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FOREIGN BANK PENETRATION, INSTITUTIONAL STRUCTURES AND BANKING SECTOR STABILITY IN SUB-SAHARAN AFRICA

MAC JUNIOR ABEKA

2022

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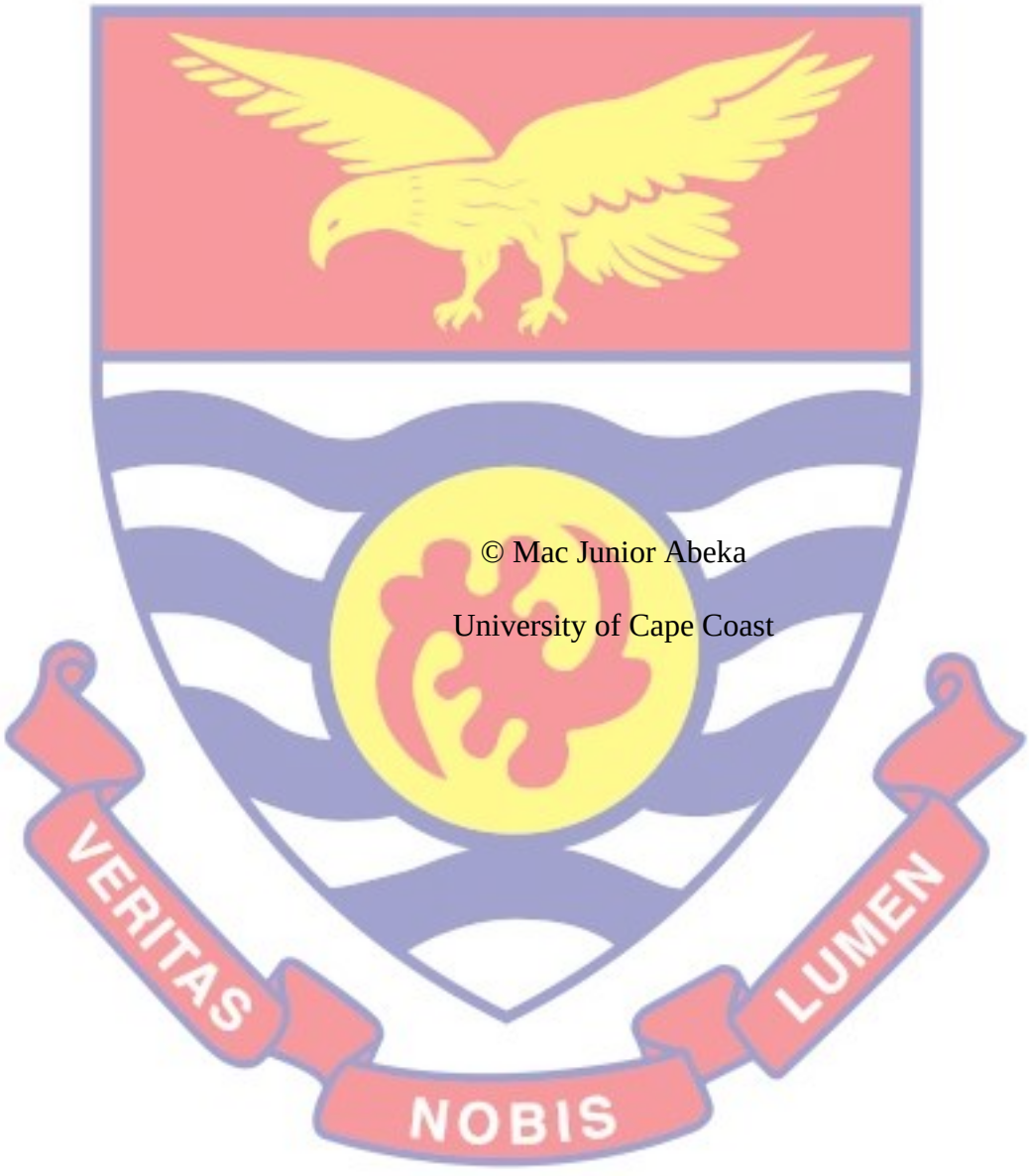

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FOREIGN BANK PENETRATION, INSTITUTIONAL STRUCTURES AND BANKING SECTOR STABILITY IN SUB-SAHARAN AFRICA

BY

MAC JUNIOR ABEKA

Thesis submitted to the Department of Finance of the School of Business, College of Humanities and Legal Studies, University of Cape Coast in partial fulfillment of the requirements for the award of Doctor of Philosophy in Business Administration

NOVEMBER 2022

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's Signature: …… Date: ……

Name: Mac Junior Abeka

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: …… Date: ……..

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Co-Supervisor's Signature: …… Date: ……..

Name: Dr. Michael Owusu Appiah

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ABSTRACT

The purpose of this study is to enhance the understanding of the role of specific institutional structures (country-level corporate governance structures, economic institutions, political institutions, banking sector regulations) in the relationship between foreign bank penetration and banking sector stability, with a special focus on the sub-Saharan Africa's banking sector. The first and second objectives provides insights on how country-level corporate governance structures and economic institutions influence banking sector stability in sub-Saharan Africa. The third objective investigates the relationship between foreign bank penetration and banking sector stability, as well as how country-level corporate governance structures and economic freedom conditions the relationship. The last objective contains analysis of how specific banking sector regulations condition the relationship between foreign bank penetration and banking sector stability in sub-Saharan African economies. Limited by data availability of the key variables of interest, the study period spans 2007 to 2017. The analytical technique employed was system Generalised Method of Moments. The results show that, country level corporate governance structures and economic institutions have a positive influence on banking sector stability. Again, in terms of banking sector stability, host economies gain from foreign bank operations than home economies. Moreover, country level corporate governance structures and economic institutions positively moderates the relationship between foreign bank penetration and banking sector stability. Finally, there is evidence of regulatory arbitrage that could potentially harm the banking sector stability of sub-Saharan African economies.

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KEYWORDS

Banking Sector Regulations

Banking Sector Stability

Country-level Corporate Governance

Economic Institutions

Foreign Bank Penetration

Institutional Structures

Political Institutions

Sub-Saharan Africa

System Generalized Method of Moments

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DEDICATION

To my Mum, Vida Twum

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LIST OF ABBREVIATIONS

BSS	Banking Sector Stability
CLCG	Country-level Corporate Governance
CLCGs	Country-level Corporate Governance Structures
CRP	Creditor Right Protection
EBF	Ethical Behaviour of Firms
ECB	Efficacy of Corporate Boards
EFW	Economic Freedom of the world
EINST	Economic Institutions
FBP	Foreign Bank Penetration
FTTI	Freedom to Trade Internationally
IFBP	Inward Foreign Bank Penetration
LSPR	Legal System and Property Rights
OFBP	Outward Foreign Bank Penetration
POMI	Protection of Minority Shareholders Interest
REG	Regulation
RESE	Regulation of Securities and Exchanges
SGMM	System Generalised Method of Moments
SM	Sound Money
SOG	Size of Government
SSA	sub-Saharan Africa

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CHAPTER ONE

INTRODUCTION

Banking sector stability is vital to every economy because the banking sector fuels economic growth. As a result of financial liberalization, the banking sector of most sub-Saharan African economies has undergone significant changes over the past few years, allowing for a huge increase in foreign bank operations in host economies. However, the stability of the banking sector in the sub-region continues to be in doubt (European Investment Bank Report, 2018; 2020). This thesis contributes to the literature on foreign bank penetration, institutional structures, and banking sector stability by assessing how institutional factors such as country-level corporate governance, economic institutions, political institutions and banking sector regulations affect the relationship between foreign bank penetration and banking sector stability. This thesis is vital to policymakers as they seek to harmonise efforts to increase the level of banking sector stability in the sub-region.

Background to the Study

Over the past few years, foreign banks and their effects on banking sector outcomes have been a subject of debate among academics, regulators, and practitioners alike. The perception that intense competition leads to a stable financial sector resulted in a deregulation spiral across the globe in the 20th century. Since then, most economies have attracted the presence of foreign banks, while allowing domestic banks to operate with less restriction on their activities. Until the latter part of the 20th century, there was a high level of banking sector entry restrictions in the western world. For instance, the banking sector in countries like the USA was highly concentrated, leading to low

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competition (Ellis, 2019). Regulatory changes, in tandem with technological advancements, have improved competition in the financial system and reduced the cost of financial intermediation. This has empowered financial institutions to be more coordinated and to expand their operations across geographical borders (Wilcox, 2005).

The recent global financial crisis in 2007/2008 and a series of financial crises witnessed by emerging and developing economies have ignited the need to re-assess why banks expand their operations abroad and the implications of such expansion. This is because the magnitude of the impact of the financial crises had been attributable to growing levels of financial integration due to cross-border trade and investments (Popov & Udell, 2012). As a result, some practitioners have raised concerns about the negative repercussions of foreign bank presence and the need to implement measures to avoid the adverse effect of foreign bank operations on the home and host country's banking sector (Claessens, 2006).

The competition-stability theory suggests that increased competition in the banking sector allows bank customers to access to credit at lower prices, avoiding possible loan defaults (Allen & Gale, 2004). Also, the theory suggests that increased competition brings about cost efficiencies in the banking sector, which leads to increased profitability and stability. From the perspective of regulators, domestic and international banking regulatory bodies have had to put measures in place to avoid the banes of increasing cross-border banking activity. The seminal discussion on the link between banking sector competition and financial stability was incited by Keeley (1990), who provided empirical evidence that an increase in the level of competition in the banking sector of the

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US led to the banking sector instability. However, Allen and Gale (2004) subsequently state that a high level of competition in the banking sector can lead to financial stability or fragility.

Allen and Gale (2000) argued that the interconnectedness between financial systems could be a source of financial sector instability. They point out that the financial systems of a region could be in danger when that region has a high level of cross-border claims against regions that are very susceptible to economic shocks. It can therefore be reasonably argued that the financial systems of an economy could be prosperous when that economy has a high level of cross-border claims on economies that have increasing levels of economic prosperity. It is also possible to view this phenomenon from the host country's perspective. Through the competition channel, foreign bank operations in the host economy can increase the performance and stability of the host economy's banking sector (Yin, 2019).

One objective of this thesis contributes to these theoretical and empirical arguments by examining the relationship between foreign bank penetration and banking sector stability, focusing on sub-Saharan African economies. SSA is an ideal setting to test the arguments for a number of reasons. First, the increase in foreign banking in Africa is comparable to that of the Eurozone but at a slower rate of development. According to a 2019 IMF report, the number of foreign bank subsidiaries in SSA host economies more than tripled between 2006 and 2018, rising from 53 to 169 (Mathieu, Pani, Chen & Maino, 2019). Second, foreign banking has extended not just its physical footprint in the SSA area but also its cross-border lending and economic relevance across numerous economies in the region (*see* Kusi, Agbloyor, Simplice & Abor, 2021).

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Therefore, examining the impact of foreign bank penetration on banking sector stability in SSA notable.

Based on the earlier arguments that financial sector deregulation has taken place globally and has led to an increase in foreign bank presence, it is also sound to examine whether economic freedom or strict regulation of the banking sector has implications on banking sector stability. North provided the following definition of institutions "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic setting" (North, 1990, p.3). Thus, since the level of economic freedom directly shapes economic agents' behavior in an economic setting, economic freedom dimensions could represent a set of economic institutions.

Gwartney and Lawson (2003) point out that economic institutions are stronger in economies where economic agents have the freedom to make personal choices, engage in exchange, and compete in markets, with the government protecting economic agents' property. In a free market where all economic agents have the right and liberty to enforce their interests, the banking system may take a stakeholder approach to risk-taking. Therefore, economic institutions could enhance the level of banking sector stability.

In contrast, Chortareas, Girardone, and Ventouri (2013) point out that a high level of economic freedom may increase the likelihood of economic agents assuming greater risk. Therefore, the banking sector must be highly regulated. Thus, one of the debates on institutional controls is whether to allow economic freedom or to strictly regulate the banking sector (Sarpong-Kumankoma, Abor

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& Aboagye, 2020). To contribute to this debate, this study examines the impact of economic institutions and banking sector regulations on banking sector stability. Further, the study analyses the role of economic institutions and banking sector regulations in the foreign bank penetration-banking sector stability nexus.

In examining the relationship between foreign bank penetration and banking sector stability, the role of corporate governance structures cannot also be ignored. The relevance of corporate governance in promoting banking sector stability is motivated by the intermittent financial crises across European economies, Asian economies, and the American economy, where most extant literature has cited weak corporate governance as a contributing factor (*see* Anginer, Demirguc-Kunt, Huizinga & Ma, 2018). Thus, other objectives of this study are dedicated to analysing the relationship between corporate governance and banking sector stability, as well as the role it plays in the relationship between foreign bank penetration and banking sector stability.

This is in line with the New Institutional Theory that both micro and macro institutional structures can shape economic activities in the banking sector. In all, this thesis contributes theoretically and empirically to the foreign bank penetration-banking sector stability nexus by examining the role of specific institutional structures such as country-level corporate governance structures, economic institutions, and banking sector regulations in the nexus.

Statement of the Problem

SSA continues to experience increases in cross-border banking transactions over the past few years compared to other regions of the world. Specifically, the number of foreign bank subsidiaries in SSA host economies

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more than tripled between 2006 and 2018, rising from 53 to 169 (Mathieu et al., 2019). These statistics show the increasing presence of foreign bank transactions in host economies in SSA. At the same time, the stability of the banking market in the sub-region continues to be in doubt (European Investment Bank report, 2018; 2020). With the surge in international banking in most SSA economies between 2006 and 2018, the imperative question is whether the foreign bank expansion possibly influences the level of banking sector stability in the sub-region. The relevance of this question is motivated by the competing theoretical perspectives of competition-stability and competition-fragility theories on the relationship between foreign bank operations and banking sector stability.

Thus, if there is any consensus, it could be that the relationship between foreign bank penetration and banking sector stability is conditioned on other factors. Institutional theorists (*see*, La Porter et al., 1998; 2000) have attributed financial sector inefficiencies and failures to poor institutional structures that govern the banking sector's operations. North provided a simplified definition of institutional structures as " the rules of the game in a society, or, more formally, the humanly devised constraints that influence human interaction" (North 1990, p. 3). As a result, institutional structures shape incentives in human transactions, whether in a political, social, economic or financial setting.

Richman (2019) broadens this concept by arguing that constraints might include laws, regulations and processes that assure obedience to rules and regulations, and, lastly, a collection of moral and ethical behaviours that go beyond rules and regulations and their enforcement mechanisms. However, these institutional structures can be observed at the micro-level or macro-level.

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On the one hand, some of the macro-level institutional structures include but are not limited to the constitution, laws, regulations, traditions, political institutions, and economic institutions. On the other hand, Williamson (1979) points out that corporate governance is the principal institutional structure, as it reduces the hazards of opportunity transactions among economic agents at the micro-level.

Since corporate governance (i.e., a micro-level institutional structure) and banking sector regulations (i.e., a macro-level institutional factor) has taken centre stage in banking sector stability discussions, this study assesses whether they condition the relationship between foreign bank penetration and banking sector stability. As argued earlier, increasing the level of economic freedom (or strengthening economic institutions) might have accounted for increases in foreign bank activities across the SSA sub-region. Since economic institutions could also enhance the level of banking sector stability (Sarpong-Kumankoma et al., 2020), it is cogent to empirically examine how economic institutions condition the relationship between foreign bank penetration and banking sector stability. The banking survey conducted by European Investment Bank (2018) on Africa highlighted the relevance of strengthening the regulatory, supervisory and corporate governance structures that govern the activities in the banking sector. This study thus examines how specific institutional structures condition the relationship between foreign bank penetration and banking sector stability. Four broad themes are pursued in this thesis to address the purpose of the study. The specific motivations for each are highlighted below:

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Country Level Corporate Governance Structures (CLCGs) and Banking Sector Stability in sub-Saharan Africa

Extant literature alludes that weaknesses in CLCGs can partly explain the vulnerabilities in the banking sector (*see* Kusi et al., 2021). Nonetheless, cross-country studies examining the nexus between CLCGs and banking sector stability are rare, especially in the SSA context. This may partly be attributed to the scarcity of comparable cross-country macro panel data that measure corporate governance. The lack of data availability may be attributed to the fact most corporate governance data being found in annual reports, and the heterogeneous nature of the annual reports of firms across countries makes aggregating the data to the country level quite cumbersome. This study attempts to fill this gap in the extant literature by exploring a uniquely rich dataset from the Global Competitiveness Index Report on CLCGs to analyse the relationship between CLCGs and bank sector stability.

The study assembles data set covering Protection of Minority Shareholder Interest, Efficacy of Corporate Boards, Ethical Behaviour of Firms, the Strength of Auditing and Reporting Standards, Regulation of Securities and Exchanges, and Creditor Right Protection. Even though some attempt has been made to examine the relationship between CLCGs and banking sector stability (*see* Kusi, et al., 2021), the focus was on pro-shareholder CLCGs. This study employs the above-mentioned pro-stakeholder CLCGs instead, based on the premise that such structures tend to fulfill the interest of all banking sector stakeholders, and this is required to ensure the stability of the financial sector amidst the era of bank globalisation. Strengthening shareholder-oriented CLCGs to some extent, may only exacerbate risk-taking and cause banking

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sector instability (Agneir et al., 2018). Therefore, the novelty of this paper is that no known empirical study examines the relationship between these sets of CLCGs and banking sector stability in Sub-Saharan Africa.

Economic Institutions, Political Institutions and Banking Sector Stability in sub-Saharan Africa

Institutional failures also appear to be a predominant hindrance to the robustness of the banking sector of SSA economies (*see* Sarpong-Kumankoma et al., 2020; Agyemang, Gatsi & Ansong, 2018; Ozili, 2018). This study, therefore, draws theoretical inspiration from the 'hierarchy of institutions hypothesis' of Acemoglu, Johnson, and Robinson (2005), and extends the discussions on the roles of economic institutions and political institutions in promoting banking sector stability in SSA economies, which has not been examined in previous research.

In particular, Acemoglu et al. (2005) show the critical interrelationships between economic and political institutions as drivers of economic growth. In a developing market context, this set of institutions has also been argued to be fundamental for economic growth (*see* Olaoye, & Aderajo, 2020). Thus, in the wake of rising levels of economic and financial integration in developing economies such as SSA, this study sheds light on the implications of the interplay between economic and political institutions in the banking sector within the framework of the hierarchy of institutions hypothesis.

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Foreign Bank Penetration and Bank Sector Stability in Sub-Saharan Africa: Does Country-Level Corporate Governance Under Low and High Level of Economic Freedom Matter?

Recent literature on foreign banking and bank stability appears to draw toward examining the conditions under which foreign bank operations can enhance or hurt banking sector stability. Specifically, the host country's absorptive capacity appears more ostensible in the literature. This means that there may be certain qualities in the host countries that allow them to benefit from foreign banking while avoiding any risks. Prior studies show that weak corporate governance resulted in excessive risk-taking that built up to the recent worldwide financial instability (Mazumder & Ahmad, 2010; Jagannathan, Kapoor & Schaumburg, 2013). Therefore, it can be argued that corporate governance shapes the level of banking sector stability and its associated factors.

Specifically, this study assesses how pro-stakeholder country-level corporate governance structures influence the relationship between foreign bank penetration and banking sector stability. By employing foreign bank penetration as a measure of foreign banking, the study provides evidence of how the increase in the level of foreign bank operations affects the stability of the banking sector of the host economy. Previous studies have examined how foreign bank assets and presence influence bank stability (*see* Kusi et al., 2021). However, these measures of foreign bank operations tend to be persistent over time and may not provide a true reflection of the extent to which foreign banks have penetrated the banking sector of host economies. Additionally, this study employs pro-stakeholder CLCGs instead of pro-shareholder CLCGs.

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Apart from the above contributions, this study draws intuitions from recent theoretical arguments that suggest that there exists some hierarchy in the institutional structures and that the extent to which an institutional structure affects economic outcomes depends on some other institutional structures. To this extent, this study examines whether the moderating effect of CLCGs on the relationship between foreign bank penetration and banking sector stability depends on the level of economic freedom. The argument here is based on the premise that free-market economies can shape country-level corporate governance outcomes in a way that command economies do not, and that the moderating effect of CLCGs on the relationship between foreign bank penetration and banking sector stability may be different for countries with a high and low level of economic freedom.

Foreign Banking Penetration, Bank Regulations and Banking Sector Stability in sub-Saharan Africa

A pivotal study by Houston, Lin, and Ma (2012) prompted the need to re-assess the motives of foreign bank entry to host economies. Houston et al. (2012) found evidence for the "race to the bottom hypothesis" that, the increase in foreign bank activity across several economies may be due to banking regulation lapses, which could pose a great danger for the banking sector of the home and host economy. Recently, based on the public and the private group interest theories of regulations, Kusi et al. (2021) examined whether the relationship between foreign bank presence and bank stability is contingent on the regulatory regime present in the host economy.

Unlike the studies of Houston et al. (2012) and Kusi et al. (2021), this study explores different aspects of banking supervision and regulation,

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particularly by employing the dataset from Triki, Kouki, Dhaou and Calice (2017), to examine the role of banking regulations and supervision in the relationship between foreign bank penetration and banking sector stability. The regulations data obtained from Triki et al. (2017) covers new and several aspects of the banking regulations issued by the Basel committee. The dataset has been employed by Triki et al. (2017) to examine the relationship between banking sector regulations and bank efficiency in Africa. Thus, no known study has employed these set of regulations variables to examine the role of banking regulations and supervision in the relationship between foreign bank penetration and banking sector stability.

Purpose of the Study

The purpose of the study is to investigate the role of specific institutional structures (country-level corporate governance structures, economic institutions, political institutions and banking sector regulations) in the relationship between foreign banking penetration and banking sector stability, with a special focus on the SSA banking sector.

Research Objectives

To achieve the study purpose, the following four objectives are set:

1. To assess the relationship between country-level corporate governance structures (CLCGs) and banking sector stability in sub-Saharan Africa.
2. To evaluate the relationship among economic institutions, political institutions and bank sector stability in sub-Saharan Africa.
3. To analyse the role of country-level corporate governance in the relationship between foreign bank penetration and banking sector

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stability in sub-Saharan African economies with a low and high level of economic freedom

4. To investigate the role played by banking sector regulations in the relationship between foreign bank penetration and banking sector stability in SSA

Research Hypotheses

1. H1: There is a positive effect of country-level corporate governance structures (CLCGs) on banking sector stability in sub-Saharan Africa.

   H1a: Corporate board efficacy has a positive effect on banking sector stability. H1b: Strong auditing and reporting standards have a positive impact on banking sector stability.

   H1c: A high level of corporate ethics positively affects banking sector stability. H1d: Protection of minority shareholder interest is positively associated with banking sector stability.

   H1e: Creditor Right Protection positively affects banking sector stability.

   H1f: Effective regulation of security and exchanges has a positive effect on banking sector stability in SSA economies.

2. H2: A positive relationship exist among economic institutions, political institutions and bank sector stability in sub-Saharan Africa.

   H2a: Economic institutions have a positive effect on banking sector stability.

   H2b: There is a positive effect of political institutions on banking sector stability.

   H2c: Political institutions positively moderate the relationship between Economic institutions and banking sector stability.

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3. H3: Country-level corporate governance significantly moderates the relationship between foreign bank penetration and banking sector stability in sub-Saharan African economies with a low and high level of economic freedom.

   H3a: Foreign bank penetration has a significant influence on bank sector stability.

   H3b: CLCGs positively moderate the relationship between foreign bank penetration and banking sector stability.

   H3c: The positive moderating effect of CLCGs on the relationship between foreign bank penetration and banking sector stability is higher for economies with a high level of economic freedom than for economies with a low level of economic freedom.

4. H4: Banking sector regulations significantly moderate the relationship between foreign bank penetration and banking sector stability in SSA economies.

Significance of Study

This thesis makes important contributions to theory and practice. The proponents of the competition- stability theory suggest that healthy competition in the banking sector could improve the level of banking sector stability. Thus competition- stability theorists will observe in this thesis that foreign bank penetration can bring about banking sector stability gains through competition. The New Institutional theory proposes that institutional structures shape economic activities in every aspect of the economy. Institutional theorists may therefore find in this thesis that institutional structures such as CLCGs, economic institutions, political institutions, and banking sector regulations can

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influence the level of banking sector stability. In addition, these institutional structures condition the relationship between foreign bank penetration and banking sector stability. Specifically, this thesis makes these contributions to existing literature:

To the best of knowledge,

- this study is the first to provide empirical evidence on the relationship between pro-stakeholder CLCGs and banking sector stability. Previous studies (*like* Kusi et al., 2021) only provide evidence for the relationship between pro-shareholder CLCGs and bank stability.
- this thesis is the first to provide empirical evidence on the hierarchy of institutions hypothesis for the stability of the banking sector. Thus, this study examines how the relationship between economic institutions and banking sector stability is conditioned by political institutions. By employing all aspects of economic freedom and also testing the hierarchy of institutions hypothesis, this study differentiates itself from that of Sarpong-Kumankoma et al. (2020) that examines how an aspect of economic institutions, i.e., financial freedom, affects bank stability.
- this thesis is the first to employ measures of inward and outward foreign banking operations that does not only consider foreign bank presence, but also the level of activity by foreign banks. Also, by examining the role of pro-stakeholder CLCGs in the relationship between foreign bank penetration and banking sector stability, this thesis differentiate itself from Kusi et al. (2021). Kusi et al. (2021) provide evidence for the role of pro-shareholder CLCGs in the relationship between inward foreign bank presence and bank stability. As a further contribution, this thesis also

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examines how pro-stakeholder CLCGs conditions the relationship between foreign bank penetration and banking sector stability in economies with low and high level of economic freedom.

- the study is the first to examine the role of banking regulations in the relationship between foreign bank penetration and banking sector stability. Previous studies (*like* Triki et al, 2017) that employ a broad array of banking regulations have only examined its direct effect on bank efficiency.

In terms of social relevance, this thesis provides direct information for regulators to emphasise the need for banks to comply with international banking regulations and international best practices on corporate governance to improve their banking sector's stability. Finally, the thesis provides information for government to strengthen country level corporate governance structures, political institutions and economic institutions, whilst protecting property rights and exchange among economic agents to ensure banking sector stability.

Study Delimitation

This study was conducted on a sample of SSA economies for 2007 – 2017. Although the current period of the study is not that recent, the study was constrained by the data span availability for the key variables of interest. However, the beginning period of the study period, i.e., 2007, is appropriate because it coincides with the time the SSA economies began to experience a sharp increase in the level of foreign bank activity. Further, the study could not employ all 48 SSA economies in the analysis due to data unavailability for the excluded economies. However, since most of the countries in SSA economies were employed, there is some reasonable level of confidence that the results and

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findings from the study can be employed to formulate banking sector policies for the rest of the SSA economies.

Organisation of the Study

This thesis is presented in the form of essays where specifically, Chapters 4,5, 6 and 7 are designed in article format. Each of the four chapters has been submitted as manuscripts to revered peer-reviewed journals. Since Chapters 4 -7 are in the journal article format, each contains its introduction, literature review, research methods, results and discussion, and summary and conclusions. Although each of the empirical chapters is freestanding, in a larger sense, they investigate the importance of institutional setting to the relationship between foreign banking penetration and banking sector stability, and they collectively examine the determinants of banking sector stability in SSA economies. The general organisation of the study is as follows:

Chapter One: Introduction

This chapter presents a brief background to the study. The reason for the brief background is that a detailed background is given for each empirical chapter later. This chapter also provides a brief motivation for the entire thesis, setting the tone for providing the study motivation for each empirical chapter.

Chapter Two: Literature Review

This Chapter focuses on the conceptual and theoretical review only. This is because each of the empirical papers provides its literature review. The conceptual review part of this chapter provides a review of concepts that have been employed in the rest of the study. The focus of the conceptual review is to explain and conceptualise foreign bank penetration, banking sector regulations, the various forms of country-level corporate governance structures, economic

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freedom, and banking sector stability. This chapter later situates some of these variables in the context of SSA to provide a better meaning because the study context is SSA economies.

The theoretical review part of this chapter presents a critical review of theories that will inform the four empirical chapters. First, the chapter provides theories that explain the motives behind the expansion of foreign banking across the SSA sub-region and theories on how the expansion affects banking sector outcomes (with a special focus on banking sector stability). Next, the chapter presents specific institutional theories that explain the relevance of banking regulations, CLCGs and economic freedom to the relationship between foreign bank penetration and banking sector stability in SSA. It is good to note that this chapter is not in the form of a journal article.

Chapter Three: Research Methods

This Chapter presents an overview of the general methodology employed in this study. The detailed methodology (including model specification, variable measurement and sources, and estimation strategy) for each objective is presented in the four empirical papers in chapters 4, 5, 6, and 7. This Chapter explains the philosophical stance of this study, the research design and the approach of the study. Also, the chapter presents the data collection procedure and finally a systematic review of the econometric approaches employed in this study.

Chapter Four: Country-level Corporate Governance Structures and Banking Sector Stability in SSA economies

This is the first empirical chapter and has been presented in journal article format. This chapter contributes to the existing literature on the

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relationship between CLCGs and banking sector stability by employing pro-stakeholder CLCG structures which have not been previously employed. Further, the empirical chapter examines how specific institutional determinants like political institutions affect the CLCG-banking sector stability relationship in SSA economies.

Chapter Five: Economic Institutions, Political Institutions and Banking Sector Stability in Sub-Saharan Africa.

This study employs a broad array of economic institution indicators to provide an understanding of how several aspects of economic institutions matter to banking sector stability. Second, this study tests the hierarchy of institutions hypothesis (a theoretical argument by Acemoglu et al., 2005) in the relationship among economic institutions, political institutions and banking sector stability in SSA.

Chapter Six: Foreign Bank Penetration and Banking Sector Stability in Sub-Saharan Africa: Does Country-Level Corporate Governance Under Low and High Level of Economic Freedom Matter?

This empirical chapter explains how two distinct but related institutional factors (i.e., CLCGs and economic freedom) affect the relationship between foreign banking penetration and banking sector stability in SSA. Thus, this empirical paper examines how free-market economies can employ CLCG structures to enhance the likely positive implications of foreign bank penetration on banking sector stability.

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Chapter Seven: Foreign Bank Penetration, Banking sector regulations and banking sector stability in SSA economies

This chapter explains the role of banking sector regulations in the relationship between foreign bank penetration and banking sector stability in SSA. To test the moderating effects, this chapter first examines the direct relationship between foreign bank penetration and banking sector stability in SSA by employing the SGMM estimator, which has not been used in previous studies to examine the relationship. Next, this chapter examines the effect of banking sector regulations on banking sector stability before examining how it affects the relationship between foreign bank penetration and banking sector stability in SSA.

Chapter Eight: Summary, Conclusions and Recommendations

The final chapter summarises the notable findings from the study to show the contribution to theory, extant empirical findings, policy and practice. This chapter also presents recommendations for further research in the area.

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CHAPTER TWO

CONCEPTUAL AND THEORETICAL REVIEW

Introduction

This chapter provides a brief review of key concepts employed in this thesis. This is to provide a fore understanding of the various concepts that have been discussed in the literature review of each empirical paper. The chapter provides a conceptual review on foreign bank penetration and banking sector stability to form a strong basis for understanding all the other concepts linked to these two variables. Further, this chapter clearly conceptualises the specific institutional structures employed in this study – bank regulations, CLCGs and economic institutions and political institutions.

The Concept of Foreign Bank Penetration

According to Mathieu et al. (2019), there had been a considerable surge in foreign bank assets and presence worldwide until 2009, when it declined slightly after the recent financial crisis (Mathieu et al., 2019). Despite this, the financial sectors of some continents like Africa continue to depict an increase in foreign bank presence (Ngwu, Ogbechie & Ojah, 2018). Foreign banking can be increased via several strategies. One of the strategies to increase foreign banking is establishing a physical presence through subsidiaries or branches (Alvarez, Garcia & Gouveia, 2016). Bank branches are not a separate legal entity but depend on the headquarter branch. Thus, bank branches can gain from the harmonised management of liquidity, capital and assets. However, there is a risk of contagion because the bank in question consists of a whole network of branches.

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On the other hand, bank subsidiaries are separate legal entities and possess a greater degree of independence. Several models of foreign banking worldwide combine a mixture of branches and subsidiaries. However, bank branches and subsidiaries may not be a good way of assessing the extent of foreign bank operations because they tend to be persistent over time.

