above we concentrate on the mean of capital adequacy ratio (CAR) of the banks as guided Basel II requirement. In year 2023 the Central Bank of Nigeria set its minimum capital adequacy ratio to the rate of 15 per cent (GTCO, 2022; First Bank Nigeria, 2023) which is to be maintained by Nigerian banks or banking groups with regional/national license and international banking license respectively. In 2022 the minimum regulatory threshold of 7.5 per cent for national and regional banks and 11.25 per cent for international and domestic systemically important banks. This is within the broad category of tier 1, tier 2 and tier 3 capital.

A decline of the bank's mean CAR is a pointer to potential solvency crisis. The implication is that the Nigerian banking system is not a crisis-prone system and the anticipation of future crisis events is not quickly foreseeable from capital adequacy depicting essential microprudential indicator. Using this as a benchmark we investigate the level of compliance with this statutory capital rule in all the sample banks (NEXIM and Rand merchant bank are withdrawn). There is no consensus on the dominant factor influencing performance of banks in terms of soundness of the system.

Development bank of Nigeria has a mean of 133.16 per cent in CAR with a maximum of 415.13 per cent which is also as high as its standard deviation of 148.877 per cent. Wema bank has mean CAR of 12.83 per cent but with a maximum of 27 per cent which indicates safety of the bank. The bank of industry (BOI) as development bank has a mean of 38.386 per cent with a maximum of 54.05 per cent. Finally, there is high level of confidence in the banking sector of Nigeria since the banks have in their balance sheets CAR above the statutory Basel and regulatory minimum. Also, the minimum CAR of Fidelity bank is 16 per cent marginally exceeds the Basel ratio of 15 per cent though with a mean of 18.87 per cent and a maximum of 24.21 per cent.

Evidently, critical holding company banks beginning with First bank Nigeria has a CAR mean of 16.05 per cent which marginally exceeded the official benchmark but its maximum is exceedingly higher at 26.63 per cent than statutory average CAR prescribed by regulators. Union bank Nigeria has mean CAR of 14.088 per cent which may indicate higher vulnerability although its maximum of 24.8 per cent is greater than the minimum. Sterling bank Nigeria produced similar result given a mean of 14.362 per cent. The least is Greenwich influenced due to too many data gaps.

FCMB has a mean of 12.2 per cent which implies weaker capital in the midst of credit, operational and market risks. However, with 19 per cent maximum the bank is safe and stable to absorb any shock from the business environment. This is especially when this ratio is compared with regulatory capital to risk-weighted assets set by the Central bank in 2022 to monitor banking industry solvency (Central Bank of Nigeria, 2022). The implication is that these banks would not suffer financial fragility based on the 15 per cent minimum set by Basel Committee on Banking Supervision.

4.3.1 Capital Adequacy Ratio Baseline Regression and Analyses

The result in the table 4.2.2.1 represents three panel data regression estimations. As guided in previous literature on selection of appropriate estimator, Hausman (1978), Hausman and Taylor (1981), Guggenberger (2010), Amini *et al* (2012), Sheytanova (2015) the *p-value* on correlated random effects - Hausman test 0.0000 based on Chi-square distribution indicates selection of Within

groups (fixed effect) to be consistent in estimating the relationship between CAR and strategic financial management in the banking industry.

Table 4.3.1: Capital Adequacy Ratio Baseline Model Result

Dependent Variable: Capital Adequacy Ratio			
	Pooled OLS	Within Groups	Random Effect
Lagged CAR	0.630244 (0.0000)	0.355944 (0.0001)	0.619506 (0.0000)
Financing strategy	0.503495 (0.0555)	0.665267 (0.0619)	0.472925 (0.0512)
Investing strategy	-0.043902 (0.8748)	0.117897 (0.7048)	-0.056292 (0.8254)
Apportionment strategy	-0.090758 (0.7727)	0.443309 (0.2921)	-0.173749 (0.5606)
Liquidity strategy	0.045249 (0.0005)	0.035790 (0.2969)	0.045293 (0.0002)
Risk	0.016803 (0.8508)	0.040376 (0.6571)	0.013849 (0.8656)
Correlated Random Effects - Hausman Test 0.0000			

*significant at 10%; **significant at 5%; ***significant at 1% () indicates *p-value*

Correlated Random Effects - Hausman Test 0.0000;

The lagged coefficient of CAR is 0.3559 per cent which is significant at 1, 5 and 10 per cents level of significant level in the within groups result (fixed effect). The relationship between financing strategy and capital adequacy ratio of the banks produced a positive coefficient of 0.665 per cent which is significant at 10 per cent level of significance. The result indicates that change or increase in the financing of capital by the banks leads to improvement in the capital adequacy of the banks. Consistent with Demirgüç-Kunt and Huizinga (2010), result shows bank funding strategies perform well by strengthening capital adequacy ratio. The result does not conflict with *a priori* expectation. Due to risks undertaken by the banks in every economy sufficient capital is ideal to avoid financial panicking which adversely impacts the economy. The result shows that financing from several options is viable source of capital adequacy that insulates Nigerian banks from risk propagation. It is unarguable to theorize in this context that long term capital sources which is dominated by equity are instrumental in protecting the banks against macroeconomic and micro prudential disturbances encountered in banking operations. Moreover, raising new capitals from various sources might not be costly for many banks.

This result supports González- Hermosillo (1999) claims that empirical evidence that the CAMELS-type assessment is statistically significant only if nonperforming loans and capital

adequacy are simultaneously considered. As it can be seen on the table 4.2.2.1, we have simultaneously considered these variables are reported in the table 4.2.2.1 above (risk in this regard is nonperforming loan with a coefficient of 0.040376 per cent). The result is further consistent with the fact that regulatory bodies are not taking capital adequacy and its financing for granted. The Central bank of Nigeria had already performed reviews of minimum capital requirement of the banks. This underscores the view in Caprio and Honohan (1999) postulation that ensuring adequate capital should be a central goal for bank supervision, and high-risk environments should indeed call for higher levels of capital.

On the other hand, the positive result might suggest that Nigerian banks make strong efforts to reduce the speed at which it advances credits in order to satisfy tighter capital requirements. This is consistent with, Drumond (1999) suggestion that in such a scenario satisfying tighter capital requirement through forced reduction in loans supply justifies Basel procyclicality theoretical literature wherein negative macroeconomic shocks are responsible for such credit supply reduction where banks have to respond. This implies pragmatic capital protection that helps in maintaining capital adequacy ratio. In practice the result confirms that Nigerian banks are well-capitalized.

Investing has a coefficient of 0.117897 indicating increase in the quality of capital adequacy ratio. However, the probability statistic shows that the positive sign even though it complies with expectation remains largely insignificant across all critical hypothetical benchmarks. Several literatures emphasize the importance of investment in the soundness of financial institutions (Vigo, Azam and Trias, 2018). This is represented in CAMELS where asset component in the acronym is created from investment. Therefore, investing decisions of the banks have less effects in the capital soundness of the Nigerian banks. We could highlight that the result as regards to the empirical relationship between investment and CAR tends towards ambiguity. It means that investment decisions of the banks do not tend to provide vital information about the tendency of the banks to run into fragility in its performance. A clear implication could be that capital adequacy ratio is less impacted by assets quality of the banks. In reality bank investment portfolio is of extreme importance if a bank must competitively thrive. However, it seems the nature of selected asset portfolio of which funds have been committed requires closer evaluation as regards to its influence on capital adequacy.

The positive result on nonperforming loan as risk to the bank is positive which conflict with the findings of Arzova and Sahin (2024). According to the authors nonperforming loans is harmful to the soundness of banking system. The same had been documented in Albulescu (2015) which

revealed that non-performing loan has negative implication on bank soundness. But current empirical finding shows this to be the contrary. In previous studies, incidence of high volume of nonperforming assets is bound to generate significant harmful consequences on banking soundness. The evidence could underscore the fact that magnitude of nonperforming loans in the Nigerian banks are relatively very minimal to depreciate capital adequacy magnitude.

Apportionment strategic financial management produced a positive coefficient 0.443309 which validates bird-in-hand theory of dividend. Thus, apportionment leads to increase in quality of capital adequacy ratio. It means that investors are motivated to increase funding the company on conviction that it returns dividend to shareholders. Therefore, capital condition of the banks seems to implicitly hang on an assurance that investors will continue to raise their liquidity stakes to banks because of rewards paid by the management to capital holders. Similarly, a related result is the coefficient of liquidity condition of the firms which is 0.035790 per cent. This value represents a positive contribution to capital adequacy ratio in all the firms.

4.3.2 Empirical Hypotheses Testing on Capital Adequacy Ratio

In order to response to our research hypotheses we test individual probability statistics carried in the parameter coefficients of each strategic financial management variables. Test in this regard is conducted using 10 per cent test hypothesis. We adopt multivariate regression results reported on table 4.2.2.2. The hypotheses tests are reported below:

H1: Strategic financing decision is insignificant as a relationship to capital adequacy ratio.

Test: The *p-value* of strategic financing decision of the bank is 0.0619 (6.19 per cent) which is less than 10 per cent ($P < 0.1$), hence, based on decision criterion the null is unaccepted. Conclusively, there is significant relationship between strategic financing decision and capital adequacy of banks.

H2: Strategic investing decision has no significant relationship with capital adequacy ratio.

Test: The *p-value* of strategic investing decision of the bank is 0.7048 (70.48 per cent) which is greater than 10 per cent ($P > 0.1$), hence, based on decision criterion the null is unaccepted. Conclusively, there is no significant relationship between strategic investing decision and capital adequacy of banks.

H3: Strategic apportionment decision has zero significant relationship with capital adequacy ratio.

Test: The *p-value* of strategic apportionment decision of the bank is 0.2921 (29.21 per cent) which is greater than 10 per cent ($P > 0.1$), hence, based on decision criterion the null is unaccepted. Conclusively, there is no significant relationship between strategic apportionment decision and capital adequacy of banks.

H4: Strategic liquidity decision has zero significant relationship with capital adequacy ratio.

Test: The *p-value* of strategic apportionment decision of the bank is 0.2969 (29.69 per cent) which is greater than 10 per cent ($P > 0.1$), hence, based on decision criterion the null is unaccepted. Conclusively, there is no significant relationship between strategic liquidity decision and capital adequacy of banks.

H5: Risk associated with nonperforming loans has zero significant relationship with capital adequacy ratio.

Test: The *p-value* of risk associated with nonperforming loans of the bank is 0.6571 (65.71 per cent) which is greater than 10 per cent ($P > 0.1$), hence, based on decision criterion the null is unaccepted. Conclusively, there is no significant relationship between risk from nonperforming loans and capital adequacy of banks.

4.3.3 Estimation and Analyses of Nonperforming Loans Dynamic Model

Nonperforming loans model estimate represents risks expressed in the econometric equation 3.12. Due to our preference for feasible efficient estimators of parameters our interpretation hangs on the outputs in D-GMM estimation. As it is well known D-GMM dynamic model setting overcomes endogeneity. In addition, our conviction is further strengthened by *J*-statistics test of over identification of restrictions in instrumental variable technique. A low *J*-statistic of 9.93985 has a probability statistic of 0.445786 per cent above 0.01, 0.05, and 0.1 benchmark decision criterion. When instruments are not correlated with error term in the linear model the instrument is valid. This condition is crucial in dictating our preference for D-GMM in conducting theoretical *a priori* tests and hypotheses for all parameters. Moreover, the D-GMM has greater compliance with standard critical hypothesis benchmarks. The presented result indicates that strategic financial management policy decisions have varying effects on nonperforming loans.

