STUDIES IN FINANCIAL SECTOR REFORMS, FINANCIAL STABILITY AND ECONOMIC DEVELOPMENT IN SUB-SAHARAN AFRICA

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Access Condition and Agreement

Chapter One: Introduction and Outline of the Research

1.1. Basis of the Submission

This thesis is based on my critical analysis of 13 articles featured in academic peer-reviewed journals during my career as a Research Economist and Economics Lecturer in the last ten years, as well as my ongoing research works in the African financial sector. The publication period of the articles ranged from 2017 to 2022, although my research dates back to 2010. The research originated from independent and collaborative research works in financial and industrial economics. None of the submitted papers in the portfolio adopted research help or submission from any undergraduate or postgraduate student. Three of the papers were derived from research projects partially sponsored by external academic grants and awards. All the papers featured in this thesis are based on my perspective that the African financial system needs strategic, locally focused, and logical financial sector reforms that correlate with the African political and economic structure to build a strong financial sector.

Such financial reforms will help address economic development issues such as poverty and inequality that presently confront the continent. As validated in the literature, financial sector development and financial sector reforms are important policy instruments for achieving economic growth and development across different stages of development globally (Cihak et al., 2013; Jauch and Watzka, 2016) and the African continent is not an exception (Bolarinwa, Adegboye and Vo, 2021; Olaniyi et al., 2022). Moreover, the literature shows that African economies need a higher level of financial development and appropriate financial reforms than other regions of the world to address the present economic and development challenges (Beck et al., 2007). However, while formulating financial development policies and financial reforms, environmental conditions, cultures, economic development levels, and availability of infrastructural facilities in the African environment must be given special attention.

These conditions opposed the forceful, untimely, and inappropriate financial development policies of the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF) imposed on the African financial system in the 1980s. For instance, the Structural Adjustment Programme (SAP) introduced into several African financial sectors placed the financial sector in countries in disarray. While these policies are not entirely bad, the absence of necessary conditions, such as infrastructural development, an effective and working market system, and an efficient stock market necessary for the implementation of SAP policies have resulted in policy failure and worsened economic conditions in most African economies (Riddell, 1992; Bowen, 1992; Lewis, 1996; Ferguson, 2006; Williams, 2007; Stein and Nissanke, 1999; Heidhues and Obare, 2011).

The above issues are the arguments of my research. These arguments characterized the position of my professional and academic research. As discussed in the submitted papers, empirical evidence shows that the continent must attain a level of financial development to address poverty and inequality (Papers 10 and 12). The findings also support the recent literature that a threshold level of financial liberalization is necessary to achieve sustainable economic growth (Olaniyi, 2022). This contradicts the position of the IBRD and IMF, which argues for the urgent and complete liberalization of the African financial sector (Edwards, 1989; Easterly and Levine, 1996; Burnside and Dollar, 2000; Dollar and Svensson, 2000).

The banking subsector is at the heart of the financial sector. This is because banking industry activities largely drive the performance of the entire financial system. In addition, the banking industry is the major channel of credit provision and creation in the real sector. Thus, activities in the banking sector reflect the performance of the financial sector and the effectiveness of reforms. To illustrate recent reforms in the African banking subsectors and their corresponding effects on system stability, the research portfolio adopts the Nigerian banking industry as the empirical focus because of recent reforms implemented in the Nigerian banking system. Moreover, Nigeria is the largest economy in sub-Saharan Africa and the second-largest banking system in Africa. The banking system has also implemented two banking reforms in the last 17 years. See Papers I, II, III, IV, V, VI and VII.

The papers adopted for the thesis portfolio were sourced from 20 peer-reviewed articles published in my career as a Research Economist and Economics Lecturer. Although I have worked in other areas of economics, the 13 papers form a coherent set that reflects my submission on how locally designed financial sector reforms (particularly in the banking sector on the African continent) transformed the African financial system. These studies also confirm that financial development is necessary for the economic development of Africa.

However, unguided market liberalization may not be beneficial for social development on the African continent. As shown in Papers (Paper I, II, III, and IV), there is a mandatory financial development level the continent needs to attain to address inequality and poverty. Beyond this level, market liberalization has become excessive in African economies. This submission contrasts with the neoclassical philosophy of full-blown market liberalization implemented by the IBRD and IMF on the African financial system in the early 1980s.

The research papers adopted for the portfolio differ significantly in style, content, analysis, and methodology. These studies primarily include empirical works, policy positions, and assessments, which are largely quantitative and empirical. The contributions of these studies are detailed in Table 1, along with the author details. The primary contributions of this work to scientific knowledge are highlighted below.

1. One of the earliest empirical evidences on drivers of bank profitability in the African banking industry during the period of banking reforms.
2. One of the earliest empirical evidences testing the "grease or sand hypothesis" in the banking literature for African and developed banking markets.
3. The first empirical work on threshold/nonlinear analysis of bank profitability and nonperforming loans, in the presence of banking reforms.
4. Extensive research has been conducted on the drivers of nonperforming loans in the African banking system featuring efficiency and competition during banking reforms.
5. Development of a financial sector development measure that addresses African continent development conditions.
6. Earliest work on the nonlinearity of financial development and poverty in Africa.
7. Earliest work on the nonlinearity of financial development and inequality in Africa.
8. Comprehensive empirical analysis of the determinants of Capital Structure among African firms after reforms in the banking sector
9. Earliest tests of structure-conduct-performance (SCP) in the African banking system.

1.2. My Personal Research Background

Although I read Economics as my first degree, my economic research didn't start until 2010 when I started my first economic research job. I received further economic research training during my Master of Philosophy Programme (M.Phil.) in 2015 at the Obafemi Awolowo University, Ile-Ife, Nigeria. Concurrently with the rigorous academic programme, I joined the Initiative for Applied Economic Analysis (IAEA), an economic research institute at Obafemi Awolowo University, Ile-Ife, Nigeria as Associate Research Economist. The institute is composed of renowned Nigerian Economists from different specializations. At the institute, I learned about the rudiments of economic research, such as literature reviews, building and running economic and financial models, drafting economic papers and policy positions, and attending peer-review queries.

I was still with the IAEA when the Initiative for Public Policy Analysis, Lagos Nigeria, asked me to join them as a fellow in 2018. In this organization, I was exposed to policy-motivated research rather than academic research I was used to. I also had opportunities to participate in several impact-evaluation studies on the impact of government-sponsored programmes that address poverty, inequality, and gender inequality in African countries. I still work as a fellow at a public policy-oriented research institute.

After completing the MPhil. programme in Financial and Industrial Economics at the Obafemi Awolowo University, I joined the Baum Tenpers Global Research, Nigeria office in April 2019, as Senior Research Economist. The Economic and Financial Research Institute broadens my research skills in the areas of writing policy positions, conducting applied public policy-oriented research, running academic models, and, more importantly, writing for good journals. In addition, I collaborated with scholars of the Global Research Economic Institute in conducting literature reviews, running empirical models, and attending scholastic peer-review assignments.

I left in October 2019 to join Chrisland University, Abeokuta, Nigeria, in November 2019 as a lecturer in the Economics Department at Chrisland University, Nigeria. In this position, I give lectures on Financial Economics, Industrial Economics, the History of Economic Thought, Introductory and Applied Econometrics, and Mathematical Economics. I continued my applied research in Banking Studies. Most of the outputs of these studies were adopted for this programme. In late 2021, I was awarded a Research Fellowship by the Govan Mbeki Research and Development Centre (GMRDC), University of Fort Hare, South Africa, to join a team of economists chosen to investigate the interactions between sustainable business, informality, and poverty in Africa. I am still in this position.

In the course of my research, I have secured some recognition. Firstly, I hold the Research Fellowship of the Govan Mbeki Research and Development Centre (GMRDC), University of Fort Hare, East London, South Africa in January 2022. Second, I am a Research Fellow of the Initiative for Public Policy Analysis, Lagos, Nigeria. I am also a Fellow of the Young Economists Network of the United Nations Economic Community for Africa (UNECA), a Research Fellow of the Institute of Business Research, the University of Economics HCMC, Vietnam since 2020, and a Research Fellow of the French Institute for Research in Africa, University of Ibadan, Nigeria. In all of these fellowships, I have learned to conduct practical and applied research that centres on financial and economic development on the African continent.

In the course of my career as an Economist, I have conducted peer-review assignments for journals such as the Journal of Economic Studies, Emerald Publications, Managerial and Decision Economics, Wiley Publications, Journal of Economics and Administrative Sciences, Emerald Publications, International Journal of Social Economics, Emerald Publications, African Development Review, Wiley Publications, International Journal of Emerging Markets, Emerald Publications; Development Southern Africa, Taylor and Francis Publications; International Journal of Development Issues, Emerald Publications; Economic Change and Restructuring, Springer Publications; Sustainability, MDPI Publications, etc.. I have joined the editorial boards of journals such as the Central Bank of Nigeria-Journal of Applied Statistics, Central Bank of Nigeria, CBN, Nigeria; Ife Journal of Economics and Finance, Economics Department, OAU, Nigeria; Ilorin Journal of Economic Policy, University of Ilorin.