Banks may gain access to foreign economies not only through establishing physical access but also via cross-border lending (Mathieu, Pani, Chen & Maino, 2019). Cross-border lending has become common in this era of economic and financial integration because cross-border loans are a source of finance for the international trading of goods and services (Aldasoro & Ehlers, 2019). They can also be used for international acquisitions. Thus, in this study, foreign bank penetration is conceptually defined as the extent to which the banking sector of a country expands its operations outside the home country. These expansions may include direct foreign claims of the banks in the home country and the claims of their foreign subsidiaries in the host country (Yin, Yang & Lu, 2020). Therefore, inward foreign bank penetration is viewed from the perspective of the host country while outward foreign bank penetration is viewed from the home country's perspective.

Foreign Banking in sub-Saharan Africa (SSA)

The landscape of foreign banking in SSA has undergone several transformations over the past few years. Before many SSA economies gained independence from colonial rule, foreign banking in Africa was dominated by subsidiaries, branches and assets of banking groups headquartered in Europe. After many SSA economies gained independence, most of the foreign bank presence in the sub-region has been dominated by subsidiaries than branches

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(Beck, Fuchs, Singer & Witte, 2014; Mathieu, Pani, Chen & Maino, 2019). Following the recent global financial crises, most of the European banking groups in SSA have retrenched. Conversely, there have been new banks from other regions like the Middle East, Asia and North Africa (Mathieu et al., 2019). In addition, banking groups in SSA have also increased their activities across the sub-region (Mathieu et al., 2019).

Specifically, between 2007 and 2017, the foreign bank subsidiaries have more than doubled in the African continent (Mathieu et al., 2019). Also, the total consolidated foreign claims of BIS reporting banks to GDP have increased within the same period (Ngwu et al., 2018). Enoch, Mathieu and Mecagni (2015) provided several reasons that could impose a significant challenge to banking regulation and supervision over a sub-region dominated by the subsidiary form of foreign banking as well as cross-border lending. Cross-border lending usually operates under the rules and regulations of the host country. Therefore, in a continent like SSA, where there is a weak level of compliance to the Basel Accords because of unnecessary fixation on own country regulations (Ngwu et al., 2018), the oversight and regulation of foreign banking are likely to be weak. In some instances, the foreign banks identify the inefficiencies in the host country's regulations so that these banks can increase their presence and lending without incurring a high cost of regulatory compliance (Houston et al., 2012).

Banking Regulation and Supervision

Historically, there have been significant variations in banking regulations and supervision across several countries (Barth, Caprio & Levine, 2008; 2013). Banking supervisory models can be classified into three main

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models: the institutional model, the functional model, and the integrated model (Goodhart, Hartmann, Llewellyn, Rojas-Suarez & Weisbrod, 1998; Cihak & Podpiera, 2006). Within the institutional model, a supervisor is assigned to every financial institution based on the financial institution's legal status. This means that even when a financial institution goes beyond its main line of business, its assigned supervisor shall still be responsible for overseeing all the activities of the financial institution. The functional model allows each business line in the financial sector to be assigned a supervisor, such that if a firm is into activities, say, insurance and banking, the firm will have two distinct supervisors. The last model, the integrated model, appears to be more ostensible in the SSA banking sector. The integrated model involves using single supervisors that combine the role of supervising all functions and all financial institutions.

There can be two types of bank regulators: the Managerialist and the Optimisers (Simon, 2010). Managerialist regulators usually employ case studies and historical information to develop indicators (for instance, stress tests) that can encourage self-correction mechanisms. On the other hand, the optimisers employ threats and Pigouvian taxes to reduce negative externalities created by financial institutions (Carlton & Loury, 1980). The managerialist regulators tend to be more common in advanced economies because of their strong institutional quality. Meanwhile, optimisers tend to be more common in developing countries because of the weak enforcement of rules and regulations. This probably explains why most bank regulators in SSA do not adhere strongly to international banking regulations but are unnecessarily fixated on their own country regulation, which is obviously dominated by threats and sanctions.

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Whether optimisers or managerialist, banking sector regulators are vital to the efficient monitoring and supervision of the banking system (Hoque, Andriosopoulos, Andriosopoulos & Douady, 2015; Anginer, Demirguc-Kunt & Mare, 2018). After the recent financial crises, several economies have revised the institutional arrangements of their financial sector. For instance, changes have taken place in even corporate governance arrangements as there have been much advocacy for stakeholder-oriented governance over shareholder-oriented corporate governance (Anginer et al., 2018). Within the institutional framework of bank regulation and supervision, some of the changes that have taken place include establishing new regulatory authorities to provide macro-prudential oversight, whilst some separate institutions have merged into the central bank.

The 2007 financial crisis, which started in America and spread to the Euro area, provided essential lessons that some gaps exist in national and international banking regulations. Therefore, over the past few years after the crises, international banking regulatory bodies like the International Organization of Securities Commission (IOSCO) and the Basel Committee have issued several regulations to ensure prudent management of banks (Brummer & Smallcomb, 2015). The international banking regulations that have dominated the banking sector of most advanced economies are issued periodically by the Basel Committee, often referred to as Basel Accords.

The Basel Accords

The Basel Committee was established in 1974 to facilitate internal banking supervision and regulation coordination. The first international banking regulation, Basel I, was issued in 1988 and predominantly focused on providing a minimum capital adequacy ratio to serve as a buffer in likely losses. Despite

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this, Basel I did not address the supervision and operational side of capital adequacy, creating a major flaw. Due to the gap in Basel I, most banks moved their highly risky assets from their balance sheet to off the balance sheet (Mohanty, 2008). To improve Basel I, the Basel Committee issued Basel II in June 2004 to focus on developing a framework for banks to set their model for minimum capital adequacy while increasing their level of disclosure. However, because the causes of the recent financial crises were beyond issues of capital adequacy, as major stakeholders heavily criticised Basel II as not comprehensive (Caruana & Narain, 2008).

Archarya and Richardson (2009) point out that financial institutions circumvented Basel II by transforming their risky assets into securitised products, thereby reducing their capital adequacy requirement (the capital adequacy requirement was based on the risk-adjusted measure of assets). In addition, Basel II did not cover liquidity and leverage (Distinguin, Roulet & Tarazi, 2013). Basel III was subsequently introduced in 2010 to enhance the requirement of capital adequacy and expand the regulator requirement of risk and leverage. The Basel III has three main pillars. Pillar I covers areas such as capital conservation buffer, countercyclical buffer, and increment in capital loss absorption by forcing financial institutions to decrease the incidence of moral hazards and promote the contribution of the private sector in crisis. Even though increased capital requirement can enhance the soundness of financial institutions, Miles, Yang and Marcheggiano (2013) warn that it can reduce the supply of credit and eventually reduce economic growth. The second pillar emphasises the need for sound risk management and supervision. Also, it focuses on the role of a wider firm governance framework (which is referred to

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as pro-stakeholder corporate governance structures in this study) in improving risk management. The third pillar focuses on market discipline and requires a high level of disclosure on off-balance sheet exposures, regulatory capital adequacy ratios and their securitisation activity. The Basel committee requires systematically important financial institutions to have an increased loss absorption capacity.

Empirically, the level of compliance with international banking regulations has been measured by the Barth, Caprio and Levine (2004, 2006, 2008) dataset for more than 100 countries worldwide. Based on the data availability for the economies of interest, the indices of regulations can be grouped into four main areas: (i) activity restrictions (ii) capital regulation stringency (iii) official supervisory power (iv) private monitoring (Houston, Lin & Ma, 2012; Karolyi & Taboada, 2015). Barth, Caprio and Levine (2013) provide the conceptual definitions of each of the four indices. The activity restriction index measures the extent to which banks can engage in other activities that could diversify their revenue while not risking their soundness. The capital stringency index measures the minimum regulatory capital that must be held by banks and how stringent regulations are on the source and nature of regulatory capital. The official supervisory power measures the bank supervisor and its agencies of a country has the power to supervise and take sound actions when necessary. The private monitoring index measures the extent to which regulations and bank supervisors encourage private investors to monitor banks' activities and implement some form of governance over the banks.

Despite the benefits of these international banking regulations, most African countries have been unnecessarily fixated on issuing their own banking

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sector regulations (Ngwu et al., 2018). Therefore, Nwgu et al. (2018) argue that such a conservative approach to banking regulation can hinder improvement in financial inclusion, development and stability. Beck (2016) earlier cautioned against the use of country-specific bank regulations as there seems to be growing cross-border banking in the African continent, and rather advocates for a high level of compliance to international banking regulations (Basel Accords). Therefore, later in the last empirical chapter, the thesis examines the relationship between international banking regulations and banking sector stability in Africa.

Country Level Corporate Governance

The concept of corporate governance has been much debated in both theoretical and empirical literature. However, several arguments are premised on the idea that the concept of corporate governance is a combination of two key concepts, that is, "corporation" and "governance". Therefore, it is imperative to distinctly explore the concept of corporation and governance to fully appreciate the conceptualisation of corporate governance. Jensen and Meckling (1978) in their "nexus-of-contract" argument, point out that a corporation consists of some contracts among the participants of the firm. Thus, a corporation is a representation of the interconnections among the contracts. The word 'contract' is widely used to include implicit and explicit agreements between the contracting parties and contracts that are implied by courts and judicial interpretation (Phillips, 1994).

Ahrens defines governance as "the capacity of the formal and informal institutional environment (in which individuals, social groups, civil associations and government officials and employees interact) to apply and carry through a given government policy and to improve coordination in the private sector"

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(Ahrens, 2002, p.128). In this regard, governance can be viewed as a combination of institutions (whether formal or informal) and government. Hence, every governance structure consists of humanly devised mechanisms that allow or constrain human behaviour and also economic agents responsible for enforcing those mechanisms. Combining the concepts of corporation and governance, corporate governance can be perceived as any arrangement that ensures that humanly devised mechanisms are applied to corporations in a manner that the nexus of contracts among the participants of a firm are directed and protected to achieve their objectives.

In the finance paradigm, Shleifer and Vishny (1997) provide a vivid definition of corporate governance:

> "Corporate governance deals with the ways in which suppliers of finance to corporations assure them of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest in bad projects? How do suppliers of finance control managers?" (Shleifer & Vishny, 1997, p. 737).

Thus, it can be argued that the role of corporate governance in providing returns on investment is drawn along two main orientations: stakeholder and shareholder orientation. There has been much debate on whether management should govern the corporation in the shareholders' sole interest or consider the interests of other constituencies. The shareholder perspective argues that shareholders are the suppliers of finance to corporations, and therefore managers have the duty to provide returns to them. However, a strict shareholder approach to corporate governance can bring about situations where

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other stakeholders' interests are totally neglected. The ethical dimension of corporate governance argues for a stakeholder orientation to corporate governance where the interest of all parties to a firm is protected.

Anginer et al. (2018) explain that the stakeholder perspective of corporate governance should be employed in the governance of banks. This is because a misguided shareholder perspective presents an opportunity for managers to engage in risky lending of deposited funds to obtain more profit for shareholders. Since banks' structure fundamentally differs from other corporations, the key suppliers of finance are the depositors, and their interests must be protected. Until the Law and Finance argument, much of the studies on corporate governance were conducted at the firm level (*see* La Porta et al.,1998). However, country-level corporate governance, a concept that combines internal and external mechanisms and configures how earnings are generated and how earning benefits all stakeholders, must be promoted in the financial sector (Shleifer & Vishny, 1997). Garcia-Osma (2008) argues that CLCG is a county-level arrangement encapsulates country-specific and firm-level mechanisms for protecting all shareholders and other stakeholder interests.

CLCG indicators have been employed in empirical finance studies like Agyemang et al. (2019a, 2019b) and Kusi et al. (2021). Kusi et al. (2021) employed pro-shareholder CLCG structures like the extent of director liability, strength of investor protection and ease of shareholder suit index to examine the role of CLCG in the relationship between foreign banking and bank stability. However, this study follows the approach of Agyemang et al. (2019) rather to conceptualise CLCG as a pro-stakeholder country and firm-level arrangements. To this end, this study adopts the indicators employed by Agyemang et al.

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(2019) and Fang, Hasan and Marton (2014) to proxy CLCG structures by ethical behaviour of firms, corporate board efficacy, creditor right protection, strength of auditing and reporting standards, and security and exchanges regulations.

Ethical behaviour of firms is a pro-stakeholder CLCG arrangement because ethics goes beyond the basic rules set for the society to impose certain constraints on firm actions that may be considered immoral, even though it is not illegal. If all corporate boards are effective, firms in an economy will be able to protect the interest of all stakeholders in the wider nexus of contracts. Creditor rights ensure that bank creditors, that is depositors, are assured of their deposits and returns. Again, creditor right protection ensures that funds given out by banks to customers (usually non-banking firms) are returned with the associated interest. Auditing and reporting standards promote transparency and accountability in all intra-firm and inter-firm transactions and contracts. Finally, securities and exchange regulations enable all firms to enter and execute financial contracts in a fair and orderly manner.

Banking Sector Stability

There is a high level of interconnectedness between everyday activities (obtaining loans, building savings, paying bills) and the services provided by banks. Businesses place reliance on the banking system for transaction settlements and other financial services to meet their financial needs. There is also some interaction among the banks themselves, especially in cheque clearance, inter-bank borrowing and international financial transactions. The relationship among banks, coupled with the fact that their stability to a large extent can be determined by public confidence, means that disruptions in the

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activity of a bank can easily affect other banks in the financial system, as well as the society as a whole.

The concept of banking sector stability is complex to define. In a broader sense, a stable banking sector can absorb all the shocks (the booms and the recessions) in the economy and still perform its basic function of accepting deposits and giving out loans (Chouhan, Chandra, & Goswami, 2014). Gadanecz and Jayaram (2008) point out that banking sector stability encompasses the ability of the entire banking system – including banks, customers, intermediaries, banking markets and banking market infrastructure – to withstand shocks and financial imbalances. A preponderance of banking stability literature has employed aggregated individual banking stability measures to measure banking sector stability (Kasman & Carvallo, 2014).

Iwanicz-Drozdowska, Altman, Laitinen and Suvas (2014) reviewed 33 papers since 2000 and found that the z-score has been employed to measure banking sector stability. The z-score conceptualises banking sector stability as the ability of the banking sector to attain earnings to the extent that it has enough total equity to absorb unexpected shocks and losses.

Economic Institutions

North (1990) explained that "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic setting". Thus, since the level of economic freedom directly shapes economic agents' behavior in an economic setting, economic freedom dimensions could represent a set of economic institutions. Although difficult to provide a single definition of economic

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freedom, one of the early writers on the concept – Gwartney and Lawson (2003) – argue that the concept is built on freedom to make personal choices, freedom of exchange among economic agents, free markets that allow competition, and the role of government to provide protection of economic agents and property.

When there is a high level of economic freedom, individuals are allowed to freely engage in mutually advantageous exchange, that is, to determine the amount of time, talent and resources that they could exchange for other beneficial economic resources. However, individuals that possess the time, talent and resources do not necessarily have the right to enforce the exchange for that of others. Therefore, economic freedom provides institutional structures that offer a setup for voluntary exchange. It is essential that when economic agents are allowed to exchange resources voluntarily, there will be structures that protect individuals and their resources from aggressors that seek to employ coercion, violence and fraud to get hold of things that are not theirs. In this regard, the role of government in economic freedom is not to interfere in the free-market process but to provide protection for economic agents and their property. In the refereeing process, the government may also remove any barriers to the free flow of sound money between the economic agents.

To limit interference in the free market process, governments may abstain from a) too much taxing of economic agents, b) dominating the economy with its huge expenditure, c) high level of market regulation and d) strict requirements for entry and exit of businesses (Gwartney, Lawson & Clark, 2005). Therefore, based on the economic freedom index of the world (EFW) published by the Frasier Institute, economies with higher ratings can be perceived as a minimal or free market state whilst economies with lower ratings

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can be deemed government-dominated states. The EFW is constructed from five main pillars, government size (GS), legal system and property rights (LSPR), sound money (SM), freedom to trade internationally (FTTI) and regulations (REG).

First, when markets are dominated by government spending relative to other economic agents, government decisions will dominate that of other economic agents. Thus, economies that have their markets dominated by government spending will have low ratings in government size and vice versa. Second, LSPR is a key indicator of economic freedom and serves as the foundation for all the other indicators because they provide a safeguard for all free-market interactions. This is because, in the absence of LSPR protection, the confidence of economic agents to exchange resources freely is fatally weakened. In other words, when economic agents lack confidence in contract enforcement and do not have the right to secure their property, their incentive to embark on productive activities is battered. Countries that are characterised by weak LSPR have low ratings in this area.

Third, sound money is essential to the free market process. All transactions run on the wheels of money, and it is therefore essential that money is not affected by inflation. Inflation distorts contract prices and erodes property value, serving as a disincentive to economic agents to embark on exchange. A likely cause of inflation is when the government implements expansionary monetary and fiscal policy without providing resources for expanding aggregate supply. Thus, economies with low government size scores are also likely to have low scores in sound money.

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Fourth, in this globalisation era, allowing freedom of exchange across a country's boundaries is essential to the free market process. Based on the theory of comparative advantage, it would be beneficial for economic agents in an economy to produce goods and services that give them a comparative advantage and exchange them for those that do not. FTTI, in some instances, enables economic agents to benefit from efficiency and skill spill-overs from other economies, which is essential to the free market process.

Finally, the nature of regulations can impede individual choices and exchange freedom. The regulation indicator consists of three sub-indicators – credit market regulation, labour market regulation and business sector regulations (Gwartney et al., 2005). Credit market regulation can impose constraints on the freedom of banks to embark on their traditional activities. It can also reduce the channelling of funds from the banking sector to the business sector. Poor labour market regulations impose limitations on the freedom of employers and employees. Sound labour market regulations rather promote the market determination of wages and salaries. Combined with FTTI, sound labour market regulations allow technical know-how and managerial competence spillovers from foreign financial institutions. Hard business regulations impose bureaucratic restraints on business setup and reduce competition. In sum, economies that do not allow credit markets, labour markets and goods markets to freely determine market outcomes are likely to have a low score in this area.

Political Institutions

Limits on the arbitrary use of power by bureaucrats and politicians are established by political institutions (Acemoglu et al., 2005). They do this by establishing boundaries between public and private property rights and

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establishing mechanisms for their enforcement. This means that political institutions may be weak in economies where political authorities mostly abuse their power and deny the ordinary citizens from obtaining property rights. In this study, political institutions are conceptualized as institutional structures that determine how political power will be distributed in the future (*see* Acemoglu & Robinson, 2003). This conceptualization is essential because it clarifies economic agents' strong motivation to reform political institutions whenever they get the opportunity. By doing so, they may seek to permanently shift the balance of political power in their favor if the current political authority mostly not in their favour. Thus, when political decisions mostly favour democracy, economic institutions are stronger than when they do not.

Theoretical Review

The theory of Bank Risk and Stability in the era of Globalisation

One objective of this thesis examines the implications of foreign bank penetration on banking sector stability. Therefore, to understand banking sector stability in this era of globalisation, the theory of bank risk must first be analysed. This is because some empirical studies have demonstrated that excessive risk-taking behaviour by banks may undermine the stability of the entire banking system. The main operations of a bank are receiving deposits and giving out loans. Intuitively, to earn more interest, some banks may give out loans to "bad borrowers" because giving out loans to borrowers with low credit ratings will offer the bank high-interest rates. In addition, high competition from bank globalisation may limit the ability of banks to do proper screening of borrowers, thereby leading to adverse selection problems. Banks' investment

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activities may also be accompanied by myriad risks, which must be identified and well managed to ensure bank stability.

Due to the multidimensional nature of bank risk and how it evolves and mutates (Taskinsoy, 2020), some theoretical argument haves suggested ways to reduce the level of bank risk-taking and ensure bank stability. These theoretical studies have been drawn along two main lines: the need for healthy competition and a stronger institutional setting. The ensuing sections of this chapter present theories that offer support for the linkage between foreign banking and banking sector stability from the competition perspective. Subsequently, the chapter presents institutional theories on how possible banking sector stability problems arising from foreign banking could be minimised.

Competition-Stability Theory

Contrary to other sectors of an economy, the nature of competition in the banking sector may have implications for its stability. In a nearly perfect competitive industry, it can be assumed there are many buyers and sellers, perfect information, and free entry and exit. This means no firm in such an industry will have market power and therefore firms would want to operate at the lowest possible cost to sell at lower prices. Allen and Gale (2004) argued that a high level of competition in the banking sector might be socially desirable because banking services will be provided at the least possible price, making financial services affordable to prevent non-performing loans. Also, competition brings about cost efficiency and forces banks to operate optimally, making them stronger. However, in an attempt to make high margins in a perfectly competitive market, banks would have to take excessive risk by lending to risky borrowers because high interest rates could be charged when

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there is a high probability of default. Thus, without complete contracts, a high level of competition in the banking sector could lead to excessive risk-taking and bank fragility.

However, this does not connote that a high level of bank concentration (low level of competition) enhances banking sector stability. In a typical Cournot model, there may exist few large banks that are characterised by a large number of branches across several countries. Even though such banks could take advantage of economies of scale and offer services at the least cost possible, they may still have incentives to engage in risk-taking behaviour to earn higher returns. This is likely to happen when there is a weak institutional setting in the host economies. Also, due to the interconnectedness between the parent bank and its branches, shocks within their network could be propagated across the entire network and lead to financial contagion (Allen & Gale, 2000).

From the preceding arguments, the relationship between competition and stability may be more complex than it was traditionally thought. Allen and Gale (2004) thus point out the relationship between banking competition and financial stability should be observed from different models. This study introduces a new paradigm by explaining the relationship between banking competition and financial stability from the perspective of regulation lapses in regulating foreign bank penetration. The study explains the race-to-bottom hypothesis in that regard.

Race-to-bottom Hypothesis

Cary (1974) defines race-to-bottom as "a situation where states compete with each other as each tries to underbid the others in lowering taxes and regulation". It could therefore be assumed that the rapid expansion of foreign

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banking in continents such as Africa is a result of weakened banking regulations as the regulatory authorities may be engaging in a "race-to-bottom". This is because the increased level of financial integration among world economies has imposed some form of competition among national banking regulators (Boyer & Kempf, 2020). The key concern for national banking regulators that engage in race-to-bottom is the loss of revenue from banking activities located outside their jurisdiction. Therefore, they try to weaken banking regulations to attract more foreign bank activities. With this, foreign banks are likely to circumvent prudential regulations and endanger the host country's banking system. In this regard, the fourth objective of this thesis examines the role of bank regulations in the relationship between foreign banking penetration and banking sector stability.

New Institutional Theory

Ménard (2018) points out that the development of the New institutional Economic (NIE) theory can be attributed to the seminal papers of Ronald Coase, Douglas North, Oliver Williamson and Elinor Ostrom. Their arguments can be grouped into two main approaches to NIE. Ronald Coase and Douglas North argue for the institutional climate and 'rules of the game' approach, while Oliver Williamson and Elinor Ostrom argue for the micro-level behaviour and transaction cost economics perspectives to NIE (Richman 2019; Canitez, 2019). North explained "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. Consequently, they structure incentives in human exchange, whether political, social, or economic" (North, 1990, p.3). Richman (2019) expands this definition by pointing out that the constraints can be rules and regulations, procedures to

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ensure adherence to rules and regulations; and a set of moral and ethical behavioural that goes beyond rules and regulations and their enforcement procedures. In sum, the North and Coase approach to NIE focus of institutional structures that govern the behaviour of economic agents at the Macro-level. Such macro-level institutional structures including but not limited to the constitution, laws and property rights, traditions, norms and codes of conduct (Ghandi & Johnson, 2019).

On the other hand, the Williamson and Ostrom approach to NIE, focuses on institutions that minimises transaction cost at the micro-level. Williamson (2000) argues that hazards of opportunism usually characterise the transactions among economic agents at the micro-level; thus, contracts and exchange agreements need to be governed. Corporate governance theories developed within the domain of finance emphasise the need to employ corporate governance as an institutional structure to reduce the transaction cost of firms (Klepczarek, 2017). Williamson earlier argued that corporate governance is the "institutional framework within which the integrity of a transaction is decided and as such corporate governance structures equate institutions" (Williamson, 1979, p. 235)

Separating institutions into micro-level and macro-level is vital because some institutional structures are framed to deal with some transactions at certain levels better than other institutional structures. Notwithstanding the different levels of institutions, all institutions are structured to shape economic activities, whether such economic activities occur in the area of politics, finance, socio-culture, etc. This is because the micro-level approach to institutions explains how economic agents at the micro-level structure and organises their actions

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and transactions within the macro-institutional environment proposed by North (1990). Acemoglu et al. (2005) therefore explained that a hierarchy may exist in the institutional structures and that the extent to which an institutional structure may be effective in achieving economic outcomes may depend on another.

As earlier explained, institutions can shape economic activities in areas such as finance. Thus, the issue of bank regulatory arbitrage, a situation where banks circumvent prudential regulations to make gains, can be analysed from the perspective of transaction cost economics. Further, the relationship between CLCGs and banking sector stability can be analysed from the corporate governance theories and the Law and Finance theory, which are micro-level and macro-level institutional theories respectively. Finally, the effectiveness of CLCGs in enhancing banking sector stability can be analysed from the hierarchy of institutions hypothesis put forth by Acemoglu et al. (2005). These theories are explained in the subsequent sub-sections of the NIE theory.

Corporate Governance Theories

A synthesis of corporate governance literature based on different assumptions has created diverse theoretical models (Friedman & Miles, 2002). Williams (1996) initially points out that corporate governance can be explained from four main perspectives: the stewardship model, the finance model, the political model, and the stakeholder model. Other studies like Clarke (2004) identify three corporate governance theories – stakeholder, agency, and stewardship. For this study, all the corporate governance models are categorised into two theoretical perspectives: the shareholder theoretical perspective and the

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stakeholder theoretical perspective. There are explained in the subsequent sections.

Shareholder theoretical perspective of Corporate Governance

All corporate governance models that support the shareholder theoretical perspective of corporate governance are premised on the fundamental assumption that firms are legally obliged to fulfill shareholder interest since shareholders are the firm's owners. However, as firms expand, ownership becomes more dispersed, and individual shareholders cannot be actively or directly involved in the monitoring and controlling of the firm' activities. Thus, monitoring a firm's activities is shifted to managers, who are regarded as agents of shareholders. The managers are likely to be self-interested, leading to the principal-agent problem (Jensen & Meckling, 1976). This is because if managers pursue their self-interest, it reduces firm profitability, reducing shareholder wealth maximisation.

The agency problem could also be caused by the difference in the risk attitude of the principal and the agent. As Eisenhardt put it, "the argument underlying the conflict of goals between the principal and agent who is more risk averse than the principal is portfolio diversification constraints based on managerial income" (Eisenhardt, 1989, p. 58). Since the management labour income is a direct function of the firm they work for, they are likely to avoid very risky investments that could cost them their salaries. Thus, agency cost is minimised when managers have an equity interest in the business (Fama & Jensen, 1983). Agency cost may include monitoring cost incurred on checking behaviour of managers, residual losses and bonding cost (Mizruchi, 2004). Although principals initially bear these agency costs, the cost will ultimately be

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transferred to the agents in the form of reduced compensations (Fama & Jensen, 1983). Consequently, there is the need to put in place appropriate structures to control agents' behaviour so that agency costs are ultimately reduced. Corporate governance mechanisms, therefore, reduce agency costs to maximise shareholder returns.

Schleifer and Vishny (1997) point out that legal protection and concentrated ownership are two effective mechanisms for minimising agency costs. Highly concentrated ownership implies that outside shareholders will be more active in monitoring roles to reduce agency costs. In addition, the legal system of an economy serves as a bedrock for corporate governance practices and arrangements such as: shareholder protection regulations, ownership structure, and capital market regulations (Denis & Kruse, 2000).

Some other studies have emphasised the need to ensure proper board governance to reduce agency cost. Even though the shareholder perspective of corporate governance is essential to maximising shareholder return, applying such a perspective to the banking sector may lead to unintended adverse outcomes. Banks are principally different from other firms, in that the maximisation of shareholder returns will require bank management to take on excessive risk, thereby endangering bank stability. Thus, corporate governance studies in banking are gradually advocating for a stakeholder perspective on corporate governance.

Stakeholder Perspective to Corporate Governance

Under the agency theory, firms are perceived as a connection of several contracting relationships, which extends beyond shareholders to embrace other stakeholders (Jensen & Meckling, 1976). The stakeholder perspective of

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corporate governance argues against the view that only shareholder's interests should be upheld but argues in favour of maximisation of all stakeholder interest (Freeman & Reed, 1983). Freeman defines stakeholders as "any group or individual who can affect or is affected by the achievement of the organisation objectives" (Freeman, 1984, p. 46). Even though this definition has been often cited in the literature, it has been criticised for its lack of clarity on what a stake is and who a stakeholder is (Pesqueux & Damak-Ayadi, 2005). Thus, in an attempt to reduce the ambiguity on the definition of a stakeholder, Clarkson distinguishes between primary stakeholders and secondary stakeholders as follows:

> "one without whose continuing participation the corporation cannot survive as a going concern" – with the primary group including "shareholders and investors, employees, customers and suppliers, together with what is defined as the public stakeholder group: the governments and communities that provide infrastructures and markets, whose laws and regulations must be obeyed, and to whom taxes and obligations may be due" (Clarkson, 1995, p. 106)

Advocates of the stakeholder perspective to corporate governance argue that managers are supposed to consider how primary shareholders' interests and actions affect firms' performance and survival. In the context of banking, depositors and borrowers can be deemed as primary stakeholders who are fundamental to bank survival. In periods where depositors cause bank runs, banks are not likely to survive. Also, bad borrowers could cause adverse selection and moral hazard problems for banks, thereby endangering their stability. Therefore, bank governance should consider the likely impact of

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depositor and borrowers' actions on bank survival. It is then reasonable to assume that the stakeholder perspective to corporate governance is more relevant to the banking sector than the shareholder theoretical perspective.

Shleifer and Vishny have contributed value to the stakeholder perspective of corporate governance by explaining corporate governance as "a mechanism that deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer & Vishny, 1997, p. 2). On the one hand, suppliers of finance to banks do not just include shareholders but other key stakeholders like depositors. On the other hand, corporate governance can assure banks of getting returns when they supply finance to borrowers. These arguments were later developed into the "Law and Finance theory", which focuses on a country-level relationship between corporate governance and the financial sector.

Law and Finance Theory (LFT)

An account of the literature shows that the LFT forms part of a broader line of research that focuses on the relevance of institutions to the determination of economic outcomes (Acemoglu & Robinson, 2012; Schnyder, Siems & Aguilera, 2021). The traditional LFT proposes that the legal origin of the Laws protecting shareholders and creditors, the laws themselves, and the efficacy of their enforcement matter to the development of the financial sector (La Porta et al., 1998). The knowledge of the institutional aspects of corporate governance can be attributed to the sequel of seminal papers developed by Shleifer, Vishny, La Porta, and Lopez-de-Silanes since 1997. Schleifer and Vishny (1997) defined corporate governance as: "corporate governance deals with the agency problem: the separation of management and finance. The fundamental question

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of corporate governance is how to assure financiers that they get return on their investment". The law and Finance theory was subsequently developed by La Porta et al. (1998) and this opened up the domain for a preponderance of empirical literature that employs legal origin and investor protection as the country-level determinants of finance outcomes (Schiehll & Martins, 2016).

Despite their huge influence, the use of legal origin and investor protection as determinants of finance outcomes has come under considerable criticisms. Some scholars (for instance, Aguiler & Williams, 2009; Pistor, 2009) have documented predispositions in the choice of legal origin variables and have also shown evidence of endogeneity problems in using these variables. Another line of criticism (for instance Roe & Siegel, 2009; Roe, 2006; Dam, 2006) contend that studies that dwell on the LFT overemphasise the importance of law in corporate governance, neglecting other importance aspects of corporate governance at the country level. Even though this study thrives on the creditor protection argument of the LFT, this study proposes other institutional aspects of corporate governance that must be taken into account to ensure banking sector stability.