Table 4.2.3: Nonperforming loans

Dependent variable: Nonperforming loans				
	Pooled OLS	Fixed Effects	Random Effect	Differenced-GMM
Lagged Nonperforming	(0.538668)*** [0.060456]	(0.489527)*** [0.071860]	(0.538668)*** [0.070896]	(0.381842)*** [0.008113]
LIQUIDITY	(0.010946) [0.010058]	(0.067693)** [0.029731]	(0.010946)* [0.006584]	(0.298532)*** [0.026071]
APPORTIONMENT	(0.190135) [0.260777]	(0.195246) [0.385414]	(0.190135) [0.208109]	(0.002635) [0.217938]
FINANCING	(0.050550) [0.203061]	(-0.105424) [0.322850]	(0.050550) [0.063125]	(-0.768420)* [0.404535]
INVESTING	(-0.089517) [0.225608]	(-0.231651) [0.289189]	(-0.089517) [0.213237]	(-0.333058)*** [0.021309]
F-statistic	18.91357	3.933924	18.91357	
Durbin-Watson	2.880932	-	2.880932	
Prob(F-statistic)	0.00000	0.000001	0.000000	
R-squared	0.442800	0.485634	0.442800	
J-statistics				9.939850
Prob (J-statistic)				0.445786

*significant at 10%; **significant at 5%; ***significant at 1% () denotes coefficient [] denotes standard error

The lagged values of dependent variable (risk) are adopted to control for dynamic endogeneity issues in panel data studies. The hypothesis of lagged nonperforming loan is significant across 1, 5 and 10 per cents. As regards to the relationship between nonperforming loans and liquidity ratio in the banks, the table delivers positive and significant result on bank liquidity rate vis-à-vis nonperforming loans. By implication liquidity appears to substantially fuel the risk of nonperforming loans such that marginal increase in liquidity of each bank increases nonperforming loans by approximately 0.2985 per cent. The coefficient seems low, yet there is a possibility that persistence could push nonperforming loans to unprecedented height. There could be underlying conditions responsible for the positive coefficient of liquidity. First, many Nigerian banks reported twice to thrice liquidity ratio above statutory ratio (FSDH merchant bank, 2015; Zenith bank, 2021; Greenwich merchant bank, 2021; Development Bank of Nigeria, 2023). For instance, regulatory liquidity requirement merely improved by 500 basis point in 2011 (from 25 to 30 per cent) of which multiple number of banks performed above regulatory limit (First bank, 2011). Second, it could be that extensive liquid capacity motivates moral hazard that potentially makes loans more vulnerable dictating marginal rise in nonperforming loans.

From the views of Dybvig (2023), banks could be doing so in good equilibrium where there is no expectation for runs bad equilibrium. Although there is no basis for bank runs due to sufficient liquidity in the view of Diamond and Dybvig (1983), but if left could become catastrophic to the balance sheet where nonperforming loans produce an emerging risk. The current finding indicates that beyond macro variables impacting on nonperforming loans identified in Khairi, Bahri and Artha (2021), liquidity is a bank-related variable exposing Nigerian banks to nonperforming loans.

However, banks have complied with regulatory prudential formular in the management of nonperforming loans. This follows classification of bank lending held by customers to minimize exposure to defaults detailed in Central Bank of Nigeria prudential guides (Stanbic IBTC, 2013).

Sterling banks plc (2020) employs internal bank risk rating grades (RR-1 to 9). RR-6 classifies loans to be on the watchlist; RR-7 is substandard; RR-8 classifies loans to be doubtful whereas RR-9 is the last ending in lost. Banks are mandated to provide for and maintain a regulatory credit risk reserve in the event of impairment on loans. There is minor discrepancy between Central Bank of Nigeria and International Financial Reporting Standard (IFRS) principles. United Bank for Africa provides succinct classification showing that credit facilities are classified as either performing or non-performing (see for instance, Zenith bank, 2010).

Financing action policy of the bank firms declines nonperforming loans in the model. The magnitude of the decline is approximately 0.7684 per cent (table 4.2.3) which is only significant at 10 per cent. A crucial aspect of this findings is that corporate leverage increase could minimize size of nonperforming loans. An intuition is that increase in gearing makes default more likely on loans arrangement. This complies with Ghosh (2005) view that capital adequacy lowers nonperforming loans. However, our finding conflicts with Nasir, Oktaviani and Andriyani (2022) assertion that financing expansion has the potential to increase the credit failure rate in the long term.

The coefficient of banking investing policy strategy which though conventionally involves credits supply has a negative coefficient of -0.333058 which is statistically significant. This result is significant at 1 per cent. This implies that critical bank investments dampen nonperforming loans. This is especially possible when management strictly follows up with monitoring and supervision. However, the relation between NPL and credit facility as investing is shown not to have a clear picture in Accornero *et al* (2017). Nevertheless, in our finding a likely reason could be from the excellent loan processing and administration strategy adopted by banks. Similarly, there might be lower information asymmetry between the bank and credit customer. In addition, strategy in managing these loans matters. Many banks have developed strong loan management capacity that reduces credit losses.

4.3.3.1 Hypotheses Testing and Analyses of Nonperforming Loans

H1: Liquidity ratio has zero significant relationship with nonperforming loans in Nigerian banks.

Test: The *p-value* of liquidity ratio of the bank is 0.0000 which is lower than 1 percent, 5 and 10 per cent significant levels. Based on decision criterion the null is unaccepted. Conclusively, there

is a significant relationship between liquidity ratio and nonperforming.

H2: Apportionment has zero significant relationship with nonperforming loans in Nigerian banks.

Test: The *p-value* of apportionment and distribution of proceeds earned by the bank is 0.9904 ($p > 0.05$). This is extremely high. Based on a decision criterion the null is unaccepted. Conclusively, there is a significant relationship between apportionment and nonperforming loans.

H3: Financing has zero significant relationship with nonperforming loans in Nigerian banks.

Test: The *p-value* of liquidity ratio of the bank is 0.0604 which is greater than 1 percent and 5 per cent significant levels. Based on decision criterion the null hypothesis is valid. Conclusively, there is no significant relationship between financing strategic policy and nonperforming loans at benchmark statistical significances.

H4: Investing has zero significant relationship with nonperforming loans in Nigerian banks.

Test: The *p-value* of investing policy of the bank is 0.0000 which is less than 1 percent, 5 per cent and 10 per cents significant levels. Based on decision criterion the null hypothesis is unaccepted. Conclusively, there is no significant relationship between investing strategic policy and nonperforming loans at benchmark statistical significances.

4.3.3.2 Robustness test of Nonperforming loans interacted with Business Cycle

This chapter implements single robustness test on nonperforming loans model specification to ascertain its reliability of the results as in Davidson and Moccero (2024). These results are presented in Table 4.2.3.2. It represents non-performing loans interacted with business cycle using as dependent variable the risk aspect of banks depicted as nonperforming loans. We report the results conforming to these comparative models: Pooled Ordinary Least Square (Pooled OLS at level data); within groups and first differenced GMM/IV estimator. The coefficient of the lagged dependent variable in difference GMM is 0.531355 ($p\text{-value} = 0.0000$) assuming no second order auto correlation in the errors. As highlighted in Arellano and Bond (1991) the GMM allows for optimally exploiting orthogonality conditions between the lagged dependent variables and the error term. We theoretically expect business cycle to impose certain level of constraints that affects firm's corporate policy decisions, especially financing. Result coefficient on financing does strongly predict occurrence of nonperforming loans which is significant at 1 per cent level of significance. Marginal change in financing mix influenced by business cycle dispersion from standard long run equilibrating relationship leads to significant growth in nonperforming loans ($p\text{-value} = 0.0000$). Therefore, in a recession external financing components in the balance sheet may appears to show extensive risk coverage capacity such that there is little consideration for deleveraging leaving out little segment of credits significantly impaired.

Table 4.3.3.2: Robustness Test of Nonperforming Loan

Dependent variable: Nonperforming loans			
	Pooled OLS	Fixed Effects	Differenced-GMM
Lagged nonperforming loans	0.520629*** (0.051576)	0.482018*** (0.062731)	0.531355*** (0.060138)
Liquidity*bcycle	-0.0000970 (0.000324)	0.0000107 (0.00855)	-0.0000207 (0.00172)
Apportionment	0.199780 (0.113364)	0.046640 (0.220637)	0.316126 (0.448190)
Financing*bcycle	0.0000178** (0.000692)	0.0000193** (0.000752)	0.000589*** (0.0000369)
Investing*bcycle	-0.000212** (0.0000784)	-0.000257** (0.0000868)	-0.0000610*** (0.0000517)
J-statistics			7.42463
Prob(J-statistic)			0.684841

*significant at 10%; **significant at 5%; ***significant at 1%

Explanatory variables interacted with business cycle show dynamic short term relationship between strategic financial management decisions predicts nonperforming loans differently. The result is statistically robust given low *J*-statistics of 7.4246 and a Prob (*J*-statistics = 0.684841) of 68.48 per cent indicating that the model is validly over identified. Nonetheless, we feel that *J*-statistics parameters are sufficient conditions to conclude on plausibility of current findings.

The liquidity of the bank has a negative relationship on nonperforming loans. This especially possible when there are more economic upturns than downturns. Assuming greater upturns the result might indicate that debtors service their obligations in a timely manner during boom as more resources are made available. In turn this can cause lending boom as bank management seeks to take advantage of favourable economic state of the country. Shi (2015) shows that such could have immediate policy implication. This does not trigger real economic damage. This result is consistent with the finding in other empirical studies, notably, Vogiazas and Alexiou (2013) who observe a strong correlation between bank liquidity and business cycle. Our specification indicates that on average, business cycle tends to aid banking firms in minimizing rate of nonperforming loans but could have more nonperforming loans when the economy suffers downward fluctuations. Apportionment has a coefficient of 0.316 per cent which *ceteris paribus* suggests that distribution of proceeds to stock and bondholders of the banks adds to size of nonperforming loans. Distribution is usually a residual decision to stockholders. However, the relationship is extremely positively weak.

4.3.3.4 Residual Diagnostic Test of Model result in Nonperforming loans

This section presents a diagnostic test in two distinct ways following *J*-statistic and its probability that tests for hypothetical confirmation of instrument over or under-identification. A complement of this diagnostic is the Arellano-Bond serial correlation test. This test is executed to confirm the absence of second order lag serial correlation of errors in the first-difference residuals. These tests collectively help deal with endogeneity bias.

Table 4.2.2.2.1 Cross-section fixed on Estimated first Differences

J-statistics	7.42463
Prob(J-statistic)	0.684841
Instrument rank	15
Arellano-Bond AR(-2)	-
Arellano-Bond AR(-1)	-

The *J*-statistics is a standard test of residual diagnostics for difference GMM estimator to ascertain instrument identification or for over identifying restrictions. According to the table *J*-statistics probability is 0.684841 which is exceedingly greater than 0.05 (5 per cent significant level). This is a satisfying decision criterion. Logical inference around this hypothesis for a 7.42463 coefficient of *J*-statistics confirms the acceptance of the null hypothesis of instrument over identification. It resultantly supports model specification and the overall validity of the instruments (Aali-Bujari *et al*, 2015).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Study and Findings

This research study carried out investigations into the relationship between strategic financial management and banking industry performance using bank-level data domiciled in the Nigerian market. As it is well known, strategic financial management is a corporate policy of using a business entity's financial resources to achieve long-term goals and maximize shareholder value. It involves planning, implementing, and monitoring financial strategies that align with the overall business objectives, including managing capital structure, investment decisions, and risk management. In view of this, financial and non-financial companies engage in the formulation and execution of financial strategies that align with overall business goals, improve financial performance with an eye on conquering the industry. In this empirical study various findings have been noted as a test of strategic financial management directing banking competition in an oligopolistic market. It is informed by the need to deviate from familiar contradictions put forward in capital structure irrelevance hypothesis to assess determinants of corporate value. In the global banking practice prevention of system-wide risk amplification to sustain the role of banks in every jurisdiction. The current research noted the significance of banking stability even though there is aggressively rivalry to dominate the industry. Upholding bank resilience is strategically ideal for individual bank and the economic system. In a robust banking system financial intermediaries' management would by norm strategically allocate deposits to most efficient uses; source capital from cheap and reliable capital sources, comply with necessary regulatory rules of operation, and make profits without destroying its liquidity status which resultantly protects every stakeholder interest. Very scanty literature on financial intermediation studies in corporate finance rarely take cognizance of the banking institutions emerging strategic financial management.