The experiences I obtained from former research organizations allowed me to conduct academic research, attend conferences and seminars, and participate in academic networking among other academic engagements. My research is empirical and policy-oriented, and focuses on two major strands of Financial Economics. The first strand evaluates Central Banking prudential policies as they relate to banking system stability. In this area, I investigated the effect of recapitalization policies on the stability of the Nigerian banking industry. In this regard, my research focuses on the drivers of high nonperforming loans in the Nigerian banking industry. My work documents the roles of inefficiency, competition, and poor corporate governance mechanisms in the industry.

Another policy-motivated study examines the threshold level of bank profitability required to sustain equilibrium nonperforming loans in the Nigerian banking system. As empirical studies, these works specifically offer policy advice and prudential guidelines to the Central Bank of Nigeria on how to sustain stability in the Nigerian banking industry. My present research centres on systemic risk in the stability of the Nigerian banking industry. The second strand of this study adopts macroeconomic data. This largely focuses on how financial development addresses economic development issues of inequality and poverty in Africa. Unlike the extant literature, these studies examine the nonlinearity between financial development and poverty and inequality in Africa. Another study, in the paper portfolio, built a financial development indicator that fits the African financial environment.

Overall, my research interests focus on financial development reforms in Africa, and how these reforms affect the stability and economic development issues of inequality and poverty. Focusing on financial sector stability, this study adopts firm-level data to examine the roles of financial reforms on nonperforming loans, competition, corporate governance, profitability, and systemic risk in the banking sector. The second theme focuses on how financial development and sector reforms address inequality and poverty within the macroeconomic framework.

1.3. Background of the Submitted Papers

The studies in the portfolio use both macroeconomic and microeconomic data and are set up within the financial reforms of the African financial sector. These works are divided into three themes: Financial Development and Reforms and Economic Development (poverty and inequality) in Africa; Financial Reforms and banking industry stability and Financial Reforms, and firm performance. The first theme covers the effect of the financial sector development and how its reforms have transformed the economic and social indicators of poverty and inequality in Africa. To this end, these works adopted forty (40) countries selected from low-income, middle-low-income, and middle-high-income sub-Saharan Africa.

Moreover, these studies adopted macroeconomic data for empirical analysis. Papers I, II, III, V, and V fall into this category. The second segment adopts micro and banking industry data. Overall, these studies adopt the Nigerian banking industry as the empirical scenario because of the recent banking industry reforms that the industry has implemented in the last 17 years. The banking industry embarked on the recapitalization policy in 2005 and 2011.

The first recapitalization policy increased the capitalization of commercial banks in the industry from N2 Billion to N25 Billion (CBN 2005). To meet the required capital base, several banks in the industry engaged in mergers and acquisitions (M and A), while others sold more share capital in the stock market. The policy outcome reduced the number of commercial banking operations in Nigeria’s banking industry from 89 in 2004 to 25 in 2005. The second recapitalization policy was implemented in 2011. The policy further increases the bank capital requirement and segregates the banks into three levels: universal banks’ assets increased to N50 billion, national banks were retained at N25 Billion, and regional banks were reduced to N15 billion. The second round reduces the number of banks by 18 by 2022. Aside from the reduction in the number of banks, the policy affected the degree of competition, corporate governance mechanisms, nonperforming loans, bank asset concentration, systemic risk, and efficiency. Papers I, II, III, V, and V fell into this category.

The second group of studies addresses these issues. Overall, these studies adopted firm-level data to investigate the effect of banking industry reforms on the stability of the banking sector. Finally, the third group of studies examines the impact of reforms in the financial sector on the sector. The reforms (banking recapitalization) are expected to increase the capital base of banks and consequently increase their capacity to lend credit to the real sector. Specifically, studies in the third segment examined firms’ capital structure decisions after recapitalization in the Nigerian banking industry. In this category, Papers I, II, III, V and V fall into this category.

1.4. Overview of Submitted Publications and Contributions

The publications submitted for this thesis are grouped under three headings: banking industry prudential policies under recapitalization, Nigerian firms' performance after the banking industry's recapitalization, and research on Financial and Economic Development. This paper makes brief contributions to the literature. The specific contributions of the papers are also included in terms of the design of the introduction, literature review, methodology, empirical analysis, and peer-review assignments.

1.4.1. Banking Industry's Prudential Policies under Recapitalization

This sub-section contains papers that focus on the impact of the banking industry recapitalization policies of 2005 and 2011 on stability, competition, and nonperforming loans in the Nigerian banking industry. Overall, these works adopt microdata sourced from the banking industry sub-sector because the policy of the banking recapitalization policy specifically affects the banking sector's activities. Overall, the sub-section contains the following seven papers.

1. Bolarinwa, S.T., Obembe, O.B and Olaniyi O.O. (2019): Re-examining the Determinants of Bank Profitability in Nigeria. Journal of Economic Studies, 46(3), 663-651. Emerald Publications. https://doi.org/10.1108/JES-09-2017-0246

- Contributions/originality

This study examines whether bank efficiency is a major driver of bank profitability in the Nigerian banking industry, as argued by CBN. This study tests the bank efficiency hypothesis and the CBN perspective. This stipulates that bank recapitalization empowers banks to improve efficiency, thereby leading to higher profitability. Overall, this study validates the important role of bank efficiency following recapitalization policies. The empirical findings imply that recapitalization policies improve bank-level efficiency and, correspondingly, bank profitability. Overall, the study validated the bank efficiency hypothesis and the position of CBN on the role of recapitalization in improving bank efficiency and thus translating to profitability performance.

• Personal Contributions: I drafted the paper and submitted it to Professor Obembe and Dr. Olaniyi for constructive criticism and contributions. Professor Obembe rewrote some parts of the introductory section, while Dr. Olaniyi provided scientific opinions that greatly improved the quality, tone, and general overview of the paper.

2. Bolarinwa, S.T. and Soetan, F. (2019): The Effect of Corruption on Bank Profitability. Journal of Financial Crime, 26(3), 753-773. Emerald Publications. https://doi.org/10.1108/JFC-09-2018-0102

- Contributions/Originality: This study tests the grease-and-sand hypotheses in the context of low-and highly corrupt economies. The empirical results validate the grease hypothesis in low-corruption banking systems and the sand hypothesis in highly corrupt banking environments. The results imply that corruption influences bank profitability, regardless of the level of corruption. However, banks in lowly corrupt economies, such as Switzerland, the UK, and Canada, explore corruption to improve profitability. Otherwise, corruption negatively affects bank profitability in highly corrupt environments such as Cameroon, Nigeria, and Ghana. A large proportion of loan portfolios in these economies fail because of incorrect credit allocations caused by corruption. The results of this study imply that policymakers should consider corruption in bank profitability.

• Personal Contributions: I drafted the complete manuscript and ran the empirical models of the manuscript, read through the manuscripts at different stages, corrected the introduction, and provided scientific advice that improved the overall quality of the manuscript before submission to the journal. I attended peer-review assignments until the paper was published.

3. Bolarinwa, S. T., Olayeni, R. O., and Vo, X.V. (2021): Is there a nonlinear relationship between Nonperforming Loans and profitability? Evidence from the Dynamic

Threshold. Managerial and Decision Economics, 42(3), 649-661. Wiley Publications. https://doi.org/10.1002/mde.3262

• Contributions/Originality: This study investigates the threshold level of nonperforming loans that guarantees equilibrium profitability in the Nigerian banking system in the post-recapitalization era. The subject correlates Basel III with the CBN's positions on bank capitalization, stability, and profitability. The results also show that 3.5% and 5% of nonperforming loans are the levels of nonperforming loans that maximize ROAA and ROAE without jeopardizing stability in the Nigerian banking system. The empirical results validate the threshold argument for the non-performing profitability nexus. Overall, the results imply that CBN position is appropriate for bank profit maximization and stability. Thus, the position of CBN on 5% nonperforming loans is valid for stability in the Nigerian banking system.

• Personal Contributions: I drafted the first manuscript and ran the models. Professor Olayeni corrected the introductory and literature review sections of the manuscript to improve the scientific and language coherence. Professor Vo wrote policy recommendations for the paper. Overall, the contributions of the two professors improved the scientific and language qualities of the scientific papers.

4. Bolarinwa, S. T., Akinyele, O., and Vo, X. V. (2021): Determinants of Nonperforming Loans in the Nigerian industry after recapitalization: Does efficiency matter? Managerial and Decision Economics, 42(6), 1-12. Wiley Publications. https://doi.org/10.1002/mde.3323

• Contributions/Originality: This study investigated the effect of efficiency on nonperforming loans, in the post-recapitalization era. We evaluated whether bank-level efficiency is a major driver of nonperforming loans in Nigeria's banking industry. This implies that improvement in the level of efficiency of Nigerian banks helps manage the mounting of NPLs in the pre-recapitalization era. The results also imply that the recapitalization policy has improved efficiency performance, which translates to low nonperforming loans level in the Nigerian banking system in the post-recapitalization era. Overall, our findings upheld Basel III views on bank efficiency and stability in the Nigerian banking system.

• Personal Contributions: I drafted and ran the empirical models of the study. Mr. Akinyele conducted the literature review, while Professor Vo generally improved the scientific tone and quality of the paper. I attended all the peer review assignments.