Shleifer and Vishny (1997) initially hinted at this by explaining that the corporate governance system at the country level could be perceived as a particular arrangement of internal and external mechanisms that sets the configuration for the generation of earnings and how all stakeholders benefit from such earnings. Garcia-Osma (2008) explains that corporate governance at the country level is a concept that encapsulates firm-level and country-specific mechanisms that protect the interest of shareholders and other stakeholders. Recently Agyemang, Gbettey, Gatsi and Acquah (2019) provided evidence that

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country-level corporate governance is very important in attracting foreign investments. This study employs pro-stakeholder CLCG structures to contribute to other aspects of corporate governance at the country level. Thus, in line with the stakeholder theoretical perspective of corporate governance, this study provides further evidence on the Law and Finance theory by examining the relationship between pro-stakeholder CLCG structures and banking sector stability.

Hierarchy of Institutions Hypothesis

Acemoglu, Robinson and Johnson (2005) propose the hierarchy of institutions. The HIH posits that the extent to which economic institutions can efficiently fashion out economic outcomes depend on political institutions. Economic institutions are the primary drivers of economic agents' incentives and restrictions, and they have an influence on economic actions and outcomes. Nonetheless, resource allocation through these economic institutions may be biased, resulting in social strife. Olaoye and Aderajo (2020) thus point out that resource allocation favours economic agents with greater political power, usually determined by political institutions. However, there are several ways this hierarchy rolls out in everyday economic transactions, highlighting how political institutions influence economic institutions and economic outcomes (Hartwell, 2018).

Magnin (2018) argues that the dominant institution on the higher levels of the hierarchy shapes the other institutions at the lower end, causing them to strengthen or deteriorate. The hierarchy of institutions hypothesis forms the foundation for how a higher-level institution moderates the impact of lower-level institutions on economic outcomes. Thus, this study argues that the

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effectiveness of CLCG in achieving bank stability may depend on some economic institutions. Strong economic institutions require a reduction of government interference while providing protection to safeguard the rights of all stakeholders that are market participants (Gwartney et al., 1996). CLCG will likely be effective in an environment characterised by strong economic institutions. It is good to note that CLCGs are micro-level institutional structures, albeit aggregated at the macro-level.

Institutional Theory of Isomorphism

The institutional theory of isomorphism posits that an organisation's formal structure and management behaviour are influenced by the institutional environment within which the organisation exists and operates (Meyer & Rowan, 1977). Consequently, adherence to stakeholder expectations could provide the firm with some goodwill, which is vital to firm survival. The pressure to meet stakeholder expectations is one of the driving forces motivating banks to adhere to sound pro-stakeholder CLCG structures. Dimaggio and Powell (1983) refer to institutional isomorphism as humanly devised constraints that urge firms to conform to the institutional environment within which it operates. However, these constraints derive their roots from environmental factors, leading to three forms of institutional isomorphism – coercive isomorphism, mimetic isomorphism and normative isomorphism.

The mimetic dimension of institutional isomorphism occurs when firms are pressured to meet international best practices (de Villiers & Alexander, 2014). Thus, it is likely that pro-stakeholder CLCG practices will influence foreign bank operations in a host economy. The normative isomorphism dimension occurs when firms are pressured to adhere to norms, values, systems

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and techniques that are considered valid by important professional groups in the area (Perez-Batres, Miller & Pisani, 2011). As pro-stakeholder corporate governance systems are becoming more common as best banking governance practices (Agnier et al., 2018), it is likely that pro-shareholder CLCGs systems will govern foreign bank's activities. Finally, the coercive dimension of institutional isomorphism drives firms to adhere to regulations and guidelines provided by external authorities like regulatory bodies (de Villiers & Alexander, 2014). With this, foreign banks are likely to conform to the level of compliance to banking sector regulations, which are in force in the host economy.

Transaction Cost Economic (TCE) Perspective of Regulatory Arbitrage

TCE can improve the knowledge on the problem of regulatory arbitrage and potentially provide avenues for solving such problems. To begin such analysis, the study adopts the two main behavioural assumptions of TCE – opportunism and bounded rationality. Indeed, if banking regulators do not face bounded rationality but know a complete set of banking sector laws, or if the banks themselves were generous and do not put-up opportunistic behaviour, the regulatory arbitrage problem might not probably exist. Regulatory arbitrage can be categorical or jurisdictional (Marjosola, 2021). Categorical regulatory arbitrage occurs when banks re-engineer their domestic transactions to avoid costly regulations by moving financial transactions from the highly regulated financial market section to a more-friendly section. With this, financial transactions that are less regulated are likely to dominate the banking sector eventually. Jurisdictional regulatory arbitrage occurs when multinational banks relocate their transactions from countries with tight regulated regimes to countries with more friendly regulatory regimes.

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Kroszner and Strahan (2014) support categorical regulatory arbitrage by contending that various transactions and financial innovations intended to avoid costly regulations led to the build-up of the 2007/2008 financial crises. Houston et al. (2012) provides empirical support for the jurisdictional regulatory arbitrage, demonstrating that multi-national banks transferred funds and operations from highly regulated markets to less regulated markets. Both categorical and jurisdictional regulation arbitrage provides evidence of the fundamental transaction economic cost problems of bounded rationality and opportunism. This is because if all bank regulators in various jurisdictions were to form part of the Basel committee, their contribution to the development of the Basel accords could reduce the problem of bounded rationality. Even if all economies do not form part of the Basel committee, the problem of opportunism may be reduced if all jurisdictions strictly adhere to the Basel accords.

The opportunism problem is likely to be present in SSA where most economies are fixated on their national banking regulations, thereby paying less attention to international banking regulations. Gerding (2015) explains that difference in the level of adherence to regulatory capital requirement influence the movement of bank capital across different regulatory regimes. From the NIE perspective, banking regulations can serve as formal institutions that can shape the behaviour of multinational banks and reduce their opportunistic behaviour that could endanger the banking system stability of the host country. Thus, the fourth objective of this thesis examines the role of banking regulations in the relationship between foreign banking and bank stability of SSA economies.

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Chapter Summary

The conceptual and theoretical literature reviewed in this chapter points out that significant relationships could exist among foreign bank penetration, country-level corporate governance structures, economic institutions, banking sector regulations and banking sector stability. However, there are some gaps that exist empirical literature. First, a gap exists in examining the relationship between pro-stakeholder corporate governance structures and bank stability at the country level. Also, gap exist in how specific economic institutions affect banking sector stability. Since existing literature have measured foreign banking using foreign bank presence, gaps exist in the use of cross-border lending as a measure of foreign bank penetration despite the theoretical foundations argued in favour of a relationship between foreign banking and banking sector stability. Finally, gaps exist in the use of several indicators of banking sector regulations to examine the relationship between them and banking sector stability. The thesis fills all such gaps.

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CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents an overview of the general methodology employed in this study. The detailed methodology (model specification, variable measurement and sources, estimation strategy) for each objective is presented in the four empirical papers in Chapters 4, 5, 6 and 7. This chapter begins by explaining the philosophical stance, presents the research design and approach of the study afterwards. Finally, a systematic review of the econometrical approaches employed in this study is presented.

Research Philosophy

This study is conducted under the positivist philosophy. Even though economics and finance research are usually classified under soft sciences like social sciences, they are usually treated as though they are part of hard sciences. Typically, the field of finance and economics has been dominated by research that relies on the positivist philosophy. The positivist philosophy assumes that an objective reality exists out there which can be perceived via structured and controlled procedures using mathematics and statistics (Saunders, Lewis & Thornhill, 2012). Research on the determinants of banking sector stability in the field of finance is usually inclined to the positive philosophy, as the authors tend to employ mathematical and statistical methods to test relations. Therefore, positivists test whether law-like statements are true or not by making a comparison of the claim with empirical evidence (Hallebone & Priest, 2008), thereby creating a truth correspondence theory. Although some authors regard

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positivist philosophy as outdated, it is still influential in the emerging fields of accounting, economics and finance (Ryan, Scapens & Theobald, 2002).

The word "positivism" does not imply that positivists obtain positive outcomes in their research. Rather, it means that they produce positive knowledge about a phenomenon – knowledge that is certain, neutral, emotion-free and free from personal human interpretations. Crotty (1998) points out that the word *positivism* was first used by Aguste Comte and later developed it as a theory of the scientific religion in his major work ("The Cours De Philosophie Positive"). Comte (1838) explains that positivism began and went through three phases in the 19th century. In the first stage, positivism studies were mostly theological and without science. The second stage saw the transformation of theological studies into metaphysical studies, where it was scientifically believed that an abstract power guides the world. The third stage saw the disregard of any metaphysical beliefs but promoted an absolute reliance on scientific methods. Ellis (2019) explains that most studies found within US literature (where finance literature evolved) show that Comte's perspective that valid knowledge is gained from the scientific procedure is still predominant.

This thesis emanates from a positivist philosophy by taking an objective stance in its entire design and observing materialism in its ontology. Ontological materialism is premised on believe that phenomena outside the human mind are more real and that reality may exist even in the absence of human observers (Vincent,1995). Therefore, this thesis objectively observes 'accepted knowledge' that can be observed and discussed. In line with this, this thesis employs a purely quantitative approach in its design. Notwithstanding, there may be some demerits in the strict reliance on mathematical methods. Gane

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(2013) argues that even a perfect mathematical or statistical method may be misleading if it is misapplied. To reduce the incidence of misapplication of the statistical methods, this thesis assesses the adequacy of all statistical results by satisfying all stated assumptions before interpreting the results based on the facts.

Another likely demerit of statistical analysis is that it can be complex and lengthy, which may not be kind to an illiterate audience. This study, therefore, provides theoretical justification and economic intuitions for all statistical findings. However, similar to other empirical studies within the positivist philosophy, this thesis does not confirm absolute truth in a theory but rather provides evidence to back a theory. Hence, in sync with Popper (2005), the results obtained in this thesis potentially falsify a theory.

Research Design

The chosen research design can impact the research method used throughout the investigation. The research design is a plan for data collection, measurement, and analysis and the general framework within which the study is done (Kothari, 2004). The cause and effect of one or a group of variables (independent) on another variable (dependent) in a theoretical model are investigated using an explanatory research design (Saunders et al., 2012). In testing theoretical predictions in this study, causal research design is vital. This is because the study investigates the impact of foreign banking penetration, CLCGs, economic institutions, political institutions and banking sector regulations on banking sector stability.

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Research Approach

The study uses a quantitative approach to research to discover the relationship between the study's key variables. In addition, the quantitative approach uses numerical and measurable data in its methodologies, measurements, and designs (Simon, Lee, Cottrell & Verleysen, 2007). This study is purely quantitative because it deploys quantitative variables (both dependent and independent) to examine the influence of foreign bank penetration, country-level corporate governance structures, economic institutions, political institutions and banking sector regulations on banking sector stability in SSA. Furthermore, the study developed hypotheses based on the theory, which are tested to reinforce or falsify the theories employed in this study.

Review of Econometric Approaches

Panel data, also known as longitudinal data, consists of repeated measurements on the same cross-section units throughout time, resulting in time-series observations of multiple cross-section units. The cross-sectional units may be countries, firms and households. Consider data on foreign banking penetration, CLCGs, economic institutions, political institutions, bank regulations, and banking sector stability collected for 35 SSA economies from 2007 - 2017. The data collected can be deemed as panel data because the data is collected from the same set of countries for several years. Since data for different units and time zones are lumped together in panel data, the data may include both observed and unobserved characteristics of the cross-sectional units across time. Panel data modelling, therefore, uncovers the unobserved

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characteristics of the countries (i.e., cross-section specific effect), that of the time period (time-specific effect) or both (Gujarati, 2011).

Types of Panel Data

The type of panel data is very critical to the choice of an appropriate estimation technique. Gujarati (2011) points out that panel data structure may be balanced or unbalanced. Balanced panel data is a panel data structure that each time series is observed across every cross-section unit, leading to the absence of missing values. Conversely, a panel may be unbalanced when some of the times series are unavailable for the entire cross-section or vice versa. Based on the length and breadth of the time-series and cross-sectional units, panel data may also be classified into micro-panel and macro-panel (Wooldridge, 2015). Micro-panel combines a wider cross-section with a shorter time series($N>T$), whilst a macro-panel combines a longer time series with a less wide cross-section and a longer time series($N<T$).

Majumder (2020) highlights that panel data analysis is much more common in economics and finance, and some economics and finance relationships may involve an adjustment process. Therefore, in a situation where the lag of a dependent variable is likely to affect the dependent variable, such an adjustment process makes the panel data model dynamic because the effect of the regressors on the dependent variable is conditioned on the history of the dependent variable. Thus, panel data models that incorporate the lagged dependent variable as a regressor are said to be dynamic panel data models. In contrast, those that do not incorporate the lagged dependent as a regressor are said to be static.

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Based on the various panel data structures discussed so far, there could be five categories of panel data model estimators (Wooldridge, 2009; Gujarati,2011; Majumder, 2020): "the pooled OLS", the "fixed effect least square dummy variable" (FELSDV) model estimator, the "fixed effect within-group estimator" (FEWG) model estimator, the "random-effect model" (REM) estimator and the "instrumental variables" (IV) estimators. The first four are appropriate for static panel models whilst the IV estimators are adequate for dynamic model estimators.

Static Panel Data Estimators

Pooled OLS

Suppose the following panel data regression equation:

$Y_{it} = \beta_1 X_{1\,it} + \beta_2 X_{2\,it} + \beta_3 X_{3\,it} + \ldots\ldots\ldots + \beta_n X_{n\,it} + \epsilon_{it}$ .....(1)

where the error term

$\epsilon_{it} = \beta_0 + \propto_t + \varepsilon_{it}$

$\beta_0, \propto_t, \varepsilon_{it}$ represents the unobserved cross-section unit effect, unobserved time-effect and the residual, respectively. It is good to note that the intercept has been included in the error term. By estimating pooled OLS, the assumption that would have been made is that all the observations are "together", thereby neglecting the time-series and cross-sectional nature of the data. Based on the assumption that the unobserved cross-sectional unit effects are time-invariant, Gujarati (2011) point out that such unobserved effects are likely to correlate with the regressors. Since the unobserved cross-sectional unit effect is a component of the error term, a key assumption of regression that there should be no correlation between the error term and the regressors will be violated. Thus, the pooled OLS estimator can only be employed when there is sufficient

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evidence that the cross-sectional units do have unobserved specific effects, which is less likely to be the case.

Fixed Effect Least Square Dummy Variable (FELSDV) Model Estimator

The FELSDV model estimator allows all observations to be pulled together but permits every cross-section unit to own an intercept (dummy variable). Each intercept is assumed to be time-invariant or fixed (Gujarati, 2012). Equation 1 is modified as follows:

$Y_{it} = \beta_{0i} + \beta_1 X_{1\,it} + \beta_2 X_{2\,it} + \beta_3 X_{3\,it} + \ldots\ldots\ldots + \beta_n X_{n\,it} + \epsilon_{it}$ ……(2)

where the error term $\epsilon_{it} = \propto_t + \varepsilon_{it}$

$\propto_t$, ε_{it} represents the unobserved time-effect and the residual, respectively.

β_{0i} is the intercept with a subscript *i*. The subscript *i* suggests that each cross-section unit has a unique intercept. Additionally, time dummies could also be employed to control for time-specific effects to obtain a two-way fixed effect (Gujarati, 2012). However, the FELSDV approach may be faced with a myriad of challenges (Gujarati, 2008). First, too many dummy variables may be employed when there are a lot of cross-sectional units, says the number of countries in SSA. The model will likely suffer from a dummy variable trap in such a situation. Second, the dummy variables employed in the model are likely to cause multicollinearity. Third, dummy variables are likely to cause the R-square to increase unnecessarily (Verbeek, 2005). Finally, the error term is likely to be inconsistent.

Fixed Effect Within Group (FEWG) model Estimator

Due to the likely inconsistency of the FELSDV estimation, an alternative to estimating fixed effects is to express the values of each variable

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as a deviation from its mean and estimate the model. The model is specified as follows:

$$(Y_{it} - \bar{Y}_i) = \beta_0 + \beta_1(X_{it} - \bar{X}_i) + \ldots \ \beta_n(X_{in,t} - \bar{X}_{in}) + (\alpha_i - \alpha_i) + (\epsilon_{it} - \bar{\epsilon}_i) \ldots(3)$$

It can be observed from equation 3 that the unobserved country-specific effect α_i is eliminated. Since the unobserved country-specific effect is eliminated and the time-specific effect is assumed to be time-invariant, the panel can be pooled together and estimated as a 'grand' regression. The modification in model 3 is termed as the within-group transformation, and the model estimator is called the FEWG estimator (Wooldridge, 2009). More recent econometric methods advocate for using first-differenced variables to eliminate the specific-cross sectional effect (Wooldridge, 2011; Majumder, 2020).

The demeaning approach and the first-difference approach to fixed-effect estimation are based on the assumption that the regressors remain fixed over time so that the cross-section-specific effect for each cross-section unit is wiped out through the demeaning or first-difference transformation. Another advantage of the fixed-effect estimator is that it is robust to unbalanced panel data.

All the fixed effect estimators account for or eliminate the cross-section-specific effects because they assume that the specific effects are subsumed in the error term and may correlate with the regressors. However, in a situation where the specific effects are random and heterogeneous, they may be uncorrelated with the error term (i.e, they may be strictly exogenous), and the fixed effect estimators may produce biased estimates (Wooldridge, 2019). The random effect estimator may be preferred in such a case.

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Random effect estimator

Wooldridge (2019) points out that a key distinguishing feature of selecting between fixed effect and random effect estimators is the evidence that there is no correlation between the regressors and the unobserved effects. Thus, there should be a formal correlation test between the unobserved effect and the regressors. Wooldridge (2019) explains that when there is evidence of no correlation between the unobserved effect and the regressors, the random effect produces more consistent and unbiased estimates than the fixed effect estimator. Therefore, the random effect and fixed effect estimators should be estimated under the hypothesis that the unobserved specific effects are not correlated with the regressors.

The Hausman specification test is a popular method for comparing the fixed and random effect estimators. It is based on the null hypothesis that the unobserved specific effects are not correlated with other regressors. If the null hypothesis is rejected, the fixed effect estimates are more unbiased, but if the null hypothesis is not rejected, the random effect estimates are favoured over fixed effects. Notwithstanding, since the random effect estimator is based on the assumption of strict exogeneity, random effect estimates may be biased when there is theoretical and empirical evidence of endogeneity caused by the persistence of the dependent variable. Also, the fixed effect estimator does not include the possibility of lagged dependent variable. Thus, these static models (i.e., fixed effect and random effect) are likely to produce inconsistent results. There is the need to employ dynamic model estimators when there is theoretical evidence of persistent dependent variable.

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Dynamic Panel Data Models

Dynamic panel data models have gained increasing popularity in a range of economic applications, especially in modelling economic growth (Majumder, 2020). Sometimes, the dependent variable is affected by its past values, making the panel data model dynamic. Therefore, if there is enough theoretical reasoning that the lag of the dependent variable affects the dependent variable, the lagged dependent variable must the included in the model specification to allow for the dynamic adjustment process. This is the case in this thesis, as the dependent variable, banking sector stability, has been found theoretically to be persistent (Delis & Staikouras, 2011; Agoraki, Delis & Pasiouras, 2011). The general dynamic data panel model is specified as follows:

$$y_{it} = \vartheta_0 + \vartheta_1 y_{it-1} + \beta' x_{it} + \mu i + \varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The lagged dependent variable employed as an independent variable incorporates the whole history of the dependent variable, and that any effect of the other regressors on *yit* is conditioned on the history of the dependent. The model specification in equation 4 controls for both short-run dynamics and long-run equilibrium. Including the lagged dependent variable introduces complications for estimating conventional error component models like random and fixed effect estimators. In addition, the lagged dependent variable as a regressor will correlate with the disturbance term because of its construction (Majumder, 2020), creating endogeneity problems in the model. The least-square estimator may produce inconsistent estimates in this case. Thus, the instrumental variable estimation technique is therefore recommended to deal with endogeneity issues.

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Choice of instrumental variable estimators over static estimators (Fixed and Radom effects)

As argued earlier due to the possible endogeneity problems, the fixed and random effect estimators may produce inconsistent estimates. Theoretically, in typical fixed and random effect models, the error term is assumed to be uncorrelated with the explanatory variables (Ullah, Akhtar & Zaefarian, 2018). In a situation where the error term correlates with the dependent variable, the model is deemed to suffer from endogeneity bias. Endogeneity bias may be caused by a number of factors, including, omitted variable bias, simultaneity bias, measurement errors, common method variance bias and inclusion of lagged dependent variable as a regressor (Ketokivi & McIntosh, 2017; Frone, Russell, & Cooper, 1994).

In this study, the inclusion of the lagged variable dependent variable (banking sector stability) leads to a condition where the lagged dependent variable itself may be correlated with the error term. Also, variables like banking sector stability and foreign bank penetration may have reverse causalities because a stable banking sector is likely to attract more foreign bank activities. Thus, theoretically, all the models estimated in the various empirical chapters of this study are likely to suffer from endogeneity problems.

To provide empirical evidence to support this theoretical reasoning, the study employed the following procedure by Ullah, Akhtar and Zaefarian (2018) to detect possible endogeneity problems. To test for endogeneity caused by reverse causality, some key variables like foreign bank penetration, CLCGs and economic freedom each were taken as dependent variables and was regressed

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on all other independent variables, including banking sector stability. Therefore, the following models were estimated using the fixed effect estimator

$$FBP_{it} = \gamma_1 + \gamma_2 BSS_{it} + \gamma_3 CLCGs_{it} + \gamma_4 EFW_{it} + \gamma_5 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \ldots\ldots\ldots (5)$$

$$CLCGS_{it} = \gamma_1 + \gamma_2 BSS_{it} + \gamma_3 FBPs_{it} + \gamma_4 EFW_{it} + \gamma_5 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \ldots\ldots\ldots (6)$$

$$EFW_{it} = \gamma_1 + \gamma_2 BSS_{it} + \gamma_3 FBPs_{it} + \gamma_4 CLCGs_{it} + \gamma_5 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \ldots\ldots\ldots (7)$$

Where *BSS* represents banking sector stability, *FBP* represents foreign bank penetration, *CLCGs* represents a vector of the pro-stakeholder country level corporate governance variables, *EFW* represents the index of economic freedom, Z is a vector of the other determinants of *BSS*. μ_i denotes a set of unobserved country-specific characteristics and η_t represents time-specific characteristics. $\varepsilon_{i,t}$ represents the error term.

Next, the study predicted the residuals from each model using the STATA command "predict new-variable residuals". Finally, the correlations test between the residuals and the independents variables was conducted using the Durbin–Wu–Hausman test. For each of the three models, the null hypothesis of no correlation was rejected and thus the study concluded that correlation exists between the explanatory variables and the error term, thereby providing empirical evidence on endogeneity for all the models estimated in each of the empirical chapters. To test for endogeneity caused by the persistence of the dependent variable, the study employed the following model:

$$BSS_{it} = \gamma_o + \gamma_1 BS_{it-1} + \gamma_2 FBP_{it} + \gamma_3 CLCGs_{it} + \gamma_4 EFW_{it} + \gamma_5 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \ldots\ldots\ldots (8)$$

Similar procedure was followed to test endogeneity as in the case of endogeneity caused by reverse causality and the study found similar results.

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Instrumental Variable Estimators

A possible way to resolve the endogeneity bias is to employ an instrumental variable estimator. An instrument of a variable is uncorrelated with the error term but correlated with the particular regressor. Anderson and Hsiao (1981) recommend using the variable instrumental technique by first removing the fixed effect and instrumenting the lagged dependent variable afterwards. Consider the following difference equation:

$y_{it} - y_{it-1} = \vartheta_1 (y_{it-1} - y_{it-2}) + (\varepsilon_{it} - \varepsilon_{it-1})$ …….. (9)

$\Delta y_{it} = \vartheta_1 \Delta y_{it-1} + \Delta \varepsilon_{it}, t = 2,... T$ ……(10)

The Δy_{it-1} is however correlated with the $\Delta \varepsilon_{it}$. Therefore, Anderson and Hsiao (1981) suggest the use of $y_{it-2} - y_{it-3}$ which is uncorrelated with the error term but correlated with Δy_{it-1}. A common instrumental variable estimator is the Two-stage least-squares instrumental variable estimator (2SLSIV). The 2SLSIV estimator estimates the regression results in two stages. The first stage involves the computation of the estimated values of the endogenous regressors using instrumental variables. The second stage involves using those computed values to estimate a linear regression model of the dependent variable. The findings of the two-stage model are optimum since the estimated values are based on uncorrelated variables with errors.

The two-stage least square procedure proposed by Anderson and Hsiao (1981) may not involve all likely orthogonality conditions (Majumder, 2020). Therefore, although such a procedure can produce consistent estimates, such estimates may not be adequate. Alternatively, Arellano and Bond (1991) propose the use of an instrumental variable technique that consider more orthogonality condition – the general method of moment.

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Arellano and Bond (1991) employed the orthogonality conditions between the disturbance term and the lagged dependent variable to develop a dynamic panel data GMM model. To obtain more instruments, Arellano and Bond (1991) employ the variables' lags as instruments. The assumption is that there is no serial correlation in the disturbance term (Rioja & Valev, 2004). Notwithstanding, Blundell and Bond (1998) argue that the lagged variables may be weakly exogenous and recommends a buildup of a system of equations. Blundell and Bond (1998) propose the system GMM, where the lagged variables are combined with the first difference to create a probable large instrument matrix. By combining the first difference with the level equation, the SGMM solves any possible problems of unit root. Thus, a survey of a preponderance of SGMM studies reveals that it has become a common practice of not testing for unit root (*see* Bliese, Schepker, Essman & Ployhart, 2020).

To assess the adequacy of the GMM results, Arellano and Bond AR (2) is employed to test the absence of serial correlation. Further, the Hansen and the Sargan tests are employed to verify the validity of the instruments. This study employs the System Generalised Method of Moment (SGMM) estimator to estimate all its models. The justification for using the SGMM is provided in the four empirical papers.

Chapter Summary

The general methodology employed in executing this research is presented in this chapter. Specifically, this thesis is premised on positivism research philosophy, explanatory research design and quantitative research approach. The chapter also presented a concise review of various panel

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econometric model estimators and justified why the GMM may be appropriate for estimating all the models in this study.

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CHAPTER FOUR

COUNTRY LEVEL CORPORATE GOVERNANCE STRUCTURES AND BANKING SECTOR STABILITY IN SSA

Abstract

This chapter analyses the effect of country level corporate governance structures on banking sector stability in SSA by employing a sample of 35 SSA economies from 2007 – 2017. The study employed the system Generalised Method of Moment Estimator to estimate the model specification. The results from the system general methods of moments analysis revealed that CLCG structures like corporate board efficacy, strength of auditing and reporting standards, creditor right protection, and regulation of securities and exchanges exhibit a positive influence on banking sector stability. However, the results show a negative effect of ethical behaviour of firms and minority shareholders' protection on banking sector stability. As a further analysis, the study also shows that political institutions positively moderate the relationship between CLCG structures and banking sector stability. In line with the study findings, policy makers in SSA economies can employ CLCG structures as effective tools for achieving banking sector stability when they strengthen their political institutions also.

Introduction

The 2007/2008 financial crisis purportedly have been the worst financial sector failure suffered by the world. The crisis largely affected the banking sector, thereby changing the way institutional structure and banking sector stability measures are evaluated by financial analysts, policy makers and academics (Kamran, bin Mohamed Arshad & Omran,2019). The literature on

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banking sector stability that has been advanced in recent years have been much focused on bank level stability proxies, ignoring the relevance of the stability of the entire banking sector (*see* Kusi et al., 2021; Abdelbadie & Salama, 2019; Clark, Radić & Sharipova, 2018; Kutubi, Ahmed & Khan, 2018; Farag & Mallin, 2017; Bushman, 2016; Bolton, Mehran & Shapiro, 2015). Similarly, studies that have presented the importance of governance structures have kept the discussion at the bank level, much of them focusing on corporate governance structures, and overlooking that the role played by the institutional setting within which the banking sector exist.

This study takes the country-level perspective to examine the relationship between country-level corporate governance structures (CLCGs hereafter) and banking sector stability. Shleifer and Vishny (1997) argues that a corporate governance system at the country-level could be perceived as a particular arrangement of internal and external mechanisms that sets the configuration for the generation of earnings and how all stakeholders benefit from such earnings. These arrangements function in most firms in a particular country and therefore becomes a country-level arrangement in that regard. Therefore Garcia-Osma (2008) explains corporate governance at the country-level as a concept that encapsulates firm level and country-specific mechanisms that protects the interest of shareholders as well as other stakeholders.

Iwanicz-Drozdowska, Altman, Laitinen and Suvas (2014) conducted a conceptual review of 33 papers since the year 2000 and found that z-score have been employed to measure bank stability. However, if such measure is aggregated to the country-level, it then becomes a proxy for banking sector stability (Kasman & Carvallo, 2014). The Global Financial Development

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Database defines Banking sector stability as the extent to which a country's banking sector is away from collapse. Similarly, Ozili (2018) argue banking sector stability to be the absence of banking crises, which is accomplished when all banks in a banking sector are stable. This means that banking sector stability may be characterized as the stability of banks that are interconnected through the participation in syndicated loans and interbank deposits market (Segoviano & Goodhart, 2009).

The emerging body of research cover little of banking sector stability and its institutional determinants. However, evaluating the effect of macro-institutional factors on banking sector outcomes may be more relevant to national policy. Some studies have examined the relationship between country governance and banking sector performance (Krishnan & Kumaran, 2015; Ho et al., 2016; Shen, Shuai, Jiao, Tan, & Song, 2017). These studies argue that banking sector performance is high in economies that are characterized by strong economic and political institutions. Also, it has been documented that good governance limits the extent of political interreference in the banking sector, and eventually enhances the soundness of the banking sector (Shen, Hasan, & Lin, 2014).

Since institutional structures matter to the performance of the banking sector, it is cogent to assume that they shape the stability of the sector also. Ozili (2018) recently demonstrated that institutional structures such as control of corruption and government effectiveness positively affects banking sector stability. Taking a similar approach, this study examines how CLCGs could possibly influence banking sector stability. Shleifer and Vishny (1997) provide a vivid definition of corporate governance:

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> "Corporate governance deals with the ways in which suppliers of finance to corporations assure them of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest in bad projects? How do suppliers of finance control managers?" (Shleifer & Vishny, 1997, p. 737).

In furtherance of this, the Law and finance theory by La porta et al. (1998) argues that investors, in the form of shareholders and creditors, make more finance available to corporations when these investors enjoy some form of legal protection.

Conyon, Judge and Useem (2011) earlier pinpointed the institutional architecture that governed financial reporting, risk management and creditors protection, as a reason for the financial crisis. Consequently, the stakeholder perspective of banking sector governance has become increasingly relevant in enhancing banking system stability (Anginer et al. 2018; Felício et al., 2018). The institutional architecture that is required to enhance banking sector stability may be fundamentally different from that of other sectors. Unlike many other sectors, the depositors, who represent a major stakeholder of the banking sector, pose a very high risk to banking sector stability in periods of panic withdrawals. Apart from depositors, other stakeholders like regulatory agencies and even governments may have some form of interest in the banking sector.

The thinking here is that the stakeholder perspective to banking sector governance should be considered when explaining the relationship between institutional structures and banking sector stability. Sound governance of the banking business require a balance between the maximization of shareholders

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return and protection of other stakeholders' interest (Lassoued, 2018). Accordingly, the ultimate success of the banking sector is a product of a combination of resources provided by stakeholders such as investors, customers, creditors, government, regulators and other stakeholders. Thus, the OECD/G20 principles of corporate governance, which have been adopted by the Basel accord as one of the tools to ensure financial stability admonishes that, banking sector governance must be concerned with ways that encourage various stakeholders of a firm to undertake investments that are optimal. Shareholder oriented form of governance may rather hurt banking sector stability because managers would have to take excessive risk to align their interest with shareholders (Anginer et al., 2018).

The Global competitiveness report provides data on some CLCGs like regulation of securities and exchanges (RESE), protection of minority shareholder interests (POMI), strength of accounting and auditing standards (SARS), efficacy of corporate boards (ECB) and ethical behaviour of firms (EBF). These CLCGs have been employed in financial sectors studies like Agyemang et al. (2019a) and Agyemang et al. (2019b). Some studies gave an earlier theoretical exposition on how some CLCGs matter to the banking sector. After a comprehensive corporate governance literature review, Shleifer and Vishny (1997) concluded that among many other factors, small investors' resistance to exploitation by large investors forms part of the corporate governance evolution. As a governance structure, protection of minority shareholders interest is essential in the banking sector to prevent large investors from expropriating other investors and stakeholders through excessive risk taking.