While we feel that this empirical aspect is largely neglected even as policy documents continue to pile up on bank business our attention has been attracted to shine light in this direction. Thus, empirical strategy given the nature of study data encouraged the employment of comparative methods of Pooled OLS, within group and Instrumental variable estimated with differenced generalized method of moment. In this study we present strategic financial management and banking system performance for 22 significant Nigerian banks. The study also considers the significance of business cycle interaction with critical dimensions of strategic financial management as a necessary metric for judging the resilience of the banking sector to certain shocks. We

constructed baseline scenario model specifications audited by robustness test regressions. The class of target sample banks comprised of all conventional deposit money institutions, development banks, merchant bank, Islamic and mortgage banks. The current study explored two performance measures worthy of separate and consolidated investigations in the Nigerian banking industry. The separate performance parts are in terms of earnings ability of the bank as well as its financial stability dimension. Empirical conclusion is drawn from estimated bank-level data on financial management strategies of managers having shown that variations in fundamental decisions of bank firms translate into corporate competitive performance and stability. The model validity and reliability are proven to be robust from different diagnostic parameters for different models. The instrument over identification parameters and Hausman test dictated model selection accuracy.

Beginning with summary statistics, several Nigerian banks have above average statutory liquidity rate as a shield to unforeseen fragile operations. Within the period of investigation several banks operating as holding companies exhibit extremely solid liquidity above central bank benchmark. Among them especially tier one banks, Zenith bank, UBA, Access and GTCO possess outstanding liquidity risk coverage. Tier two banks comprising Fidelity, FCMB and Sterling are not prone to liquidity risk. However, Stanbic IBTC has the greatest mean in liquidity ratio which implies that Nigerian banks can competently fund the economy. When compared with maximum value all bank groups including Union bank Nigeria have more than sufficient liquid capacity to cover risks.

Capital adequacy ratio which absorbs shocks and further mitigates risks amplification has no shortfall, at least considering 50th and 99th percentile. As expected under tight regulatory environment banks of all category experience impressive common equity tier1 complied from core capital. The calculation is based on 50th percentile where banks remain well above regulatory minimum. There is no clue that banks suffer capital adequacy ratio fragility in the industry that could plunge any into crisis. Bank of Industry and Development Bank Nigeria have the strongest surplus capital adequacy to absorb credit, operational and market risks.

5.2 Conclusions

Our attempts to study strategic financial management and the banking industry performance using multiple specifications produced intriguing results. In current decades compliance with worldwide statutory requirement has been the focus of almost all jurisdictions. Fortunately, critical macro prudential aspects of strong regulatory focus such as liquidity and risk-weighted capital adequacy ratio did not deviate from international regulatory standard. It is important to mention that bank soundness and the entire financial system stability is still a front line topic for discussion. We replicated this. The results presented analyzed through a descriptive statistical path, the correlation of major bank-level data and how strictly regulated conditions such as liquidity and risk-weighted capital adequacy ratios strongly comply with domestic and international benchmark. Preliminary findings indicate that Nigeria domestically important banks, those with foreign operations as well as banks dedicated for special developmental functions are not struggling with stability as long as capital is concerned. They are also not vulnerable to insolvency.

Banks provided above average risk-weighted capital adequacy and hold strong liquidity position. Each bank is well capitalized irrespective of its percentage contribution of its component capital structure. An outstanding conclusion in MM hypothesis is capital optimality irrelevance. But there is a flip side. This is because as the banks compulsorily adhere to Basel and domestic regulatory capital adequacy minimum ratio strategically proves that optimal capital mix though rejected on the basis of irrelevance in traditional MM is feasible at least among the banks. Bank stability driven by strong capital adequacy is a motivating factor for investors' business confidence which indirectly promotes performance value through the window of massive investments by capital owners. Our strategic financial management investigations as regards to the performance of the banking firms based on stability and soundness using risk-weighted capital adequacy ratio shows that strategic decision on corporate financing of banks is a standard prerequisite for system-wide performance of the banking industry.

Thus, the Nigerian banks are robustly solid and could be relied upon for certain depository or investment decisions. It is implied that developing country like Nigeria is evidently operating banks that are not cheaply susceptible to financial difficulties. These healthy institutions pose no difficulty through which investors' forward-looking panics for vulnerabilities materializes. Key to this conclusion is that all risk-weighted capital tiers of the banks exceeded regulatory threshold especially for domestically important banks and those in offshore operations. This perhaps represents a hallmark for periodic good rating. Every other metric of strategic financial management

does not have strong effects on capital adequacy.

In the baseline scenario regression on net interest margin, we find rising rate of bank liquidity to substantially deplete net interest margin. By including interaction of business cycle the negative effects of liquidity persists. This reveals conservative nature of some bank managements and their sentiments about increasing credit portfolio risk. We would not fail to input that some of the managers may be more of competitive risk-neutral or rigid investors. Management strategy tailored towards solvency and safety have low risk appetite and may be comfortable in foregoing riskier investment opportunities, hence, the decline in actual bank earnings. Again, there is a likelihood that banks shy away from elevated risks outside familiar sectors which often encourage significant credits concentration. Investing in the model declines net interest margin which is quite weak. Compared with the investing influenced by business cycle dynamics this study could not find contradictory evidence that shows positive influence of investing strategic policy on bank net interest margin parameter. Rather the negative coefficient of investing policy by the banks is significantly related to their net interest margin.

Considering the relationship between apportionment and net interest margin we confirmed that net interest margin as performance measure is immeasurably supported rather than hindered, hence, contrary to expectation that payment of proceeds like dividend reduces bank reserves and retained earnings for broadening capital as confidence for risky investment expansions. It is likely possible when interest paid and dividend declared and paid are disaggregated, we could see a different picture about our established relationship. Apportionment as the last financial manager's strategic policy decision yielded positive implications across every dependent variable. In the financing strategic policy variable, bank financing triggers harmful consequences on net interest margin. Integration of business cycle as integral economic fundamental reversed the negative influence of interest margin. Banks do not exhibit capital shortfall indicating that capital conservation needed to navigate through business cycle turbulence indirectly facilitates profitable operations in period of significant economic uncertainty.

Apportionment of proceeds exerts positive effects on net interest margin which extends to business cycle influence on other variables which is insignificant. In addition, all banks experience minimal impairment in their lending. Baseline regression shows positive relationship of nonperforming loans with net interest earned. However, business cycle proves that nonperforming loan plunges earning to significant vulnerability in earnings. Like every other risk factor to balance sheet, nonperforming loans constrain bank net interest margin in a scenario where business cycle deteriorates bank loans

quality with significant severity.

In the risk model measured as nonperforming loans, we also present new evidence incorporating business cycle. Business cycle consideration is ideally important. Liquidity in the baseline scenario has positive relationship with nonperforming loans which means liquidity exacerbates risk. Sensitivity of liquidity to business cycle interaction proved otherwise. With cyclical fluctuations bank liquidity responds to penalize nonperforming loans by modestly reducing its magnitude. Changes in financing strategy modestly mitigates accumulation of bad loans in the banks. On interaction with business cycle financing composition failed to lower nonperforming loans. There is observed co-movements between apportionment of earnings of the banks and nonperforming loans across all the models. Bank investing policy decisions predicts significant worsening repercussions on nonperforming loans. In the presence of business cycle interaction, the result remained unchanged and robust across both models.

5.3 Policy Suggestions and Implementation

Our suggested policy recommendations could help management and perhaps other policy experts to obtain better outcomes in their strategic management of their respective banks at macro prudential levels. Depending on the risk appetite of the management of banks it is important that conservative managerial strategy for enhanced liquidity in the banks should also consider to maintaining a balance by increasingly allocating more resources to corporate investment portfolio. This action is appropriate in mitigating the declining effect of extremely large liquidity ratio on net interest earnings.

The effectiveness of investing policy should be re-evaluated through periodic reappraisal on the performance of each investment portfolio. The riskiest aspect of bank investments is the credit advances. Credit concentration in the Nigerian oil and gas is quite promising yet it limits investment diversification which might be constraining improvements in the earnings ability of the banks. While it seems the hydrocarbon industry is a long-lasting cash cow, the risk in the international energy market could produce feedback consequences that either significantly impairs loans or crystallize into systemic risk. Risk managers in the bank could avoid this trap. For a change the new task for risk experts requires strong governance as well as the adaptation of competitor strategic formula that aids in thriving in the other sectors suffering funding starvation. The mortgage market is not densely populated by banks which for decades have been inherently oligopolistic. First bank Nigeria holding company operates a subsidiary in the mortgage market to divide the market rivaled by very few traditional mortgage banks. Several other banks should consider mortgage as part of

company business segment.

Investments in agricultural sector has huge potentials for greater returns which makes it a channel for diversification. Other things being equal net interest margin could receive a boost if attention is given to agricultural sector. Moreover, small scale borrowers and households could be encouraged with soft loans. We know that banks find it difficult with this borrower group due to asymmetric information problem, development banks in the sample funded from taxpayers' money should strive to structure credit package tailored to needs of this group. Their increased funding to enhance growth create more earnings for lending institutions.

It is also of paramount importance that nonperforming loans is managed through individual bank transfer of its excess liquidity to the purchase of higher volume of treasury bills. We acknowledge the prudential guidelines set out by Central bank of Nigeria but banks have to complement regulatory formula with internal management method. Also managing nonperforming loans by still confronting business cycle could be truly hard. This is where government team of economic managers should help by averting conditions that lead to amplification of recessionary conditions that adversely affects businesses. Keeping the economy consistently stable on a steady state growth is a good control measure that helps risk managers of banks. In addition, while supervisors are keeping strict watch over liquid position of all banks to ensure resilience, it is important that regulators are cautious of the role high liquidity in the bank plays in adding to rate of nonperforming loans.

Further studies should be conducted on strategic financial management and banking system stability. The development of such future study should involve the inclusion of board size, loan-to-value which was a real issue that kick-started the last global financial crisis. Detail test of several macro prudential variables on financial stability indicators should be given comprehensive empirical attention.

5.4 Limitation of Study

The bank-level data processed for empirical result are found in financial statements, however, some of the banks failed to provide complete and comprehensive records on all the tested variables. It is also important to highlight that some of the banks lately commenced gathering systematic records on net interest margin while others commenced calculations on liquidity ratios in periods outside year 2013 the starting point of our time series. We have covered zero availability of net interest margin estimation in some banks by adopting financial estimation formula widely applied in First bank Nigeria which has been arbitrarily imposed on group non-sophisticated bank. However, as a data generating process is a standard financial formula. Findings are theoretically valid to influence policy to the extent that standard econometric assumptions are obeyed in the various models.

The models try to mimic reality but this not completely possible due to the social nature of the variables. There are numerous factors that can impact on the findings. These factors are relegated to model disturbance term. The statistical estimates on the bank variables are studied as cross sectional subjects rather than separate entities, weaknesses inherent in any of the bank variables can produce widespread effects that weaken banks with robust strategic decisional inputs. Thus, inferences drawn especially in mean and percentiles presented in descriptive statistics represent a generalized view on the behavior of the estimated variable parameters to be applicable to all the banks. Econometric estimates reflect this information. It must also be highlighted that net interest margin is a test of earnings capacity of banks and is not appropriate to be used in forming strong opinion about the value of the firm especially when discussing the theoretical contradiction between MM and traditional theory of capital structure. Nevertheless, since it is in the category of earnings capacity of the bank in CAMELS principle then and interest margin is a robust metric to capture performance.