5. Bolarinwa, S.T. and Akinlo, A. E. (2021): Determinants of Nonperforming Loans in the Nigerian Industry After Recapitalization: Does Competition Matter? African Development Review, 34(3), 309-323. Wiley Publications. https://doi.org/10.1111/1467-8268.12661

• Contributions/Originality: This study visits the competition-stability and competition-fragility hypotheses in the context of African banking markets (Nigeria). This study investigates whether recapitalization policies result in a concentrated banking system. We also investigated the role of competition on nonperforming loans. Overall, the empirical results show that recapitalization reduces competition in the Nigerian banking system. Second, we establish the competition-stability hypothesis in the Nigerian context. Third, competition and bank size are complementary in reducing nonperforming loans. The results imply that recapitalization policies, through a reduced degree of competition in the system, have complemented the efforts of larger banks to reduce nonperforming loans. The results of this study largely explain recent low nonperforming loans and improved stability performance in the Nigerian banking system.

• Personal Contributions: I conceived the idea of the paper, wrote the first draft of the manuscript, and submitted the same to Professor Akinlo, who wrote several sections of the paper for clarity and better scientific and language editing. Overall, we address both peer-review assignments of the paper.

6. Bolarinwa, S. T. and Obembe, B. B. (2019). Firm size–profitability nexus: Empirical evidence from listed financial firms in Nigeria. Global Business Review, 20(5), 1109-1121. Sage Publications. https://doi.org/10.1177/0972150917733834

• Contributions/Originality: This study provides empirical evidence on the feedback effect between firm size and profitability nexus in the context of the financial sector. The empirical findings confirm a bidirectional causal relationship between bank size and profitability in the Nigerian banking system in the post-recapitalization era. This implies that larger banks in the industry benefited relatively from higher profitability performance in the post-recapitalization era. Simultaneously, larger banks also plough back profitability to expand bank size, and vice versa.

• Personal Contributions: I drafted the original manuscript, including the entire write-up and empirical models, and submitted it to Professor Obembe. As a second scientific work, Professor Obembe corrected several sections and language issues in the paper. I have addressed these peer review assignments. Overall, we have contributed to this paper.

7. Bolarinwa, S. T., Obembe, O. B. (2017): Concentration-Profitability Nexus: New Approach from Causality. Studies in Microeconomics, 5(1), 84-98. Sage Publications. https://doi.org/10.1177/2321022217695993

• Contributions/Originality: This study empirically examines the Structure-Conduct-Performance (SCP) and efficiency hypotheses in the context of Nigerian recapitalization policy. Overall, this study validates the SCP hypothesis rather than the efficiency hypothesis. The results imply that the structure of the Nigerian banking system explains the banking market's conduct. In addition, conduct variables explain profitability performance variables. Furthermore, policymakers in the Nigerian banking industry can reliably predict conduct and performance based on knowledge of the structure of the banking system.

• Personal Contributions: I drafted the initial manuscript and ran the models, while Prof. Obembe improved the scientific tone and language quality of the paper. I also attended peer review assignments following Prof. 's scientific discussions and opinions. Overall, we both contributed to the paper.

1.4.2. Firms' Performance After Banking Industry's Recapitalization

The papers in the sub-section provide empirical evidence on how banking recapitalization affects the real sector of the economy. There were two papers in total.

8. Bolarinwa, S. T. and A. A. Adegboye. (2021): Reexamining the determinants of capital structure in Nigeria. Journal of Economic and Administrative Sciences, 37(1), 26-60, Emerald Publications. 10.1108/JEAS-06-2019-0057

• Contributions/Originality: This study specifically investigates the importance of bank-level efficiency in Nigerian firms' capital structure decisions in the post-recapitalization banking industry era. The study finds that recapitalization policies positively influence Nigerian firms' capital structure decisions across different sectors because of improved credit access. Similarly, this study validates the efficiency hypothesis in the Nigerian banking system. The empirical results imply that bank-level efficiency is a major driver of Nigerian firms' capital-structure decisions. In addition, the study finds that banking system policies influence capital structure decisions in the real sector.

• Personal Contributions: I drafted the original paper, including all sections of the paper and empirical analysis. However, senior colleagues on the paper fine-tuned the completed work, edited the grammatical issues, and straightened the academic arguments. Further, we collectively deliberated on the peer-review reports while I did the writing. Overall, their academic and scholastic input largely improved the final output of the study.

9. Onyekwelu, U.L. and Bolarinwa, S.T. (2022): Leverage and Firm Performance: Threshold Evidence from the Role of Firm Size. Global Business Review (Online First), https://doi.org/10.1177/09721509221109571.

• Contributions/Originality: This study continues capital structure paper number 9. Specifically, we examine the leverage threshold that maximizes firm profitability. Overall, we found nonlinear threshold evidence. The empirical results imply a level of leverage at which firm performance is maximized. These results imply that Nigerian policymakers and managers should adopt acceptable leverage levels for firms across several industries in the real sector. Managers should, therefore, identify this level and adhere to it to sustain the positive impact of leverage on firm performance for their organizations. Hence, the view that leverage will always improve firm performance has not been validated in the context of Nigeria's real sector.

• Personal Contributions: I drafted the initial paper, including the introduction, literature review, methodology, running of the empirical models, and the conclusion. The co-authors handled the peer-review assignments and improved the quality of the paper and other issues that resulted from the peer-reviewed assignments.

1.1.1. Financial Development and Poverty and Inequality

The papers in this sub-section adopted financial macroeconomic data to investigate how policies in the financial sector affect the economic development issues of poverty and inequality in Africa. This subsection contains four papers.

10. Bolarinwa, S.T. and Adegboye, A. A. (2021): Is there a nonlinear relationship between financial development and poverty in Africa? Journal of Economic Studies, 48(7), 1245-1266. Emerald Publications. https://doi.org/10.1108/JES-10-2019-0486

• Contributions/Originality: Recent literature on financial development-poverty has argued that there exists a threshold of financial development that addresses poverty and social development issues. This study empirically investigated this hypothesis. Overall, the empirical results validated the nonlinear relationship in the nexus. This implies that African countries have continually and individually improved their financial development to attain the thresholds needed to address poverty and social development issues.

• Personal Contributions: I drafted the original manuscript, including empirical modelling and a complete write-up. I presented the completed article to senior colleagues, who straightened the sections and broadened the literature. We also engaged in discussions to improve the scientific content of the article. I managed the peer review process of the final article.

11. Bolarinwa, S.T., Olaoye, O.O. and Agbi, B. (2021): Does financial development really matter for poverty reduction in Africa? The Forum for Social Economics, 50(1), 1-13. Taylor and Francis Publications.

• Contributions/Originality: The social development in Sub-Saharan African countries is uniquely different from that in other regions of the world; hence, its measurement is important. This study builds a new financial development indicator to measure financial development in Africa, taking cognizance of financial inclusion and other features unique to the continent. This study tests the new measure and finds that it is more robust than existing measures of financial development in the literature. The results of this study imply that some unique features of the African financial system must be prioritized when modelling financial development for the region for appropriate and robust measurement.

• Personal Contributions: I drafted the manuscript and ran the empirical models. Dr. Olaoye and Agbi handled the peer-reviewed assignments.

12. Bolarinwa, S.T. and Akinlo, A. E. (2021): Is there a nonlinear relationship between financial development and income inequality in Africa? Evidence from dynamic panel threshold. The Journal of Economic Asymmetries, 24(1). https://doi.org/10.1016/j.jeca.2021.e00226

• Contributions/Originality: The literature supports the argument of linearity on the financial development-inequality nexus. This study, unlike the extant literature, tested this linearity assumption. Overall, the results dispute the linearity assumption and validate the nonlinear hypothesis in the financial development-inequality nexus. These results imply that policymakers in the African financial system must continually improve the financial system in the region to reach the threshold level that addresses inequality. This also implies that a high level of inequality in the continent is associated with a low level of financial development in the region.

• Personal Contributions: I had a discussion with Professor Akinlo on the topic, which resulted in the initial draft of the article. I drafted the initial article and sent it to Professor

Akinlo, who corrected it and submitted it to the journal. I attended the peer-review process until the publication of this work.

13. Bolarinwa, S.T., Vo, X.V. and Olufolahan, T.J. (2021): The effect of financial development on income inequality in Africa. Development Southern Africa, 38(2), 311-329. doi.org/10.1080/0376835X.2020.1838261

• Contributions/Originality: This study developed and tested new financial development measures to address the level of inequality in the African continent. Considering the characteristics of the region, the new measure of financial development to address inequality is more robust than the general measure of financial development in the literature. The results of this study imply that policymakers and academics must pay attention to regional social dimensions and characteristics when modelling financial development indicators that will be used to check inequality in the region.

• Personal Contributions: I drafted the initial manuscript and discussed it with other authors. The co-authors addressed the peer-reviewed assignments along with the first author. All papers in the portfolio received constructive criticism from senior colleagues who were co-authors of them for their scientific contributions, views, and perspectives.

Moreover, the papers in this thesis work with collaborators from two sources: first, my former university (Obafemi Awolowo University, Nigeria), where I conducted the Master of Philosophy (M.Phil.) programme and Chrisland University, Abeokuta, Nigeria, where I lecture on Economics. The co-authors are erudite Professors and Associate Professors of international standing who have contributed to my formal and informal academic and research training over the years. The second type is research funding from different research institutes, fellowships, and awards. These include The University of Economics, Ho Chi Mi, Vietnam; Central Bank of Nigeria (CBN) Research Funding; University of Fort Hare; and the South Africa Research Fellowship Funding. Collaborations were formed as a result of established academic relationships, networking, and external research funding opportunities in these organizations.