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In addition, La Porta et al. (1997, 1998), La Porta, Silanes, Shleifer, and Vishny (2002) highlighted the importance of disclosure in governance practices. The extent of financial disclosures will reduce information asymmetry in financial contracts and enhance financial system discipline (Ghosh, 2018). Apart from POMI and proper financial disclosures, corporate ethics could play a vital role in ensuring banking sector stability. Dudley (2014) and Thakor (2015, 2020) highlighted failures of corporate ethics as a contributor to the recent financial crisis. Thus, this study argues that the ethical behaviour of firms in the banking sector could serve as a corporate governance pillar in enhancing banking stability.

The above related literature alludes that weaknesses in CLCGs can partly explain the vulnerabilities in the banking sector. This issue could be more critical in sub-Saharan Africa as available data from the European Investment Bank (2018) report revealed that the stability of banks in SSA economies is in doubt as NPLs continue to rise. Relative to non-financial firms, banks are highly interconnected and their business activities may substantially involve other banks (Mülbert, 2010). This means that a wide range of stakeholders to a large extent can determine the nature of governance of financial institutions (Adams & Mehran 2012).

Nonetheless, cross-country studies examining the nexus between CLCGs and banking sector stability are rare, especially in SSA context. This may partly be attributed to scarcity of comparable cross-country macro panel data that measures corporate governance. The lack of data availability was also partly because most corporate governance data can be found in annual reports, and the heterogeneous nature of the annual reports of several firms across

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several countries makes aggregating the data to the country level quite puzzling. This study attempts to fill this gap in the extant literature by exploring a uniquely rich dataset from the Global Competitiveness report on CLCG to analyse the relationship between CLCGs and bank sector stability.

The study assembles data set covering POMI, ECB, EBF, SARS, RESE and creditor right protection (hereafter, CRP). Even though some attempt has been made to examine CLCGs in the extant finance literature (*see* Kusi, Agbloyor, Simplice & Abor, 2021; Agyemang, Gbettey, Gatsi & Acquah, 2019), the novelty in this study is that no known empirical study examines the relationship between these set CLCGs and banking sector stability in sub-Saharan Africa. Following this, the contribution to the extant literature is in three folds.

First, this study performs a multifaceted analysis of the influence of the various CLCGs on banking sector stability, thus providing the platform for identification of the specific corporate governance factors that are of relevance to the banking sector stability in SSA economies. This study adds to the work of Fang et al. (2014), which is the first to examine how creditor rights protection (as corporate governance pillar), affects financial sector stability in market and transition economies.

Second, this study contributes to that of Kusi et al. (2021), which is the first to examine the relevance of corporate governance systems to bank stability in Africa. Kusi et al. (2021) provides evidence for the institutional theory by examining how some pro-shareholder CLCGs affect bank stability, using bank level data. Instead, this study examines how pro-stakeholder CLCGs matter to banking sector stability, by employing country-level data – country level studies

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are more relevant for national policy. Also, stakeholder perspective of corporate governance is more important to banking sector stability.

Lastly, given the growing importance of corporate governance in the banking stability literature and policy, this study sheds light on the relationship between banking sector stability and governance structures that combines a firm's internal structures with external norms of behaviour. The relationship between CLCGs is particularly relevant for SSA economies, given the relatively lower levels of financial development in the continent, coupled with relatively weaker institutional structures (*see* Abeka, Gatsi, Appiah & Agyemang, 2021). Given the weak nature of political institutions in the SSA region (*see* Abeka et al., 2021), as a further analysis, the study sheds light on the hierarchy of institutions hypothesis by examining whether political institutions matter to the relationship between CLCGs and banking sector stability in SSA economies.

Literature Review and Hypotheses Development

This section presents a literature review on the relationship between each of the CLCGs and banking sector stability. Thus, the literature review covers the effect of POMI, ECB, EBF, SARS, RESE and CRP, and subsequently sets the premise for statement of the hypotheses.

Board Efficacy and Banking Sector Stability

A fledging body of empirical literature as well as regulators' reports have highlighted that, for a board to be effective in ensuring accountability to its shareholders and other stakeholders, the board must be highly independent, must be devoid of CEO duality, must have a high level of gender diversity, education and financial expertise (Akbar, Kharabsheh, Poletti-Hughes, & Shah, 2017; Talavera, Yin, & Zhang, 2018 ; Farag & Mallin, 2017; García-Sánchez,

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García-Meca & Cuadrado-Ballesteros, 2017; Basel Committee on Banking Supervision, 2015). More recently, the stakeholder perspective of corporate governance has been advocated in banking sector governance. Therefore, an effective corporate board is evident in an institutional framework that ensures a high level of accountability to key stakeholders like shareholders and depositors.

The repercussions of the recent financial crisis of 2007–2008 have imposed on economies the need to have corporate board efficacy as an institutional structure because board inefficiencies have been cited as one of the causes of the crisis (Trinh, Elnahass, Salama & Izzeldin, 2020). The role of bank boards is particularly a complex one since they have to satisfy the economic benefits of shareholders on the one hand, and also satisfy that of key stakeholders such as depositors (Vallascas, Mollah & Keasey, 2017; Bolton, Mehran & Shapiro,2015). The implication of this is that bank boards would have to sustain bank risk taking at lower levels and improve banking sector stability (Abdelbadie & Salama, 2019), albeit increasing shareholder value.

This study examines the relationship between corporate board efficacy and banking sector stability. The reasons for this are two-fold. First, the stability of other sectors of the economy is engineered by the banking sector and thus enhancing banking stability is a fiduciary duty that behooves on corporate boards of firms in all sectors of the economy (Abdelbadie & Salama, 2019; Berger, Klapper, & Turk-Ariss, 2009). Krishnan and Lee (2009) contend that board efficacy in the non-financial sector reduces moral hazards caused to firms in the banking sector, and this is very vital to the stability of the banking sector. Again, board efficacy ensures that the banks are able to engage in prudent risk

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taking, and this likely to reduce moral hazard problems to its stakeholders (John, De Masi, & Paci, 2016; Elyasiani & Zhang, 2015). Second, bank boards may be faced with peculiar tasks and uncertainties that may arise in the bid to solve the multiple agency problems of protecting the diverse interest of all stakeholders (Abdelbadie & Salama, 2019). Thus, enhancement of banking sector stability is likely to occur in economies that are characterised by effective corporate boards because the quality of board governance depends on both internal and external factors (Kutubi, Ahmed & Khan, 2017).

Despite the commitment by several SSA economies to ensure that bank boards operate in an effective manner to enhance banking sector stability (*see* Mutarindwa et al., 2020), empirically much is not known whether corporate board efficacy enhances banking sector stability. By focusing on this blind spot, the study tests the hypothesises that:

Hypothesis 1: There is positive effect of corporate board efficacy on banking sector stability.

Strength of Auditing and Reporting Standards (SARS) and Banking Sector Stability

SARS tells the extent to which firms in an economy employ auditing and reporting standards in presenting corporate information to stakeholders. Thus, in an economy where firms do not mostly apply auditing and reporting standard, they will obtain a low score on the SARS. La Porta et al. (2002) explained the relevance of proper disclosures in corporate governance practices. This is because financial disclosures can help remove inadequacies caused by information asymmetry in financial contracts and enhance discipline in financial markets (Ghosh, 2018).

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The banking industry, unlike most other commercial and industrial areas, is heavily regulated. By converting deposits into loans for businesses, commercial banks act as financial intermediaries between depositors and borrowers. Depositors, on the other hand, are unable to properly oversee and regulate bank managers' risk-taking behaviour when there is asymmetric information (Beatty & Liao, 2014). This necessitates the use of reporting and auditing standards that ensure adequate information disclosure between firms in the banking sector and its various stakeholders (Barth et al. 2004).

Financial disclosures can be essential to banking sector stability from two perspectives, that is, the view point of borrowers and that of financial institutions. Intuitively, financial disclosures about borrowers reduce the likelihood of adverse selection by financial institutions (Pagano & Jappelli, 1993). Financial information sharing about borrowers can reduce moral hazard problems and also provide incentives for borrowers to repay their loans as they dread to lose their credit worthiness (Padilla & Pagano, 2000). In addition, financial information sharing about borrowers minimizes over-borrowing risk. This is because annual reports of institutional borrowers are mostly publicly available and lenders are able to get information on all the lending sources of borrowers (Guerineau & Leon, 2018).

On the part of financial institutions like banks, there has been much academic debate on opacity and financial stability. The level of bank risk exposures is usually difficult for the public to judge and thus bank supervisors try to ameliorate this problem by ensuring that banks conform to some level of public disclosure requirements (Jungherr, 2018). This is because transparency in bank balance sheets ensures market discipline in terms of bank risk taking.

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Usually, a bank shows some level of transparency in their financial transactions by making their annual reports public. Thus, it can be concluded that banks that ensure transparency usually believe bank creditors will have a positive view of the bank's portfolio choice. In consequence of this, banks are forced to choose a comparatively safe portfolio to avoid bank runs. Conversely, banks with low level of transparency are of the view that creditors beliefs are not affected by the bank's portfolio choice, and such banks are likely to choose a risky portfolio.

In some instances, bank executives are compelled to manipulate accounting quantities in order to fulfil regulatory capital requirements, even though they may be engaging in excess risk-taking (Chen, 1999; Bushman, 2016). As Beatty and Liao (2014) point out, such risk-taking in reality lowers capital ratios, which is likely to prompt regulatory intervention and unfavourable market reactions. To avoid regulatory intervention, banks for instance, can employ accounting discretion in bank loan loss provisions to maintain regulatory capital and/or earnings (Ahmed et al. 1999). Such manipulations certainly diminish the capacity of financial statements to represent underlying economic reality, hence decreasing the information quality of financial statements (Fan & Wong, 2002; Marquardt & Wiedman, 2004).

In sum, proper disclosures enable banking supervisors to easily monitor the activities of firms in the banking sector and it also allows banks themselves to avoid adverse selection of borrowers. Thus, this study hypothesises that

Hypothesis 2: There is a positive impact of strong auditing and reporting standards on banking sector stability.

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Corporate Ethics and Banking Sector Stability

One of the recent developments in the literature that attempts to identify the causes of the recent financial crisis is the examination of the relationship between corporate ethics and banking stability. Studies like Graaflan and Ven (2011) and Koslowski (2011) gave an earlier theoretical exposition on the trade-off between ethics and the financial crises, especially in a neo-liberal free market economy. In a neo-liberal free market economy, there is a high level of privatisation and deregulation, and this allows market participants to operate with some form of autonomy. Until recently, most of the modern corporate governance literature had focused on shareholder value maximization (Anginer et al., 2018). Thus, this focus provided incentives for firms in a neo-liberal free market economy to act unethical with the aim of increasing shareholder value, hence confirming the self-destructing hypothesis which postulates that capitalism crowds out the foundation of morality in a society (Graaflan & Ven, 2011).

Some empirical studies have identified lack of ethics as a key reason for the recent financial crises. For instance, Thakor (2020) identified that some US banks that were actively involved in the 2007 financial crises had paid fines up to the tune of 243 billion US dollars after the financial crises. Globally, it was expected that banks will pay fines of about 400 billion dollars by the end of 2020 in lieu of poor ethical behaviour that led to the financial crises (Thakor, 2020). Thakor (2016) earlier claimed that one of the reasons for the financial crises was that firms in the banking sector had rather turned their focus on "making money" rather than doing the right thing. Kvalnes and Nordal (2018)

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provided similar evidence that poor ethics was key reason for the financial crises, and that moral hazards were common in free market economies.

This study argues that in a free market economy, banks as wells as its customers are likely to engage in financial transactions that will lead to moral hazards. On the one hand, bank can use deposits to engage in risky lending and investments to earn them above normal returns. On the other hand, bad borrowers could use borrowed funds to engage in business activities that were not communicated to the banks they borrowed from. This may subsequently lead to a high level of non- performing loans, which poses a threat to banking sector stability. To address the issue of poor ethics and its implications for banking sector stability, corporate ethics should be recognized as a "soft governance structure". Additionally corporate ethics may project the interest of all the stakeholders of banks and this may undermine the possibility of banking crises.

The increase in cross-border banking transactions in the SSA continent shows that the market economy of the subregion is becoming more liberalised and thus the need for corporate ethics to ensure banking sector stability must be emphasised. Intuitively, an economy with a high level of corporate ethics is likely to have a banking sector that have a more restrained risk-taking. Also, borrowers-spenders may not engage in activities that will lead to moral hazard problems for the banks. Even in the absence of strong bank regulations, banks in such economy are not likely to pursue economics gains at the expense of risking their stability. This leads to the hypothesis that:

Hypothesis 3: A high level of corporate ethics has a positive effect on banking sector stability.

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Protection of Minority Shareholder Interest (POMI) and Banking Sector Stability

An earlier empirical discussion on investor protection and firm risk - taking behaviour was prompted by Acharya, Amihud and Litov (2011) who described that strong shareholder rights reduce the risk-shifting behaviour that favours shareholders at the expense of bond-holders. This is because there is always a trade-off between shareholders interest and creditors interest (Lepetit et al., 2018). Anginer et al. (2018) explained in order to satisfy the interest of majority shareholders, banks would have to take excessive risk, thereby undermining the stability of the banking sector.

This is likely to be the situation in economies where there is concentrated ownership because concentrated ownership usually breeds conflict of interest between minority shareholders and controlling insiders (Claessens & Yurtoglu, 2013). Thus, protection of minority shareholders could serve as a governance mechanism that alters the appetite of controlling shareholders for excessive corporate risk taking (Koirala, Marshall, Neupane & Thapa, 2020). From the ongoing discussions, minority shareholder interest will be germane to enhancing banking stability. From the arguments advanced in this section, the study provides the following hypotheses:

Hypothesis 4: Protection of minority shareholder interest is positively associated with banking sector stability.

Creditor Right Protection and Banking Sector Stability

The relationship between protection of suppliers of finance and banking sector stability can be explained from the Law and Finance theory put forth by La Porta et al. (1998). La-Porta et al. (1997) explained that corporate

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governance comprises a set of mechanisms which ensures suppliers of finance get return on their investment. Following this theoretical proposition, some empirical studies have examined the relationship between protection of suppliers of finance and firm risk-taking incentives. Suppliers of finance to a bank, primarily consist of creditors (depositors) and the shareholders (Teixeira, Matos, da Costa & Fortuna, 2020).

Teixeira et al. (2020) explained that strong creditor rights ensure security of collateral and thus banks are likely to make lower risk investment with the deposit made by creditors. This is because in times of financial distress, the creditors (depositors) have a higher probability of forcing the repayment of their deposits, or even liquidate the collateral in lieu of repayment. Furthermore, the disciplining hypothesis put forth by Ashraf and Zheng (2015) explains that depositors pose a threat to the banking sector in a strong creditor rights regime because, the depositors can activate clauses to withdraw their funds and even stop lending when managers take excessive risk.

Similarly, it is quite risky for banks to lend to firms operating in economies that are characterised by weak creditor protection (Bae & Goyal, 2009). Conversely, banks that lend to firms in economies that are characterised by strong creditor protection would have taken on a low level of risk. Creditor right protection allows banks to retrieve loans from borrowers, moral hazard problems that could be suffered by the firms in the banking sector. Thus, a positive relationship could be expected between strong creditor rights and banking sector stability (Cole &Turk-Ariss 2018; Fang et al., 2014). This leads to the hypothesis that:

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Hypothesis 5: Creditor Right Protection has a positive effect of banking sector stability.

Regulation of Security and exchanges and banking sector stability

Every financial system consists of financial institutions, financial markets, lender – savers, borrower – spenders and government entities. The interaction among these various actors requires a regulatory body to ensure secure transactions and market discipline among these participants. The role of regulatory bodies has become increasing blatant following the recent financial crises. The regulatory bodies play essential role by (a) ensuring that market participants do no breach the regulatory framework, and (b) reducing the effect of the repercussions of breach of regulatory framework (Krambia-Kapardis, 2016).

Agyemang et al. (2018a) explained that regulators of securities and exchanges are charged with the duty of providing guidelines and ensuring adherence to firm level corporate governance. In most economies, the securities and exchange commission also monitor and ensure compliance of securities as well as listed firms to trading rules and listing rules respectively (Agyemang et al., 2018b). Allen (2017) explains that the core mandate of every security and exchange commission, although very different from that of Central Banks, includes the enhancement of banking sector stability. Regulation of securities and exchanges resolves conflict of interest in the capital raising by companies, and also ensures that transparency in transactions in order to protect market users. Further, the regulation of security and exchanges averts fraud, ensures market integrity, investor protection and smoothens the capital formation process (Agyemang et al, 2018b).

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The oversight role of securities and exchange commission include establishing and maintaining efficient, orderly and fair market standards; facilitating accurate and timely securities transaction settlement; and eventually safeguarding funds and securities (Allen, 2017). As such, market participants like banks, clearing agencies, government and others are able to interact in a regulated environment. Gallagher (2014) stressed the importance of securities and exchanges regulations by explaining that although bank regulations seek to avoid bank failures, the regulation of securities and exchanges promotes prudent risk taking by banks and also institute measures to deal with unforeseen failures.

The regulation of security and exchanges may be important to banking sector stability in SSA countries due to a number of reasons. First, the number of cross-border banking transactions have increased and thus the securities and exchanges in the various SSA economies need to be well regulated to ensure that banks do not engage in highly risky off-balance sheet trading. Second, the fixation of banking supervisors towards their home country banking regulations means that the securities and exchange commissions will have to ensure that expansion of cross-border equity of banks are not for regulatory arbitrage purposes. Agyemang et al. (2018b) contends that securities and exchanges regulate the activities of parties that engage in capital market transactions. Given that the banks dominate capital market trading in most SSA economies, the security and exchange's regulation will be germane in ensuring banking sector stability. From the ongoing discourse, the study hypothesises that:

Hypothesis 6: Effective regulation of security and exchanges has a positive effect on banking sector stability in SSA economies.

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Research Methods

Variables and Measurement

Data

The study sample comprises an unbalanced panel of 33 SSA economies over the 2007-2017 based on data availability of the variables of interest. Excluding CRP data, all the CLCGs data were obtained from Global Competitiveness dataset, with the recent data point for most of the variables being 2017. The data on Creditor right protection is obtained from the World Bank Ease of doing business database. The data on banking sector stability, banking sector performance controls and banking sector structure controls (except information sharing) were obtained from the Global Financial Development Database. The macroeconomic controls and information sharing data are obtained from the World Development Indicators dataset. Data on country-level governance, political institutions, and economic institutions were obtained from the Worldwide Governance Indicator dataset, Polity 5 database and Fraser Institute database respectively. The measurement of all the variables have been employed in extant literature. The variables, their definition and measurement are presented in Appendix A of this chapter.

Model Specification

To assess the relationship between CLCGs and banking sector stability in SSA, we employ country-level data and regress banking sector stability on a number of variables. Based on the variables of interest, the data span was between 2007 – 2017. Following similar country-level studies such as Ozili (2018) the study proposes the following dynamic regression model:

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$$lnBSS_{it} = \alpha + \beta_1 lnBSS_{it-1} + \sum_{i=2}^{7} \beta_i CLCG_{it} + \sum_{i=8}^{10} \beta_i FINS_{it} + \sum_{i=11}^{13} \beta_i PERF_{it} + \sum_{i=14}^{17} \beta_i IQ_{it} + \sum_{i=18}^{19} \beta_i MACRO_{it} + \mu_{it} \ldots\ldots\ldots (1)$$

In equation 1, the β's are the regression coefficients to be estimated, whilst *i* and *t* are the individual countries and years respectively. BSS_{it} is the regressand representing banking sector stability. Following studies such as Tan and Floros (2018), Noman et al. (2018) and Clark et al. (2018), the study includes the lag of banking sector stability to account for its persistence. Even though the z - score is a widely employed measure of financial stability, studies like Jayakumar et al. (2018), Houston et al. (2010) and Ozili (2018) have suggested the use of the natural log of z-score as it is usually skewed. $CLCG$ is a vector of the six CLCG variables. $FINS$ represents a vector of financial structure variables and they include bank concentration, banking sector size and information sharing. $PERF$ is a vector of different aspects of financial sector performance. IQ represents a vector of other institutional quality variables namely country governance, political institutions, economic freedom and legal origin. $MACRO$ represents a vector of macroeconomic variables like inflation and economic growth.

Justification for Control Variables

Banking sector size may exhibit a positive effect on banking sector stability because its sheer size will be able to absorb financial sector shocks. The effect of banking sector concentration ratio on banking sector stability could be negative or positive, due to the competition-stability and competition-fragility theories by Allen and Gale (2005). Different aspects of financial sector performance are relevant to the stability of the sector and therefore all the financial sector performance variables are expected to have a positive

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relationship with banking sector stability (Ozili, 2018; Olson & Zoubi, 2011). For instance, a high liquid reserve means that banks are increasing their liquid reserves as a result of high performance. Therefore, these banks are able to quickly fall on their reserves when the need arises, and thus avoid bank runs that could lead to bank instability (Diamond & Rajan, 2000).

The New Institutional Economists provide valuable lessons that institutional quality matters to all economic activities. Therefore, institutional structures such as country-level governance, economic freedom, political institutions and common law legal origin are expected to exhibit a positive effect of banking sector stability (*see* Klomp & de Haan, La Porta et al., 1998). Lastly, the study controls for inflation and economic growth because some various empirical studies have established that it significantly influences banking sector stability (Feghali, Mora & Nassif, 2021). Economic growth can influence banking sector stability because banking sector becomes very strong in periods of economic prosperity. Inflation negatively affects banking sector stability because increases in general price levels can lead to poor expectations of real future investment returns. This will culminate into poor lending and borrowing decisions, eventually increase loan defaults and banking sector instability (Morgan & Pontines, 2014).

Estimation Strategy

The current level of banking sector stability may be influenced by the previous level (*see* Delis & Staikouras, 2011; Agoraki, Delis & Pasiouras, 2011). The intuition here is that when the banking sector is unstable in a period, it may spend a considerable number of resources in the next period to restructure, and this negatively affects its performance and stability in the next

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period as well. Thus, the study includes the lag of banking sector stability as a regressor. With the inclusion of the lag of banking sector stability (BSS_{it-1}) as a regressor, the model is likely to suffer from endogeneity due to the relationship between BSS_{it-1} and the error term.

When a model suffers from endogeneity, the covariance estimators of the equation specified are not reliable (Anderson & Hsiao, 1981; Arellano, 2003). According to Hall (2004), endogeneity can be caused by simultaneity bias, persistent variables and omitted variable bias. In such instances, the model requires an instrumental variable estimator to estimate consistent and unbiased coefficients. Instrumental variables must be relevant (correlated with the regressors) and must not be correlated with the error term (strictly exogenous).

In line with the arguments of Arrelano and Bond (1990) as well as Blundell and Bond (1995), the System Generalised Method of Moment (SGMM) estimator is appropriate in dealing with endogeneity concerns. This estimator may be applicable in this study because of the persistent nature of banking sector stability, and the fact that there can be reverse causality among banking sector stability, financial performance and financial structure variables. However, the SGMM estimator yields more unbiased estimates when the number of cross-sectional units are more than the time series units as in the case of this study (Arrelano & Bond, 1990). Therefore, this study employs the SGMM estimator for the main line estimation. Specifically, the study employs the two-step SGMM as it is more efficient than the one step-estimator.

To confirm that the SGMM estimates are efficient and consistent, the study considers the Arrelano and Bond autocorrelation [(AR1) and (AR2)]test as well as the Hansen J-statistic. The null hypothesis for the AR tests is that

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there is no autocorrelation. Most importantly, the Hansen J-statistic tests the null-hypothesis that the instruments employed are valid. Therefore, a valid output necessitates that the probability values of the Hansen J-statistics are insignificant at most 10% level (Dovonon & Hall, 2018).

Results and Discussions

Descriptive Statistics

The descriptive statistics of all the variables are presented in Table 1, however the study presents the discussion of the key variables in this section.

Table 1:Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ZScore	360	11.476	5.531	2.548	41.308
SOB	314	4.824	.851	1.989	6.661
ECB	314	4.519	.561	2.337	6.685
SARS	314	4.24	.839	2.134	6.727
EBF	314	3.776	.545	2.402	5.283
POMI	314	4.158	.654	1.998	6.222
RESE	292	3.772	.928	1.803	6.558
CRP	363	55.455	21.115	20	100
GOV	363	-.562	.651	-1.822	.905
PINST	363	3.38	4.938	-9	10
CONCENT	336	71.759	18.629	32.521	100
NIM	358	6.854	3.018	1.162	21.434
BDGDP	338	33.944	57.584	3.785	770.259
BCIR	315	60.897	14.668	24.753	202.041
LIQRES	321	18.946	12.925	2.245	96.717
IS	346	13.536	20.743	0	86.1
GDPPC	363	2071.437	2407.148	172.496	10809.646
INF	360	6.709	6.092	-27.787	44.357
LO	363	.488	.501	0	1
EFW	341	6.305	.741	3.21	8.045

z-score represents the z-score, SOB is soundness of banks, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

The z-score of banks in the sampled SSA economies averaged 11.476 during the study period 2007 – 2017, indicating a low level of banking sector stability over the period. This finding is in line with that of Sarpong-Kumankoma et al. (2018). Among the CLCG variables obtained from the Global Competitiveness Index report, ECB attained the highest average,

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indicating that corporate boards play an invaluable role in corporate governance in SSA economies, and this finding is in line with that of Agyemang et al. (2019). RESE appears to have the lowest average and this is practically due to the underdeveloped nature of the capital markets in SSA economies. CRP attained an average of 55.455 on a scale of 1 – 100 and this indicates a fair level of CRP, implying that its improvement is imperative. PINST attained average score of 3.38 on a scale of -10 to +10, which indicates that the strength of political institutions in our sampled SSA economies is moderate.

Correlation Analysis

For parsimony, Table 2 presents the pairwise correlation on the dependent variable and the key explanatory variables. It is good to note that as a robustness check, the study later employs soundness of banks index (SOB) to assess whether the results are robust to another measure of banking sector stability. This measure has been employed in recent studies like Loo and Iqbal (2019). As expected, the lagged dependent variable, in the case of lnZscore and SOB, exhibits a strong positive correlation (0.929 and 0.933 respectively) with the dependent variable, encouraging the use of the SGMM. Although some are insignificant, the CLCGs mostly exhibit a positive correlation with the two measures of banking sector stability. Also, the CLCGs exhibit significantly high level of pairwise correlation so they do not enter the regression model simultaneously. The detailed correlation matrix on all the variables is presented in Appendix B. Aside the CLCGs, a careful observation of the correlations among all the independent variables in Appendix B reveals no correlations coefficient above 0.80. Thus, in line with the suggestion of Kennedy (2003) and Adams (2015), there is no multicollinearity concerns for the regression.

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Table 2: Correlation matrix among Banking Sector Stability measures and CLCGs

Variables	(lnZscore)	l.lnZscore	SOB	l.SOB	ECB	SARS	EBF	POMI	RESE	CRP
lnZscore	1.000									
L.lnZscore	0.929***	1.000								
SOB	0.125**	0.140**	1.000							
ln.SOB	0.149**	0.137**	0.933***	1.000						
ECB	0.011	-0.020	0.558***	0.536***	1.000					
SARS	0.060	-0.052	0.672***	0.650***	0.737***	1.000				
EBF	0.044	0.030	0.632***	0.629***	0.599***	0.709***	1.000			
POMI	0.035	0.041	0.783***	0.775***	0.680***	0.806***	0.737***	1.000		
RESE	0.109*	0.102*	0.703***	0.662***	0.716***	0.857***	0.673***	0.803***	1.000	
CRP	0.025	-0.021	0.152***	0.159***	0.407***	0.471***	0.286***	0.303***	0.496** *	1.000

*, **, *** represents 10%, 5% and 1% significant level respectively. z-score represents the z-score, SOB is soundness of banks, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

Regression Results

From the regression diagnostics in all the models of Table 3, 4, 5 and 6, the study does not reject the null hypothesis of over-identifying restrictions by Sargan and Hansen tests. Further, the Arellano and Bond of no second order autocorrelation (AR (2)) for all the models are not rejected at 5% level. Table 3 reports the SGMM estimation of equation 1, when the lnZcore is employed as a proxy for banking sector stability. Following the procedure of Agyemang et al. (2019a) and Agyemang et al. (2019b), each of the CLCGs do not enter the same model due to their high pairwise correlations (see Table 2). Thus, each column (column 1 – 6) in the regression results corresponds to the effect of each CLCG structure on banking sector stability.

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Table 3: Regression results on the effect of CLCG structures on banking sector stability in SSA economies

Dependent Variable: lnZscore

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZscore	1.025***	0.847***	0.879***	0.937***	0.885***	0.731***
	(0.068)	(0.070)	(0.043)	(0.046)	(0.102)	(0.099)
ECB	0.198**					
	(0.075)					
SARS		0.124**				
		(0.052)				
EBF			-0.135*			
			(0.066)			
POMI				-0.065**		
				(0.025)		
CRP					0.005**	
					(0.002)	
RESE						0.015
						(0.033)
Control variables						
Financial Structure Variables						
lnCONCENT	-0.003	-0.004**	-0.002	-0.004	0.005**	-0.004***
	(0.002)	(0.001)	(0.002)	(0.013)	(0.002)	(0.001)
lnBDGDP	0.002	0.004**	0.001	0.001	0.001	-0.002
	(0.002)	(0.001)	(0.002)	(0.001)	(0.003)	(0.002)
lnIS	-0.046***	-0.054**	-0.028	-0.052**	-0.040**	-0.013
	(0.011)	(0.021)	(0.020)	(0.021)	(0.020)	(0.018)
Performance Variables						
lnNIM	0.061***	0.053**	0.050***	0.045***	0.048**	0.043***
	(0.008)	(0.015)	(0.011)	(0.009)	(0.022)	(0.008)
lnLIQRES	-0.005**	0.002	-0.002	-0.002	-0.006**	-0.004***
	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)
lnBCIR	-0.301**	-0.173	-0.026	-0.029	-0.034	-0.199**
	(0.121)	(0.137)	(0.143)	(0.072)	(0.130)	(0.089)
Institutional factors						
GOV	0.229*	0.186**	0.302***	0.243**	0.213	0.0826
	(0.121)	(0.077)	(0.097)	(0.093)	(0.139)	(0.080)
PINST	0.019	0.016**	0.017	0.011	0.018**	0.013
	(0.012)	(0.007)	(0.011)	(0.007)	(0.006)	(0.007)
EFW	0.171**	0.201**	0.181	0.158*	0.050	0.176**
	(0.081)	(0.078)	(0.097)	(0.078)	(0.085)	(0.081)
LO	0.223	0.158	0.118	0.0795	0.546**	-0.155
	(0.171)	(0.205)	(0.108)	(0.159)	(0.258)	(0.145)
Macroeconomic Variables						
lnGDPPC	0.0497	0.147	0.183***	0.124	0.0900	0.373***
	(0.140)	(0.100)	(0.057)	(0.071)	(0.116)	(0.075)
lnINF	-0.022***	-0.013**	-0.006	-0.009**	0.004	-0.007*
	(0.007)	(0.005)	(0.004)	(0.004)	(0.006)	(0.003)
_cons	-1.215	0.369	0.592	0.346	-1.755	-1.698**
	(0.927)	(1.263)	(1.246)	(0.934)	(1.047)	(0.703)

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Table 3 continued

N	217	217	217	217	234	217
AR (1) *P-value*	0.004	0.002	0.039	0.008	0.009	0.004
AR (2) *P-value*	0.906	0.638	0.177	0.194	0.144	0.308
Sargan OIR *(P-value)*	0.108	0.108	0.244	0.233	0.306	0.484
Hansen OIR*(P-value)*	0.980	0.949	0.607	0.416	0.920	0.914
Instruments	22	22	22	22	22	22
Groups	28	28	28	28	28	28

Standard errors in parentheses. *, **, *** represents 10%, 5% and 1% significant level respectively. Z-score represents the z-score, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

Columns 1, 2, 3, 4, 5 and 6 are the baseline models with ECB, SARS, EBF, POMI, CRP and RESE as the explanatory variables. Column 1 result shows a significant positive effect of Efficacy of Corporate Boards on banking sector stability, indicating that in an economy where corporate boards are concerned with maximizing the interest of all stakeholders, banks are likely to be stable as compared to economies where corporate boards are focused on maximizing only the interest of shareholders. In this regard, corporate boards in both the banking and the non-banking sectors that ensures prudent risk taking will eventually enhance the stability of the banking sector. This finding corroborates the arguments of Abdelbadie and Salama (2019) as well as John, De Masi, and Paci (2016).