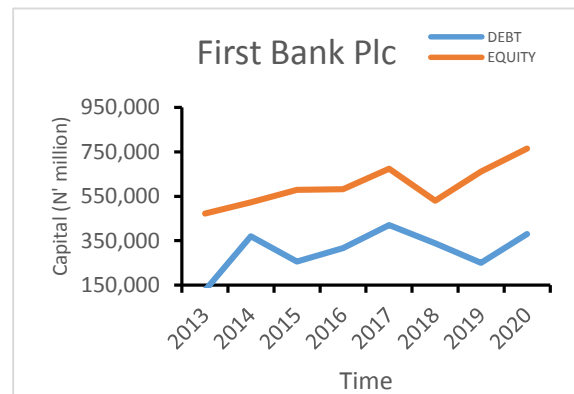
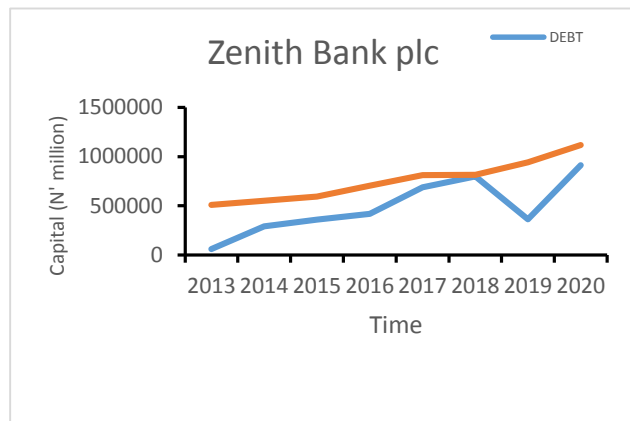
Similarly, the banking industry of Nigeria also includes certain new entrants into the market. These new banks even though operate as deposit money banks are yet to go public making it impossible for data to be publicly available on them. However, we have done theoretical generalizations without including industrial influences of those factors. In addition, business cycle from 2015 ending around 2017 deserved to be dummied to test its direct consequences on our major dependent variables which in reality should have direct effect. In our study we presented business cycle to have indirect consequences on bank performance indicators through interaction with factors representing and driving strategic financial management. The isolated cyclical component carried in real gross domestic product warehouses three fundamental economic fluctuations. These could

not be separately extracted by filters to quantitatively identify bad phase that potentially disrupts the economy while almost crumbling corporate activities. It is really empirically hard for filters to extract the quantities and demarcate them appropriately. Strategic policy on liquidity, financing, investing and apportionment reactions to business cycle produce interpretation challenges on the economic signs assumed in the coefficient. Lastly, the variables studied are based on past historical information covering the operational activities of the banks in the industry, thus, analysis is in the *ex post* rather than *ex ante*. Nevertheless, the study can be used for future prediction of the relationship between strategic financial management and banking system profitable stable performance.

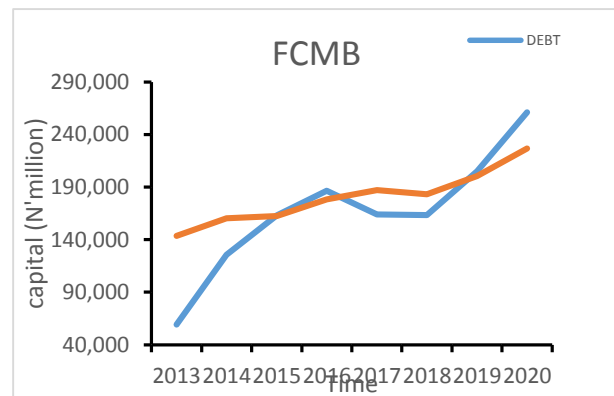
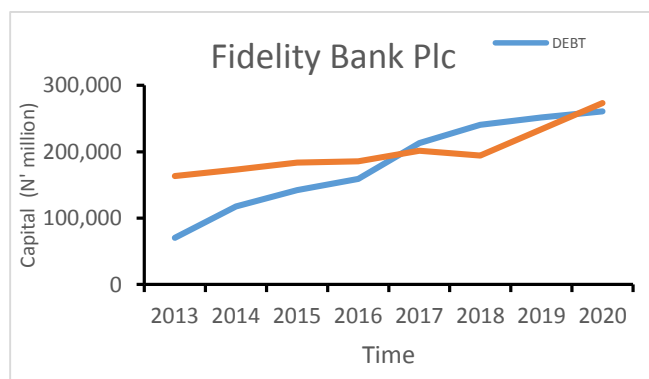
APPENDICES

APPENDIX 1: Capital structure of banks

Panel A: Largest Banks



Panel B: Domestically important banks



Note: FCMB means First City Monument Bank plc

Appendix II: Capital Adequacy Ratio of banks in Nigeria (%)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	13.54	15.78	23.03	22.59	13.47	12.18	17.67	26.63	0	16.34	15.35
UBN	24.8	16.39	15	13.3	17.8	15.91	19.7	17.46	14.61	0	0
UBA	20	17	20	20	22	24	24.2	22.4		29.6	32.6
ZENITH	26	20	21	23	27	25	22	23	21	1.93	
FIDELITY	21.77	24.21			16	17	18.29	18.18	20.08	18.14	16.17
ACCESS	18	18.81	19.5	21	0	0	16.07	15.46	24.52	20.24	15.5
GTCO	23.91	21.4	18.17	19.79	23.39	28.14	20.66	25.9	23.83	24.08	21.94
STERLING	14	13.60	17.49	11.16	12.00	13.3	14.74	18.03	14.8	14.7	14.17
FCMB	0	19	17.49	11.16	15.9	14.17	0	16.1	16.24	0	0
RAND	0	0	0	0	0	0	0	0	0	0	0
Abbey	55	60		59	54	42	38	31	49	54	60
FSDH	49.15	24.44	26.81	0	0	28.67	30.74	31.02	20.05	20.18	11
WEMA	27	18.22	15.1	11.07	14.32	0	0	15.01	11.71	12.74	16.04
STANBIC	24.5	16.8	18.3	22.8	23.5	18	17.2	20.6	21.1	19.2	19
DBN	0	0	0	415.13	319.97	140.52	323.19	75.24	64.21	63.96	62.58
BOI	0	0	33.5	48.2	41.6	54.05	51.73	48.22	51.13	47.67	46.15
ECOBANK	16.13	20.4	18.72	16.72	16	14.3	16.31	21.44	0	14.2	15
Greenwich	0	0	0	0	0	0	0	0	0.13168	0	0.04487
NEXIM	0	0	0	0	0	0	0	0	0	0	00
Jaiz	0	10	0	33	27	21.13	16.44	20.02	23.66	0	0
Aso save	0	0	0	0	0	0	0	0	0	0	0
Living trust	0	0	0	0	0	0	0	60.13	49.51	54.88	40.77

Source: Annual report and financial statements

Appendix III: Dividend and Interest Payment by Banks as Apportionment (N’billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	122948	129318	132162	90159	146878	136473	136875	118171	0	174270	347067
UBN	6888	6836	8683	9929	11905	15859	17709	27228	46064	0	0
UBA	165456	136914	636097	871282	377231	3340525	287415	825115	0	165061	239184
ZENITH	120830	161,862	184471	195653	258895	220541	223485	189371	201277	241230	0
FIDELITY	55652	60964	0	0	81138	85039	92641	56527	90404	143049	203111
ACCESS	33346.58	74911.09	35803.45	67735.41	257391.6	233336.9	273413.7	224289.6	333660	665529	939485
GTCO	94615.62	107069.3	0	0	141073.3	165245.9	146233.4	131522.5	132305.9	143852.4	215406.6
STERLING	37632.37	41957.48	43378.37	45705.75	43115	68149	45190	37818	33021	37431	44535
FCMB	46715.92	56087.92	43378.37	45705.75	64980.89	61191.85	0	61047.55	76797.08	0	0
RAND	0	0	0	0	4929.69	10081.74	0	4122.061	3374.45	0	0
Abbey	1030.537	423.289	0	344.405	490.754	485.456	487.657	539.378	1683.943	2563.955	4464.994
FSDH	7749.041	7352.334	9601.716	9098.875	12906.09	13237.76	10419.78	8244.114	7106.637	9291.187	11114.64
WEMA	11511.8	12425.61	15953.19	25037.47	33306.17	15805.94	19162.92	35245.49	36464.53	7753.308	12005.6
STANBIC	34690	39976	50727	30328	46643	48303	52080	49965	80763	437	0
DBN	0	0	0	0	0	8189.474	8189.474	11263.71	11,642	11,129	15,569
BOI	0	242.237	979.607	1393.25	1723.091	17945.45	27,385	2,600	4,621	89073.36	152097.8
ECOBANK	641711	651,473	71,512	65,869	87251	74779	12,640	2,514	0	71001	65575
Greenwich	0	0	0	0	0	0	30.997	648.449	1153.974	6387.725	8832.318
NEXIM	391	0	501	549	1,013	443	1,158	1,234	1,261	9,607	0
Jaiz	0	0	0	0	0	0	0	883.929	883.929	0	0
Aso save	4,208	4,517	-269	291	4133.784	2725.337	2375.406	3942.067	2208.743	437.029	0
Living trust	0	0	0	0	0	0	0	53	282	795	916

Appendix IV: Net interest Margin of Nigerian banks (%)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	8	7.6	7.6	8.8	8.4	7.5	15.5	17	0	2.246341	1.66782
UBN	8.71509	7.588502	6.412876	6.550408	5.600084	3.499149	3.047464	2.88235	1.147646	0	0
UBA	0.689503	0.875367	0.213304	0.19422	0.590563	0.062101	0.858832	0.327634		3.698492	5.593199
ZENITH	0	0	2	2	8.94	8.90	8	8	7.3	6.7	
FIDELITY	0	4	6	0	0	1.980917	3.388587	6.2	6.3	4.7	6.3
ACCESS	1.635358	5	5.9	6.8	0.685078	0.809095	1.022672	1.184163	0.993284	0.569867	0.816198
GTCO	0	0	0	0	3.064567	2.593021	3.547081	5.238334	5.053229	4.757675	3.761706
STERLING	51.2	48.9	55.2	0	6.9	6.6	1.681739	15.9	45.2	43.6	1.990253
FCMB	1.237167	1.448409	0.949359	1.298612	1.119436	1.225662	0	0	0	0	0
RAND	0	0	0	0	0	0	0	0	0	0	0
Abbey	0	1	0	1.789933	1.558712	1.369694	1.306426	1.59454	0.96815	0.791782	0.576479
FSDH	0.31321	0.384281	0.499394	0.41993	0.596362	0.43216	0.746909	0.618594	0.538185	0.669632	0.692828
WEMA	1.087958	1.493039	1.110726	0.744891	0.593492	0.752678	0.350047	0.915362	1.141895	11.619	11.25667
STANBIC	12	16.9	16.6	16.9	6.9	5.2	4.5	3.5	2.9	14	14.2
DBN	0	0	0	0	0	3.195454	4.645731	-0.07598	0.030001	3.321811	3.321739
BOI	0	0	72.21675	139.4735	65.17796	3.117815	2.199923	0	0	1.564134	0.986787
ECOBANK	7.2	6.8	1.888005	1.882448	1.222221	1.152677	3.01788	24.13723	0	4.9	5.4
Greenwich	0	0	0	0	0	0	0	0	0	0	0
NEXIM	9.941214	0	8.790514	8.69685	3.907863	16.13653	6.827101	5.848647	7.413444	1.092355	0
Jaiz	0	0	0	0	0	0	0	0	0	0	0
Aso save	0	0	0	0	0	0	0	0	0	00	000
Living trust	0	0	0	0	0	0	0	6.091088	3.875617	2.911923	1.806617