1.1. Co-authors

Professor Akinlo, Professor Olayeni, Professor Vo, Professor Adegboye, Professor Obembe Dr Olaniyi, Dr Olufolahan, Dr Olaoye, Mr Akindele and other authors have provided emails to attest to the contributions for the relevant papers.

1.5. Structure of the Thesis

Unlike the standard PhD thesis, the PhD by Publication commentary, is uniquely different in structure. In the case of a standard PhD, the introduction, literature review, methodology, empirical results, and conclusions are presented in various chapters. In the case of PhDs by publication, the literature review, methodology, empirical results, and conclusions are provided in the submitted publications. Consequently, this commentary provides only a critical analysis of the submitted papers and their respective contributions to the literature. The present section of the commentary is therefore equivalent to the introduction and conclusion of the standard PhD. Thesis.

The following section presents a discussion of the literature associated with the submitted publications. For these submitted works, I attempted to provide salient empirical literature directly or indirectly related to individual papers. Chapter three provides a critical analysis of the submitted papers by emphasizing the contributions of the papers to the literature and pointing out the deficiencies in the studies. Chapter Four offers a critical appraisal of the submitted works, focusing on citation analysis, contributions to policymaking, and other qualitative indicators of the submitted papers. The final section provides remarks that serve as the conclusions of this work.

Chapter Two: Conspectus of the Literature

2.1. Introduction

This section provides a summary of the literature on the portfolio of papers adopted in this thesis. Unlike the literature review of traditional PhD theses, PhD by Publication provides a conspectus of the literature at the time of writing the papers. Overall, this section analyses the position of the literature on the state of the African financial system and the corresponding reforms in the 1980s. Furthermore, the recent literature on home-grown financial sector reforms among African financial systems is reviewed.

In particular, the works adopted the banking subsector for its importance, micro-representation, data availability, and clearer analysis of the African financial sector. The remainder of this paper is organized as follows. The first section provides a background overview of the African financial sector and Nigerian banking industry and is used to depict recent home-grown banking industry reforms and their corresponding effects. The next section provides an overview of specialist literature on the different themes of the thesis. Accordingly, this review provides an overview of the literature on banking industry reforms. Reforms in the banking industry have transformed the activities of firms in the real sector. This is covered in the second section of the Conspectus section. Finally, the literature on the macroanalysis of financial development and its impacts on economic development is covered in the last section.

2.2. Overview of the Specialist Literature

2.2.1 Overview of the Specialist Literature: Banking Studies

The African financial sector has undergone several financial reforms, championed by the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF) since the early 1980s. These financial sector reforms are premised on neoclassical theories, with the basic requirements of market liberalization and its accompanying deregulation policies. Ultimately, these series of reforms have yielded both positive and negative impacts on the African financial system. One major subsector largely affected by the reforms is the banking sector. Several reforms have yielded relatively resilient banking industries, low nonperforming loans, and higher profitability across African banking industries, but less competitive banking industries. This subsection reviews important studies on several banking reforms in the African banking industry and their corresponding effects on banking systems in recent years. Specifically, empirical studies adopted the Nigerian banking industry as the case because of recent and ongoing financial and banking sector reforms that have been implemented in the economy. This section covers reviews for Publications 1, 2, 3, 4, 5, 6, and 7.

In Publication 1, the earliest literature on the drivers of banking profitability is largely attributed to the work of Short (1979). The study specifically investigated the drivers of bank profitability in Canada, Western Europe, and Japan, and attributed bank profitability to asset concentration, among other factors. The works of Demirguc-Kunt and Huizinga (1999); Dietrich and Wanzenried (2011) address the inherent endogeneity in the literature and adopted the Switzerland banking industry. Further empirical evidence from Europe and the USA addresses endogeneity issues (Capraru and Ihnatov 2015). Simultaneously, the issue of efficiency in bank profitability, which started with the works of Berger (1995) and Berger and Hannan (1997), took a center-stage in the literature.

Despite the importance of African banking systems in the global banking market, they are largely neglected in the literature. In a rejoinder paper, Dietrich and Wanzenried (2014) provided evidence from different income levels; however, African financial systems are largely neglected in this study. Moreover, the African banking industry implemented several banking reforms, and the Nigerian banking industry is a good case study. The recapitalization policy implemented by the Central Bank of Nigeria (2004) is based on the philosophy that a well-capitalized banking industry promotes bank efficiency and, therefore, transforms into higher bank profitability.

Publication 1 addresses three major issues in the African banking system literature: recapitalization, efficiency, and profitability. One major paper in banking studies neglected the drivers of bank profitability in African banking systems despite recent reforms in African banking systems. Second, a few studies on African banking have adopted the fixed/random effect method, which fails to address the endogeneity issue, a recent issue in the literature (Aburime, 2009; Ani et al., 2012; Adeusi, Kolapo, and Aluko, 2014). Third, the developing literature recognizes that efficiency as the driver of bank profitability has not been correctly measured in efficiency in the context of African studies. Thus, recent literature argues that concentration and efficiency are the major drivers of bank profitability. These contributions are the major drivers of this study. The Nigerian banking industry was adopted because of the ongoing recapitalization policies that started in 2005. The policy reduced the number of commercial banks from 89 in 2004 to 25 in 2005 and 18 in 2020. The series of reforms also increased the level of efficiency in the industry. Recent studies have cited this paper as the foremost paper for robust methods on the drivers of bank profitability from the African market and accommodating efficiency.

Profiling Publication 2, this study focuses on the literature on the impact of corruption on bank profitability, with a focus on the Grease and Sand hypotheses. The empirical literature on bank profitability in the African and developing economies started with the CBN (1999) report though theoretical literature had earlier started with the “grease” hypothesis (Gerschenkron, 1962) and the “sand’ hypothesis (La Porta, 1997; Laeven and Levine, 2009). The report argues that the huge profitability of commercial banks in Nigeria is largely attributed to corruption in the banking industry. In response, Aburime (2009) examined the relationship between corruption and bank corruption in Nigeria. The empirical results validate the allegations of the CBN. Another study of the Nigerian banking industry further validated the view of the CBN that corruption largely contributed to the profitability of Nigerian banks.

The work of Mongid and Tahir (2011) from Sharia governance economies-ASEAN economies further validated the submission of earlier literature from Nigeria. in response to the positive findings of the extant literature, Bougatef (2017) examined the relationship between Islamic banking and also reported the positive relationship between corruption and bank profitability. Only the work of Asteriou, Pilbeam, and Tomuleasa (2016) reported evidence of the nexus from developed banking markets in Europe. Our study contributes to the literature by examining the relationship between developed markets with strong governance indicators and developing economies exhibiting weak governance performance.

Thus, Publication 2 provides empirical evidence of the relationship between corruption (grease or sand) and bank profitability in developed and developing banking markets. This is especially important considering the financial reforms implemented in developed and developing systems and the view that these reforms improve the governance of these economies. The work has recognized the first robust paper to address this issue from both markets with the appropriate method to address endogeneity in the nexus.

Publications 3 and 4 originate from a recent series of banking recapitalization policies and financial reforms in the Nigerian system. Publication 3 highlights the Central Bank of Nigeria (CBN, 2004, 2011) that recapitalization policies transform efficiency in the industry and thus reduce nonperforming loans to promote stability. Prior works on bank efficiency and performance can be traced to Berger (1995) and Berger and Hannan (1997). Interest in empirical studies on the nexus was renewed after the global financial crisis, as several scholars argue that inefficiency was one of the major causes of the built-up of nonperforming loans. However, these studies largely adopted weak methods of efficiency (for instance, see Us, 2017; Us,2018; Amuakwa-Mensah et al., 2017). Publication 2 contributes to the literature on African economies regarding the financial reforms that transpired across the continent.

Concerning the financial sector reforms, and specifically the banking industry's recapitalization policies in the Nigerian banking industry, Publication 4 focuses on the role of competition on nonperforming loans during reforms. Earlier studies on banking competition and banking stability have largely neglected the African banking system despite its reforms (Boyd and De Nicoló, 2005; Caminal and Matutes, 2002; Stiglitz and Weiss, 1981). However, the Nigerian banking system has witnessed significant development in the banking system following the recapitalization policies in 2005 and 2011. The number of banks in the industry decreased from 89 in the 2004 pre-reform period to 25 in 2005. The second round of recapitalization further reduced this number to 18 by 2021. While the number of banks reduced, the NPL level and stability in the industry also decreased. Hence, the industry provides a unique opportunity to test the competition-stability and competition-fragility hypotheses. Publication 4 provides empirical evidence from this perspective from the African banking industry, which is largely neglected in the literature.

Publication 5 diverts from the extant literature on nonperforming loans and bank profitability, as this paper argues for nonlinearity in the nexus (Dietrich and Wanzenried, 2011; Dietrich and Wanzenried, 2014; Capraru and Ihnatov, 2015). First, to the best of our knowledge, this is the first known study to document nonlinearity. This corresponds to policy formulations and reality, as most central banks adopt threshold levels for stability indicators. For the African banking industries and Nigerian banking system, the Central Bank of Nigeria adopted the practice of threshold levels of nonperforming loans in its prudential regulations to manage stability in the banking system. Similarly, Publication 5 corresponds to the introduction of a new nonperforming loan threshold following commercial banking reforms in 2005 and 2011 in the Nigerian banking system. Hence, it is an empirical study that balances theories with the reality of central banking policymaking. From these perspectives, the publication offers have been cited as one of the works that offer new insights into the relationship.