Notably in column 2 of Table 3, it can be observed that the estimated coefficient of Strength of Auditing and Reporting Standards on banking sector stability is positive and significant. Hence the study finds evidence to support hypothesis 2 – namely, there is a positive impact of strong auditing and reporting standards on banking sector stability. Given that auditing and reporting standards are adopted by bank and non-banking firms, information asymmetry that leads adverse selection and moral hazard problems caused by

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bank and non-banking firms to each other are minimized, thereby enhancing banking sector stability.

Contrary to hypothesis 3, the result in column 3 of Table 3 shows a significant negative effect of Ethical Behaviour of Firms on banking sector stability. The result is therefore indicative of the fact that ethical compliance in weak institutional regimes like that of SSA economies may be costly and this may reduce banking sector profitability and stability. Also, the result in column 4 exhibit a significant negative influence of Protection of Minority shareholder Interest on banking sector stability contrary to the 4th hypothesis. On one hand, these findings imply that even though every shareholder has a voice, it could be that, in the sampled SSA economies, minority shareholders' voice is faint in the management and governance of their firms relative to majority shareholders. With this, majority shareholders tend to influence corporate decisions to serve their interests, which may lead to excess risk- taking and consequently banking sector instability. On the other hand, the results could imply there is a low level of concentrated ownership of firms in our sampled SSA economies, and therefore minority shareholders' interest are likely to be aligned with that of majority shareholders. In such economies, banks and non-banking firms (who represent a majority of bank customers) are likely to take unguided risk to maximize shareholders' interest, thereby risking the banking sector stability. This finding corroborates the argument of Anginer et al. (2018).

The result in column 5 depicts a significant positive effect of creditor right protection on banking sector stability and this is in line with hypothesis 5. The results confirm that of Teixeira et al. (2020) who find that strong creditor rights ensure security of collateral and thus banks are likely to make lower risk

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investment with the deposit made by creditors. In addition, this result also implies that in economies characterized by strong credit right protection, borrowers are likely not to create moral hazard problems for banks, since banks can seize the collateral attached to the loan contracts. Finally, in line with hypothesis 6, the results in column 6 depict a positive effect of Regulation of Securities and Exchanges on banking sector stability, although the result is statistically not significant. This could mean that even though banks dominate capital market trading in most SSA economies, the underdeveloped nature of our capital markets weakens importance of security and exchange's regulation to banking sector stability.

As control variables, other institutional factors like political institutions, country level governance, economic freedom mostly exhibits a positive effect on banking sector stability, signifying the importance on institutional factors to banking sector stability. The study controlled for legal origin and find its effect to be mostly positive but statistically insignificant. Even though legal origin influences regulatory compliance and eventually banking sector stability (Ahlering & Deakin, 2007), it may not be relevant to banking stability in an environment of weak regulatory compliance. This finding corroborates that of Mohammed and Muhammed (2017).

Net interest margin exhibits a positive effect on banking sector stability, indicating that increased profitability is important to banking sector stability. The cost-to-income ratio and the liquid reserves ratio both exhibit a negative effect on banking sector stability. The cost-to-income ratio may be negatively related to banking sector stability because that a decrease in banking sector profitability as a result of high expenses (cost-to-income ratio has a mean of

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69%) will eventually weaken the stability of the sector. These findings that banking sector performance is positively related to bank sector stability corroborate that of Ozili (2018), and Albertazzi and Gambacorta (2009). The negative relationship between liquid reserve ratio and banking sector stability could mean that the banks in the sampled SSA economies are likely to take excessive risk when they believe that have adequate liquid reserves, thereby risking their stability.

Banking sector concentration negatively affects banking sector stability, and this indicates that high level of banking sector concentration reduces the level of banking sector competition required to ensure stability of the sector. Banking sector size positively affects stability and this is in line with our earlier argument that an increase in banking sector size increases its ability to absorb financial sector shocks. Information sharing rather exhibits a negative influence on banking stability. In line with the argument of Guérineau and Leon (2019), this finding could imply that greater access to credit history can lead to more credit access for risky borrowers because over-reliance on credit history reduces the effectiveness of loan demand screening. Finally, inflation and GDP mostly exhibit a negative and positive effect on banking sector stability respectively, and this in line with existing studies like Feghali, Mora and Nassif (2021); and Morgan and Pontines (2014).

Testing the Hierarchy of Institutions Hypothesis

The study presents some further analysis to assess the role of political institutions in the relationship between CLCGs and banking sector stability. The Hierarchy of Institutions Hypothesis (HIH) forms the foundation for how a higher-level institution moderates the impact of a lower-level institutions on

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economic outcomes. Therefore, this study assesses whether the efficacy of CLCGs in achieving banking sector stability depends on the political institutions. The reason for this is two-fold. First, due to their political connections, non-financial firms (that represents a major part of bank's loan portfolio) are able to assess huge loans at a very low cost from banks, which eventually reduces banking sector profitability and stability. Further, these non-financial firms may have incentives to cause moral hazard problems with the loans acquired because their political connections weaken the enforcement ability of agencies that are supposed to ensure regulatory compliance and contract enforcement (Haris, Yao, Tariq, Javaid & Ain, 2019; Cheema, Munir & Su, 2016).

Second, financial institutions with political connections are likely to undertake risky investments due to the implicit guarantee of financial bailout in moments of distress (Chen, Liao, Lin & Yen, 2018). Therefore, weak political institutions squeeze the power of stakeholders to monitor bank executives' decision, thereby increasing information asymmetry and moral hazards (Haris et al., 2019). With this, the extent to which CLCGs will effectively fashion out banking sector stability can depend on the strength of the political institutions. The results on the moderating role of political institutions on the relationship between CLCGs and banking sector stability are presented in Table 4.

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Table 4 : Regression results on the moderating effect of political institutions on the relationship between CLCGs on banking sector stability in SSA economies

Dependent Variable: lnZscore

	(7)	(8)	(9)	(10)	(11)	(12)
L.lnZscore	1.175***	0.980***	0.921***	0.971***	0.648***	0.939***
	(0.154)	(0.095)	(0.086)	(0.144)	(0.157)	(0.129)
ECB	0.231***					
	(0.080)					
ECB*PINST	0.041**					
	(0.018)					
SARS		0.197**				
		(0.078)				
SARS*PINST		-0.032**				
		(0.014)				
EBF			0.188**			
			(0.083)			
EBF*PINST			-0.035***			
			(0.013)			
POMI				0.075**		
				(0.035)		
POMI*PINST				-0.011*		
				(0.007)		
CRP					0.237**	
					(0.010)	
CRP*PINST					-0.0030*	
					(0.0017)	
RESE						0.105***
						(0.038)
RESE*PINST						-0.021**
						(0.008)
Financial Structure Variables						
lnCONCENT	-0.005***	-0.001	-0.002*	-0.0032*	0.007	-0.005***
	(0.001)	(0.002)	(0.001)	(0.0016)	(0.004)	(0.001)
lnBDGDP	0.003	0.005*	0.002	0.003	0.0050	0.0006
	(0.002)	(0.0027)	(0.001)	(0.005)	(0.004)	(0.0020)
lnIS	-0.095***	-0.012	-0.0396*	-0.033	-0.0421	-0.0397*
	(0.0301)	(0.023)	(0.0207)	(0.026)	(0.0366)	(0.0203)
Performance Variables						
lnNIM	0.0734***	0.062***	0.040**	0.066***	0.124***	0.059***
	(0.0084)	(0.011)	(0.011)	(0.008)	(0.031)	(0.011)
lnLIQRES	-0.0026	-0.007**	-0.0012	-0.0010	-0.008	-0.004**
	(0.0020)	(0.002)	(0.0034)	(0.0022)	(0.005)	(0.002)
lnBCIR	-0.301**	-0.173	-0.026	-0.029	-0.034	-0.199**
	(0.121)	(0.137)	(0.143)	(0.072)	(0.130)	(0.089)
Institutional Factors						
GOV	0.400***	0.103	0.218	0.136	0.456**	0.210**
	(0.131)	(0.084)	(0.136)	(0.115)	(0.211)	(0.083)

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Table 4 continued

PINST	-0.220**	0.141***	0.0975**	0.0248	0.163**	0.0508**
	(0.084)	(0.048)	(0.0404)	(0.0213)	(0.064)	(0.021)
EFW	0.344***	0.025	0.0971	0.0903	0.006	0.174**
	(0.123)	(0.075)	(0.110)	(0.125)	(0.157)	(0.074)
LO	0.097	0.475***	0.505*	0.762**	0.377	0.410***
	(0.236)	(0.122)	(0.254)	(0.338)	(0.325)	(0.138)
Macroeconomic Variables						
lnGDPPC	-0.0610	0.177	0.182	0.270**	-0.002	0.311***
	(0.196)	(0.0980)	(0.111)	(0.110)	(0.144)	(0.071)
lnINF	-0.032***	-0.013**	0.001	-0.009	-0.0102*	-0.009*
	(0.007)	(0.006)	(0.006)	(0.007)	(0.005)	(0.004)
_cons	0.316	-2.367	-0.214	-0.828	-1.633	-1.329**
	(1.619)	(1.475)	(1.100)	(0.995)	(1.078)	(0.531)
Net Effects of CLCGs	**0.4181**	**0.1836**	**0.0547**	**0.0276**	**0.0701**	**0.0247**
N	217	217	217	217	234	217
AR(1) *(P-value)*	0.064	0.039	0.002	0.006	0.004	0.005
AR(2) *(P-value)*	0.272	0.817	0.927	0.683	0.680	0.675
Sargan OIR *(P-value)*	0.113	0.742	0.195	0.397	0.757	0.103
Hansen OIR *(P-value)*	0.960	0.539	0.149	0.921	0.845	0.488
Instruments	22	22	22	22	22	22
Groups	28	28	28	28	28	28

Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. All the variables are previously defined. We follow the approach suggested by Gujarathi (2009) and employed in recent studies like Agyei, Marfo-Yiadom, Ansong and Idun (2020) to calculate the net effect using partial derivatives. For instance, the net effect of ECB = 0.231+0.0414(4.519) = 0.4181. z-score represents the z-score, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

It can be observed from Table 4 that the introduction of the interaction terms between political institutions and each of the CLCG variables causes the coefficients of some of the CLCG variables that were previously negative to be positive. Further, the already positive coefficients of the CLCG variables in Table 3 attains higher coefficients in Table 4. To avoid ambiguities in the interpretations of the moderating effect, we follow the approach suggested by Gujarathi (2009) and employed in recent studies like of Agyei et al. (2020) to compute the net effects of CLCGs on banking sector stability. The net effects are computed by taking a partial differential of the dependent variable with respect to independent variable and the interaction term. Comparing the unconditional effects of the CLCGs on banking sector stability in Table 3 to their net effect computations in Table 4, the results offer support to the argument

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that political institutions shape corporate governance outcomes in terms of banking sector stability. Specifically, the results depict that ceteris paribus, the stronger the level of political institutions, the stronger the relationship between CLCGs and banking sector stability in the sampled SSA economies will be. Therefore, the results support the HIH.

Robustness Check – Soundness of Bank as a Dependent Variable

To this point, the study has employed *lnZ-Score* as a proxy for banking sector stability. A reasonable question to ask is whether other proxies of banking sector stability could confirm or otherwise the robustness of the main finding. Following the study of Loo and Iqbal (2019), this study employs soundness of banks index in place of *lnZ-Score*. The World Economic Forum's Global Competitiveness Index report recommends the use of bank soundness indicator to measure banking sector stability, since the perception on the soundness of the banks reflects the confidence in the banking sector and consequently its stability. Most of the results as presented in *Appendix* C are much similar to those obtained in Table 3 when *lnZ-score* is employed as the dependent variable, with some few exceptions. The results in Appendix C rather find an unconditional positive effect of POMI and EBF on banking sector stability. This imply that when firms' executives perceive that there is a high level of POMI and EBF in an economy, there are likely to have more confidence in the banking sector.

Appendix D presents the results on the moderating role of political institutions on the relationship between CLCGs and banking sector stability, when SOB is used as the dependent variable. When compared to the results in Table 4, it can be observed that there is an increase in the coefficients of the

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CLCGs and the interaction terms are significant positive. This means that political institutions unequivocally moderate the relationship between each of the CLCGs and banking sector stability positively. This means that the main line results in Tables 3 and 4 are robust to another measure of banking sector stability.

Summary and Conclusions

Pro-stakeholder CLCG structures important institutional factors that are essential to monitoring risk taking incentives of both banks and non-banking institutions, and are therefore required to ensure banking sector stability. This study uncovered the effect of pro-stakeholder CLCGs like ECB, EBF, SARS, POMI, CRP and RESE on banking sector stability in the context of SSA. As a further analysis, the study provided evidence for the HIH, by examining the moderating role of political institutions in the relationship between CLCGs and banking sector stability. The estimates from the SGMM reveals that strengthening of CLCG structures like ECB, SARS, CRP and RESE will enhance banking sector stability in SSA. However, the results show a negative effect of EBF and POMI on banking sector stability, signifying that ethical compliance is costly, and minority shareholders interest are dominated by that of the majority respectively, in the sampled SSA economies.

Further, the results support the HIH and this imply that even though banking sector stability may depend on pro-shareholder CLCGs, the higher level of banking sector stability may depend on strong political institutions also. In line with this, policy makers in SSA economies can employ CLCG structures as effective tools for achieving banking sector stability when they strengthen their political institutions also.

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Appendices to Chapter Four

Appendix A: Variables, Definition, Measurement and Literature Source

Variable	Definition and Measurement	Literature Source
Banking Sector Stability	"It captures the probability of default of a country's banking system. Z-score compares the buffer of a country's banking system (capitalization and returns) with the volatility of those returns. It is estimated as: Zit = $\frac{ETA_{it} + ROA_{it}}{\sigma_{ROA}}$ Where ETA is Equity to Asset ratio, ROA is Return on Assets, and σ_{ROA} is standard deviation of return on assets, calculated for country-years with no less than 5 bank-level observations. ROA, equity, and assets are country-level aggregate figures. Calculated from underlying bank-by-bank unconsolidated data from Bankscope and Orbis."	Ozili (2018)
EBF, ECB, POMI, RESE, SARS	The CLCG data is measured on a scale of 1 – 7, where 1 means that the CLCG indicator is extremely weak and 7 means that CLCG indicator is extremely strong.	Agyemang et al. (2019a; 2019b)
CRP	It is defined as the legal rights for creditors, measured on 0 to 100, where 0 represents the worst legal rights performance and 100 the legal rights performance.	Fang et al. (2014)
Banking Sector Size	Defined as how large the banking sector of an economy is relative to the whole economy. Measured by the ratio of bank deposit to GDP.	Ozili (2018)
Banking Sector Concentration	Measured as "Banking sector Assets of three largest commercial banks as a share of total commercial banking assets". Economic theory suggests that a high level of concentration reduces competition and thus represent an inverse measure of competition	Ozili (2018)
Information Sharing	Defined as the extent to which borrowers' credit information are shared within an economy. It is measured as credit registry/bureau coverage (% of adults)	Tchamyou and Asongu (2017)
Net interest margin	Defined as "Accounting value of bank's net interest revenue as a share of its average interest-bearing (total earning) assets". The numerator and denominator are aggregated on the country level before division.	Ozili 2018
cost-to-income ratio	Defined as "Operating expenses of a bank as a share of sum of net-interest revenue and other operating income". The numerator and denominator are aggregated on the country level before division.	Olson and Zoubi, (2011)
liquid reserve ratio	Defined as the extent to which banks can employ easily convertible to cash assets to fulfill customer deposit obligations. Measured as the ratio of Liquid assets to deposits and short-term funding. The numerator and denominator are aggregated on the country level before division.	Diamond and Rajan (2000)

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Appendix A continued

Governance	Defined as "the extent to which the state and citizens have respect for institutions that govern economic and social interactions among them". Measured by an index of the Kaufman's six worldwide governance indicators	Agbloyor , Gyeke-Dako, Kuipo and Abor (2016)
Economic Institutions	Defined as "institutions that determine the incentives of and the constraints on economic actors, and shape economic outcomes".	Acemoglu et al. (2005).
Political Institutions	Defined as the extent to which political decisions favors democracy. Constructed on a scale of – 10 to +10, [−10 = political decisions in the country does not reflect democracy and +10 = political decisions in the country mostly reflect democracy country]	Ehighebolo and Braimah (2020)
Legal Origin	Legal origin is the legal traditions that shape lawmaking and adjudication of dispute in an economy. Dummy variables where 1= common law and 0 = civil law	La Porta et al. (1998)
Inflation	"Reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly". Measured by changes in CPI.	Kim et al. (2010)
GDP per Capita	Measured by the GDP of an economy as a ratio of population	Guryay, Safakli, and Tuzel (2007)

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Appendix B: Pairwise correlations

Variables	(lnZscore)	SOB	ECB	SARS	EBF	POMI	RESE	CRP
lnZscore	1.000							
SOB	0.125**	1.000						
ECB	0.011	0.558***	1.000					
SARS	0.060	0.672***	0.737***	1.000				
EBF	0.044	0.632***	0.599***	0.709***	1.000			
POMI	0.035	0.783***	0.680***	0.806***	0.737***	1.000		
RESE	0.109*	0.703***	0.716***	0.857***	0.673***	0.803***	1.000	
CRP	0.025	0.152***	0.407***	0.471***	0.286***	0.303***	0.496***	1.000
GOV	0.149***	0.627***	0.353***	0.538***	0.684***	0.519***	0.564***	0.093*
PINST	0.059	0.268***	0.204***	0.246***	0.216***	0.191***	0.326***	0.194***
lnCONCENT	-0.093*	-0.116**	-0.166***	-0.185***	-0.074	-0.178***	-0.356***	-0.519***
lnNIM	0.257***	0.194***	-0.002	-0.069	-0.048	-0.133**	-0.036	0.227***
lnBDGDP	0.134**	0.300***	0.132**	0.307***	0.323***	0.321***	0.282***	-0.089*
lnBCIR	-0.064	-0.122**	-0.019	-0.120**	-0.116*	-0.086	0.008	0.028
lnLIQRES	-0.148***	-0.121**	-0.149**	-0.168***	-0.049	-0.172***	-0.185***	-0.145***
lnIS	0.046	0.343***	0.432***	0.695***	0.499***	0.449***	0.611***	0.353***
lnGDPPC	0.288***	0.485***	0.320***	0.569***	0.467***	0.462***	0.577***	0.204***
lnINF	-0.089*	0.042	0.099*	0.064	-0.003	0.059	0.083	0.146***
LO	-0.137***	0.220***	0.316***	0.493***	0.260***	0.307***	0.475***	0.668***
EFW	0.190***	0.463***	0.378***	0.448***	0.542***	0.382***	0.555***	0.380***

	GOV	PINST	CONCENT	lnNIM	lnBDGDP	lnBCIR	lnLIQRES	lnIS	lnGDPPC	lnINF	LO	EFW
GOV	1.000											
PINST	0.511***	1.000										
lnCONCENT	-0.102*	-0.198***	1.000									
lnNIM	-0.206***	-0.042	0.014	1.000								
lnBDGDP	0.178***	0.172***	-0.002	-0.037	1.000							
lnBCIR	-0.192***	-0.006	-0.083	0.017	-0.125**	1.000						
lnLIQRES	-0.087	-0.091*	0.045	0.220***	0.013	-0.082	1.000					
lnIS	0.483***	0.181***	-0.152**	-0.053	0.060	0.024	-0.038	1.000				
lnGDPPC	0.572***	0.220***	-0.177***	-0.402***	0.132**	-0.053	0.022	0.715***	1.000			
lnINF	-0.089*	0.024	0.014	0.387***	0.045	-0.090	0.093*	-0.105*	-0.264***	1.000		
LO	0.132**	0.137***	-0.191***	0.453***	0.042	0.005	0.033	0.431***	0.118**	0.269***	1.000	
EFW	0.676***	0.339***	-0.399***	0.057	0.384***	-0.070	-0.080	0.394***	0.381***	0.061	0.400***	1.000

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Z-score represents the z-score, SOB is soundness of banks, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions

Source: Field data (2022)

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Appendix C: Regression results on the effect of CLCG structures on banking sector stability in SSA economies

Dependent Variable: SOB

	Model (13)	Model (14)	Model (15)	Model (16)	Model (17)	Model (18)
L.SOB	0.727***	0.643***	0.879***	0.347***	0.759***	1.127***
	(0.068)	(0.084)	(0.083)	(0.079)	(0.087)	(0.063)
ECB	0.301**					
	(0.143)					
SARS		0.553***				
		(0.116)				
EB			0.591***			
			(0.126)			
POMI				0.973***		
				(0.130)		
RESE					0.440***	
					(0.132)	
CRP						0.017***
						(0.004)
Financial Structure						
lnCONCENT	0.005	-0.007	0.005	-0.005	0.010	-0.010**
	(0.005)	(0.006)	(0.005)	(0.006)	(0.008)	(0.005)
lnBDGDP	0.007	0.004	0.005**	0.003	0.003	0.011***
	(0.004)	(0.005)	(0.002)	(0.004)	(0.004)	(0.003)
lnIS	-0.301***	-0.123**	-0.214***	-0.127***	-0.253***	-0.168***
	(0.068)	(0.047)	(0.071)	(0.037)	(0.061)	(0.060)
Performance Variables						
lnNIM	0.054**	-0.033	0.013	0.043*	0.027	0.008
	(0.021)	(0.021)	(0.031)	(0.021)	(0.030)	(0.033)
lnLIQRES	-0.031***	0.005	-0.011**	0.002	-0.017***	-0.028***
	(0.011)	(0.005)	(0.004)	(0.004)	(0.006)	(0.007)
lnBCIR	-0.295	-0.448**	-0.133	-0.006	-0.460	-0.035
	(0.452)	(0.188)	(0.332)	(0.262)	(0.408)	(0.259)
Institutional factors						
GOV	-0.679	0.785**	-0.735***	0.504**	0.329	-0.385*
	(0.648)	(0.311)	(0.250)	(0.238)	(0.270)	(0.201)
PINST	0.024	0.038	0.006	0.065**	0.040	0.053**
	(0.054)	(0.026)	(0.022)	(0.026)	(0.044)	(0.023)
EFW	0.818**	0.465	0.112	0.204	0.052	0.376
	(0.370)	(0.341)	(0.287)	(0.287)	(0.278)	(0.362)
LO	0.691	0.0681	0.031	0.304	0.907**	0.021
	(0.404)	(0.410)	(0.345)	(0.347)	(0.418)	(0.372)
Macroeconomic Factors						
lnGDPPC	0.590*	0.111	0.139	0.348**	0.283	0.023
	(0.302)	(0.163)	(0.282)	(0.151)	(0.231)	(0.241)
lnINF	-0.016	-0.005	-0.005	-0.001	-0.033**	0.011
	(0.024)	(0.005)	(0.011)	(0.010)	(0.012)	(0.009)
_cons	-11.65***	2.535	-3.572	1.534	-4.149**	-5.002**
	(3.896)	(2.383)	(2.339)	(2.377)	(1.895)	(2.308)
N	209	209	209	209	209	209
AR(1) (p-value)	0.064	0.039	0.002	0.006	0.005	0.004
AR(2) (p-value)	0.272	0.817	0.927	0.683	0.675	0.680
Sargan OIR(p-value)	0.113	0.742	0.195	0.397	0.103	0.757
Hansen OIR(p-value)	0.960	0.539	0.149	0.921	0.488	0.845
Instruments	22	22	22	22	22	22
Groups	28	28	28	28	28	28

Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. All the variables are previously defined. SOB is soundness of banks, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to

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GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

Appendix D: Regression results on the moderating effect of political institutions on the relationship between CLCG structures on banking sector stability in SSA economies

Dependent Variable: SOB

	Model (19)	Model (20)	Model (21)	Model (22)	Model (23)	Model (24)
L.SOB	0.978***	0.719***	0.768***	0.292***	0.845***	1.162***
	(0.078)	(0.080)	(0.067)	(0.083)	(0.087)	(0.111)
ECB	0.366***					
	(0.090)					
ECB*PINST	0.098***					
	(0.019)					
SARS		0.713***				
		(0.227)				
SARS*PINST		0.058				
		(0.039)				
EBF			0.785***			
			(0.176)			
EBF*PINST			0.054*			
			(0.032)			
POMI				1.120***		
				(0.191)		
POMI*PINST				0.015		
				(0.035)		
RESE					0.477***	
					(0.163)	
RESE*PINST					0.065**	
					(0.028)	
CRP						0.021***
						(0.005)
CRP*PINST						0.037
						(0.226)
Financial Structure						
lnCONCENT	0.007	-0.011	-0.001	-0.002	-0.021***	0.009*
	(0.003)	(0.008)	(0.005)	(0.007)	(0.006)	(0.005)
lnBDGDP	-0.015***	-0.004	-0.004	-0.012**	-0.006	0.010***
	(0.004)	(0.006)	(0.005)	(0.006)	(0.006)	(0.003)
lnIS	-0.159**	-0.125**	-0.241***	-0.139**	-0.307***	-0.114
	(0.063)	(0.053)	(0.048)	(0.047)	(0.079)	(0.065)
Performance Variables						
lnNIM	-0.042*	-0.021	-0.003	-0.034	0.010	-0.016
	(0.022)	(0.022)	(0.033)	(0.024)	(0.037)	(0.038)
LIQRES	0.001	0.0017	0.011	0.003	0.0180***	0.0291**
	(0.007)	(0.006)	(0.007)	(0.005)	(0.005)	(0.010)
BCIR	-0.427	0.493**	0.464	0.378	-0.146	0.203
	(0.388)	(0.233)	(0.364)	(0.388)	(0.282)	(0.388)
Institutional factors						
GOV	-0.345	1.210***	-0.044	0.162	-1.824***	-0.272
	(0.340)	(0.331)	(0.356)	(0.333)	(0.549)	(0.345)
PINST	0.484***	-0.121	0.220**	-0.097	0.146**	0.056
	(0.0913)	(0.114)	(0.106)	(0.083)	(0.062)	(0.094)
EFW	0.534**	0.598*	0.446	0.511	0.059	0.089
	(0.210)	(0.320)	(0.233)	(0.378)	(0.335)	(0.309)

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Appendix D continued

LO	0.076	0.254	0.351	0.570	0.585	0.131
	(0.264)	(0.571)	(0.705)	(0.430)	(0.452)	(0.660)
Macroeconomic Variables						
lnGDPPC	0.141	-0.111	-0.218	-0.333**	0.827***	-0.136
	(0.193)	(0.178)	(0.225)	(0.129)	(0.261)	(0.292)
lnINF	0.010	0.001	-0.016	-0.012	-0.009	-0.001
	(0.011)	(0.006)	(0.016)	(0.009)	(0.013)	(0.013)
_cons	-4.123*	3.291	-4.418	-2.266	-9.616*	-3.654
	(1.838)	(2.217)	(2.857)	(3.291)	(3.761)	(2.242)
N	209	209	209	209	209	209
AR (1) (p-value)	0.003	0.039	0.002	0.703	0.062	0.591
AR (2) (p-value)	0.308	0.817	0.927	0.343	0.459	0.134
Sargan OIR (p-value)	0.117	0.742	0.702	0.114	0.169	0.580
Hansen OIR (p-value)	0.107	0.539	0.910	0.207	0.496	0.815
Instruments	22	22	22	22	22	22
Groups	28	28	28	28	28	28

Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. All the variables are previously defined. SOB is soundness of banks, ECB is efficacy of corporate boards, SARS is strength of auditing and reporting standards, EBF is ethical behaviour of firms, POMI is protection of minority shareholder interest, RESE is regulation of security and exchanges, CRP is creditor right protection, GOV represents Governance, PINST represents political institutions, CONCENT represents banking sector concentration, NIM represents Net interest margin, BDGDP is bank deposit to GDP ratio, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, IS represents information sharing, GDPPC represents GDP per capita, INF represents Inflation, LO is legal origin and EFW represents economic freedom Index of the world, which is a proxy for economic institutions.

Source: Field data (2022)

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CHAPTER FIVE

ECONOMIC INSTITUTIONS, POLITICAL INSTITUTIONS AND BANKING SECTOR STABILITY IN SUB-SAHARAN AFRICA

Abstract

This chapter assesses the effect of economic and political institutions on banking sector stability in Africa. To accomplish this, the study employs a panel data of 33 SSA countries from 2007 to 2017. Based on the dynamic nature of the model, the study estimated the results with SGMM. Generally, the results point out that strong economic institutions increase the level of banking sector stability. When the study regressed banking sector stability on the several measures of economic institutions, the study finds that legal system and property right, regulations and sound money exhibit an unconditional positive effect on banking sector stability. However, the size of government and freedom to trade internationally show an unconditional negative effect of banking sector stability. Finally, the study finds that political institutions positively moderate the relationship between economic institutions and banking sector stability. Therefore, it is recommended that governments in SSA economies strengthen both economic and political institutions to enhance banking sector stability.

Introduction

The importance of a stable financial sector to economies cannot be overemphasised. The financial sector ensures efficient allocation of financial resources by facilitating the transfer of domestic and foreign financial resources from surplus spending units to deficit spending units to undertake productive investments in an economy, thereby increasing overall economic growth and efficiency. To the extent that the financial sector is stable, it can perform these

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functions well and exhibit a first-order impact on growth (Ijaz, Hassan, Tarazi & Fraz, 2020; Creel, Hubert & Labondance, 2015). Indeed, following a series of financial crisis suffered by developing economies, the stability of the financial sector has grown of increasing importance to policymakers, academics and policymakers around the globe.

A stable financial sector may exhibit three core characteristics. First, it can facilitate efficiently the exchange of contracts and provision of services to allow the desynchronisation of income and consumption streams of economic agents (Danthine, & Donaldson, 2014). Second, it can assess and manage financial risks accurately (Schinasi, 2004); and lastly, it should be able to effectively absorb financial and real economic shocks (Ijaz et al., 2020). The increase in global financial integration has resulted in greater access to funds, but it has also increased the sensitivity and susceptibility of developing economies to financial shocks from the external environment (IMF, 2016). In this regard, concerns exist about whether the increasing financial integration has grown in tandem with institutional frameworks in developing economies to ensure the resilience of their financial sectors.

Demirguc-Kunt and Detragiache (2002) earlier highlighted that too much emphasis had been placed by regulators on micro-prudential and macro-prudential regulations to enhance banking sector stability, thereby neglecting structural and institutional factors that affect the stability of the sector. Therefore, one of the arguments on institutional controls is whether to allow economic freedom or to strictly regulate the banking sector (Sarpong-Kumankoma, Abor & Aboagye, 2020). Chortareas, Girardone and Ventouri (2013) point out that a high level of economic freedom may increase the

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likelihood of economic agents to assume greater risk, and therefore the banking sector must be tightly regulated. Conversely, Beck, Demirguc-Kunt and Levine (2006) maintain that economic freedom in the banking industry reduces concentration in the sector, and enhances efficiency, profitability and stability.

Recently, Ozili (2018) demonstrate that most African economies have suffered frequent financial crisis in the past few years, and the banking sector has pioneered these crises. This is because banks represent the most vital institutions in the financial sector of sub-Saharan Africa, since other aspects of the financial system, such as financial markets, are either nonexistent or underdeveloped (Sarpong-Kumankoma et al., 2020; Ozili, 2018). Institutional failures also appear to be a predominant hindrance to the robustness of the banking sector of SSA economies (*see* Sarpong-Kumankoma et al., 2020; Agyemang, Gatsi & Ansong, 2018; Ozili, 2018).

Scholarly discussions on the relevance of institutional structures to the banking sector seem to have been built on three lines of thought. One is an institutional framework that structures economic incentives and protects private property from expropriation by the power elites in financial contracts (*see* La Porta et al., 1998). The other is institutions that economise transaction costs of enforcing contracts and thus, deter participants in financial contracts from reneging on their contractual obligations (Agyemang et al., 2018). Finally, those that shape the behaviour of economic and political actors in the financial sector (Wang & Sui, 2019).