Appendix V: Bank equity (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	471,777	522,890	578,800	582,575	673,719	530,647	661,125	765,171	879,856	995741	1747021
UBN	199,343	222,234	243,921	271,670	345,741	225,632	252,342	264,318	266,867	297,023	281945
UBA	235,036	265,406	332,621	448,069	527,779	502,608	597,978	724,148	804,807	922,104	2,030,195
ZENITH	509251	552638	594,353	704,465	812,116	815,751	778,995	905,232	1,279,662	1,378,940	0
FIDELITY	163,455	173,111	183,516	185,402	201,361	194,416	234,030	273,533	297,769	314360	437307
ACCESS	244482.05	277410.728	367801.467	454494.6	511195	490511.8	606739.8	751041.2	1,226,892	1,226,892	2,348,432
GTCO	332353.07	374332.548	413561.938	504902.8	625167.8	576277.2	687337.5	8.14E+08	8.83E+08	9.31E+08	1.48E+09
STERLING	63,457,896	84715.285	95565.747	85660.02	101643	97800	119,558	135,753	136,559	153,998	160,355
FCMB	143,707	160,365	162,391	178,164	187,100	183,207	200,434	226,741	243,806	275879.6	460739.8
RAND	0	16716 291	22063 033	13538 877	29140.3	37967.9	0	56699.01	63069.75	0	0
Abbey	6,714	6,551	6,606	6,438	6,226	5,457	5,395	3,355	6,932	7,698	8,570
FSDH	23,720	25,460	30,242	27,869	34,628	29,336	26,770	30,814	26,848	25,054	30,953
WEMA	41395.151	43768.649	46064.11	48470.73	49615.25	50900.1	52035.08	59141.75	70146.62	82542.9	139298.7
STANBIC	97,634	120,244	128,967	140,798	185,218	239,667	302,229	378,601	376,866	399,562	499,576
DBN	0	0	0	19,436	43480.83	126,044	159,956	177,934	194,376	214509.3	235546.9
BOI	0	162188.403	206547.324	219905.2	241777.2	258239.5	293,088	336,483	384,846	429,829	676,938
ECOBANK	156628	198394	227787	220775	267329	247,482	264,270	298,721	278777	294613	286695
Greenwich	0	0	0	0	0	0	9481.979	25718.62	26563.55	26371.23	28675.2
NEXIM	36,463	0	41,151	34,278	35,926	32,905	34,875	37,673	43,138	48,547	0
Jaiz	0	11,229	11,490	13,144	13,679	13,109	15,552	17,845	24,305	0	0
Aso save	5,331	3,787	-25,900	-31,488	-30,706	-31,868	-35,331	-43,196	-38,980	-38,603	0
Living trust	0	0	0	0	0	0	0	2,777	3,224	3,746	4,254

Appendix VI: Bank Debts in Capital Structure (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
FBN	126,302	369,707	256,116	316,792	420,919	338,214	250,596	379,484	405,304	675,440
UBN	45,280	78,135	76,059	89,514	93,211	108,751	152,975	262,398	243,632	213,049
UBA	48,866	113,797	129,896	259,927	502,209	683,532	758,682	694,355	455,772	535,735
ZENITH	60,150	207,300	358,680	416,570	689,427	798,437	368,870	917,267	1,119,710	1,274,642
FIDELITY	70,328	117,541	141,975	159,035	213,233	240,767	251,586	260,971	468,413	261,466
ACCESS	120,167.23	218,297.488	381,320.801	616,088.209	613,723.893	639,668.117	744,590.707	960,615.296	1,435,754	2,187,250
GTCO	248,633.039	258,619.752	345,240.332	345,871.467	312,623.837	178,566.8	162,999.909	113,894,768	153,897,499	126,528,105
STERLING	433,581,25	499,34,681	648,49,304	978,32,407	225,915	206,135	125,357	128,641	158,777	175,658
FCMB	59,244	125,715	163,010	186,576	164,126	163,383	205,209	261,249	159,198	173,110.809
RAND	0	135,873,32	135,040,64	135,040,64	717,68,933	802,46,577	0	38,392,871	43,030,313	0
Abbey	581	825	112	24	15	6	0	0	0	0
FSDH	59,286	5,583	1,990	29,804	32,280	33,251	32,823	23,050	46,447	55,828
WEMA	58	58	52	32	39	27	51	74	73	69
STANBIC	55,163	93,124	104,806	124,001	103,938	130,513	198,823	180,300	183,853	259,835
DBN	0	0	0	0	878,997,19	151,704,062	308,484,268	313,724,945	298,134,621	291,139,709
BOI	0	430,215,314	453,336,299	422,203,976	172,933,591	686,730,273	598,199	1,302	1,125	1,720
ECOBANK	58,122	146,653	167,071	176,402	160,922	160,828	79,896	104,509	212,723	306,159
Greenwich	0	0	0	0	0	0	0	191,468	5,527	5,527
NEXIM	776	0	19,503	22,215	21,054	66,949	64,491,388	112,067,341	0	0
Jaiz	0	0	1,000	0	0	0	0	15,405	31,536	0
Aso save	10,448	17,203	10,869	15,964	19,295	18,881	19,842	20,825	15,312	16,098
Living trust	0	0	0	0	0	0	0	63	340	2,841

Appendix VII: Aggregate banks Investments in Nigeria (N’ billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
FBN	29,265	29,493	997,897	1,536,213	1,036,882	1,295,228	1,897,585	1,969,026	1,958,487	1,528,187		
UBN	2,354	121,276	23,833	9790	12627	32124	55808	107160	50710	539474		
UBA	117025	47421	626331	850582	1092685	3198360	2,985,175	4654251	0	8,901,556		
ZENITH	12892	13179	27240	29838	49577	73840	64501	29667	3002179	3693147		
FIDELITY	36608	100761	0	0	190051	306158	183926	321831	445785	283225		
ACCESS	226474.873	312593.229	603380.144	533510.989	957039.535	1575994.14	6089781.37	8562259.484	2,270,545	2079714		
GTCO	382675.658	337577.894	0	0	718940.084	1392182.458	875454.04	1042780.62	3019702.05	3006089.853		
STERLING	48410.91	40860.771	78223.331	44075.842	91820	381156	57456	78558	716,135	1059650		
FCMB	86987.411	158659.23	78223.347	44075.842	130423.535	189746.55	0	257162.068	786430.09	285005.617		
RAND	0	0	22900	791	34926	871	27310.139	0	0	151.151	488.101	0
Abbey	93	434	0	347	7	77	758	67	318	466		
FSDH	37,734	39,631	23,210	34,993	55,584	30,406	96,574	482	585	79,789		
WEMA	33,667	6,037	3,820	2,929	9,503	11,771	26,846	58,890	5,442	201,015		
STANBIC	58034	70302	4998	108788	64642	100968	18703	10,417	643,641	728180		
DBN	0	0	0	0	113121.879	263301.511	261853.2	38825.511	28022.428	7152.93		
BOI	0	1189.64	8505.212	8422.336	17212.675	221636.861	864,691	2,524	3,216	3,410		
ECOBANK	2024984250	1939138200	7476	26691	8336	6990	11589	3237	0	1244829.6		
Greenwich	0	0	0	0	0	0	0	10837.504	13342.951	105.512		
NEXIM	1,655	0	2,941	2,514	5,032	32403.057	936.419	338.904	473.383	3234.04		
Jaiz	0	639	511	1,060	699	796	802	30,604	49,341	0		
Aso save	6,259	6,424	11,385	3,636	6,507	81	1,520	647	26	2,724		
Living trust	0	0	0	0	0	0	0	120	96	226		

Appendix VIII: Interest Payment on debts in bank capital (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	90,052	93,316	128,555	84,173	138,939	126,472	126,141	103,933	0	161,707	329,120
UBN	6,574	6,836	8,683	9,929	11,905	15,859	17,234	19,915	38,748	0	0
UBA	149718	121244	626331	850582	351583	3311453	258345	791941	0	128,715	191,305
ZENITH	70,596	106,919	121,678	139,139	195,473	134,201	135,575	101,461	107,051	143,859	0
FIDELITY	49,568	56,907	0	0	77,083	81,853	89,455	50,734	6,372	130,016	182,311
ACCESS	13896.097	61159.165	20522.742	51825.03	238588.391	214533.755	271083.124	222055.627	303447	629,719	877992
GTCO	48,866	56,750	0	0	80488.743	85781.718	65,226	48,425	43,658	54502.065	116090.051
STERLING	34,492	36559.273	41650.942	43114.607	43115	67573	45,190	36,954	31,581	34,552	40,216
FCMB	46715.922	50147.105	41650.942	43114.607	63000.614	59211.577	0	58275.168	73812.274	0	0
RAND	1648 519	2064 140	2064 140	2336 003	4929.69	10081.737	0	4122.061	3374.45	0	0
Abbey	1,031	423	0	344	491	485	488	539	1,684	2,564	4,465
FSDH	7,057	6,248	8,634	9,099	12,906	11,030	7,346	6,078	6,515	8,885	10,772
WEMA	11,512	12,426	15,953	25,037	33,306	15,806	18,006	33,703	34,922	4,667	8,148
STANBIC	25,572	26,094	37,815	30,328	36,855	41,169	37,682	38,689	26,729	40,129	88,623
DBN	0	0	0	0	0	8189.47	8189.47	11263.712	11641.639	11128.998	12151.162
BOI	0	0	367.28	198.51	528	16,445	25,385	0	0	83051.553	144273.943
ECOBANK	247049100	279999450	65,967	65,869	87,251	74,779	12,640	2,514	0	3290.4	3290.4
Greenwich	0	0	0	0	0	0	30.997	23.449	1153.974	5477.352	8453.258
NEXIM	354.963		501.337	548.752	971.068	443.102	1158.241	1034.408	1261.382	9607.467	0
Jaiz	0	0	0	0	0	0	0	0	0	0	0
Aso save	4,208	4,517	-269	291	4,134	2,725	2,375	3,942	2,209	437	0
Living trust	0	0	0	0	0	0	0	52.762	231.816	495.272	854.056

Appendix IX: Net Interest Income (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FBN	230,115	243,854	265,165	304,442	331,522	284,168	279,592	251,615	0	363,249	548,913
UBN	57,293	51,875	55,683	65,039	66,669	55,493	52,520	57,402	44,469	59,592	91,290
UBA	103,231	106,133	133,599	165,200	207,632	205,646	221,875	259,467		379,489	707,540
ZENITH	0	0	224,582	240,179	0	0	0	0	0	0	0
FIDELITY	0	83,055	104,123	94,877	152,695	277,366	0	0	0	0	0
ACCESS	77723.641	100017.143	105381.65	0	163451.545	173,578	277,229	262,950	301,409	358,856	716,615
GTCO	136939.005	142392.098	0		246,663	222,434	231363.102	253668.147	220612.622	259303.127	436696.585
STERLING	35812.646	43016.783	39541.683	55989.144	50174	55281	64,699	62,147	67,809	76,392	80,040
FCMB	57795.411	72633.527	39541.683	55989.144	70525.135	72,573	75,976	90,758	90,914	121,997	177,423
RAND	1 453 355	3 418 428	3418 428	3936 999	5170.879	4792.389	0	7897.377	5160.815	0	0
Abbey	380	611	0	616	765	665	637	860	1,630	2,030	2,574
FSDH	2,210	2,401	4,312	3,821	7,697	4,767	5,486	3,760	3,506	5,949	7,463
WEMA	12,524	18,552	17,720	18,650	19,767	11,897	6,303	30,850	39,877	54,230	91,721
STANBIC	34,802	46,658	43,860	68,194	89,182	78,209	77,831	74,215	75,372	113,119	175,190
DBN	0	0	0	0	5161140	26,169	38,046	-856	349	36,968	40,363
BOI	0	26523.84	26523.841	27687.437	34438.403	51,274	55,845	82,789	117,965	129,904	142,368
ECOBANK	472841100	499233150	124,546	123,995	106,640	86,196	38,146	60,681	0	456166.35	525893.4
Greenwich	0	0	0	0	0	0	244,845	1225.379	2509.833	5477.352	8453.258
NEXIM	3528.763	3,529	4407.01	4772.414	3794.801	7,150	7,907	6,050	9,351	10,495	0
Jaiz	0	2,301	3,941	189	703	5,830	9,464	8,003	8,972	0	0
Aso save	4,833	2,669	-269	291	-683	-247	-256	-1,836	-1,210	681	0
Living trust	0	0	0	0	0	0	0	321.378	898.43	1442.194	1542.952

Note: the vacuums in some years in certain banks, precisely Zenith bank and others like Fidelity bank are not due to deliberate non-computation of net interest income but because of their CEO report of net interest margin employed as first line metric of performance in this research project.