The last two publications (6 and 7) are grounded in banking sector reforms in Nigeria's financial system. Publication 6 specifically contributes to the literature on the firm size-profitability nexus in the financial sector. Extant studies have neglected the financial sector due to inherent features that govern the industry (Aburime, 2009a; Adeusi et al., 2014). The evidence from the Nigerian banking industry is relevant because of the series of reforms in the Nigerian banking system. The reforms led to the merger and acquisition (M and A) of banks, and the summation of 89 banks into 25 banks in 2005 and 18 banks in 2011. The implications are an increase in bank size and profitability. Hence, it is appropriate to examine whether bank size prompted by financial reforms has led to a change in profitability, or vice versa.

Similarly, Publication 8 provides empirical evidence on the structure-conduct-performance hypothesis in the context of the Nigerian banking system during reforms. Although empirical studies provide several hypotheses, studies on the African banking system are almost non-existent, to the best of our knowledge. Publication 7 provides empirical evidence in this regard. In regards to methodology, Publications 6 and 7 adopted better methods to examine the nexus. Publications 6 and 7 adopted Panel Vector Autoregression (PVAR) by Abridgo and Love (2017) to address the issue of endogeneity commonly neglected in the nexus. Similarly, a causality analysis that correctly analyses the nexus is extracted from the PVAR analysis.

2.2.2. Overview of Specialist Literature: Financial Development and Poverty and Inequality.

This subsection presents an overview of studies that investigated the relationship between financial development and economic development in Sub-Saharan Africa and specifically adopts macroeconomic data for the analysis of the nexus of the roles of financial development in poverty and inequality, the two major development issues that plague the African continent. Overall, the subsection covers Publications 9, 10, 11, and 12. Publication 9 focuses on the relationship between poverty and financial development in development economics literature. Publication analyses the nexus from a nonlinear perspective. Extant literature has largely focused on the linearity of the nexus and argued that as the financial sector develops, there is broader access to finance and its advantages, thus spurring economic growth and reducing poverty and inequality (Dollar & Kraay, 2002; World Bank Group, 2001; Ravallion, Chen, & Sangraula, 2009).

However, some financial theoretical literature has argued that there might be a threshold at which financial development ceases to influence economic growth and development (Dhrifi and Maktouf, 2013; Zahonogo, 2017; Jalilian and Kirkpatrick, 2005). Following the arguments of these studies and the low level of financial development and high poverty level, it is plausible to investigate whether the ineffectiveness of financial development in the African continent can be attributed to the fact that the region has not attained the required threshold of financial development necessary to influence poverty severity. It is also pertinent to examine the threshold levels required in middle- and low-income African countries.

This study empirically examines the arguments in the context of African economies and within the framework of financial sector reforms implemented in African economies. Publication 9 provides empirical evidence for middle- and low-income African economies. Overall, the work largely contributes to the financial development literature and provides new perspectives on the nexus from the empirical analysis of nonlinearity. The results validate the nonlinearity argument in the nexus and document the threshold levels within the context of African economies.

Similarly, Publication 10 contributes to the financial development-poverty literature from the context of the measurement of financial development indicators. The adoption of appropriate measurements has been controversial in the literature (Odhiambo, 2009; Odhiambo, 2010; Stiglitz, 1998; Jalilian and Kirkpatrick, 2001; World Bank, 1995). The literature focuses on financial depth, access, efficiency, and stability. Overall, the literature on the measurement of financial development in the African continent has largely paid less attention to access. This argument was taken up by IMF's theoretical paper (Sahay et. al., 2015). Focusing primarily on the low access to financial development measures that affect African countries, this study builds a financial development indicator/index that fits the African environment. This is largely appropriate because the literature adopts the same financial development measurement for all developed, developed, and emerging economies.

The last two publications (11 and 12) in this sub-section focus on the nexus between financial development and inequality in the African environment. Publication 11 builds a new measurement of financial development that fits the analysis of inequality on the continent, considering the relatively high inequality on the continent. This follows the IMF theoretical Working Paper, which stipulates the need to build financial development for the analysis of development issues among different income levels for appropriate analysis (Sahay et al., 2015). Moreover, the study argues that all indicators of financial development should be considered while examining the level of financial development, but attention should be given to access rather than depth, stability, and efficiency in the African environment. Overall, the Publication is an empirical investigation of the IMF working paper (Sahay et. al, 2015), which stipulates the need to build a specific and appropriate measure of financial development that fits the conditions of the African environment.

2.2.3. Overview of the Specialist Literature: Capital Structure and Firm Performance

The financial reforms implemented in African economies in the late 1980s were expected to influence real sector performance. In the Nigerian financial system, two major financial sector reforms were implemented in the banking industry: the recapitalization policies of 2005 and

2011. The Publications in this subsection examine the impact on the real sector. Specifically, these studies examined the effects of financial reforms in the banking industry on the capital structure of firms in the real sector. Publications 8 and 15 are examined in the sub-section.

One major issue that is often neglected in the literature on capital structure is endogeneity. Recent studies in developed countries have addressed this issue; however, studies in the context of African economies have neglected endogeneity (Oyesola, 2007; Salawu and Agboola, 2008; Onaolapo and Kajola, 2010; Akinlo, 2012; Akinlo and Asaolu, 2012; Akinyomi and Olagunju, 2013; Olokoyo, 2013; Jeleel and Olayiwola, 2017; Ibhagui and Olokoyo, 2018). In addition to endogeneity, efficiency is another factor that is wrongly measured owing to the weak methodology in the finance literature. For example, Mursalim et al.. al. (2017) proxy efficiency with the ratio of operational cost to operational income. Kirmi (2017) adopts operational efficiency as a measure of efficiency. Akhtar et al. (2016) adopted the efficiency risk hypothesis to measure efficiency. Similarly, Mursalim et al. (2017) adopted the ratio of operating revenue to operating costs as a measure of efficiency.

In addition, few empirical studies incorporating the role of efficiency have largely adopted the data envelope analysis (DEA) method of efficiency (Margaritis and Psillaki, 2007; Akhtar et al., 2016; Mursalim et al., 2017; Njagi et al., 2017). The issue with these proxies is that they fail to accommodate all costs incurred by firms. Considering issues with the extant literature, Publication 8 re-examines the determinants of capital structure in the Nigerian real sector using the appropriate methods of generalized method of moments (GMM) and stochastic frontier analysis (SFA) after the Nigerian banking industry implemented two recapitalization reforms that strengthened the capital base of banks to lend to the financial sector.

Lastly, the general belief that there is a linear relationship between capital structure and firm performance has long been held in the finance literature. However, theoretical studies have argued for nonlinearity in this relationship. Ibhagui and Olokoyo (2018) used data from 101 listed Nigerian firms to document a linear relationship. This study examines the threshold level of capital structure and firm performance in terms of firm size. However, this study adopted the Hansen (1999) threshold method, which neglects the endogeneity issue in the nexus. Publication 15 improves the existing works by adopting the Abridgo and Love (2017) threshold method, which accounts for endogeneity in the nexus. Similarly, this study examines the process of recapitalization reforms in the Nigerian banking industry. The reforms improved the capital base of Nigerian banks with the expectation that there is a positive spillover effect in their lending pattern to the Nigerian real sector while improving the efficiency of firms. Overall, this study documents the existence of nonlinearity in the nexus and accounts for linearity in the capital structure literature in the context of the Nigerian economy.

Reflecting on the series of papers submitted in the commentary, I have contributed knowledge in the area of financial economics, with an emphasis on financial sector reforms and their roles in bank stability and economic development in Africa. In part, this work was supported by research collaborators and funding institutions. Overall, these studies contribute to the empirical literature on financial sector reforms.

2.2.4. Overview of Methods adopted in the Publications

The portfolio of papers in the thesis, especially Papers 1, 3, 5, 10 and 11 adopted three methods: System Generalized Method of Moments (SGMM), Stochastic Frontier Analysis (SFA) and the Dynamic Panel Threshold Method. This subsection provides an overview of these methods.

2.2.4.1 System Generalized Methods of Moments (SGMM)

Arellano and Bover (1995) and Blundell and Bond (1998) introduced the Generalized Method of Moments (GMM). It is a widely used econometric method for economic and financial modelling. It is particularly useful for its ability to yield robust parameter estimates because of its underlying dynamic moment conditions, unlike the stringent ordinary least squares (OLS) conditions. This method is preferred in empirical research because of its superior properties in handling statistical issues: flexibility, dynamic endogeneity, nonlinearity, instrumental variables, asymptotic efficiency, and consistency.

Specifically, Publications 1, 3, and 10 in the Portfolio adopt System GMM. SGMM is an extension of the Generalized Method of Moments (GMM), SGMM is designed to tackle complex economic and financial phenomena, providing researchers with an array of advantages for analysing and understanding these intricate systems. The advantages of SGMM over differenced GMM lie in its ability to handle short panels, better management of dynamics, persistence of financial data, and unbalanced panels (Sinha and Sharma, 2015; Bolarinwa et al., 2019). More importantly, SGMM is more robust to weak instruments than differenced GMM.