Following the lead of the law and finance arguments by La Porter et al. (1998), a potpourri of institutions such as the rule of law, government effectiveness, political stability and absence of violence, control of corruption,

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regulatory quality, voice and accountability, and country-level corporate governance have been argued to be relevant for the financial sector of developing economies (*see* Agyemang, Gbettey, Gatsi, & Acquah, 2019). This study aligns itself with the arguments of North (1990), draws theoretical inspiration from the 'hierarchy of institutions' of Acemoglu, Johnson, and Robinson (2005), and extends the roles of institutions discussed in the latter in promoting banking sector stability.

Institutions can shape the behaviour of economic agents in the financial system. In particular, Acemoglu et al. (2005) advertised the critical interrelationships between economic institutions and political institutions as drivers of growth. In a developing market context, these institutions have been argued to be fundamental for economic growth and other aspects of the economy such as the banking sector (*see* Olaoye, & Aderajo, 2020). Thus, in the wake of rising levels of economic and financial integration in developing economies such as SSA, this study seeks to shed light on the implication of the interplay between economic and political institutions on the banking sector, within the framework of the hierarchy of institutions hypothesis.

Fundamentally, "economic institutions determine the incentives of and the constraints on economic actors, and shape economic outcomes" (Acemoglu et al., 2005, p. 397). Thus, economic institutions are strong in economies where economic agents have freedom to make personal choices, freedom of exchange, free markets that allow competition, with government to provide protection of economic agents' property (Gwartney & Lawson, 2003). Economies with robust economic institutions are associated with high equity market returns (Williamsen & Mathers, 2011), high bank performance (Asteriou, Pilbeam, &

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Tomuleasa, 2021), high bank interest margins (Sufian, & Hassan, 2011), low equity market volatility (Eldomiaty et al., 2016) and lower sovereign bond default risks (Roychoudhury & Lawson, 2010).

Strong economic institutions allow financial institutions like banks to optimise on economies of scale through financial innovations and promote banks' incentives to maximise revenue from non-traditional income sources. This ultimately enables firms in the banking sector to build profit buffers sufficient to withstand unanticipated shocks. However, it has been argued that economic institutions granting enormous financial freedom can spur the fragility of banking sector. Due to fewer restrictions and increased competition, strong economic institutions can incentivise bank borrowers as well as the banks themselves to take on high-risk levels, which can lead to moral hazard problems and subsequently lead to banking sector instability (Sarpong-Kumankoma et al., 2020). Thus, promoting a nuanced understanding of the specific economic institutions that matter for banking sector stability is necessary.

In line with existing studies such as Gwartney and Lawson (2003), this study has assembled five economic institutions indicators from the Frasier institute, and they include Government size, Legal System and Property Rights, Sound Money, freedom to trade internationally, and Regulations. At a glance, these economic institutions indicators provide several reasons to suspect that countries with strong economic institutions create a conducive environment for economic prosperity (Azman-Saini, Baharumshah & Law, 2010) and thus are likely to have a robust banking sector. For instance, when the legal system and property rights are strong in an economy, borrowers are likely not to renege on loan contracts to cause moral problems that can derail the banking sector's

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stability. Also, a high level of trade freedom could provide diversification options for banks, reduce their level of risk-taking and eventually enhance banking sector stability (Rahman, Begum, Ashraf, Masud & Kaium, 2020).

Aside from understanding the specific economic institutions that matter for banking sector stability, assessing the conditions under which economic institutions could further enhance banking sector stability is important. This will provide more insight into the opposing views on the relationship between economic institutions and banking sector stability. Harkati, Alhabshi and Kassim (2019) argue that economic institutions incentivise banks and other economic agents to undertake risky transactions, especially when the institutional environment allows opportunistic motives of risk-taking.

Therefore, resource allocation through economic institutions may be biased towards those with greater political power usually determined by political institutions (Olaoye & Aderajo, 2020). This study contends that the extent to which economic institutions can effectively fashion out banking sector stability may depend on political institutions. Such argument stems from the hierarchy of institutions hypothesis (HIH) proposed by Acemoglu et al. (2005), which posits that the extent to which economic institutions can achieve economic outcomes depends on political institutions.

The central question this study seeks to answer is whether political institutions affect the relationship between economic institutions and banking sector stability. Given that the study setting is SSA, this study differentiates itself from existing literature in some ways. First, as different from Sarpong-Kumankoma et al. (2020) that focuses only on financial freedom, this study employs a broad array of economic institutions indicators to provide an

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understanding of how several aspects of economic institutions matter to banking sector stability. Second, this study test for the HIH, a theoretical argument by Acemoglu et al. (2005) which has been ignored in empirics, in the relationship among economic institutions, political institutions and banking sector stability in SSA. Finally, this study adds to the literature on New Institutional Economics in the context of developing economies.

The study is conducted in the SSA context because the level of economic institutions continues to strengthen in the region (*see* Abeka et al, 2021; Ozili, 2018), and this has led to increased relaxation of restrictions on economic agents' activities. Thus, examining the implication of this development on the banking sector's stability is worthwhile. In addition, as the restrictions continue to be relaxed alongside with strengthening of economic institutions (*see* Sarpong-Kumankoma et al., 2020), there is a need to examine the conditions under which the increased freedom does not hurt banking sector stability in SSA. Moreover, the region is known for weak political institutions, and thus strengthening the political institutions will be important to avoid any unintended consequences of strengthening economic institutions.

The rest of the chapter is organised as follows: The next section presents a brief theoretical and empirical review that leads to the development of hypotheses which are later tested in the study. The section afterwards presents the econometric methodology employed in the study's empirical analysis. Next, the study presents the results and discussion, and finally conclusion and recommendations for policy and practice.

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Literature Review

The New Institutional Economists proposes that institutions, whether micro-level or macro-level, are structured to shape economic activities in the area of politics, finance, socio-culture etc. This is because the micro-level approach to institutions (by Williamson, 2000) explains how economic agents at the micro-level structure and organise their actions and transactions within the macro-institutional environment proposed by North (1990). Therefore Acemoglu et al. (2005) explained that a hierarchy may exist in institutional structures and that the extent to which an institutional structure may be effective in achieving economic outcomes may depend on another. The following sub-sections provide the empirical review of the relationships among economic institutions, political institutions and banking sector stability.

Economic Institutions and Banking Sector Stability

The Fraser Institute define economic institutions as "the extent to which governments provide protection for privately owned property, build a legal system that treats all equally, ensure even-handed enforcement of contracts, and a stable monetary environment, keep taxes low, refrain from creating trade barriers, and rely more fully on markets rather than government spending and regulation to allocate resources". Thus, the aspects of economic institutions include the Legal system and property rights, sound money, freedom to trade internationally, size of government and regulations.

The McKinnon-Shaw financial repression argument posits that weak economic institutions are usually characterised by intense government involvement in the financial sector, and this stifles innovation and banking sector development (Bencivenga & Smith, 1992). Also, when the government

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decisions dominate the banking sector, the government can indirectly influence the interest rates – pushing or pulling them away from market-clearing levels (Owuondi, Mbassi & Owoundi, 2021). As a consequence, banks may invest in risky portfolios to compensate for declining margins, thereby risking the banking sector's stability. In the next sub-sections, the study presents a literature review on the relationship between each indicator of economic institutions and banking sector stability.

Legal System and Property Rights (LSPR) and Banking Sector Stability

Since LSPR offer protection for all free-market exchanges, it is a vital indication of economic institutions and serves as the foundation for all other indicators. This is because, without LSPR protection, economic actors' trust in their ability to exchange resources freely is severely eroded. In other words, when economic actors lack trust in contract enforcement and do not have the legal authority to protect their property, their motivation to engage in productive activity is harmed. La Porter et al. (1998) therefore contend that rules and enforcement mechanisms are vital to the financial sector.

Pistor, Raiser and Gelfer (2000) later explained that a good legal system cannot substitute for poor enforcement of propriety rights, and that both must work in tandem to ensure the development of the financial sector. This means that economies that enforce laws regarding an exchange and laws that protect their financial resources are likely to build confidence in the banking system, which is essential to banking sector stability. There are good reasons to corroborate the effect of LSPR on banking sector stability. First, in an environment characterised by strong LSPR, banks' borrowers may not renege on loan contracts. Second, the banks are not likely to undertake risky

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investments that may create moral hazard problems for depositors. Third, the judicial system can ensure the seizure of loan collateral when borrowers default on loan arrangements. From the foregoing arguments, this study hypothesises that:

Hypothesis 1: There is a significant positive effect of LSPR on banking sector stability

Government Size and Banking Sector Stability

Government decisions will obviously dominate that of other economic agents when markets are dominated by government spending relative to other economic agents. Thus, economies that have their markets dominated by government spending will have low ratings in government size and vice versa. The government may dominate the banking sector for developmental and political purposes (Gerschenkron, 1962; Kornai, 1979; Shleifer & Vishny, 1994). The government could contribute to the development and stability of the banking sector through the central bank by instituting policies to reduce transaction costs, correct market failures, and reduce adverse selection and its associated moral hazard problems (Gerschenkron, 1962; Kornai, 1979).

The advocates of the political purposes rather postulate that government dominates the banking sector to score political points for itself. Shleifer and Vishny (1994) point out that when the government intervenes in the banking sector for political reasons, it is likely to institute policies that favour their political affiliates, who in return provide them votes, bribes and political contributions. The political purpose of government usually thrives in the banking sector of economies characterised by inadequate property rights,

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because there will be minimal competition in the banking sector to iron out any government inefficiencies (La Porta et al., 2002).

Whether for political purposes or developmental purposes, too much involvement of government in the banking sector can lead to inefficiencies that will hamper banking stability. Gerschenkron puts it this way: "There is no doubt that the government as an *agens movens* of industrialisation discharged its role in a far less than perfectly efficient manner. Incompetence and corruption of bureaucracy were great. The amount of waste that accompanied the process were formidable." (Gerschenkron, 1962, p. 20). Drawing from Gerschenkron's argument, it is cogent to assume that banking sectors dominated by huge government spending may be ill-governed, have higher transaction and agency costs compared to banking sectors that freely allow demand and supply factors to determine banking sector outcomes.

Rather, low government interference in the outcomes of several sectors of the economy will enhance the sound allocation of financial resources to all economic agents, which is vital to the soundness of the banking sector. The government size index employed in this study exhibits a high score when minimal government involvement in the market process. Therefore, the study hypothesises that:

Hypothesis 2: There is a positive effect of government size on banking sector stability in SSA.

Sound Money and Banking Sector Stability

Sound money is an essential aspect of the free market process. All transactions that economic agents undertake involve the use of money, and therefore there must be soundness of money. Based on the sound money index

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employed in this study, countries that can maintain a stable inflation and allow banks to grant access to economic agents to open foreign bank accounts usually earn high scores in this area. The aspect of sound money that ensures stable inflation is key to banking sector stability because inflation can increase the risk appetite of banks and borrowers since inflation cause a decrease in real interest rate (Boyd, Levine & Smith,2001; Owoundi, Mbassi & Owoundi, 2021). The Schwartz hypothesis earlier highlighted that successive inflationary periods can lead to poor inferences on the expected real investment returns, resulting in poor borrowing and lending decisions. This will eventually lead to increases in loan defaults and bank bankruptcies.

To reduce inflation, the government could employ contractionary monetary and fiscal policies or allow banks to open foreign bank accounts for individuals. The latter is essential because foreign currency serves as a store of value during periods of inflation. Therefore, it has been contended that when economic agents are allowed to own foreign bank accounts, it aids the economy in reducing inflation and increasing economic output (*see* Edwards & Magendzo, 2003; Gruben & Mcleod, 2004). Bleaney and Fielding (2002) provided evidence for the France zone that foreign currency proliferation aided in achieving a lower inflation rate.

Whether via government policy or foreign currency penetration, the essential thing is that sound money is important in making accurate predictions of real interest rate, which will result in good lending and borrowing decision and avoid bank bankruptcies. Lower inflation maintains the integrity of loan contract prices and incentivises economic agents to engage in loan contracts with good terms and conditions. With this, the study hypothesises that:

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Hypothesis 3: There is a positive effect of sound money on banking sector stability

Freedom to Trade Internationally (FTTI) and Banking Sector Stability

A significant relationship could be observed between trade freedom and banking sector stability in a number of ways (Rahman, Begum, Ashraf, Masud & Kaium, 2020). For instance, banking sectors that finance international trade can create a diversified investment portfolio of purely domestic firms and exporting firms. Consequently, firms that borrow from these banking sectors can spread their sales across different economies characterised by different business cycles. In such a situation, borrowers are not likely to renege on their loan contracts because they create a diversified investment portfolio with borrowed funds.

Both macro and micro-level evidence suggest that banking sectors more involved with international trade usually gain an advantage from international diversification (*see* Alamgir Hossain, Moudud-Ul-Huq & Kader, 2020; Wagner, 2012). Hauner, Alessandro and Bircan (2013) point out that trade freedom fosters reforms like liberalisation of interest rates, banking sector deregulation and privatisation, decreasing bank credit cost, enhancing loan performance and eventually banking sector stability. Similarly, Bui and Bui (2020) find that trade openness ensures discipline in banks' risk-taking behaviour in 42 emerging economies, consequently enhancing their stability. Also trade openness allows banks to gain informed access to different customers in different economies, thereby reducing the possibility of adverse selection of borrowers (Bui & Bui, 2019). From the discussions advanced in this section, it can be hypothesised that:

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Hypothesis 4: Freedom to Trade internationally positively affects banking sector stability.

Regulations of credit market, business sector and labour market and Banking sector stability

Regulation is an essential aspect of economic institutions because the nature of regulations can impede individual choices and exchange freedom. The regulation indicator employed in this study consists of three sub-indicators – credit market regulation, labour market regulation and business sector regulations (Gwartney & Lawson, 2003). Poor credit market regulation can obstruct banks' freedom to embark on their traditional activities and their ability to generate income from non-traditional sources. It can also reduce the channelling of funds from the banking sector to the business sector, which can impede the banking sector's profitability and stability.

Poor labour market regulations impose limitations on the freedom of employers and employees. Sound labour market regulations rather promote the market determination of wages and salaries. In combination with FTTI, sound labour market regulations can allow technical know-how and managerial competence spillovers from foreign financial institutions, which is essential for firm performance in both the domestic banking and non-banking sector. Business regulations are also relevant to banking sector stability because overly strict business regulations can impose bureaucratic restraints on business set-ups and reduce competition. In line with the competition-stability argument by Allen and Gale (2005), low level of competition can lead to banking sector instability. In sum, economies that do not allow credit markets, labour markets and goods markets to freely determine market outcomes are likely to have a low

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score in this area and an unstable banking system. Therefore, the study states the following hypothesis:

Hypothesis 5: Regulations positively affects banking sector stability

The role of Political Institutions in the relationship between Economic Institutions and Banking sector stability

The argument that political institutions affect banking sector outcomes emanates from the New Political Economics (NPE) theory that claims the economic outcomes are affected by a country's policies, rules and regulations (*see* Owoundi et al., 2021). These policies, rules and regulations are rooted in political institutions. In line with the NPE theory, Ho, Huang, Shi and Wu (2018) argue that a low level of democracy weakens the ability of public supervisory agencies to check the risk-taking behaviour of firms in the banking sector.

The nature of political institutions can affect the banking sector's stability in several ways. First, governments in economies characterised by weak political institutions may solicit bribes and create artificial entry barriers for the banking industry to share in the economic rents of the existing banks. Second, weak political institutions may also incentivise governments to grant a convenient license to banks and then force them to provide loans to politically allied firms, which may not necessarily have the capacity to repay (Wang & Sui, 2019).

Again, banks with political connections are likely to undertake risky investments due to the implicit guarantee of a financial bailout in moments of distress (Chen, Liao, Lin & Yen, 2018). Fourth, Chen, Wu, Jeon and Wang (2017) contend that strong political institutions improve the information

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environment and reduce information asymmetry and its associated adverse selection problems in the credit market. Consequently, the study states the following hypothesis:

Hypothesis 6: There is a positive effect of political institutions on banking sector stability

The role of political institutions in the relationship between economic institutions and banking sector stability can be explained by the Hierarchy of Institutions Hypothesis (HIH) put forth by Acemoglu et al. (2005). The HIH posits that economic institutions' efficacy in achieving economic outcomes depends on the nature of political institutions. James and Johan (1984) explain that political institutions specify fundamental obligations and rights, shapes them, and device means to solve conflicts and problems. In this regard, political institutions can shape economic institutions, that is, institutions that create freedom to make personal choices, freedom of exchange among economic agents and free markets that allow competition.

Following the HIH, this study intends to answer some questions on the role of political institutions in the relationship between economic institutions and banking sector stability. For instance, how would undue huge government dominance affect the stability of the banking sector when the key firms in the banking sector have strong political affiliations? Again, how does politics influence the effectiveness of LSPR in achieving banking sector stability? Also, how can credit market regulation, labour market regulation and business sector regulations affect the banking sector's stability when the major actors in these markets are likely to renege on financial contracts due to their political connections? To what extent will sound money influence banking sector

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stability when the decisions of the monetary authority are mostly free from political interference? Finally, how would FTTI affect banking sector stability when trade policy reforms are mostly politically motivated? To provide answers to these questions, the study hypothesises that:

H7: Strong political institutions positively moderate the relationship between economic institutions and banking sector stability.

Research Methods

Data

The study sample comprises 33 SSA economies over the period 2007 – 2017. The study period is reflective of the data availability of the variables employed in the analysis. The economic institutions variables are obtained from the Fraiser institute that constructs the yearly series of the economic freedom indices. Data on banking sector stability is obtained from the Global Financial Development Database. This study considers some control variables from existing banking sector stability determinants studies (*see* Sarpong-Kumankoma et al. 2020; Ozili, 2018; Bermpei, Kalyvas & Nguyen, 2018). In line with this, the study controls for the banking system's specific variables like banking sector concentration, size, information sharing, net interest margin and return on assets. Again, the study controls for the level of institutional quality by employing an index of the six worldwide governance indicators dataset. This study employs GDP per capita as a macroeconomic control variable as it has been found to influence banking sector stability.

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Measurement of Variables

Measurement of Banking sector Stability

The study employs z-score as the measure of banking sector stability. This measure has been employed as a standard proxy for banking sector stability in a preponderance of empirical literature (*see* Scott, 2019). The formula of the z-score is (EQAS + ROA)/σROA, where *EQAS* represents the equity to assets ratio, *ROA* is return on assets and *σROA* is the standard deviation of return on assets. However, the z-score data provided by the Global Financial Development Database is aggregated at the country level. This z-score thus shows the number of standard deviations that a banking sector is away from insolvency. Further, to reduce the level of skewness in the z-score, this study follows the approach of Beck, Demirguc-kunt and Levine (2006) to rather employ the natural logarithm of the z-score in the model estimations.

Measurement of economic institutions

To provide a detailed view of economic institutions, the study sourced the economic institutions variables from the economic freedom dataset provided by the Frasier Institute. Economic institutions indicators include Size of Government (SOG), Legal System and Property Rights, Freedom to Trade Internationally, Sound Money (SM), and regulations (REG). The variables have been employed in recent SSA studies as a proxy for economic institutions (*see* Abeka et al., 2021). Each indicator is measured on a scale of 0 – 10, where 0 is the weakest level of the particular economic institution and 10 is the strongest level of the economic institution.

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Measurement of Political Institutions

The study employs the political institutions index (polity 2) from the Polity 5 database. It is constructed on a scale of -10 to +10, "where -10 means that the political decisions in the country do not reflect democracy and +10 means that political decisions in the country mostly reflect democracy".

Control Variables

The study draws from existing banking sector stability literature to control for banking system-specific variables, institutional quality and macroeconomic variables. Concerning the banking system-specific variables, the study employs the natural logarithm of bank concentration (i.e., "the assets of three largest commercial banks as a share of total commercial banking assets") as a proxy for banking sector competition. Intense competition in the banking sector can improve or hurt the banking system's stability (Allen & Gale, 2004). Next, the study employs the natural log of bank deposits to GDP ratio to control for the banking sector size since it can affect banking sector stability (*see* Barakat & Hussainey, 2013).

The level of credit information sharing can exhibit a positive or negative relationship with banking sector stability. On the one hand, overreliance on borrowers' credit history reduces the quality of loan demand screening. Conversely, credit information sharing can reduce adverse selection and moral hazard problems. Thus, the study employs the natural log of credit bureau presence (% of adults) as a proxy for information sharing. Other banking system-specific variables employed are return on assets and net interest margin because a high level of banking sector stability is expected to improve its stability. Except for the credit bureau presence obtained from the World Bank

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World Development Indicators Dataset, all the banking system-specific variables were obtained from the Global financial development database.

Apart from the banking system-specific variables, the study also controls for institutional quality. In line with existing studies like Agbloyor , Gyeke-Dako, Kuipo and Abor (2016), the study employs an index that is constructed from the six worldwide governance indicators as a proxy. Banking system stability is expected to improve in economies characterised by strong institutional quality. To control for the macroeconomic factors, the study employs the natural log of real GDP per capita as a proxy for economic growth. The real GDP per capita data was obtained from the World Bank World Development Indicators Dataset.

Estimation Procedure

Two vital concerns need to be considered in modelling the determinants of banking sector stability (Bermpei et al., 2018). First is the likely persistence of banking sector stability and second is the potential reverse causality with some banking system-specific variables (*see* Delis & Staikouras, 2011; Agoraki, Delis & Pasiouras, 2011). Owing to these reasons, the study adopts the two-step System Generalised Method of Moments (SGMM) to address endogeneity caused by reverse causality and dependent variable persistence. Further, the SGMM is appropriate when the cross-sectional units are more than the time-series units(N>T), as in the case of this study (Blundell & Bover, 1995). To estimate the unconditional effect of economic institutions on banking sector stability, the study specifies the following model:

$$\ln Zscore_{it} = \alpha + \beta_1 \ln Zscore_{i,t-1} + \sum_{i=2}^{6} \beta_i ECOINST_{it} + \beta_7 PINST_{it} + \sum_{i=8}^{12} \beta_i BANKSYS_{it} + \beta_{13} INST_{it} + \beta_{14} MACRO_{it} + \mu_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1).$$

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To test for the hierarchy of institutions hypothesis, the study modifies equation (1) to include an interaction term between economic institutions and political institutions to state the following equation:

$$\text{lnZscore}_{it} = \alpha + \beta_1 \text{lnZscore}_{i,t-1} + \sum_{i=2}^{6} \beta_i \text{ECOINST}_{it} + \beta_7 \text{PINST}_{it} + \sum_{i=8}^{12} \beta_i (\text{ECOINST} * \text{PINST})_{it} + \sum_{i=13}^{17} \beta_i \text{BANKSYS}_{it} + \beta_{18} \text{INST}_{it} + \beta_{19} \text{MACRO}_{it} + \mu_{it} \quad \text{..........(2).}$$

In both equations, $lnZscore_{it}$ represents the natural logarithm of the measure employed for banking sector stability whilst $ECOINST_{it}$ is a vector of economic institutions variables employed in the study. Further, $BANKSYS_{it}$ stands for the banking system specific variables. Additionally, INST_{it} represent the country governance index and MACRO_{it} represents the macroeconomic variable employed in this study. Finally, μ_{it} is the error terms which is composed of the country-specific effects, years specific effects and the white noise. It is good to acknowledge that the lag of the banking stability is included as a regressor to account for its persistence.

The SGMM treats the problem of endogeneity by employing the appropriate instruments for the endogenous variables (Arrelano & Bond, 1990). Thus, by following studies previous panel data studies (*e.g.*, Bermpei et al., 2018; Delis, 2012), the study treats the banking system-specific variables as endogenous. By doing so, the study employs their second lags and above and their differences as instruments (*see* Blundell & Bond, 1998). The other variables like economic institutions, political institutions, governance and macroeconomic factors are exogenously determined (*see* Delis & Staikouras, 2011). This is because most firms in the banking sector usually observe institutional quality and other macro-level factors every year and put in place the right strategies (Bermpei et al., 2018). The adequacy of the results is

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assessed by the Arellano and Bond (1991) test of autocorrelation (AR2) and the Hansen J and Sargan tests of instrument validity.

Results and Discussion

Univariate Statistics

Table 5 presents the summary raw scores of all the variables employed later in the regression estimation. However, the summary statistics discussion of the main variables is presented in this section.

Table 5: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Z-Score	360	11.476	5.531	2.548	41.308
CONCENT	336	71.759	18.629	32.521	100
ECOINST	341	6.305	.741	3.21	8.045
LSPR	341	6.758	1.005	4.109	8.82
SOG	341	4.456	1.14	2.336	6.812
SM	341	7.35	1.29	0	9.672
REG	341	6.2	.898	1.833	8.542
FTTI	341	6.762	.887	4.179	8.462
BDGDP	338	33.944	57.584	3.785	770.259
IS	346	13.536	20.743	0	86.1
NIM	358	6.854	3.018	1.162	21.434
ROA	337	2.77	2.314	-15.096	10.211
INST	363	-.479	.558	-1.596	.854
Polity2	363	3.38	4.938	-9	10
GDPPC	363	2071.437	2407.148	172.496	10809.646

lnZscore represents the log of z-score, CONCENT represents the banking sector concentration ratio, ECOINST represents the index of economic institutions, LSPR is legal system and property rights, SOG is size of government, SM is sound money, REG is regulation of credit market, business sector and labour market, BDGDP represents the ratio of banking sector deposits to GDP, IS represents information sharing, NIM represents Net interest margin, ROA return of assets for the banking sector, INST represents institutional quality, Polity2 represents political institutions and GDPPC represents GDP per capital.
Source: Field data (2022)

From Table 5, the Z-score had an average value and dispersion of 11.476 and 5.531, respectively. This means that, on average, the banking sector of the sampled SSA economies are only 11.476 points away from instability and this shows that during the study period SSA economies observed a slightly low level of banking sector stability. The standard deviation also shows a significant variation in banking sector stability across the sampled SSA economies. Since

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each economic institution is measured on a scale of 0 – 10, all of the economic institutions obtained slight above average scores, except SOG. This means that for the sampled SSA economies, government decisions mostly dominate that of other economic agents. This could also mean that in our sampled SSA economies, large businesses are practically state-owned. The political institutions variable obtained an average score of 3.38, on a scale of – 7 to +7, depicting a slightly above level of political institutions.

Correlation analysis

Table 6 depicts the correlation matrix of the variables employed in the regression estimations. The dependent variable *lnZscore* is positively correlated with most of the regressors. Also, the correlation between *lnZscore* and its lag is 0.929, indicating a high persistence level and a justification for the use of SGMM. The correlations matrix of only the key variables are presented here for brevity. A careful observation shows that the economic institutions variables exhibit high correlation among themselves, but this does not raise any issue of multicollinearity because they do not enter the same regression model. A detailed correlation matrix is presented in Appendix A of this Chapter.

Table 6: Correlation Matrix

Variables	(lnZscore)	(L.lnZscore)	(ECOINST)	(LSPR)	(SoG)	(SM)	(REG)	(FTTI)	(Polity2)
lnZscore	1.000								
L.lnZscore	0.929***	1.000							
ECOINST	0.190***	0.176***	1.000						
LSPR	0.080	0.086	0.431***	1.000					
SoG	0.033	0.034	0.691***	0.031	1.000				
SM	0.128**	0.106*	0.826***	0.205***	0.369***	1.000			
REG	0.125**	0.116**	0.867***	0.309***	0.510***	0.737***	1.000		
FTTI	0.345***	0.317***	0.717***	0.015	0.510***	0.540***	0.530***	1.000	
Polity2	0.059	0.050	0.339***	0.173***	0.429***	0.211***	0.281***	0.074	1.000

*, **, *** represents significance at 10%, 5% and 1% respectively. lnZscore represents the log of z-score, CONCENT represents the banking sector concentration ratio, ECOINST represents the index of economic institutions, LSPR is legal system and property rights, SOG is size of government, SM is sound money, REG is regulation of credit market, business sector and labour market, Polity2 represents political institutions.

Source: Field data (2022)

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Regression analysis on the relationship between economic institutions and banking sector stability

Table 7 depicts the regression results on the effect of economic institutions and political institutions on banking sector stability. The study finds a positive effect of the overall measure of economic institutions on banking sector stability in column 1. The economic institutions index can be found from the Fraser Institute dataset.

Table 7: The effect of Economic Institutions on Banking Sector Stability

Dependent variable: lnz-score

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZscore	0.682***	0.628***	0.628***	0.574***	0.728***	0.745***
	(0.061)	(0.108)	(0.087)	(0.097)	(0.054)	(0.054)
ECOINST	0.065***					
	(0.022)					
LSPR		0.065**				
		(0.029)				
SoG			-0.243***			
			(0.068)			
REG				0.063**		
				(0.029)		
SM					0.019*	
					(0.010)	
FTTI						-0.120***
						(0.038)
lnCONCENT	-0.070	-0.345**	-0.282*	-0.288***	-0.084	-0.195*
	(0.126)	(0.144)	(0.149)	(0.097)	(0.122)	(0.107)
lnBDGPD	0.201***	0.266	0.113	0.241***	0.207***	0.269***
	(0.065)	(0.189)	(0.089)	(0.074)	(0.064)	(0.074)
lnIS	-0.031**	-0.018	0.003	-0.038**	-0.039***	-0.079***
	(0.013)	(0.035)	(0.014)	(0.017)	(0.011)	(0.024)
lnNIM	0.018**	0.023	0.026**	0.025*	0.023***	0.053***
	(0.008)	(0.015)	(0.010)	(0.012)	(0.007)	(0.014)
lnROA	0.017**	0.019*	0.035***	0.024**	0.018**	0.032*
	(0.007)	(0.010)	(0.011)	(0.010)	(0.008)	(0.018)
INST	0.015	0.149	0.187	0.064	0.018	0.029
	(0.067)	(0.089)	(0.145)	(0.089)	(0.060)	(0.123)
Polity2	0.008	0.045*	0.024***	0.022*	0.008	0.019*
	(0.008)	(0.025)	(0.008)	(0.012)	(0.008)	(0.010)
lnGDPPC	0.027	0.020	0.102	0.120	0.034	0.200**
	(0.044)	(0.102)	(0.058)	(0.076)	(0.043)	(0.095)
_cons	-0.213	1.052	1.955**	0.193	-0.062	-0.135
	(0.562)	(0.763)	(0.896)	(0.720)	(0.559)	(1.055)

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Table 7 continued

N	219	219	219	219	219	219
No. of grps	30	30	30	30	30	30
No. of instr.	23	23	23	23	23	23
AR1 (p-value)	0.0621	0.0828	0.0722	0.0763	0.0741	0.0782
AR2 (p-value)	0.599	0.513	0.524	0.556	0.466	0.33
Hansen-J(p-value)	0.472	0.461	0.515	0.519	0.437	0.628
Sargan(p-value)	0.433	0.430	0.524	0.414	0.428	0.464

lnZscore represents the log of z-score, CONCENT represents the banking sector concentration ratio, ECOINST represents the index of economic institutions, LSPR is legal system and property rights, SOG is size of government, SM is sound money, REG is regulation of credit market, business sector and labour market, BDGDP represents the ratio of banking sector deposits to GDP, IS represents information sharing, NIM represents Net interest margin, ROA return of assets for the banking sector, INST represents institutional quality, Polity2 represents political institutions and GDPPC represents GDP per capital.
Source: Field data (2022)

The results in column 2 of Table 7 show a significant positive coefficient for Legal System and Property Right, providing empirical evidence that on the average, LSPR increase banking sector stability in the sampled SSA economies. This is in line with the first hypothesis that *there is a significant positive effect of Legal System and Property Right on banking sector stability.* This result implies that, LSPR ensures completeness of loan and deposits contracts, and eventually strengthens the robustness of the banking sector.

Contrary to the second hypothesis that *government size has a positive effect on banking sector stability,* the coefficient of SOG in column 3 of Table 7 is a significant negative. This is probably because in the sampled SSA economies, as revealed by the descriptive statistics, on average government decisions mostly dominate that of other economic agents. In line with the argument of Gerschenkron (1962), this finding implies that the high level of government dominance in the outcomes of several sectors of the economy will derail the sound allocation of financial resources to all economic agents and eventually harm the stability of the banking sector. Also, in such economies, the loan portfolio of banks is dominated by state-owned enterprises (SOEs). These SOEs mostly renege on loan contracts and endanger the banking sector.