Appendix X: Liquidity Ratios (%)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
FBN	34.68	91.92	20	22.50	0	0	0	0	0	0
UBN	0	0	0	0	30	0	30	41	35	0
UBA	67	48.9	52.57	38.57	49.69	55.84	54.9	44.3	0	68.3
ZENITH	0	0	0	0	69.7	72	57.3	66.2	71.6	75
FIDELITY	38	38	0	0	0		35	37.8	40.4	39.6
ACCESS	0	0	38	43.6	00	0		46	0	25
GTCO	50.31	40.07	0	0	47.56	41.44	49.33	38.91	38.26	49.93
STERLING		34	0	0	33.2	42.19	39.22	34.9	37.94	37.2
FCMB	0	0	0	0	35.3	49	0	34.2	34.8	0
RAND	0	0	0	0	0	0	0	0	0	0
Abbey	0	0	0	0	0	0	41	0	0	0
FSDH	81	20	37.39	0	0	30	109.95	136.3	74	55
WEMA	76.61	32.8	30.3	30.3	26.25	0	0	31.04	29.8	30.51
STANBIC	87.8	84.7	57.13	78.05	106.72	106.92	117.3	149	105.35	85
DBN	0	0	0	0	0	0	0	0	0	0
BOI	0	0	326	511	0	3.6	0	0	0	0
ECOBANK	79	68.7		38	0	0	0	0		47
Greenwich	0	0	0	0	0	0	0	0	0.13459	0.03
NEXIM	0	0	0	0	0	0	0	0	0	0
Jaiz	0	0	0	35	33	27.94	33.6	43.06	29.78	0
Aso save	22	5	4	1	0	0	0	0	0	20
Living trust	0	0	0	0	0	0	0	0	0	0

Appendix XI: Bank Capital Financing (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
FBN	598079	892597	834916	899367	1094638	868861	911721	1144655	1285160	1671181
UBN	244623	300369	319980	361184	438952	334383	405317	526716	510499	510072
UBA	283902	379203	462517	707996	1029988	1186140	1356660	1418503	1260579	1457839
ZENITH	569401	759938	953033	1121035	1501543	1614188	1147865	1822499	2399372	2653582
FIDELITY	233783	290652	325491	344437	414594	435183	485616	534504	766182	575826
ACCESS	364649.28	495708.216	749122.268	1070582.79	1124918.93	1130179.872	1351330.54	1711656.541	2662646	3414142
GTCO	580986.109	632952.3	758802.27	850774.302	937791.632	754844.041	850337.377	928290445	1037124591	1057677307
STERLING	106816021	134649.966	160415.051	183492.43	327558	303935	244915	264394	295336	329656
FCMB	202950.959	286079.963	325400.875	364740.758	351226.096	346589.286	405643.212	487989.887	403003.272	448990.419
RAND	0	0	0	0	100909.236	118214.478	0	95091.878	106100.065	0
Abbey	7294.992	7376.015	6718.313	6462.512	6240.562	5463.088	5394.74	3355.041	6932.254	7698.414
FSDH	83006.472	31043.346	32232.222	57672.922	66907.915	62586.217	59593.283	53864.629	73295.188	80882.029
WEMA	41452.73896	43827.03073	46116.3999	48502.8264	49654.7095	50927.36761	52085.854	59215.27747	70219.34866	82612.35653
STANBIC	152797	213368	233773	264799	289156	370180	501052	558901	560719	659397
DBN	0	0	0	19436.115	87943199.8	277748.132	468439.794	491658.695	492510.701	505649.013
BOI	0	592403.717	659883.623	642109.134	414710.822	944969.737	891286.654	337785.5723	385971.6136	431548.5006
ECOBANK	214750	345047	394858	397177	428251	408310	344166	403230	491500	600772
Greenwich	945,635	1,128,661	1,507,925	1,921,357	2,062,711	1,885,024	2,201,668	930,002,102	1,039,787,237	1,061,091,449
NEXIM	37239.005	0	60653.805	56493.622	56979.994	99853.824	99366.293	149740.235	43138.363	48546.969
Jaiz	0	11228.685	12489.81	13143.784	13679.148	13109.162	15551.947	33250.296	55841.659	0
Aso save	15778.946	20989.639	-15031.492	-15524.131	-11411.236	-12987.04	-15489.439	-22370.538	-23668.296	-22504.796
Living trust	0	0	0	0	0	0	0	2840.144	3564.096	6587.408

Appendix XII: Gross domestic product, business cycle and H-P trend (N' billion)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
cycle	9E+10	1.08676E+11	-3.6472E+11	2.59562E+11	1.60626E+11	1.79337E+11	2.0382E+11	2.3495E+11	-1.69201E+11	1.67188E+11	14899987771
hp trend	9E+10	1.08677E+11	1.28307E+11	1.45087E+11	1.60696E+11	1.79408E+11	2.0389E+11	2.35021E+11	2.71633E+11	3.10215E+11	3.48946E+11
Real GDP	924398	982724.8125	4.93027E+11	4.04649E+11	69205700	70536348.62	72094094	70800543.49	4.40834E+11	4.77403E+11	3.63846E+11

Appendix XIII: Some tabular computations

Dependent Variable: NIM

Method: Panel Least Squares

Date: 04/09/25 Time: 11:56

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.809901	0.074179	10.91814	0.0000
LNINVEST	-0.163929	0.252547	-0.649102	0.5175
LNFINANCE	-0.089245	0.231299	-0.385844	0.7003
LNAPPORT	-0.141378	0.291752	-0.484583	0.6288
RISK	-0.016713	0.079722	-0.209641	0.8343
LIQUIDITY	0.142295	0.012597	11.29632	0.0000
C	0.438205	1.514709	0.289300	0.7728
R-squared	0.796799	Mean dependent var		5.998415
Adjusted R-squared	0.786723	S.D. dependent var		15.40996
S.E. of regression	7.116610	Akaike info criterion		6.815875
Sum squared resid	6128.183	Schwarz criterion		6.971846
Log likelihood	-429.2160	Hannan-Quinn criter.		6.879247
F-statistic	79.07850	Durbin-Watson stat		1.185062
Prob(F-statistic)	0.000000			

Dependent Variable: NIM

Method: Panel Least Squares

Date: 04/09/25 Time: 12:23

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.680901	0.068695	9.911972	0.0000
LNINVEST	-0.096049	0.230562	-0.416587	0.6779
LNFINANCE	-0.195788	0.260751	-0.750864	0.4545
LNAPPORT	0.513075	0.322147	1.592675	0.1143
RISK	-0.013223	0.066888	-0.197685	0.8437
LIQUIDITY	0.022050	0.025667	0.859111	0.3923
C	0.499962	2.452798	0.203833	0.8389

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.904394	Mean dependent var	5.998415
Adjusted R-squared	0.880961	S.D. dependent var	15.40996
S.E. of regression	5.316755	Akaike info criterion	6.358796
Sum squared resid	2883.324	Schwarz criterion	6.938115
Log likelihood	-380.9629	Hannan-Quinn criter.	6.594176
F-statistic	38.59501	Durbin-Watson stat	1.849575
Prob(F-statistic)	0.000000		

Dependent Variable: NIM

Method: Panel Generalized Method of Moments

Transformation: First Differences

Date: 04/09/25 Time: 12:25

Sample (adjusted): 2015 2023

Periods included: 9

Cross-sections included: 20

Total panel (unbalanced) observations: 108

White period instrument weighting matrix

White period standard errors & covariance (d.f. corrected)

Instrument specification: @DYN(NIM,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.498633	0.022720	21.94719	0.0000
LNINVEST	-0.113081	0.125864	-0.898438	0.3711
LNFINANCE	-0.066078	0.262960	-0.251287	0.8021
LNAPPORT	1.401144	1.045954	1.339585	0.1834
RISK	0.266219	0.027604	9.644082	0.0000
LIQUIDITY	-0.050210	0.018638	-2.694007	0.0083

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.144521	S.D. dependent var	5.735899
S.E. of regression	7.922967	Sum squared resid	6402.888
J-statistic	10.91647	Instrument rank	14
Prob(J-statistic)	0.206477		

Dependent Variable: RISK

Method: Panel Least Squares

Date: 04/24/25 Time: 14:17

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.538668	0.060456	8.910032	0.0000
LNAPPORT	0.190135	0.260777	0.729113	0.4674
LNFINANCE	0.050550	0.203061	0.248939	0.8038
LNINVEST	-0.089517	0.225608	-0.396780	0.6922
LIQUIDITY	0.010946	0.010058	1.088325	0.2787
C	-0.348269	1.318458	-0.264148	0.7921
R-squared	0.442800	Mean dependent var		3.834160
Adjusted R-squared	0.419388	S.D. dependent var		8.335931
S.E. of regression	6.351803	Akaike info criterion		6.582164
Sum squared resid	4801.103	Schwarz criterion		6.717923
Log likelihood	-405.3853	Hannan-Quinn criter.		6.637316
F-statistic	18.91357	Durbin-Watson stat		2.880932
Prob(F-statistic)	0.000000			

Dependent Variable: RISK
Method: Panel Least Squares
Date: 04/24/25 Time: 14:18
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.489527	0.071860	6.812209	0.0000
LNAPPORT	0.195246	0.385414	0.506589	0.6136
LNFINANCE	-0.105424	0.322850	-0.326541	0.7447
LNINVEST	-0.231651	0.289189	-0.801037	0.4250
LIQUIDITY	0.067693	0.029731	2.276805	0.0249
C	0.589647	2.925297	0.201568	0.8407

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.485634	Mean dependent var	3.834160
Adjusted R-squared	0.362186	S.D. dependent var	8.335931
S.E. of regression	6.657344	Akaike info criterion	6.806175
Sum squared resid	4432.022	Schwarz criterion	7.371837
Log likelihood	-400.3859	Hannan-Quinn criter.	7.035973
F-statistic	3.933924	Durbin-Watson stat	2.850974
Prob(F-statistic)	0.000001		

Dependent Variable: RISK
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 04/24/25 Time: 14:19
Sample (adjusted): 2015 2023
Periods included: 9
Cross-sections included: 20
Total panel (unbalanced) observations: 105
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(RISK,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.381842	0.008113	47.06650	0.0000
LNAPPORT	0.002635	0.217938	0.012092	0.9904
LNFINANCE	-0.768420	0.404535	-1.899516	0.0604
LNINVEST	-0.333058	0.021309	-15.62968	0.0000
LIQUIDITY	0.298532	0.026071	11.45057	0.0000

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.569810	S.D. dependent var	9.824881
S.E. of regression	11.97707	Sum squared resid	14345.01
J-statistic	9.939850	Instrument rank	15
Prob(J-statistic)	0.445786		