The extant literature on banks in developing countries largely adopts Ordinary Least Square-fixed, random, and pooled effects (Aburime, 2009; Ejoh, 2014; Adeusi et al., 2014; Echekoba et al., 2014; Osuagwu, 2014; Olaoye and Olarewaju, 2015). This method neglects several issues such as persistence, dynamic endogeneity, and simultaneity bias. To address this issue, a portfolio of studies adopted the SGMM for these properties. By combining the first differences and levels, SGMM offers a robust solution to address endogeneity concerns and controls for unobserved individual-specific effects. Hence, its application in Publications 1, 3, and 10.

2.2.4.2 Stochastic Frontier Analysis

SFA is a parametric method used to measure the technical efficiency of the technology of Decision Management Units (DMUs), such as cost, revenue, profit, and production of firms, government institutions, banks, stock exchange markets, and so on. SFA, introduced by Aigner, Lovell and Schmidt (1977) and Meeusen and Van den Broeck (1977), is grounded in economic theory and statistical modelling. Unlike Data Envelope Analysis (DEA), SFA assumes that observed variations in output are due to a combination of error terms and deterministic factors, which include the inputs and model-specific parameters. Thus, SFA separates the observed inefficiency from random noise (Kumbhakar et al., 2014).

The fundamental assumption in SFA is that DMUs operate under a stochastic production function, in which the variation in output is attributed to both observed inputs and unobserved inefficiency. SFA estimates this inefficiency, which is a measure of the divergence of a DMU's actual performance from its best possible performance. This makes SFA useful when dealing with noisy data, or when the impact of inefficiency is of particular interest. Another advantage of SFA, which suggests its preference and applications in Publication 3, is that it is parametric. The method specifies a functional form for the production process, whereas DEA is non-parametric and does not require such specifications.

Moreover, SFA directly quantifies inefficiency in econometric modelling, distinguishing it from random noise, whereas DEA measures relative efficiency and ranks DMUs in comparison. Moreover, the SFA provides a clear understanding of the sources of inefficiency through its structural parameters. DEA provides efficient units as benchmarks without decomposing sources of inefficiency. SFA is preferable if the goal of empirical work is to examine the sources of inefficiency in a parametric context, while DEA can be useful when one needs a benchmarking tool that does not rely on a specific functional form, as evidenced in Publications 1 and 3.

2.2.4.3 Dynamic Panel Threshold Method

Seo and Shin (2016) introduced the dynamic panel threshold method, which was developed by Seo et al. (2019). The method offers an innovative approach to understanding the complexity and dynamics of panel data modelling because of its extensive ability to capture nonlinearity and adapt to changing contexts. Dynamic Panel Threshold Analysis improves the linear threshold model of Hansen (1999) and Hansen (2000). This method provides a more robust framework, thus addressing endogeneity, heterogeneity, and kink behaviour neglected in the linear threshold analysis (Zhang, Zhou, and Jiang, 2017). This is more suitable for financial data, as adopted in Publications 1, 5, and 11. To the best of our knowledge, our work is the first to document a threshold analysis in the financial development-poverty nexus and the nonperforming loans-profitability nexus. The extant literature has largely reported linearity in the nexus (Honohan, 2004; Beck et al., 2007; Odhiambo, 2010; Donou-Adonsou and Sylwester, 2016).

Chapter Three: Critical Analysis of The Submitted Publications

3.1. Introduction

In the last chapter, the key works that influenced my publications and the need to improve the existing works are highlighted. This chapter presents an overview and examination of the approaches and contents of the submitted works with a mindset of scientific evaluation. The shortcomings and alternative methods of some papers are discussed to influence future work in my areas of concentration. Specifically, a detailed evaluation of eight out of the 13 publications (Publications 1-8) is presented in this chapter.

3.2. Critical Analysis of the Papers

This chapter is divided into two sections. The first deals with studies of financial sector reforms and financial system performance. The financial system comprises several institutions, such as banking, insurance, and stock exchanges. Among these, the banking industry is regarded as the most important. In addition, most policies in the financial sector largely influence activities and pass through the banking sector more than other sub-sectors in the financial sector. Specifically, these studies adopt the Nigerian banking industry as a mirror to explore the impacts of financial sector reforms on financial system performance in Africa.

The first strand adopts firm-level data for analysis. This allows us to specifically examine activities in the subsector because the data concentrate on the banking industry. The second strand of literature adopts macroeconomic data. This covers all activities in the financial sector, and hence the data enable us to examine how the financial sector reforms affect the overall activities in the financial sector and thus affect economic development in Africa. Since the data allows us to explore panel analysis, this group of publications examines the collective effect of the financial sector reforms that started in the early 1980s on the economic development issues of poverty and inequality in African countries.

Publication 1 is widely cited (See Table 1) as one of the papers that investigates the drivers of bank profitability in emerging markets. It is an empirical study informed by the political issues surrounding banking businesses in Nigeria. Around 2017 and 2018, there were several discussions questioning the huge profits declared by Nigerian banks around the period. Several notable individuals argue that the huge profits declared by this corporate entity are associated with political affiliations, illegal financial transactions, and government contracts, and not directly from normal banking businesses. Some schools of thought argue that the industry was not as competitive as in other African countries such as South Africa, Kenya, and Egypt. This was the atmosphere in the Nigerian financial system when the publication was undertaken.

This study examines the drivers of profitability in the Nigerian banking industry. Having investigated the empirical literature on the subject and policy framework in the Nigerian financial system, I found that some issues demand scientific investigation. First, after the recapitalization policies in 2005 and 2011, no study has examined the effect of the policies on the profitability of banks in the industry. Second, studies on emerging markets and African financial markets suffer from methodological gaps. These studies adopted Ordinary Least squares (OLS) for fixed and random effects. The method fails to address the inherent endogeneity and simultaneity of this relationship.

Specifically, I was influenced by the works of Blundell & Bond (1998). The study argues that the generalized method of moments (GMM) addresses these issues. Therefore, after reading 15 papers, including "How to xtabond2," I opted for the method. Third, a popular paper on the subject also argued that the value of the coefficient of the lagged dependent variable is interpreted as the degree of competition. This helps to answer the question of whether the industry is competitive. Finally, the policy framework in the industry also alleged that the low efficiency of Nigerian banks affected their profitability. These four issues motivated the present study.

We To address these issues, the paper sets its scientific underpinning on the need to examine the drivers of bank profitability in the Nigerian banking industry during recapitalization. examined the degree of competition in the industry and the role of efficiency in bank profitability. Using the system GMM, the study finds that the Nigerian banking industry is fairly competitive, and the firm-level drivers of bank size, liquidity, deposit growth, and efficiency, among others, drive the profitability of Nigerian banks during the recapitalization process. In terms of contribution, this study was the first to adopt the system GMM to estimate the drivers of profitability in emerging markets, and it is the first to estimate the efficiency of banks in Nigeria using stochastic frontier analysis (SFA). In addition, this study is the first to set the scenario within the recapitalization period to examine the effectiveness of the policy. This study is also the first to examine competition in the industry, considering the reduction in the number of Nigerian banks from 86 in 2004 to 24 in 2018 (CBN 2005).

Having completed my draft of the article, being my first standard paper, I gave it to senior researchers, Professor Obembe and Dr. Olaniyi, for constructive criticism. They checked the work and offered advice on the draft. Professor Obembe checked and corrected grammatical issues, while Dr. Olayeni demanded explanations of some interpretations and corrected the draft. Finally, this work was submitted to the Journal of Economics Studies for review. Having gone through four series of reviews under two closed reviewers and the general editor in one year and two months, the work was finally published in April 2019. While publication is still one of the standard scientific works on the subject in Nigeria, I have received some letters and questions about the work. In particular, Mr. Simon, a senior Lecturer from Nelson Mandela University, South Africa, questioned the adoption of SGMM for this paper rather than cross-sectional dependence methods. He argued that banks are intercorrelated and interconnected and thus should be treated collectively. As argued, this method seems appropriate. Future studies can, therefore, adopt a method to re-examine drivers in Nigerian and other emerging markets.

Publication 2 focuses on the effects of corruption on bank profitability. This study is a continuation of Publication 1. Around 2017 and 2018, the Central Bank Governor declared that corruption in the Nigerian economy had largely influenced bank profitability and the Nigerian banking industry. The issue created a serious pandemonium in the Nigerian financial sector, such that the National Assembly of Nigeria invited the Governor for questioning. Following this situation, I decided to investigate the claims of the CBN scientifically. A look at the literature shows that Aburime (2009) investigated the case and reported a positive effect of corruption on Nigerian banks' profitability. The findings show that Nigerian industry profited from politicking and political association and benefitted heavily from corruption, as claimed by the CBN Governor. The study reported that the weak corporate governance mechanism in the Nigerian banking industry prompted this situation.

Following his publication, two other works examined the relationship between Cameroon and Ghana. Using Transparency International Corruption data, such as the work of Aburime (2009), this study also finds a positive effect of corruption on bank profitability. The second study provides evidence of the sharing banking system. Ultimately, a positive effect of corruption on bank profitability in the Sharia banking system is reported. Our Publication cumulated this argument by examining the nexus between highly corrupt and least-corrupt economies with the same dataset. Evidence shows that corruption affects bank profitability in both economies. However, these effects are mixed. While corruption positively affects profitability in the least-corrupt economies, implying that banks finance corrupts but feasible projects in these countries, on the other hand, banks finance non-feasible, unproductive, politically-motivated and corrupt projects in high-corrupt countries. This largely explains the large nonperforming loans that accumulated in the Nigerian banking industry between 2015 and 2019.