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In column 4 of Table 7, REG exhibit a significant positive effect on banking sector stability. This corroborates the third hypothesis that sound regulation of credit markets, labour markets and business markets positively affect the stability of the banking sector. The economic intuition here is that economies that allow credit markets, labour markets and goods markets to freely determine market outcomes are likely to have robust banking sector. Column 5 in Table 7 reports a significant positive impact of SM on banking sector stability. This is consistent with the fifth hypothesis that *there is a positive effect of sound money on banking sector stability*. This finding is consistent with the Schwartz hypothesis that low inflation leads to correct inferences on expected real investment returns, results in proper lending and borrowing decisions and eventually enhances banking sector stability. The findings also corroborate the studies of Owoundi et al. (2021) who find that inflation negatively affect banking sector stability.

With respect to FTTI, the study finds that improvement in FTTI negatively affects banking sector stability. This is contrary to the fourth hypothesis that there is a significant positive effect of FTTI on banking sector stability. This finding could imply that imports usually outcompete domestic firms, which usually make up a substantial portion of the bank's loan portfolio. Thus, opening up international trade could indirectly affect banking sector stability negatively through domestic firms' inability to pay back loans.

Across all the columns in Table 7, the empirical results mostly present significant positive nexus between political institutions and banking sector stability in the sampled SSA economies. This confirms the fifth hypothesis: there is a positive effect of political institutions on banking sector stability. This

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finding is in line with that of Chen et al. (2017), who found that political institutions improve the information environment and reduce information asymmetry and its associated adverse selection problems in the credit market.

With the control variables, the study finds some significant relationships between the banking system-specific variables (*banking sector concentration, banking sector size, credit information sharing, net interest margin, return on assets*) and banking sector stability. First, the results mostly present a significant negative effect of banking sector concentration on banking sector stability, and this could mean that a high level of concentration reduces banking sector competition and increases banking sector fragility (Allen & Gale, 2005). Next, the study finds a positive effect of banking sector size on stability, implying that the sheer size of the sector can absorb the shocks in the banking sector. Third, the study finds a negative effect of credit information sharing on banking sector stability. This could mean that over-reliance on credit history reduces loan demand screening effectiveness and leads to instability in banking sector (Guérineau & Leon, 2019). Both net interest margin and return on assets mostly positively affect banking sector stability, signalling the importance of banking sector performance to stability. Finally, the study finds that improving GDP per capita and institutional quality could enhance banking sector stability.

The conditioning effect of political institutions on the relationship between Economic institutions and Banking sector stability

Columns 1 – 6 of Table 8 provides the results on the conditioning effect of political institutions on the relationship between Economic institutions and Banking sector stability. Relative to the results in column 1 of Table 7, the study finds in column 1 of Table 8 an improvement in the coefficient of the overall

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economic institutions index, even though the interaction term was statistically insignificant. This confirms the hypothesis that *political institutions positively moderate the relationship between economic institutions and banking sector stability*. This result supports the HIH put forth by Acemoglu et al. (2005).

Table 8: The moderation effect of political institutions on the relationship between economic institutions and banking sector stability in SSA economies

Dependent variable: lnz-score

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZscore	0.341***	0.579***	0.353***	0.576***	0.807***	0.344**
	(0.089)	(0.127)	(0.092)	(0.105)	(0.067)	(0.105)
ECOINST	0.135*					
	(0.071)					
ECOINST*Polity2	-0.025					
	(0.017)					
LSPR		0.212***				
		(0.076)				
LSPR*Polity2		-0.027***				
		(0.008)				
SoG			0.629***			
			(0.219)			
SoG*Polity2			-0.099***			
			(0.019)			
REG				0.066*		
				(0.034)		
REG*Polity2				0.005		
				(0.009)		
SM					0.028*	
					(0.016)	
SM*Polity2					0.008*	
					(0.004)	
FTTI						0.185***
						(0.047)
FTTI*Polity2						0.028*
						(0.014)
Polity2	0.091	0.117*	0.416***	0.011	0.049	0.200**
	(0.100)	(0.063)	(0.072)	(0.049)	(0.029)	(0.094)
lnCONCENT	-0.119	-0.453***	-0.552**	-0.259**	0.079	0.139
	(0.215)	(0.147)	(0.226)	(0.106)	(0.095)	(0.142)
lnBDGDP	0.334***	0.346*	-0.052	0.265***	0.147**	0.259***
	(0.068)	(0.195)	(0.103)	(0.084)	(0.056)	(0.076)
lnIS	-0.039	-0.029	0.065*	-0.035**	-0.036***	0.015
	(0.031)	(0.033)	(0.032)	(0.016)	(0.010)	(0.023)
lnNIM	0.042***	0.036**	0.009	0.029**	0.016**	0.026*
	(0.015)	(0.016)	(0.017)	(0.012)	(0.007)	(0.014)
lnROA	0.066***	0.021	0.043**	0.021**	0.037**	0.037**
	(0.010)	(0.012)	(0.018)	(0.010)	(0.015)	(0.015)

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Table 8 continued

INST	0.051	0.267**	0.020	-0.098	0.0200	0.328**
	(0.094)	(0.120)	(0.361)	(0.091)	(0.042)	(0.116)
lnGDPPC	0.137**	0.034	0.291**	0.131*	0.005	0.212***
	(0.060)	(0.117)	(0.132)	(0.072)	(0.030)	(0.073)
_cons	-0.615	0.342	8.646***	-0.162	-0.487	-2.931**
	(0.966)	(0.929)	(2.081)	(0.907)	(0.535)	(0.921)
N	219	219	219	219	219	219
No. of grps	30	30	30	30	30	30
No. of instr.	26	26	26	26	26	26
AR1 (p-value)	0.0922	0.0918	0.0826	0.0661	0.0664	0.0872
AR2 (p-value)	0.604	0.503	0.614	0.691	0.567	0.635
Hansen-(p-value)	0.571	0.562	0.503	0.591	0.636	0.718
Sargan(p-value)	0.413	0.539	0.623	0.314	0.419	0.346

Standard errors in parentheses* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. lnZscore represents the log of z-score, CONCENT represents the banking sector concentration ratio, ECOINST represents the index of economic institutions, LSPR is legal system and property rights, SOG is size of government, SM is sound money, REG is regulation of credit market, business sector and labour market, BDGDP represents the ratio of banking sector deposits to GDP, IS represents information sharing, NIM represents Net interest margin, ROA return of assets for the banking sector, INST represents institutional quality, Polity2 represents political institutions and GDPPC represents GDP per capital.

Source: Field data (2022)

With regard to the individual condition effect of political institutions, the study find in column 2 of Table 8 an improvement in the coefficient of LSPR as compared to that of column 2 in Table 7. Also, the interaction term was positive and significant. Hence, for the sampled SSA economies, an improvement in political institutions will strengthen the enforceability of LSPR that are relevant to maintain a robust banking sector. This result could imply that when depositors and the bank themselves are able to enforce their property rights by seizing loan collaterals in instances of defaults, the integrity of loan contracts will be upheld and institutions of banking sector instability will be reduced.

Comparative to the coefficient of SOG in Table 7, the study finds an improvement in the coefficient in column 3 of Table 8. However, the coefficient of the interaction term is negative and significant. A possible explanation is that even though strong political institutions may reduce the level of government dominance in the banking sector and improve its stability, the policies of

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government in the sampled SSA economies are heavily biased towards the political philosophy of the government in power. Therefore, SOG may be substituted by the political institutions. Hence, the potential beneficial impact of these two institutional structures on banking sector stability could be neutralised when they interact.

The interaction term of REG and political institutions in column 4 of Table 8 causes the coefficient of REG to improve as compared to its coefficient in column 4 of Table 7, even though the interaction term is statistically insignificant. This result is in line with Roe and Siegel (2011) who find that strong political institutions enforce regulations by improving the implementation capacity and consistency. The conditional effect of SM on banking sector stability seems to have a higher coefficient than the unconditional effect. First, the coefficient of SM in column 5 of Table 8 is higher than in column 5 in Table 7. Also, the interaction term is positive and significant. This result means that political institutions make sound money policies more effective in achieving banking sector stability. Finally, upon the introduction of the interaction, the coefficient of FTTI in column 6 of Table 8 becomes positive as compared to the negative coefficient in column 6 of Table 7. Again, the interaction term is positive and significant. Thus, for the sampled SSA economies, when there are strong political institutions, domestic firms (which usually make up a substantial portion of the bank's loan portfolio) become much become stronger because political decisions favour all domestic economic agents. Thus, competition from imports will not weaken domestic firms and eventually banking sector stability.

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Summary and Conclusions

This study examines the effect of economic institutions on banking sector stability in a sample of SSA economies over 2007 – 2017. The study further tests HIH in the relationship between economic institutions and banking sector stability. The study provides evidence of the conditioning effects of political institutions on the relationship between economic institutions and banking sector stability, but the direction of these conditioning effects depends on the particular economic institution involved. The findings of the study show that economic institutions such as LSPR, REG and SM exhibit an unconditional positive effect on banking sector stability. However, SOG and FTTI show an unconditional negative effect of banking sector stability. The study also finds that political institutions enhance the positive effect of LSPR, REG and SM on banking sector stability. Additionally, the enhancing effect of SOG and FTTI on banking sector stability is improved in the presence of strong political institutions.

Overall, considering the direct effect of economic institutions and the conditional effect of economic institutions on banking sector stability, the study provides an understanding of the institutional setting within which banking sector stability could be improved. Therefore, the study provides insights for policy implications that can improve banking sector stability. First, government dominance in the banking sector should be reduced, LSPR enforcement should be enhanced, REG should be strengthened, and monetary policy that seeks to control inflationary pressures must be advanced. However, strengthening political institutions is much more relevant in realising an appreciable level of banking sector stability when these measures are implemented.

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Appendix to Chapter Five

Appendix A: Correlation matrix of all the variables

	(lnZscore)	(L.lnZscore)	(ECOINST)	(LSPR)	(SoG)	(SM)
lnZscore	1.000					
L.lnZscore	0.929***	1.000				
ECOINST	0.190***	0.176***	1.000			
LSPR	0.080	0.086	0.431***	1.000		
SoG	0.033	0.034	0.691***	0.031	1.000	
SM	0.128**	0.106*	0.826***	0.205***	0.369***	1.000
REG	0.125**	0.116**	0.867***	0.309***	0.510***	0.737***
FTTI	0.345***	0.317***	0.717***	0.015	0.510***	0.540***
lnCONCENT	-0.111**	-0.121**	-0.408***	-0.484***	-0.165***	-0.271***
lnBDGDP	0.280***	0.279***	0.454***	-0.060	0.548***	0.280***
lnIS	0.046	0.041	0.394***	-0.027	0.461***	0.229***
lnNIM	-0.257***	-0.247***	0.057	0.166***	0.043	0.021
lnROA	-0.209***	-0.193***	-0.124**	-0.055	-0.093*	-0.135**
INST	0.157***	0.149***	0.685***	0.044	0.796***	0.426***
Polity2	0.059	0.050	0.339***	0.173***	0.429***	0.211***
lnGDPPC	0.288***	0.286***	0.381***	0.026	0.351***	0.202***

	(REG)	(FTTI)	(lnCONCENT	lnBDGDP	(lnIS)	lnNIM	lnROA	(INST)	(Polity2)	(lnGDPPC)
REG	1.000									
FTTI	0.530***	1.000								
lnCONCENT	-0.326***	-0.197***	1.000							
lnBDGDP	0.439***	0.382***	-0.011	1.000						
lnIS	0.385***	0.363***	-0.138**	0.361***	1.000					
lnNIM	0.019	-0.066	-0.026	-0.323***	-0.053	1.000				
lnROA	-0.108*	-0.035	0.042	-0.206***	-0.101*	0.218***	1.000			
INST	0.621***	0.538***	-0.110**	0.573***	0.490***	-0.205***	-0.132**	1.000		
Polity2	0.281***	0.074	-0.216***	0.410***	0.181***	-0.042	-0.001	0.528***	1.000	
lnGDPPC	0.376***	0.435***	-0.169***	0.447***	0.715***	-0.402***	-0.128**	0.577***	0.220***	1.000

****p<0.01, **p<0.05, *p<0.1.* lnZscore represents the log of z-score, CONCENT represents the banking sector concentration ratio, ECOINST represents the index of economic institutions, LSPR is legal system and property rights, SOG is size of government, SM is sound money, REG is regulation of credit market, business sector and labour market, BDGDP represents the ratio of banking sector deposits to GDP, IS represents information sharing, NIM represents Net interest margin, ROA return of assets for the banking sector, INST represents institutional quality, Polity2 represents political institutions and GDPPC represents GDP per capital.

Source: Field data (2022)

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CHAPTER SIX

FOREIGN BANK PENETRATION AND BANKING SECTOR STABILITY IN SUB-SAHARAN AFRICA: DOES COUNTRY-LEVEL CORPORATE GOVERNANCE UNDER LOW AND HIGH LEVELS OF ECONOMIC FREEDOM MATTER?

Abstract

This chapter provides insights into the nexus between foreign bank penetration and banking sector stability by employing country-level banking sector data on 32 SSA economies from 2007 to 2017. Secondly, the chapter also explores how country level corporate governance structures and economic freedom conditions the relationship between foreign bank penetration and banking sector stability. The chapter employed the SGMM estimator to achieve the objectives above. The study finds that host economies gain from foreign bank operations than home economies in terms of banking sector stability. Also, the study finds that the relationship between foreign bank penetration and banking sector stability strongly depends on some CLCGs and the level of economic freedom. By later splitting the full sample into economies with a high and low level of economic freedom, we also find that the positive moderating effect of CLCGs is stronger for countries with a high level of economic freedom than those with a low level of economic freedom.

Introduction

The effect of foreign banking on the outcomes of the banking sector of the host economy has attracted growing attention in the financial and economic literature. The growing interest in this research area also coincides with the increase in policy makers' emphasis on attracting more foreign banks into their

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host economies, especially in developing economies. Specifically, over the past few years there has been an increase in the number of foreign bank assets and presence in the African continent (Ngwu, Ogbechie & Ojah, 2019). According to the currently available data, the number of foreign bank subsidiaries in SSA host economies increased by more than three times as much, from 53 to 169 between 2006 and 2018 (IMF, 2019).

Some of the reasons for the rising efforts to attract more foreign banks is the general belief that it has positive spillover effects in terms of competition, technological transfers, knowledge transfers, and efficiency gains in the banking sector of the host economy (*see* Yin, 2019). In addition, foreign banking can provide diversification benefits for its asset portfolio and host country bank depositors. Thus, foreign banking has been found to affect the banking outcomes of the host economy, including bank performance, efficiency, risk-taking, and stability (Ghosh, 2016; Yin, 2019; Yin, Yang & Lu, 2020; Yin, 2021; Kusi, Agbloyor, Simplice & Abor, 2021).

Despite the enormous benefits of foreign banking to the host economy's banking system, there seem to be conflicting theoretical arguments on the effect of foreign banking on banking sector stability. Specifically, the "competition-fragility" hypotheses put forth by Allen and Gale (2005) provide some cues that intense competition from foreign banks that are well resourced could drive down profits of local banks and increase banking instability in the host economy. Again, foreign banks can leverage goodwill and economies of scale to "cherry-pick" bank customers with good creditworthiness in the host economy. From the transaction cost economics perspective, foreign banks may take advantage of lapses in host country regulations and avoid prudential

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regulations, thereby endangering bank stability of the host economy. Further, to reduce the cost of transactions in a competitive banking environment, banks in the host economy may not engage in detailed credit assessment of borrowers, leading to adverse selection and moral hazard problems.

Recent literature on foreign banking and bank stability appears to draw toward examining the conditions under which foreign banking can enhance or hurt bank stability (*see* Houston, Lin & Ma, 2012; Kusi et al., 2021). Specifically, the host country's absorptive capacity appears to be more ostensible in the literature. This means that certain factors in the host countries may allow them to benefit from foreign banking while avoiding any banes. Prior studies show that weak corporate governance resulted in excessive risk-taking that built up to the recent worldwide financial instability (Mazumder & Ahmad, 2010; Jagannathan et al., 2013). Therefore, it is obvious that corporate governance can shape the level of banking sector stability and its associated factors. For instance, Kusi et al. (2021) recently demonstrated that the extent to which foreign bank presence and assets affect bank stability is influenced by private sector-led and public sector-led financial transparency regulations, albeit such moderating effect also depends on some pro-shareholder corporate governance structures. Although such a similar argument was tested on a sample of banks in Africa by Kusi et al. (2021), there is the need to provide a nuanced understanding of how several forms of foreign banking, as well as corporate governance structures, shape the level of banking sector stability.

Specifically, this study assesses how pro-stakeholder country-level corporate governance structures (hereafter CLCGs) influence the relationship between foreign bank penetration and banking sector stability. By employing

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foreign bank penetration as a measure of foreign banking, the study provides evidence of how the increase in the level of foreign bank operations affects the stability of the banking sector of the host economy. Previous studies have examined how foreign bank assets and presence influence bank stability (*see* Kusi et al., 2021). However, these measures of foreign banking tend to be persistent over time and may not provide a true reflection of the extent to which foreign banks have penetrated the banking sector of host economies. Additionally, this study employs pro-stakeholder CLCGs instead of pro-shareholder CLCGs (like strength of investor protection, extent of director liability index, shareholder suit index). This is based on the premise that pro-stakeholder CLCGs structures tend to fulfill the interest of all banking sector stakeholders, which is required to ensure the financial sector's stability amidst the era of bank globalization. Strengthening shareholder-oriented CLCGs to some extent, may only exacerbate risk-taking and cause banking sector instability (Anginer et al., 2018).

Apart from the above contributions, this study draws intuition from recent theoretical arguments that suggest some hierarchy exists in the institutional structures and that the extent to which an institutional structure affects economic outcomes depends on some other institutional structures. Such theoretical arguments are made in Acemoglu et al. (2005)'s Hierarchy of institutions hypothesis (hereafter, HIH) and have been tested empirically in recent studies such as Hartell (2018); Magnin (2018); and Olaoye and Aderajo (2020). By taking a similar perspective, this study examines whether the moderating effect of CLCGs on the relationship between foreign bank penetration and banking sector stability depends on the level of economic

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freedom. The argument here is based on the premise that free-market economies can shape country-level corporate governance (hereafter CLCG) outcomes in a way that command economies do not and that the moderating effect of CLCGs on the relationship between foreign bank penetration and banking sector stability may be different for countries with high and low levels of economic freedom.

Intuitively, the extent to which corporations in an economy are allowed to transact within several markets of the economy with little or no interference from the government can affect the governance of corporations. In a free-market economy where regulatory burdens are removed, corporate governance structures are likely to be more effective in achieving economic outcomes. It is likely that in free markets, firms can freely adopt the norms and structures by which they are governed. At the background of institutional isomorphism, theory is the argument that firms tend to find factors in their business environment for the formation of appropriate actions and practices for business operations (Meyer & Rowan,1977). This implies that firms are likely to adopt best practices in corporate behaviours/governance (whether from international markets or from local benchmarks).

Even if corporate governance structures are exogenously determined by government regulations like central bank corporate governance guidelines, as in the case of many developing economies like SSA (*see* Mutarindwa, Schäfer, & Stephan,2020), such structures are likely to mimic international best practices. However, it is easier for free-market economies to benchmark corporate governance structures against international best practices than command economies. One of the international best practices in banking sector governance

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is focusing on the stakeholder perspective of corporate governance instead of the shareholder perspective. Thus, pro-stakeholder CLCGs will likely be more effective in free-market economies.

Claessens and Laeven (2004) explain that a high level of economic freedom allows the setup of new local banks and foreign entrants, bringing about product diversification for bank customers which can improve bank stability and efficiency. Similarly, Azman -Saini, Baharumshah, and Law (2010) argue that greater opportunities exist for firms in free-market economies to try innovations. For instance, a free-market welcomes start-ups of banks and allows banks to compete efficiently to influence banking sector outcomes (Sarpong-Kumankoma, Abor, Aboagye & Amidu, 2020). Free market economies foster proper allocation of resources (Sarpong-Kumankoma et al., 2020), and this could allow corporate governance structures to function effectively in fulfilling all stakeholder interests.

The banking sector of SSA is the focus of this study. This is because there is a low level of competition in the SSA's banking market as compared to the rest of the world (Sarpong-Kumankoma et al., 2020). However, there is a gradual improvement in economic freedom in the continent (*see* Abeka et al.,2021), which signals that the banking environment for both local and foreign banks continue to be more competitive. With this, there is the implication of foreign bank penetration (hereafter, FBP) to banking sector stability (hereafter, BSS). Further, pro-stakeholder CLGCs continue to improve in the SSA continent (*see* Agyemang, Gbettey, Gatsi, & Acquah, 2019) while foreign banking is increasing. Therefore, it is necessary to examine how it influences the relationship between FBP and BSS in the SSA context.

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This study differentiates from existing studies in the area, specifically studies conducted in the African context. First, by examining the potential effect of pro-stakeholder CLCGs on the relationship between FBP and BSS, this study differentiates itself from Kusi et al. (2021), which examined the effect of foreign banking (i.e., presence and assets) on bank stability in strong and weak pro-shareholder CLCG economies. Second, by examining the relationship between FBP and BSS in economies with a low and high level of economic freedom, this study differentiates itself from Sarpong-Kumankoma et al. (2020), which examines the effect of economic freedom on the relationship between competition and bank stability. Third, this study contributes to the emerging literature on HIH by demonstrating that the efficacy of CLCGs depends on the level of economic freedom. Besides, the study is a country-level one that is arguably believed to yield direct evidence for policy decisions on BSS (*see* Idun, 2019).

Even though the discussion on foreign banking and bank stability has mainly focused on inward foreign banking, a further contribution made by this study is to examine whether outward FBP also affects the stability of the home country's banking sector, and also to examine whether CLCGs and economic freedom affect such relationship. This is an essential issue to study since it concerns the reasons for banks investing in foreign countries. Yin et al. (2020) recently examined the impact of institutional and regulatory regimes on the relationship between bank globalization on the efficiency of the home country's banking sector. This study offers insights into how CLCGs and economic freedom condition the relationship between outward foreign bank penetration and banking sector stability by taking a similar approach. This study is probably

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the first to offer similar insights into banking sector stability. We argue that maintaining the banking sector's cost efficiency, as in the case of Yin et al. (2020) does not necessarily imply banking sector stability because the firms in the banking sector may take unguarded risks to maintain cost efficiency and then end up in endangering the banking sector. Thus, the focus on banking sector stability offers a new perspective.

Literature Review

This section presents the probable theoretical linkages among FBP, CLCGs, economic freedom, and BSS. The effect of these variables is of relevance because they define the business environment within which the banking sector operates. Intuitively, these factors may interact with each other since greater economic freedom can define the market environment within which foreign and local banks operate. Similarly, strong CLCG structures are likely to improve the discipline of the host economy's market within which foreign and local banks operate so that their interaction does not hurt bank stability. Finally, the extent to which CLCG can effectively ensure market discipline may itself depend on the level of economic freedom. Evidence on the empirical linkages among these variables is examined in detail later in the empirical analysis. In the rest of this section, the study first presents a succinct review of the individual effects of these factors on the banking stability of the host economies and how these factors interact to affect BSS.

The impact of Foreign Bank Penetration

Regarding theoretical underpinnings, the linkage between FBP and BSS can be explained from different perspectives. The competition-fragility theory explains that intense competition in the banking market can lead to banking

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system fragility. This emanates from the argument that the influx of foreign banks increases the competition in the host economy banking. Yin (2020) argues that intense competition created by the presence of foreign banks affects the behaviour, performance, and stability of the host economy banking sector. Ghosh (2016) as well as Claessens, Demirgüç-Kunt, and Huizinga (2001) document that for banks in the domestic banking sector to stay profitable amidst the strong competition, they are forced to take on a high level of credit risk in their loan portfolio or reduce their level of capital. This will increase the risk and likelihood of failure in the banking sector. Further, to reduce transaction costs, Chen et al. (2019) contend that increased competition reduces banks' incentives to monitor borrowers. This can lead to a low loan recovery rate and exacerbate the banking sector's fragility.

The relationship between FBP and BSS can also be viewed from the opposite. This can be explained by the "competition-stability" and international portfolio diversification theories. The competition induced by the entry of foreign banks will reduce the likelihood of both foreign and local banks to charge high-interest margins, and eventually reduce loan portfolio default risk. Yin (2019) argues that reduction in the severity of adverse selection and moral hazard problems are often associated with low levels of interest rates. This means that increased competition caused by foreign banks can indirectly enhance banking stability in the host economy. Besides, foreign banking provides diversification benefits for both the home and host countries. From the host country's perspective, banking customers can diversify their investment portfolio by depositing in both purely domestic and foreign banks. In a similar vein, Sissy, Amidu, and Abor (2017) explain that the spillover effect can aid the

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entire banking system in acquiring managerial competence from foreign banks and foster effective risk management and banking sector stability.

The "competition-fragility", "competition-stability", and portfolio diversification arguments point out that there may be no apparent direction in the relationship between foreign bank penetration and banking sector stability. Thus, the conditions or absorptive capacities under which foreign bank penetration can lead to banking sector stability must the explored. This leads to the hypothesis that:

Hypothesis 1: *Foreign bank penetration has a significant influence on bank sector stability*

The effect of interaction among FBP, CLCGs, and Economic Freedom

From the agency theory perspective, it is reasonable to assume that too much insistence on pro-shareholder CLCGs could be detrimental to banking sector stability. Shareholder-oriented form of governance may rather hurt banking sector stability because managers would have to take excessive risk to align with shareholders' interest in excess return (Anginer et al. 2018). Thus, it is likely that pro-stakeholder CLCG structures will reduce the opportunistic behaviour of foreign banks and allow banks in the host economy to benefit from foreign banks' operations. At a glance, the pro-stakeholder CLCG structures employed in this study(i.e. Protection of Minority shareholders' Interest, Efficacy of Corporate Boards, Ethical Behavoiur of Firms, Strength of Auditing and reporting standards, Regulation of securities and exchanges, and creditor rights protection) provides compelling reasons to expect that economies characterized by strong CLCG will have greater absorptive capacity, and hence allow their banking sector to reap stability benefits of the influx of foreign

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banking. These reasons can be explained from the perspective of the institutional theory of isomorphism.

The institutional theory of isomorphism explains that the formal structure of an organization can be influenced by the institutional context in which it operates (Meyer & Rowan,1977). Therefore, if an economy is characterized by strong ethical behavior of firms, the foreign banks are likely to conform to the corporate expectation of being ethical and therefore transact business in a manner that does not hurt banking sector stability. The mimetic dimension of institutional isomorphism is largely influenced by the uncertainty around a certain organizational practice and the need for organizations to consciously or unconsciously replicate legitimized methods from firms that are believed to be successful in that industry (Palmer & Jennings & Zhou, 1993; Dacin, Dacin, Greenwood, Oliver, Sahlin & Suddaby, 2008). From the mimetic isomorphism perspective, foreign banks are likely to adopt sound auditing and reporting standard which has become an international best practice for enhancing banking sector stability.

The coercive dimension of institutional isomorphism is driven by the external authority influence, usually through government regulatory bodies (DiMaggio & Powell, 1983; Alshbili & Elamer, 2020). With this, foreign banks are likely to adhere to the regulations of security and exchanges in their business transactions. Adherence to the regulations of securities and exchanges promotes careful risk-taking by banks and avoids failures (Gallagher, 2014). Further, in economies where regulatory authorities enforce creditor rights protection, foreign banks are less likely to cause moral hazard problems for depositors. Moreover, since high competition due to foreign bank penetration can reduce

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quality of bank's loan portfolio, higher creditor rights protections can help banks to recover defaults from bad loans.

Another dimension of institutional isomorphism is normative isomorphism, which is driven by professionalization (DiMaggio & Powell, 1983; Amoako, Adam, Tackie & Arthur, 2021). Boards of banks may be required to have the education, diversity, and training which is considered prudent for professional bank directors to carry out their duties, and induce similar practices by banks operating within the same economic environment. Therefore, in an environment where firms are characterized by effective corporate boards, there will be much expectation on foreign bank boards also. It can then be assumed that the level of efficacy of corporate boards in an economy will drive foreign bank boards to act in a manner that does not endanger the stability of the host economy's banking system. In short, there are compelling reasons to believe that strong pro-stakeholder CLCGs positively moderate the relationship between FBP and BSS. This leads to the hypothesis that:

Hypothesis 2: Country-level corporate governance structures positively moderates the relationship between Foreign Bank Penetration and banking sector stability

Despite these arguments, the moderation effect is likely to differ between economies with low and high levels of economic freedom. The concept that businesses have a tendency to locate factors in their business environment that are suitable for the establishment of acceptable actions and practices for business operations serves as the foundation of the institutional isomorphism hypothesis (Meyer & Rowan,1977). This suggests that businesses are likely to

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adopt ideal corporate governance structures (whether from international markets or from local benchmarks). However, such adoption process is likely to be much easier in free markets compared to command economies. Therefore, economic freedom can complement pro-stakeholder CLCGs in influencing the relationship between FBP and BSS.

One of the key tenets of economic freedom is the reduction of government interference whilst protecting to safeguard the rights of market participants (Gwartney & Lawson, 2003). Similarly, pro-stakeholder CLCGs involve procedures to control and monitor the actions of economic agents directly connected to the firm and eventually protect the interest of all stakeholders. Milhaupt (1998) argues that the protection of stakeholder interest is not limited to corporate governance, but also includes the government's efforts. As argued earlier in the introduction, pro-stakeholder CLCGs are likely to be more effective in free-market economies. Thus, we argue that CLCG structures are likely to be more effective in shaping the FBP-banking sector stability nexus in economies with high economic freedom. This leads to the third hypothesis that:

Hypothesis 3: The positive moderating effect of country-level corporate governance structures on the relationship between Foreign Bank Penetration and Banking Sector Stability is higher for economies with high levels of economic freedom than economies with low levels of economic freedom.

Research Methods

Model Specification

This study employs the panel data technique to provide insights into the effect of the interrelations among foreign banking, CLCG, and economic

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freedom on banking sector stability in SSA. The dataset covers 32 countries in sub-Saharan Africa between 2007 and 2017. The outward FPB and BSS data is sourced from the global financial development database (GFDD). Using a similar approach used by the GFDD in constructing the outward FBP variable, this study constructs the inward FBP variable by employing data from BIS statistics and the WDI dataset. Based on existing literature, the study control variables like country governance, return on equity, net interest margin, banking sector concentration, banking sector size, borrower information sharing, and GDP per capita (*see* Ozili, 2018, Feghali, Mora & Nassif ,2021). Panel data delivers more reliable results since it collects and reports both entity and time aspects of data, unlike cross-sectional and time-series data. Based on the nature and structure of the data, a panel data estimation technique is employed to estimate the results. The general model for panel data estimation is expressed as follows:

$$y_{it} = \alpha_i + \delta_t + \beta X_{it} + \varepsilon_{it} \quad \ldots\ldots (1)$$

$$\varepsilon_{it} = y_{it} - \alpha_i - \delta_t - \beta X_{it} \quad \ldots\ldots (2)$$

α_i = country-specific effect, δ_t = time specific effect, X_{it} represents a vector of regressors, y_{it} is the dependent variable, i represents the cross-sectional dimension (countries) and t denotes the time series dimension (years). This study follows extant banking stability literature in Africa to (Kusi et al., 2021; Ozili, 2018) to specify the empirical models.

To assess how pro-stakeholder CLCGs condition the effect of FBP on BSS in SSA, the study first specifies the unconditional effect in equation (3) by including both CLCGs and foreign bank Penetration variables as regressors but with no interaction term. Next, the study specifies equation (4) by modifying

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equation (3) to include an interaction term of each of the CLCG structures and FBP variables to assess the conditional effect of FBP on BSS in SSA. To test the hypothesis that the conditional effect is different for economies with a low and high level of economic freedom, the study sample is split into economies with low and high economic freedom and re-estimates models (3) and (4).

$$BSS_{it} = \gamma_o + \gamma_1 BS_{it-1} + \gamma_2 FBP_{it} + \gamma_3 CLCGs_{it} + \gamma_4 EFW_{it} + \gamma_5 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

$$BS_{it} = \gamma_o + \gamma_1 BS_{it-1} + \gamma_2 FBP_{it} + \gamma_3 CLCGs_{it} + \gamma_4 EFW_{it} + \gamma_5 (FBP * CLCGs)_{it} + \gamma_6 Z_{it} + \mu_i + \eta_t + \varepsilon_{it} \quad \ldots\ldots\ldots \quad (4)$$

Where *BSS* represents banking sector stability, *FBP* represents foreign bank penetration, *CLCGs* represents a vector of the pro-stakeholder country level corporate governance variables, *EFW* represents the index of economic freedom, Z is a vector of the other determinants of *BSS*. μ_i denotes a set of unobserved country-specific characteristics and η_t represents time-specific characteristics. $\varepsilon_{i,t}$ represents the error term.