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

** WARNING: robust standard errors may not be consistent with assumptions of Hausman test variance calculation.

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
RISK(-1)	0.489527	0.538668	-0.004030	NA
LNAPPORT	0.195246	0.190135	0.091867	0.9865
LNFINANCE	-0.105424	0.050550	0.004896	0.0258
LNINVEST	-0.231651	-0.089517	0.027143	0.3883
LIQUIDITY	0.067693	0.010946	0.003038	0.3032

Cross-section random effects test equation:

Dependent Variable: RISK

Method: Panel Least Squares

Date: 04/24/25 Time: 14:32

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 125

White period standard errors & covariance (d.f. corrected)

WARNING: estimated coefficient covariance matrix is of reduced rank

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.589647	2.337438	0.252262	0.8014
RISK(-1)	0.489527	0.031569	15.50644	0.0000
LNAPPORT	0.195246	0.367663	0.531047	0.5966
LNFINANCE	-0.105424	0.094236	-1.118715	0.2659
LNINVEST	-0.231651	0.269467	-0.859663	0.3920
LIQUIDITY	0.067693	0.055510	1.219468	0.2255

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.485634	Mean dependent var	3.834160
Adjusted R-squared	0.362186	S.D. dependent var	8.335931
S.E. of regression	6.657344	Akaike info criterion	6.806175
Sum squared resid	4432.022	Schwarz criterion	7.371837
Log likelihood	-400.3859	Hannan-Quinn criter.	7.035973
F-statistic	3.933924	Durbin-Watson stat	2.850974
Prob(F-statistic)	0.000001		

Dependent Variable: CAR

Method: Panel Least Squares

Date: 04/22/25 Time: 09:53

Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR(-1)	0.630244	0.060490	10.41900	0.0000
LNFINANCE	0.503495	0.260409	1.933475	0.0555
LNINVEST	-0.043902	0.277959	-0.157945	0.8748
LNAPPORT	-0.090758	0.313509	-0.289489	0.7727
LIQUIDITY	0.045249	0.012736	3.552738	0.0005
RISK	0.016803	0.089154	0.188472	0.8508
R-squared	0.624610	Mean dependent var		15.96693
Adjusted R-squared	0.609225	S.D. dependent var		12.75646
S.E. of regression	7.974322	Akaike info criterion		7.036071
Sum squared resid	7757.957	Schwarz criterion		7.169760
Log likelihood	-444.3085	Hannan-Quinn criter.		7.090390
Durbin-Watson stat	2.134732			

Dependent Variable: CAR
Method: Panel Least Squares
Date: 04/22/25 Time: 09:55
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.904576	3.381499	-0.858961	0.3924
CAR(-1)	0.355944	0.089231	3.989020	0.0001
LNFINANCE	0.665267	0.352414	1.887742	0.0619
LNINVEST	0.117897	0.310352	0.379882	0.7048
LNAPPORT	0.443309	0.418650	1.058900	0.2921
LIQUIDITY	0.035790	0.034134	1.048517	0.2969
RISK	0.040376	0.090696	0.445177	0.6571

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.737188	Mean dependent var	15.96693
Adjusted R-squared	0.672773	S.D. dependent var	12.75646
S.E. of regression	7.297174	Akaike info criterion	6.992044
Sum squared resid	5431.372	Schwarz criterion	7.571362
Log likelihood	-421.4908	Hannan-Quinn criter.	7.227424
F-statistic	11.44440	Durbin-Watson stat	1.944470
Prob(F-statistic)	0.000000		

Dependent Variable: CAR

Method: Panel EGLS (Cross-section random effects)

Date: 04/22/25 Time: 10:19

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 128

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.600861	1.536724	1.041736	0.2996
CAR(-1)	0.619506	0.056305	11.00270	0.0000
LNAPPORT	-0.173749	0.297743	-0.583553	0.5606
LIQUIDITY	0.045293	0.011655	3.886161	0.0002
LNFINANCE	0.472925	0.240096	1.969732	0.0512
LNINVEST	-0.056292	0.254633	-0.221069	0.8254
RISK	0.013849	0.081633	0.169652	0.8656

Effects Specification		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		7.297174	1.0000

Weighted Statistics			
R-squared	0.627406	Mean dependent var	15.96693
Adjusted R-squared	0.608930	S.D. dependent var	12.75646
S.E. of regression	7.977329	Sum squared resid	7700.170
F-statistic	33.95834	Durbin-Watson stat	2.162385
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.627406	Mean dependent var	15.96693
Sum squared resid	7700.170	Durbin-Watson stat	2.162385

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.216427	6	0.0000

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
CAR(-1)	0.355944	0.619506	0.004792	0.0001
LNAPPORT	0.443309	-0.173749	0.086617	0.0360
LIQUIDITY	0.035790	0.045293	0.001029	0.7671
LNFINANCE	0.665267	0.472925	0.066549	0.4559
LNINVEST	0.117897	-0.056292	0.031480	0.3262
RISK	0.040376	0.013849	0.001562	0.5021

Cross-section random effects test equation:

Dependent Variable: CAR

Method: Panel Least Squares

Date: 04/22/25 Time: 10:21

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 128

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.904576	3.381499	-0.858961	0.3924
CAR(-1)	0.355944	0.089231	3.989020	0.0001
LNAPPORT	0.443309	0.418650	1.058900	0.2921
LIQUIDITY	0.035790	0.034134	1.048517	0.2969
LNFINANCE	0.665267	0.352414	1.887742	0.0619
LNINVEST	0.117897	0.310352	0.379882	0.7048
RISK	0.040376	0.090696	0.445177	0.6571

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.737188	Mean dependent var	15.96693
Adjusted R-squared	0.672773	S.D. dependent var	12.75646
S.E. of regression	7.297174	Akaike info criterion	6.992044
Sum squared resid	5431.372	Schwarz criterion	7.571362
Log likelihood	-421.4908	Hannan-Quinn criter.	7.227424
F-statistic	11.44440	Durbin-Watson stat	1.944470
Prob(F-statistic)	0.000000		

Dependent Variable: NIM
Method: Panel Least Squares
Date: 04/25/25 Time: 11:53
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 22
Total panel (unbalanced) observations: 205

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.533398	0.030801	17.31751	0.0000
LNINVESTBIZ	-3.37E-09	8.74E-10	-3.849004	0.0002
LNFINANCEBIZ	3.17E-09	7.34E-10	4.310788	0.0000
LNAPPORT	193.8103	142.1890	1.363048	0.1744
LIQUIDITYBIZ	-2.97E-11	4.68E-11	-0.634665	0.5264
C	-1328.156	1329.887	-0.998698	0.3192
R-squared	0.603040	Mean dependent var		943.4555
Adjusted R-squared	0.593066	S.D. dependent var		13433.05
S.E. of regression	8569.133	Akaike info criterion		20.97855
Sum squared resid	1.46E+10	Schwarz criterion		21.07581
Log likelihood	-2144.302	Hannan-Quinn criter.		21.01789
F-statistic	60.46191	Durbin-Watson stat		2.980038
Prob(F-statistic)	0.000000			

Dependent Variable: NIM
Method: Panel Least Squares
Date: 04/25/25 Time: 12:16
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 22
Total panel (unbalanced) observations: 205

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.537205	0.035471	15.14483	0.0000
LNINVESTBIZ	-3.46E-09	1.02E-09	-3.398944	0.0008
LNFINANCEBIZ	3.21E-09	8.53E-10	3.758761	0.0002
LNAPPORT	343.1237	230.3514	1.489567	0.1381
LIQUIDITYBIZ	-3.05E-11	5.50E-11	-0.554527	0.5799
C	-2553.965	2038.432	-1.252907	0.2119

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.607833	Mean dependent var	943.4555
Adjusted R-squared	0.550550	S.D. dependent var	13433.05
S.E. of regression	9005.656	Akaike info criterion	21.17128
Sum squared resid	1.44E+10	Schwarz criterion	21.60895
Log likelihood	-2143.056	Hannan-Quinn criter.	21.34831
F-statistic	10.61109	Durbin-Watson stat	3.004177
Prob(F-statistic)	0.000000		

Dependent Variable: NIM
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 04/25/25 Time: 12:35
Sample (adjusted): 2015 2023
Periods included: 9
Cross-sections included: 22
Total panel (unbalanced) observations: 183
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
WARNING: estimated coefficient covariance matrix is of reduced rank
Instrument specification: @DYN(NIM,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NIM(-1)	0.674307	0.125187	5.386409	0.0000
LNINVESTBIZ	-1.40E-08	2.32E-10	-60.25780	0.0000
LNFINANCEBIZ	1.26E-08	1.97E-10	63.92016	0.0000
LNAPPORT	56.07955	14.23875	3.938517	0.0001
LIQUIDITYBIZ	-7.85E-11	3.46E-12	-22.69849	0.0000

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-1051.309	S.D. dependent var	14217.96
S.E. of regression	18066.25	Sum squared resid	5.81E+10
J-statistic	16.32235	Instrument rank	19
Prob(J-statistic)	0.294088		

Arellano-Bond Serial Correlation Test

Equation: Untitled

Date: 04/25/25 Time: 13:01

Sample: 2013 2023

Included observations: 183

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-0.106209	80	48	0.9154
AR(2)	NA	9	NA	NA

*Standard errors could not be computed. Try different covariance matrix options

Arellano-Bond Serial Correlation Test

Equation: Untitled

Date: 04/09/25 Time: 12:38

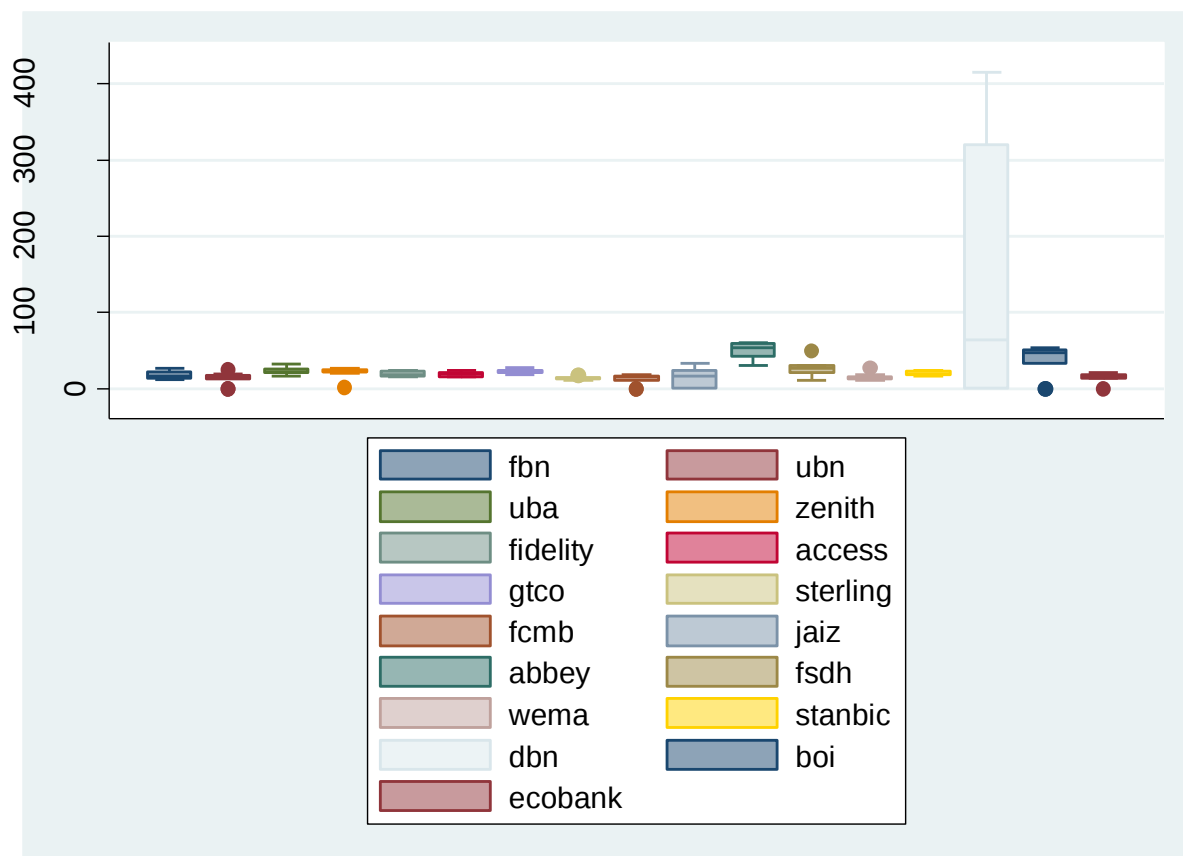
Sample: 2013 2023

Included observations: 108

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	NA	209.093406	NA	NA
AR(2)	-3.277156	-1339.872067	408.852139	0.0010