After drafting the manuscript, it was submitted to Professor Soetan for her views and contributions. Prof took a scientific evaluation of the paper, corrected some grammatical issues, and gave candid advice on my difficult use of some words. After correcting the manuscript following her contributions, it was sent to the Journal of Fianncial Crime for review. The manuscript passed through a serious review process and after nine months, it was finally published in 2019. As of today, the paper has attracted 22 citations (see Table 2), and is one of the referenced works on the nexus between corruption and bank profitability in both developed and developing economies. A major question I have got on the article relates to the measure of corruption adopted, Transparency International Measure of Corruption. The email suggested a firm-level measure of corruption, which seems to align with secondary data from annual bank reports. A new study is ongoing that adopts this indicator in both developed and emerging markets.

Publication 3 is another paper that examines the performance of Nigerian banking industry after the reform of recapitalization. This publication is a response to the disagreement between CBN and commercial banks in Nigeria. Following the recapitalization policies of 2005 and 2011 and the mounting nonperforming loans in the Nigerian banking industry, the CBN inaugurated a policy that reduced its nonperforming loan threshold from the existing 10% to 5% through its quarterly prudential guidelines. The CBN justified the policy through recapitalization policies that have increased the capital base, liquidity, and strengths of Nigerian banks. In response to this policy, commercial banks notified the CBN that the 5% threshold was not applicable. Through their publication in the dailies, banks argued that the threshold will reduce their loan portfolio, reduce profitability, and affect stability in the industry because of the systemic risk associated with weak stability. Therefore, they argue that the CBN should rescind her decision. This was a dramatic scenario in the Nigerian financial sector, which motivated Publication 3.

Having checked the literature, I found that empirical works on the nexus between nonperforming loans and bank profitability did not address this issue to a large extent. A review of the literature on developed economies also shows that the literature holds a strong assumption of linearity on the nexus. This was another issue that motivated the publication of this manuscript. This study fills two gaps in the literature. First, it diverts attention to the exploration of nonlinearity and threshold in the non-performing profitability nexus. Second, it verifies whether the threshold of 5% imposed by the CBN on commercial banks in Nigeria is appropriate. To answer these questions, Seo and Shin (2019) adopted the dynamic panel threshold method to address this issue.

Overall, the empirical results show that 3.5% is the appropriate threshold level for nonperforming loans that maximizes the profitability of Nigerian commercial banks. Thus, the industry operates the excessive level of nonperforming loans necessary for bank profitability in the Nigerian economy. The Publication rests on the chaos between commercial banks and the Central Bank of Nigeria. The CBN rightly referred to the publication in its presentation in the first quarter of 2021. The implementation has largely helped in the reduction of nonperforming loans in the Nigerian banking industry. The following year, the nonperforming loans in the industry were significantly reduced by 5%. This publication has largely contributed to both the policymaking and empirical literature. It helps shape the threshold level of the CBN policy regarding nonperforming loans in the Nigerian banking industry. To the best of our knowledge, this is the first study to document nonlinear evidence of the non-performing profitability nexus.

Following the complete draft of the manuscript, I submit it to Prof. Olayeni, an associate professor at the time, and my mentor. He edited the manuscript and corrected the inherent scientific errors in the manuscript. After Prof's evaluation, the draft was submitted to Prof. Vo of the University of Economics, Vietnam, who also offered constructive views. The views of these two professors improved the contents of the paper and qualified the paper for funding from the University of Economics. Finally, the paper was published by the Journal of Managerial and Decision Economics six months after undergoing a rigorous peer review process by two referees and the Editor of the Journal. As of today, the paper has attracted nine citations since late 2021 when it was published.

Publication 4 is another work that examines the effect of financial sector reforms on financial sector performance. Following the recapitalization policy in the Nigerian banking industry, the number of banks and competition in the industry were significantly reduced. The first phase, in 2005, reduced the number of Nigerian banks from 86 to 25. This results from mergers and acquisitions (M) embarked upon by these banks to raise the newly required capitalization of N25 billion. Before this period, the industry operated with an N5 billion capital base. Due to the CBN's first phase of the recapitalization policy, several banks merged in the Nigerian banking system, and altogether 89 banks became only 25 banks because of the new capital base requirement.

The second phase of the recapitalization policy was introduced in 2011. The second phase of the recapitalization policy disaggregated Nigerian banks into three groups: Universal, National and Regional banks. Under this policy. The capital requirement of universal banks was further increased to N50 billion, whereas the capital demand of national banks was maintained at 25 billion. Additionally, regional banks were mandated to own only N15 billion. By attribute, universal banks have a capital base that qualifies them to establish units/branches in other countries. Among these are the First Bank of Nigeria (FBN), Guaranty Trust Bank (GTB), and Zenith Bank. The second group is the national bank, which has a capital requirement of N25 billion. These were allowed to establish units and branches across the country. Finally, regional banks only establish branches in their respective regions. For instance, Wema Bank in the Southwest, Unity Bank in the North, etc.

The effect of the second policy was a further reduction in the number of commercial banks in Nigeria's banking industry. As of December 2021, only eighteen (18) operate in the Nigerian economy. This largely affects the degree of competition in the industry and, therefore, eludes the industry from several advantages of a highly competitive banking industry. In particular, the study was interested in the effect of risk-taking of these banks due to low competition in the industry, following the banking competition-fragility and competition-stability hypotheses. This scenario motivated the publication of Publication 5. I conceived the idea of the paper and wrote the first draft. Using the asset concentration indicators (3 and 5) of these banks as competition measures, this study examines the impact of low competition (or high concentration) on NPL performance of nonperforming loans. The paper further examines the nexus between the recapitalization and pre-recapitalization eras. The study also examines the channels through which recapitalization impacts nonperforming loans, using the system GMM method.

Compared to the literature, this study makes several distinct contributions. First, this is the first study to examine the competition-nonperforming loan relationship in the context of the Nigerian economy. Second, this study documents evidence from the recapitalization era in emerging economies. Overall, the work confirmed the competition stability hypothesis in the context of Nigeria during periods of recapitalization. The result further confirmed that competition helped stabilize the industry and helped reduce nonperforming loans in the Nigerian banking industry. Upon the completion of the paper in 2021, it was submitted to Prof. Akinlo for academic scrutiny and contributions. His contributions have helped with the final draft of the manuscript.

The manuscript was submitted to the African Development Review, one of the most respected economic journals on the African continent, financed by the African Development Bank and housed by Wiley Publications. After undergoing one and a half years of under four referees in a rigorous peer review, the paper was accepted for publication in July 2022. This study is expected to contribute to policymaking in the Nigerian banking industry, especially for the next round of recapitalization policy in 2023.

Table 1*: Paper Portfolio

	Titles	Publishers
1	**Bolarinwa, S.T. and** Obembe, O.B and Olaniyi O.O. (2019): Re-examining the Determinants of Bank Profitability in Nigeria.	Journal of Economic Studies, 46(3), 663-651. Emerald Publications. https://doi.org/10.1108/JES-09-2017-0246
2	**Bolarinwa, S.T. and** Soetan, **F.** (2019): The Effect of Corruption on Bank Profitability.	Journal of Financial Crime, 26(3), 753-773. Emerald Publications. https://doi.org/10.1108/JFC-09-2018-0102
3	**Bolarinwa, S.T.,** Akinyele O. and Vo, X.V. (2021): Determinants of Nonperforming Loans in the Nigerian Industry After Recapitalization: Does Efficiency Matter?	Managerial and Decision Economics, 42(6), 1-12. Wiley Publications. https://doi.org/10.1002/mde.3323
4	**Bolarinwa, S.T. and** Akinlo, A. E. (2022): Determinants of Nonperforming Loans in the Nigerian Industry After Recapitalization: Does Competition Matter?	African Development Review, Wiley Publications, just accepted for publication.
5	**Bolarinwa, S.T.** and Olayeni, R.O and Vo, X.V. (2021)**:** Is there a Nonlinear Relationship Between Nonperforming Loans and Profitability? Evidence from Dynamic Threshold.	Managerial and Decision Economics, 42(3), 649-661. Wiley Publications**.** *https://doi.org/10.1002/mde.3262*
6	**Bolarinwa, S.T. and** Obembe, O.B. (2019): Firm Size-Profitability Nexus: An Empirical Evidence from Listed Financial Firms in Nigeria.	Global Business Review, 20(5), 1109-1121. Sage Publications. https://doi.org/10.1177/0972150917733834
7	**Bolarinwa, S.T.** and Obembe, O.B. (2017): Concentration-Profitability Nexus: New Approach from Causality.	Studies in Microeconomics, 5(1), 84-98. Sage Publications. https://doi.org/10.1177/2321022217695993
8	**Bolarinwa, S.T.** and Adegboye, A.A. (2021): Re-examining the Determinants of Capital Structure in Nigeria.	Journal of Economic and Administrative Sciences, 37(1), 26-60, Emerald Publications. 10.1108/JEAS-06-2019-0057
9	**Bolarinwa, S.T**. and Adegboye, A. A. (2021): Is there a nonlinear relationship between financial development and poverty in Africa?	Journal of Economic Studies, 48(7), 1245-1266. Emerald Publications. https://doi.org/10.1108/JES-10-2019-0486
10	**Bolarinwa, S.T**., Olaoye, O.O. and Agbi, B. (2021): Does financial development really matter for poverty reduction in Africa?	The Forum for Social Economics, 50(1), 1-13. Taylor and Francis Publications. https://doi.org/10.1108/JES-10-2019-0486
11	**Bolarinwa, S.T. and** Akinlo, A. E. (2021): Is there a nonlinear relationship between financial development and income inequality in Africa? Evidence from dynamic panel threshold.	The Journal of Economic Asymmetries, 24(1), 1-13. https://doi.org/10.1016/j.jeca.2021.e00226
12.	**Bolarinwa, S.T.,** Vo, X.V. and Olufolahan, T. J. (2021): The effect of financial development on income inequality in Africa.	Development Southern Africa, 38(2), 311-329. https://doi.org/10.1080/0376835X.2020.1838261

13	**Bolarinwa, S.T., Onyekwelu, U.L. and** (2022): Leverage and Firm Performance: Threshold Evidence from the Role of Firm Size,	***Global Business Review, Online First,*** Sage Publications

Source: https://scholar.google.com/citations?user=ptY3AlMAAAAJandhl=en

Chapter Four: Critical Analysis of the Contributions of The Submitted Works

4.1. Introduction

The quality of scientific publications was evaluated quantitatively and qualitatively using several measures. This chapter evaluates the scientific contributions of the submitted papers using four basic scientific indicators of academic work: citations, Quality of Journals, Research Assessment Exercise, and other Qualitative measures. This is discussed in this section.

4.2. Citations

Scientifically, citation is a globally accepted measure of the quality of academic papers and technical works and must also be understood; however, recent quality works tend to attract fewer citations as they are not yet widely read. Table 1 shows a list of submitted publications, years of publication, and the number of citations.

Table 1: Citations of Submitted Publications

Publication Reference	Year of Publication	Number of Citations
Financial Sector Reforms and Financial Sector Performance		
Publication 1	2019	49
Publication 2	2019	38
Publication 3	2021	12
Publication 4	October2022	3
Publication 5	2021	11
Publication 6	2019	16
Publication 7	2017	13
Financial Sector Reforms and Real Sector Performance		
Publication 8	2020	38
Publication 9	2021	16
Financial Sector Performance and Economic Development		
Publication 10	2021	21
Publication 11	2021	9
Publication 12	2021	10
Publication 13	July 2022	9

Source 13/10/2023: https://scholar.google.com/citations?user=ptY3AlMAAAAJandhl=en

4.2. Quality of Journals

Journal indexing is another globally recognized measure of the quality of academic work. In the literature, several measures of journal quality have been suggested and accepted, depending on academic fields, specialization, continents, and other factors. In economics, business and finance in the United Kingdom, two major journal indexing have been popular: The Association of Business Schools (ABS, [see http://charteredabs.org/]) and the Australian Business Schools Deans Council List (ABSDC). In Africa, however, Scopus and the Web of Science have been largely recognized as measures of journal quality. Hence, the submitted works were published in highly rated academic journals, as reported in Table 2.

Regarding the grading system of these journals, ABS ranks the best journals as 4* and grades them down to 1 (see http://www.abdc.edu.au/pages/abdc-journal-quality-list-2013.html). ABCD adopts a grading system that rates the best journal as A* and the least as D. Scopus ranking adopts a four-quarter system and therefore ranks the best journals as Q1 and the lowest group of journals as Q4. For the Web of Science Index (WoS), the best journals are located with the recently introduced Enhanced Social Science Citation Index (ESSCI), followed by Social Science Citation Index (SSCI) and Emerging Science Citation Index (ESCI), respectively. Based on the ranking systems of various journals, it can be concluded that the submitted works have been published in some respected journals in the field of financial and development economics. Most importantly, the papers were published by reputable academic publishers.

Table 2: Submitted Works and Journal Ratings

Publications	Journal Rankings	Journal Ratings
Publication 1	Journal of Economic Studies, Emerald Publications.	Scopus (Q1); ABS 2, ABCD**; WoS (EMCI)
Publication 2	Journal of Financial Crime, Emerald Publications.	Scopus (Q2); WoS (EMCI).
Publication 3	Managerial and Decision Economics, Wiley Publications.	Scopus Q3, WoS (SSCI), ABS 2.
Publication 4	African Development Review, Wiley Publications.	Scopus Q2, WoS (SSCI).
Publication 5	Managerial and Decision Economics, Wiley Publications.	Scopus Q3, WoS (SSCI), ABS 2.
Publication 6	Global Business Review, Sage Publications.	Scopus Q2, ABS 1, WoS (EMCI).
Publication 7	Studies in Microeconomics, Sage Publications.	WoS (EMCI).
Publication 8	Journal of Economic and Administrative Sciences, Emerald Publications.	Scopus Q2, WoS (EMCI).

Publication 9	Global Business Review, Sage Publications.	Scopus Q2, ABS 1, WoS (EMCI).
Publication 10	Journal of Economic Studies, Emerald Publications.	Scopus (Q1); ABS 2, ABCD**; WoS (EMCI)
Publication 11	The Forum for Social Economics, Taylor and Francis Publications.	Scopus Q2, ABS 2, WoS (EMCI).
Publication 12	The Journal of Economic Asymmetries, Elsevier Publications.	Scopus Q3, ABS 1.
Publication 13	Development Southern Africa, Taylor and Francis Publications.	Scopus Q2, WoS (SSCI).

Source: Author, 2023.

4.3. Qualitative Commentary and Policy Relevance

The essence of empirical and applied research is to formulate policies that are adopted for policy formulation to make important economic, social, and other important policies. In fulfilling this attribute, the studies in the portfolio have been adopted in different policy circles across banking prudential, banking stability, and financial development in African countries, particularly Nigeria. Specifically, Publication 5 attracted the attention of the Research Department, Risk Management, and Prudential Guidelines Committee of the Central Bank of Nigeria (CBN). In line with the recommendations of the paper, the Prudential Guideline Committee of the Central Bank made important changes to the prudential policies of the existing policies in early 2023. These include special attention to the nonperforming loans threshold of the five (5) largest commercial banks in Nigeria-First Bank, GTB, Access, UBA, and Zenith. The CBN intends to reduce its nonperforming threshold level to 3.5% to reduce mounting and maintain equilibrium nonperforming loans in the industry. This follows the policy recommendations of Paper 5.

Moreover, one of the policy recommendations of Paper 3 attracted the attention of the Central Bank of Nigeria (CBN). This study recommends the adoption of efficiency as one of the prudential measures of performance. Following this recommendation, the CBN introduced efficiency as a quarterly performance indicator of Nigerian banks in late 2021. Unlike financial ratios, which are usually adopted as performance measures, efficiency measures incorporate banks' long-run performance. In addition, the policy recommendation from Paper 4 remains an issue of debate in the Prudential Guidelines Committee of the Central Bank of Nigeria.

The study recommends that the degree of competitive powers of the five Nigerian largest banks should be checked, as they hold about 70% of the assets in the industry. Following the presentation of my findings and their consequences on nonperforming loans, stability, and systemic risk in the industry virtually to the committee in August 2022, it is expected that the recommendation of this paper will be adopted for appropriate policy formulation for the stability of the Nigerian banking industry.

Papers 9, 10, 11, and 12 examined the effect of financial development on poverty and financial development policy formulations. Overall, the studies have discarded the idea that financial development is good in poverty and inequality policy circles. Rather, the studies have largely recommended several factors that must be considered when building African-environment-relevant financial development measures. Several policy responses in the African region have now focused on the importance of financial inclusion variables for appropriate policies.

In addition to the policy relevance of the papers in the portfolio, the recommendations in the works have been acknowledged in policy circles and academic discussions in Nigeria and South Africa. I have been nominated to participate in three Prudential Guidelines Discussions of the Central Bank of Nigeria: participate as a Research Fellow at the Govan Mbeki Research Development Council (GMRDC), South Africa in poverty research in the Southern African region, and Research Fellowship of the University of Economics, Ho Chi Mi, Vietnam, among others. In addition, my research on systemic risk in the Nigerian banking industry is partly financed by the research department of the Central Bank of Nigeria.

Chapter Five: Summary and Concluding Remarks

The publications submitted in this thesis are centred on financial sector reforms, financial sector stability, and economic development in Sub-Saharan Africa. The commentary provides a critical analysis of (13) thirteen publications published in peer-reviewed journals. The commentary has attempted to position the papers in the context of the literature in financial, banking, and development economics.

Subsections of the papers represent contributions within an ongoing research agenda on reforms in the African banking system and its effects on stability and economic development. However, some studies and their methodological approaches now require revision and re-estimation. Thus, in the light evaluation of the works, some shortcomings and scope for alternative methods were raised. The contributions of the papers were also critically examined in terms of quality, citation, and academic and policy impacts. Unavoidably, this differs across studies.

Table 1 presents a summary of the methods and approaches adopted in the submitted publications. By writing these papers, I was able to develop my analytical skills and confidence in using econometric software such as MATLAB, Stata, E-Views, and Phyton. I was also able to build strong collaborations with my research. Overall, these studies adopted the System Generalized Methods of Moments (SGMM) and Stochastic Frontier Analysis (SFA), among others. The methods and analysis were self-taught.

Working within academic and policy research environments has broadened my views on research and the environment has been highly supportive. Accordingly, I have felt comfortable initiating research works and collaborations with colleagues in academic and policy-oriented environments employing advanced econometric methods of analysis. This will be addressed in future work.

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