*Standard errors could not be computed. Try different covariance matrix options

	BANK	Effect
1	FBN	-3.157731
2	UBN	-2.051884
3	ZENITH	-6.143073
4	FIDELITY	-2.547986
5	UBA	-0.867368
6	ACCESS	-2.530747
7	GTCO	-2.066183
8	Sterling	-3.576904
9	FCMB	-3.450196
10	Jaiz	7.472398
11	Abbey	23.26695
12	FSDH	0.831135
13	Greenwich	-2.285746
14	Rand	-5.167659
15	ASO SAVE	-1.195418
16	Living trust	11.89777
17	WEMA	-1.744050
18	STANBIC	-2.916497
19	BOI	9.460930
20	ECOBANK	-2.500397



Dependent Variable: RISK

Method: Panel Least Squares

Date: 04/25/25 Time: 09:58

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.538668	0.060456	8.910032	0.0000
LIQUIDITY	0.010946	0.010058	1.088325	0.2787
LNAPPORT	0.190135	0.260777	0.729113	0.4674
LNFINANCE	0.050550	0.203061	0.248939	0.8038
LNINVEST	-0.089517	0.225608	-0.396780	0.6922
C	-0.348269	1.318458	-0.264148	0.7921
R-squared	0.442800	Mean dependent var		3.834160
Adjusted R-squared	0.419388	S.D. dependent var		8.335931
S.E. of regression	6.351803	Akaike info criterion		6.582164
Sum squared resid	4801.103	Schwarz criterion		6.717923
Log likelihood	-405.3853	Hannan-Quinn criter.		6.637316
F-statistic	18.91357	Durbin-Watson stat		2.880932
Prob(F-statistic)	0.000000			

Dependent Variable: RISK
Method: Panel EGLS (Cross-section random effects)
Date: 04/25/25 Time: 10:40
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 125
Swamy and Arora estimator of component variances
White period standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.538668	0.070896	7.598041	0.0000
LIQUIDITY	0.010946	0.006584	1.662630	0.0990
LNAPPORT	0.190135	0.208109	0.913633	0.3628
LNFINANCE	0.050550	0.063125	0.800788	0.4249
LNINVEST	-0.089517	0.213237	-0.419801	0.6754
C	-0.348269	0.403582	-0.862944	0.3899
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			6.657344	1.0000
Weighted Statistics				
R-squared	0.442800	Mean dependent var		3.834160
Adjusted R-squared	0.419388	S.D. dependent var		8.335931
S.E. of regression	6.351803	Sum squared resid		4801.103
F-statistic	18.91357	Durbin-Watson stat		2.880932
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.442800	Mean dependent var		3.834160
Sum squared resid	4801.103	Durbin-Watson stat		2.880932

Dependent Variable: RISK
Method: Panel Least Squares
Date: 04/25/25 Time: 09:59
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 125

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.489527	0.071860	6.812209	0.0000
LIQUIDITY	0.067693	0.029731	2.276805	0.0249
LNAPPORT	0.195246	0.385414	0.506589	0.6136
LNFINANCE	-0.105424	0.322850	-0.326541	0.7447
LNINVEST	-0.231651	0.289189	-0.801037	0.4250
C	0.589647	2.925297	0.201568	0.8407

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.485634	Mean dependent var	3.834160
Adjusted R-squared	0.362186	S.D. dependent var	8.335931
S.E. of regression	6.657344	Akaike info criterion	6.806175
Sum squared resid	4432.022	Schwarz criterion	7.371837
Log likelihood	-400.3859	Hannan-Quinn criter.	7.035973
F-statistic	3.933924	Durbin-Watson stat	2.850974
Prob(F-statistic)	0.000001		

Dependent Variable: RISK
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 04/25/25 Time: 10:00
Sample (adjusted): 2015 2023
Periods included: 9
Cross-sections included: 20
Total panel (unbalanced) observations: 105
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(RISK,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.381842	0.008113	47.06650	0.0000
LIQUIDITY	0.298532	0.026071	11.45057	0.0000
LNAPPORT	0.002635	0.217938	0.012092	0.9904
LNFINANCE	-0.768420	0.404535	-1.899516	0.0604
LNINVEST	-0.333058	0.021309	-15.62968	0.0000

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.569810	S.D. dependent var	9.824881
S.E. of regression	11.97707	Sum squared resid	14345.01
J-statistic	9.939850	Instrument rank	15
Prob(J-statistic)	0.445786		

Dependent Variable: RISK

Method: Panel Least Squares

Date: 04/25/25 Time: 11:00

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.482875	0.061536	7.847054	0.0000
LNINVESTBIZ	-1.48E-12	1.01E-12	-1.475592	0.1425
LNFINANCEBIZ	2.69E-12	8.28E-13	3.256144	0.0014
LNAPPORTBIZ	-2.16E-12	1.06E-12	-2.036286	0.0438
LIQUIDITYBIZ	1.24E-13	8.45E-14	1.469034	0.1443
C	1.757476	0.549909	3.195938	0.0018

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.505185	Mean dependent var	3.535000
Adjusted R-squared	0.413126	S.D. dependent var	7.662603
S.E. of regression	5.870143	Akaike info criterion	6.525170
Sum squared resid	4445.156	Schwarz criterion	7.018182
Log likelihood	-477.4381	Hannan-Quinn criter.	6.725430
F-statistic	5.487643	Durbin-Watson stat	2.572601
Prob(F-statistic)	0.000000		

Dependent Variable: RISK

Method: Panel EGLS (Cross-section random effects)

Date: 04/25/25 Time: 11:02

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 154

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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RISK(-1)	0.546059	0.052081	10.48480	0.0000
LNINVESTBIZ	-1.07E-12	9.57E-13	-1.120639	0.2643
LNFINANCEBIZ	2.41E-12	8.03E-13	2.997854	0.0032
LNAPPORTBIZ	-1.90E-12	1.02E-12	-1.864024	0.0643
LIQUIDITYBIZ	-1.43E-14	3.35E-14	-0.426512	0.6704
C	1.350686	0.522626	2.584420	0.0107

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	5.870143	1.0000

Weighted Statistics

R-squared	0.463562	Mean dependent var	3.535000
Adjusted R-squared	0.445439	S.D. dependent var	7.662603
S.E. of regression	5.706250	Sum squared resid	4819.072
F-statistic	25.57882	Durbin-Watson stat	2.578823
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.463562	Mean dependent var	3.535000
Sum squared resid	4819.072	Durbin-Watson stat	2.578823

Dependent Variable: RISK

Method: Panel Generalized Method of Moments

Transformation: First Differences

Date: 04/25/25 Time: 11:03

Sample (adjusted): 2015 2023

Periods included: 9

Cross-sections included: 20

Total panel (unbalanced) observations: 134

White period instrument weighting matrix

White period standard errors & covariance (d.f. corrected)

Instrument specification: @DYN(RISK,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.506147	0.040414	12.52397	0.0000

LNINVESTBIZ	-4.98E-12	5.07E-13	-9.819788	0.0000
LNFINANCEBIZ	6.07E-12	3.19E-13	19.03634	0.0000
LNAPPORTBIZ	-1.57E-12	5.83E-13	-2.690472	0.0081
LIQUIDITYBIZ	-1.51E-13	1.26E-13	-1.199140	0.2327

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.432761	S.D. dependent var	8.855591
S.E. of regression	9.726692	Sum squared resid	12204.50
J-statistic	8.989855	Instrument rank	15
Prob(J-statistic)	0.533067		

Dependent Variable: RISK

Method: Panel Least Squares

Date: 04/25/25 Time: 13:26

Sample (adjusted): 2014 2023

Periods included: 10

Cross-sections included: 20

Total panel (unbalanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.520629	0.051576	10.09448	0.0000
LIQUIDITYBIZ	-9.70E-15	3.24E-14	-0.299339	0.7651
LNAPPORT	0.199780	0.113364	1.762287	0.0801
LNFINANCEBIZ	1.78E-12	6.92E-13	2.572824	0.0111
LNINVESTBIZ	-2.12E-12	7.84E-13	-2.706818	0.0076
C	-0.275983	1.040282	-0.265297	0.7912

R-squared	0.461534	Mean dependent var	3.535000
Adjusted R-squared	0.443342	S.D. dependent var	7.662603
S.E. of regression	5.717029	Akaike info criterion	6.362957
Sum squared resid	4837.294	Schwarz criterion	6.481280
Log likelihood	-483.9477	Hannan-Quinn criter.	6.411020
F-statistic	25.37096	Durbin-Watson stat	2.584519
Prob(F-statistic)	0.000000		

Dependent Variable: RISK
Method: Panel Least Squares
Date: 04/25/25 Time: 13:24
Sample (adjusted): 2014 2023
Periods included: 10
Cross-sections included: 20
Total panel (unbalanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.482018	0.062731	7.683896	0.0000
LIQUIDITYBIZ	1.07E-13	8.55E-14	1.245539	0.2152
LNAPPORT	0.046640	0.220637	0.211388	0.8329
LNFINANCEBIZ	1.93E-12	7.52E-13	2.565482	0.0114
LNINVESTBIZ	-2.57E-12	8.68E-13	-2.956720	0.0037
C	1.280545	1.906842	0.671553	0.5031

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.489457	Mean dependent var	3.535000
Adjusted R-squared	0.394472	S.D. dependent var	7.662603
S.E. of regression	5.962706	Akaike info criterion	6.556461
Sum squared resid	4586.449	Schwarz criterion	7.049473
Log likelihood	-479.8475	Hannan-Quinn criter.	6.756721
F-statistic	5.153003	Durbin-Watson stat	2.583800
Prob(F-statistic)	0.000000		

Dependent Variable: RISK

Method: Panel Generalized Method of Moments

Transformation: First Differences

Date: 04/25/25 Time: 13:28

Sample (adjusted): 2015 2023

Periods included: 9

Cross-sections included: 20

Total panel (unbalanced) observations: 134

White period instrument weighting matrix

White period standard errors & covariance (d.f. corrected)

Instrument specification: @DYN(RISK,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RISK(-1)	0.531355	0.060138	8.835558	0.0000
LIQUIDITYBIZ	-2.07E-13	1.72E-13	-1.204532	0.2306
LNAPPORT	0.316126	0.448190	0.705339	0.4819
LNFINANCEBIZ	5.89E-12	3.69E-13	15.98272	0.0000
LNINVESTBIZ	-6.10E-12	5.17E-13	-11.81473	0.0000

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.432761	S.D. dependent var	8.855591
S.E. of regression	10.27980	Sum squared resid	13631.98
J-statistic	7.424630	Instrument rank	15

Prob(J-statistic) 0.684841

Arellano-Bond Serial Correlation Test

Equation: Untitled

Date: 04/25/25 Time: 14:46

Sample: 2013 2023

Included observations: 134

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	NA	-6414.372765	NA	NA
AR(2)	NA	1277.705251	NA	NA

*Standard errors could not be computed. Try different covariance matrix options

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