Variables and Measurement

The dependent variable employed in the study is BSS. Following a preponderance of studies on bank stability, the study employs the z-score as a measure. The main regressors of the study are FBP, CLCGs, and economic freedom. Foreign banking penetration was measured by two variables – inward FBP and outward FBP. The pro-stakeholder CLCG structures employed in this study include ethical behaviour of firms, corporate board efficacy, minority shareholders protection, creditor rights protection, Regulation of securities and exchanges, and Strength of Auditing and Reporting Standards, which are used in prior studies like Agyemang et al. (2019). In terms of economic freedom, the

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study employs the economic freedom index published by the Frasier Institute, which is in line with prior studies. The summary of the variables, their definition, and measurement are presented in Table 9.

Table 9: Variables, Definition and Measurement

Variables	Definition	Data Source
Dependent Variable		
Z-score	It measures the extent to which bank's performance and risk aversion level can enable then to avoid losses. It is calculated as $(ETA_{it} + ROA_{it})/\sigma_{ROA,}$ where ROA represents return on assets, ETA is the equity to assets ratio and σ_{ROA} represents the standard deviation of return on assets.	World bank's global financial development database
Independent variables		
Inward foreign bank penetration	Constructed as Ratio of consolidated banking claims on a host economy by foreign countries to the GDP	Data on consolidated banking claims on a host economy by foreign countries is sourced from BIS statistics and GDP data was sourced from WDI.
Outward foreign bank penetration	Ratio of consolidated banking claims against foreign countries to the GDP	World bank's global financial development database
CLCG measures		
EBF	Measured on a scale of 1 – 7 to show the extent to which companies behave ethically in their interaction with customers, other firms, public officials, and politicians.	Global Competitiveness report (GCI), World Economic Forum (WEF)
ECB	Measured on a scale of 1 – 7 to show the extent to which management and board of directors are accountable to all stakeholders	GCI, WEF
CRP	It is defined as the legal rights of creditors, measured on 0 to 100, where 0 represents the worst legal rights performance and 100 the legal rights performance.	
SARS	Measured on a scale of 1 – 7 to depict the extent to which countries adopt and comply with auditing and financial reporting standards	GCI, WEF

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Table 9 continued

RESE	Measured on a scale of 1 – 7 to show the extent regulators ensure the stability of the entire financial system.	GCI, WEF
Economic Freedom	Index of economic freedom measured on a scale of 1 – 10. Where 1= low level of economic freedom and 10= high level of economic freedom.	Fraser Institute
Control variables		
Banking sector size	Measured as the ratio of bank deposit to GDP	World bank's global financial development database
Banking sector competition measures	Measured as the concentration ratio of the banking sector. High concertation implies a low competition level and vice versa.	
Net Interest margin	Measured as (interest revenue on loans – interest expense on deposits)/Average earning assets	World bank's global financial development database
Return on equity	Measured as net income divided by total equity.	World bank's global financial development database
Information sharing	Defined as the extent to which borrowers' credit information is shared within an economy. It is measured as credit registry/bureau coverage (% of adults)	World bank's global financial development database
Governance	Defined as "the extent to which the state and citizens have respect for institutions that govern economic and social interactions among them". Measured by an index of the Kaufman's six worldwide governance indicators, on a scale of -2.5 to +2.5.	Worldwide governance indicators dataset
Economic growth	Measured as real GPD per capita	World bank's WDI dataset
Inflation	Changes in the consumer price index	World bank's WDI dataset

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Estimation Strategy

An essential methodological challenge that can arise from estimating the effect of FBP, economic freedom, and CLCGs on BSS is endogeneity bias. The estimates are likely to be biased due to simultaneity and reverse causality problems that can arise because FBP may be affected by BSS. BSS may drive FBP because BSS can provide locational and international advantages to attract foreign banks. The effect of foreign banking has been well argued in the existing literature. To control for the possible endogeneity concerns, it is vital to employ a panel econometric approach that could alleviate endogeneity in the empirical specification.

Existing literature has also identified the persistence of BSS in both developing and developed countries (*see* Delis & Staikouras, 2011; Agoraki, Delis & Pasiouras, 2011). This means that BSS is a persistent series and that the past level of BSS can be an important predictor of the current level of BSS. The existence of lagged BSS also poses econometric concerns because it can correlate with the error term in the model. However, even if there is no correlation between the error term and the lag of the dependent variable, the error term may still correlate with transformed error terms and even if the random and the fixed effect estimators are employed, it will yield inconsistent results (Baltagi, 2008). OLS also fails to control for possible endogeneity and also does not account for possible unobserved country-specific variations. Econometricians that observe endogeneity caused by reverse causality and lagged dependent usually model with instrumental variables or dynamic panel-data techniques.

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Blundell and Bond (1998) developed the System Generalized Method of Moment (SGMM) estimator by employing the lag of all the independent variables as internal instruments to address the endogeneity caused by reverse causality. The SGMM is an improvement of the basic difference GMM and the deviation GMM proposed by Arellano and Bond (1991), and Arellano and Bover (1995) respectively. Roodman (2006) explains that the SGMM purges the fixed effect and incorporates time-invariant regressors that fade in difference GMM. The data on the full sample of (32) SSA economies covers the period 2007 – 2017, making the panel data have a short time series dimension and a wider cross-sectional dimension. Further, the empirical model is characterized by more moment conditions compared to model parameters. Thus, an appropriate point to begin estimating the model is to employ the SGMM to deal with the endogeneity problem and incorporate fixed effects. The lag of banking sector stability in model specification is assumed to be correlated with the differenced error term and therefore introduces an endogeneity problem. Despite the assumption that the original error term may not be serially correlated, the regressors may be weakly exogenous, and there exist this moment conditions:

E (BSS_{it-s}, $\Delta \in_{it}$)= 0 for $s \geq 2$; t= 3, ……T

E(X_{it-s} , $\Delta\in_{it}$)= 0 for $s \geq 2$; t= 3, ……T

Where BSS_{it-s} represents the lag of BSS and $X_{i,t-s}$ represents the lag of all the regressors except the lag of bank stability, and s represents the lag structures. This implies that the second lag onward can be employed as an instrument. The application of instruments to solve the endogeneity problem is that they are correlated with the regressors but uncorrelated with the error term.

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However, Blundell and Bond (1998) demonstrate that the likelihood of the existence of measurement error can cause the lag of regressors usually to perform poorly as instruments to augment the first difference of the regressors. Therefore Alonso-Borrego and Arrelano (1990), as well as Blundell and Bond (1998), suggest a system of equations to deal with the endogeneity problem, where the level equations (equation 1 and 2) are added to their differenced equations, respectively. Hence, the lagged first difference of variables is used to instrument the corresponding variables in levels. Finally, the system GMM imposes the following orthogonality restrictions:

$E\ (BSS_{it-s},\ \Delta \in_{it})$= 0 for s =1

$E\ (X_{it-s}\ , \Delta \in_{it})$= 0 for s = 1

In any overidentified model estimated with instrumental variables approaches, the Sargan-Hansen test of overidentifying limitations should be conducted frequently as a diagnostic. Although instrumental variables techniques are useful, if the null hypothesis of the Sargan-Hansen test is strongly rejected, you should seriously question the estimates' validity. The SGMM estimates require an additional diagnostic check, the AR2 to test the null hypothesis that there is no autocorrelation in the second order.

Results and Discussion

Descriptive Statistics and Correlation Matrix

The descriptive statistics (as presented in Table 10) is employed to screen and detect possible outliers that could adversely affect the regression results' efficiency, consistency, and accuracy.

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Table 10: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lnZScore	360	2.325	.494	.935	3.721
IFBP	358	20.437	21.84	15.251	32.415
OFBP	341	58.849	43.926	.137	84.57
ECB	314	4.519	.561	2.337	6.685
SARS	314	4.24	.839	2.134	6.727
EB	314	3.776	.545	2.402	5.283
POMI	314	4.158	.654	1.998	6.222
RESE	292	3.772	.928	1.803	6.558
CRP	363	55.455	21.115	20	100
EFW	341	6.305	.741	3.21	8.045
GOV	352	-.488	.565	-1.596	.854
ROE	337	19.122	14.823	-93.62	81.608
NIM	358	6.854	3.018	1.162	16.434
BDGDP	338	33.944	57.584	3.785	770.259
CONCENT	336	71.759	18.629	32.521	100
IS	346	13.536	20.743	0	86.1
INF	360	6.709	6.092	-27.787	44.357
GDPPC	363	2071.437	2407.148	172.496	10809.646

lnz-score represents the natural log of z-score, IFBP represents Inward Foreign bank penetration, OFBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

The descriptive statistics in Table 10 provide an overview of the variables employed in the study. Additionally, the study presents a pairwise Pearson correlation matrix between the variables employed in the regression analysis. The results of the pairwise correlation matrix is presented in Appendix A of this chapter. The correlation matrix is employed to detect possible multicollinearity in the regression analysis. By setting the threshold to 0.80(*see* Kenedy, 2008), the study finds no evidence of multicollinearity aside from the pairwise correlation between the CLCGs. Thus, the CLCG variables do not enter the same model.

FBP, CLCGs, and Host Country Banking Sector Stability.

The regression results of this study are present in Tables 11 – 14. In Table 11, the study presents the estimates of the effect of inward FBP on BSS

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for the full sample employed in this study. Since the CLCGs depict high pairwise correlations, the study does not include them in the same model and this means that there are six models in Table 11. Next, in Table 12, the study examines the moderation effect of the CLCGs on the relationship between FBP and BSS by modifying the results obtained in Table 11 to include an interaction term of FBP and each of the CLCGs. From the regression diagnostics in all the models in Tables 11,12, 13 and 14, the study does not reject the null hypothesis of over-identifying restrictions by Sargan and Hansen tests. Further, the Arellano and Bond of no second-order autocorrelation (AR (2)) for all the models are not rejected at 5% level. These diagnostics altogether show that the estimated results are reliable.

Table 11: The effect of inward FBP, CLCGs, and Economic freedom on BSS
Dependent variable: lnz-score

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZScore	0.784***	0.751***	0.798***	0.817***	0.703***	0.850***
	(0.083)	(0.043)	(0.030)	(0.056)	(0.069)	(0.056)
lnIFBP	0.012**	0.013***	0.012***	0.013***	0.013**	0.008**
	(0.006)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)
ECB	0.139**					
	(0.058)					
SARS		0.061**				
		(0.025)				
EB			-0.137***			
			(0.038)			
POMI				-0.070*		
				(0.039)		
RESE					0.084***	
					(0.024)	
CRP						0.022*
						(0.012)
EFW	0.171***	0.151***	0.118***	0.092*	0.133***	0.141***
	(0.056)	(0.063)	(0.034)	(0.048)	(0.058)	(0.068)
GOV	0.095	0.091*	0.036	0.019	0.103*	0.165**
	(0.064)	(0.047)	(0.070)	(0.066)	(0.054)	(0.071)
lnROE	0.018***	0.053***	0.068	0.022	0.012*	0.093
	(0.009)	(0.014)	(0.076)	(0.055)	(0.007)	(0.056)
lnNIM	0.045***	0.026***	0.039***	0.033***	0.046***	0.025***
	(0.006)	(0.004)	(0.007)	(0.006)	(0.007)	(0.008)

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Table 11 continued

lnBDGDP	0.006	0.006**	0.003	0.006**	0.004**	-0.002
	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
lnCONCENT	-0.010**	-0.082***	-0.034***	-0.034***	-0.047***	-0.037***
	(0.005)	(0.015)	(0.010)	(0.014)	(0.012)	(0.017)
lnIS	-0.023*	0.002	-0.022*	-0.021**	-0.016	-0.015
	(0.012)	(0.009)	(0.012)	(0.010)	(0.017)	(0.010)
lnINF	-0.032***	-0.014**	-0.005	-0.008**	0.006	-0.008*
	(0.006)	(0.005)	(0.003)	(0.004)	(0.007)	(0.004)
lnGDPPC	0.113***	0.037	0.210***	0.107*	0.286***	0.164***
	(0.033)	(0.070)	(0.053)	(0.060)	(0.048)	(0.039)
_cons	-0.346	1.204*	0.287	0.584	-0.848	-0.539
	(0.587)	(0.667)	(0.388)	(0.380)	(0.673)	(0.717)
Observations	208	208	208	208	208	224
No. of grps	28	28	28	28	28	28
No. of instr.	20	20	21	21	20	20
AR1 (p-value)	0.0213	0.0508	0.0956	0.0461	0.0654	0.0773
AR2 (p-value)	0.805	0.707	0.914	0.890	0.857	0.725
Hansen-J (p-value)	0.672	0.660	0.903	0.792	0.816	0.828
Sargan(p-value)	0.315	0.609	0.513	0.110	0.365	0.257

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, IFBP represents Inward Foreign bank penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

From Table 11, where the study examines the effect of inward FBP on banking sector stability in sampled SSA economies, it can be observed that the inward FBP promotes the stability of the banking sector (*see* columns 1 – 6). This finding is in line with the "competition-stability" that competition induced by the entry of foreign banks will reduce the likelihood of both foreign and local banks to charge high-interest margins, eventually reducing loan portfolio default risk. Further, the results corroborate the argument of Yin (2019) that FBP leads to efficiency that reduces the severity of adverse selection, and moral hazard problems are often associated with low interest rates. In line with studies like Sissy et al. (2017) that were conducted in a similar context, our results could imply that the spillover benefits like managerial competence from foreign banks can foster effective risk management and banking sector stability.

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In addition, except for EBF and POMI, the CLCGs mostly exhibit a positive direct effect on the banking sector stability of our full sample. The result, therefore, indicates that ethical compliance is costly in weak institutional regimes like that of SSA economies and that strict adherence to ethical behaviors could reduce banking sector profitability and stability. The negative coefficient of POMI on banking sector stability also shows that in SSA economies, majority shareholders' decisions tend to dominate that of minority shareholders since majority shareholders are interested in large profits, firms in both the banking and non-banking sector may exchange excess risk-taking and consequently deteriorating the stability of the banking sector. The results could also imply that since minority shareholders have low control assets, they tend to be more interested in dividends rather than capital appreciation. Satisfying such interests will make banking and non-banking firms take on more risks to generate high profits, thereby endangering the banking sector's stability.

However, the study mostly finds a positive direct effect of economic freedom on banking sector stability. This result produces some economic intuitions. First, the results imply that economic freedom provides a business environment that encourages the initiation and development of innovative ideas (Mavrakana & Psillaki, 2019). This is likely to increase banking sector performance and stability. This finding is in line with that of Sufian and Habibullah (2010) as well as Sufian (2014) who provide evidence of the favourable influence of economic freedom on bank performance. In line with the findings of Lin, Doan, and Doong (2016), these results could mean that economic freedom enhances the cost efficiency of the banking sector, boosts performance, and eventually increases the level of banking sector stability. Our

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results also align with the McKinnon-Shaw financial repression argument that intense government involvement in the financial market can reduce the level of interaction between market forces, limit innovative outcomes and stifle banking sector progress, thus government must allow economic freedom. Specifically, for the SSA region, these findings confirm that of Sarpong-Kumankoma et al. (2018) who point out that economic freedom positively affects banking sector profits. Next, the study presents the findings on the moderation effect of CLCGs on the relationship between inward FBP and BSS in Table 12.

Table 12: The moderating effect of CLCGs on the relationship between Inward FBP and BSS. *Dependent variable: lnz-score*

	(1) lnZScore	(2) lnZScore	(3) lnZScore	(4) lnZScore	(5) lnZScore	(6) lnZScore
L.lnZScore	0.736***	0.714***	0.921***	0.790***	0.849***	0.862***
	(0.063)	(0.076)	(0.063)	(0.060)	(0.086)	(0.054)
lnIFBP	0.228**	0.101**	0.206***	0.130***	0.043*	0.049*
	(0.110)	(0.044)	(0.056)	(0.042)	(0.021)	(0.024)
ECB	1.008*					
	(0.529)					
lnIFBP*ECB	0.053**					
	(0.025)					
SARS		0.431**				
		(0.175)				
lnIFBP*SARS		0.019**				
		(0.008)				
EB			0.902***			
			(0.248)			
lnIFBP*EB			-0.050***			
			(0.013)			
POMI				-0.428**		
				(0.168)		
lnIFBP*POMI				0.024**		
				(0.009)		
RESE					0.208*	
					(0.105)	
lnIFBP*RESE					-0.013***	
					(0.004)	
CRP						0.018*
						(0.009)
lnIFBP*CRP						0.0828*
						(0.0461)
EFW	0.191***	0.124**	0.094*	0.122***	0.145***	0.009
	(0.061)	(0.051)	(0.052)	(0.043)	(0.040)	(0.049)
GOV	0.155**	0.126	0.097	0.067	0.053	0.072
	(0.075)	(0.080)	(0.081)	(0.099)	(0.080)	(0.111)
lnROEAT	0.020**	0.028*	0.043	0.061	0.026*	0.015**
	(0.008)	(0.015)	(0.092)	(0.069)	(0.013)	(0.007)
lnNIM	0.014	0.016	0.052***	0.008	0.031***	0.019***
	(0.008)	(0.009)	(0.007)	(0.007)	(0.004)	(0.003)

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Table 12 continued

lnBDGDP	0.005	0.004***	0.006	0.008***	0.006**	-0.004
	(0.004)	(0.001)	(0.005)	(0.002)	(0.003)	(0.003)
lnCONCENT	-0.053***	-0.017	-0.016	-0.016**	-0.066	-0.092
	(0.014)	(0.019)	(0.009)	(0.008)	(0.092)	(0.091)
lnIS	-0.011	0.018	-0.040***	-0.043***	-0.006	-0.015
	(0.024)	(0.014)	(0.011)	(0.015)	(0.011)	(0.017)
lnINF	-0.042***	-0.018**	-0.007	-0.006**	0.007	-0.009**
	(0.007)	(0.006)	(0.005)	(0.003)	(0.008)	(0.004)
lnGDPPC	0.073	0.139**	0.209***	0.020	0.089	0.087*
	(0.101)	(0.051)	(0.029)	(0.059)	(0.058)	(0.050)
_cons	5.479**	2.455*	-4.742***	3.775***	-0.192	0.792
	(2.525)	(1.309)	(1.022)	(1.082)	(0.774)	(0.625)
Observations	208	208	208	208	208	224
No of groups	28	28	28	28	28	28
No. of instr.	20	22	21	22	21	21
AR1 (p-value)	0.0147	0.0372	0.0160	0.0140	0.0201	0.0625
AR2 (p-value)	0.712	0.904	0.725	0.640	0.898	0.774
Hansen-J (p-value)	0.757	0.690	0.904	0.820	0.724	0.992
Sargan(p-value)	0.378	0.132	0.275	0.484	0.319	0.222

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, IFBP represents Inward Foreign bank penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

We mostly find that the introduction of the interaction terms causes the inward FBP coefficients in Table 12 to be quite higher than those obtained in Table 11. This depicts the extent to which CLCGs are crucial in shaping the extent of inward FPB so that FBP could better enhance banking sector stability in SSA economies. Also, most of the interaction terms between inward FBP and CLCGs are positive and significant, except for EBF and RESE. Specifically, in column 1 of Table 12, the positive interaction term of FBP and ECB means that in economies where firms are characterized by effective corporate boards, there will be much expectation of foreign bank boards to also discharge their duties. In line with our earlier argument, ECB in an economy can drive foreign bank boards to act in a manner that does not endanger the stability of the host economy's banking system.

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In column 2 of Table 12, we do find a positive interaction term between inward FPB and SARS. This means that when host economies are characterized by strong adherence to auditing and reporting standards, foreign banks are likely to adopt sound auditing and reporting. Altogether, there is likely to be a low level of adverse selection and moral hazard problems in the banking sector of these host economies. However, the interaction term between EBF and inward FBP is negative and significant. The implication here is that since ethical compliance is quite costly in our sampled SSA economies, the level of ethical compliance is very low. Thus, in this regard, foreign banks can engage in risky lending to earn them above-normal returns. Also, these foreign banks are likely not to engage in proper screening procedures of borrowers, leading to a high level of non-performing loans, which poses a threat to banking sector stability. Similarly, we do find a negative interaction term of inward FBP and RESE in column 5 of Table 12. Even though it was argued earlier that when foreign banks are likely to adhere to the regulations of security and exchanges of the host economy, foreign banks rather choose to locate their risky transactions in host economies that have weaker security and exchange regulations. This is because there is no uniformity when it comes to regulations on securities and exchanges regulations across SSA economies.

Instead, we find a positive interaction term between inward FBP and POMI in column 4 of Table 12. This shows that even though majority shareholders may dominate minority shareholders' interests, foreign banks may still want to build social trust and legitimacy in their business operations. Thus, foreign banks are likely to consider the interest of minority shareholders, who are relatively more risk-averse than majority shareholders. Thus, the interaction

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term between POMI and FBP is likely to reduce risk-taking in the banking sector and subsequently improve banking sector stability. Finally, we find a positive interaction term of CRP and inward FBP. This shows that, in economies where creditor rights protection is enforced, foreign banks are less likely to cause moral hazard problems for depositors, which eventually reduces the probability of banking sector failure.

With regards to the control variables, the bank performance variables, that is, return on assets and net interest margin mostly exhibit a positive relationship with banking sector stability and this means that improvement in banking sector stability is usually associated with banking sector performance (*see* Ozili, 2018). The country-level governance variable mostly exhibits a positive relationship with banking sector stability, which emphasises the need for strong country governance to enhance the stability of the banking sector. From the results in Tables 11 and 12, banking sector concentration mostly exhibits a negative relationship with banking sector stability. This indicates that a high level of banking sector concentration reduces the level of banking sector competition required to ensure the sector's stability.

Information sharing mostly exhibits a negative influence on banking sector stability in all the results obtained in Tables 11 and 12, and this is in line with the study of Guérineau and Leon (2019) who argue that greater access to credit history can lead to more credit access for risky borrowers because over-reliance on credit history reduces the effectiveness of loan demand screening. Inflation mostly exhibits a negative relationship with BSS, which is in line with existing studies like Feghali, Mora, and Nassif (2021). Finally, GDP mostly positively influences banking sector stability because banking sectors are more

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prosperous and robust in periods of economic prosperity (Feghali, Mora & Nassif, 2021).

Foreign Bank Penetration, CLCGs, Economic Freedom and Home Country Banking Sector Stability

In this section, we present the results on how CLCGs and economic freedom affects the relationship between outward FBP and the banking sector stability of the home county. The results are presented in Table 13.

Table 13: The effect of Outward FBP, CLCGs, and economic freedom on BSS
Dependent variable: lnz-score

	(1) lnZScore	(2) lnZScore	(3) lnZScore	(4) lnZScore	(5) lnZScore	(6) lnZScore
L.lnZSco	0.727***	0.576***	0.547***	0.757***	0.501***	0.571***
	(0.077)	(0.078)	(0.047)	(0.040)	(0.102)	(0.079)
lnOFBP	-0.072**	-0.099***	-0.057**	-0.057**	-0.080***	-0.088**
	(0.035)	(0.030)	(0.023)	(0.027)	(0.026)	(0.040)
ECB	0.113**					
	(0.046)					
SARS		0.599***				
		(0.040)				
EB			-0.145***			
			(0.044)			
POMI				-0.083**		
				(0.040)		
RESE					0.082**	
					(0.038)	
CRP						0.066***
						(0.022)
EFW	0.047	0.098**	0.179**	0.038	0.138**	0.152**
	(0.063)	(0.036)	(0.069)	(0.073)	(0.058)	(0.063)
GOV	0.144*	0.076	0.087	0.202*	0.121	0.194*
	(0.083)	(0.081)	(0.118)	(0.108)	(0.099)	(0.095)
lnROE	0.089	0.016	0.022	0.019	0.032***	0.014
	(0.144)	(0.076)	(0.077)	(0.098)	(0.010)	(0.088)
lnNIM	0.034***	0.031***	0.042***	0.031***	0.045***	0.008
	(0.007)	(0.006)	(0.008)	(0.008)	(0.011)	(0.009)
lnBDGDP	0.062	0.074**	0.069	0.092***	0.081**	0.081
	(0.045)	(0.015)	(0.056)	(0.011)	(0.032)	(0.071)
lnCONCENT	0.036	-0.033*	-0.039***	-0.014	-0.043***	-0.044**
	(0.194)	(0.017)	(0.014)	(0.016)	(0.013)	(0.020)
lnIS	-0.008	0.023	-0.042*	0.058	-0.043**	-0.037*
	(0.013)	(0.015)	(0.021)	(0.093)	(0.017)	(0.021)

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Table 13 continued

lnINF	-0.092***	-0.018	-0.092***	-0.008	0.009	-0.005**
	(0.006)	(0.019)	(0.005)	(0.007)	(0.007)	(0.002)
lnGDPPC	0.211***	0.134	0.290***	0.154***	0.253**	0.086
	(0.037)	(0.097)	(0.096)	(0.032)	(0.096)	(0.091)
_cons	-1.248	0.862	0.945	-0.903	0.918	0.137
	(0.753)	(0.816)	(0.920)	(0.720)	(1.066)	(0.924)
Obs.	205	205	205	205	205	221
No of groups	28	28	28	28	28	28
No. of inst	20	18	20	21	19	18
AR1 (p-value)	0.0823	0.0642	0.0138	0.0638	0.0818	0.0131
AR2 (p-value)	0.952	0.928	0.794	0.770	0.735	0.330
Hansen-J (p-value)	0.579	0.862	0.733	0.955	0.665	0.967
Sargan(p-value)	0.165	0.194	0.394	0.160	0.732	0.401

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, OFBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

The results in Table 13 generally show that outward foreign bank penetration decreases the banking sector stability of the home country. These results have several implications. The banking sector of advanced economies is assumed to be more robust than that of emerging economies (Focarelli & Pozzolo, 2005). Therefore, since foreign bank operations in SSA are dominated by purely African banks (usually referred to as pan-African banks), foreign bank penetration mainly occurs between these same SSA economies and therefore inefficiencies are likely to be transferred from the host economy to the home economy. Also, the similarities in macroeconomic environments in SSA economies probably provide little opportunities for diversification. This eventually reduces the level of the home country's banking sector stability. Thus, our results align with the argument of Yin et al. (2020) that outward foreign bank penetration may only be beneficial to the home economy if the foreign bank operations are extended mainly to advanced economies.

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Next, the study presents the findings on the moderation effect of CLCGs on the relationship between outward FBP and BSS in Table 14.

Table 14: The moderating effect of CLCGs on the relationship between Outward FBP and BSS. *Dependent variable: lnz-score*

	(1) lnZScore	(2) lnZScore	(3) lnZScore	(4) lnZScore	(5) lnZScore	(6) lnZScore
L.lnZScore	0.466***	0.543***	0.490***	0.799***	0.448***	0.656***
	(0.111)	(0.083)	(0.074)	(0.079)	(0.118)	(0.090)
lnOFBP	-0.044***	-0.051***	-0.033***	-0.021*	-0.032**	-0.017*
	(0.009)	(0.007)	(0.008)	(0.011)	(0.013)	(0.008)
ECB	0.138**					
	(0.063)					
lnOFBP*ECB	0.124***					
	(0.038)					
SARS		0.288***				
		(0.099)				
lnOFBP*SARS		0.116***				
		(0.029)				
EB			0.226***			
			(0.046)			
lnOFBP*EB			-0.061***			
			(0.019)			
POMI				-0.099**		
				(0.044)		
lnOFBP*POMI				0.039		
				(0.029)		
RESE					0.218***	
					(0.069)	
lnOFBP*RESE					0.061*	
					(0.032)	
CRP						0.077**
						(0.003)
lnOFBP*CRP						0.025*
						(0.014)
EFW	0.292**	0.109*	0.066	0.035	0.107*	0.115**
	(0.115)	(0.056)	(0.091)	(0.046)	(0.062)	(0.055)
GOV	0.066	0.154	0.020	0.140*	0.011	0.338***
	(0.141)	(0.119)	(0.154)	(0.068)	(0.092)	(0.061)
lnROE	0.072***	0.087	0.087	0.100	0.040**	0.013
	(0.021)	(0.055)	(0.092)	(0.071)	(0.017)	(0.011)
lnNIM	0.035***	0.0489***	0.041***	0.043***	0.042***	0.038***
	(0.010)	(0.011)	(0.009)	(0.007)	(0.014)	(0.007)
lnBDGDP	0.041	0.092***	0.077	0.092	0.091***	0.071
	(0.033)	(0.023)	(0.056)	(0.081)	(0.012)	(0.081)
lnCONCENT	-0.056**	-0.042**	-0.044***	0.0601	-0.057***	-0.034*
	(0.024)	(0.020)	(0.016)	(0.188)	(0.018)	(0.019)
lnIS	-0.003	0.0237	-0.019	-0.005	-0.015	0.023
	(0.015)	(0.018)	(0.027)	(0.020)	(0.023)	(0.014)

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Table 14 continued

lnINF	-0.073***	-0.100***	0.012	-0.009	0.004	-0.009***
	(0.005)	(0.019)	(0.054)	(0.006)	(0.003)	(0.003)
lnGDPPC	0.137**	0.245**	0.236**	0.152**	0.243**	0.134**
	(0.058)	(0.119)	(0.109)	(0.056)	(0.100)	(0.055)
_cons	3.048*	1.308	1.116	-0.703	1.490	-0.625
	(1.499)	(0.984)	(1.031)	(0.568)	(1.324)	(0.714)
Observations	205	205	205	205	205	221
No of groups	28	28	28	28	28	28
No. of instr.	20	18	19	19	18	18
AR1 (p-value)	0.0325	0.0374	0.0549	0.0687	0.0279	0.0196
AR2 (p-value)	0.573	0.823	0.859	0.985	0.907	0.489
Hansen-J (p-value)	0.720	0.890	0.922	0.991	0.836	0.934
Sargan(p-value)	0.440	0.687	0.141	0.482	0.976	0.315

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, OFBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

The positive interaction terms in Column 1 and 2 of Table 14 shows the invaluable role of corporate board efficiency and SARS in mitigating the possible transfer of inefficiencies from the foreign market to the host economy. These results imply that when corporate boards are effective in fulfilling the interest of all bank stakeholders, there will be a low margin of banking sector instability associated with outward foreign bank penetration. The result could also mean that effective corporate boards can spot opportunities and make strategic investments in economies with favourable macroeconomic conditions. Additionally, the results show that strong adherence to auditing and reporting standards provides the necessary information required for managers and other concerned stakeholders to reduce the extent to which inefficiency transfers harm the stability of the home country's banking sector.

The interaction term of EBF and outward FPF is negative showing that ethical compliance is costly in the sampled SSA economies and thus the weak level of EBF compounds the problem of inward transfer of banking sector

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inefficiencies. Model 4 show that POMI does not seem to matter to the relationship between outward FBP and the home country's banking sector stability. The interaction term between outward FBP and RESE is positive and this means that the security and exchange commission of the sampled SSA economies are wary not to allow banks to transfer inefficiencies to the home country when they engage in outward trading of financial securities.

The results in Model 6 in Table 14 show that in economies where creditor rights protection is enforced, the extent to which inwardly transmitted banking sector inefficiencies and risk from economic exposures can deteriorate the stability of the home economy banking sector is reduced. The results on the effect of economic freedom as well as the control variables are much similar to those obtained when inward foreign bank penetration was employed as the measure of foreign bank penetration.

The role of CLCGs in the relationship between FBP and BSS across economies with weak and strong economic freedom

Next, we estimate the moderation results obtained in Tables 12 and 14 by splitting the samples into economies with a low and high level of economic freedom and present the results in appendices 2 – 5. When the initial splitting was done, the study found the coefficients in the subsample results to be mostly insignificant. This is because the GMM estimates are likely to be statistically insignificant when the sample size reduces (Santos & Barrios, 2011). Thus, as Santos and Barrios (2011) recommended, the study employed bootstrapping to estimate the GMM model parameters via resampling with a number of replications.

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For brevity, in this subsection, we briefly discuss the results presented in the appendices. It can be observed from the results in appendices 2 and 3 that the direct coefficients of lnFBP are mostly higher for economies with a high level of economic freedom than economies with low level of economic freedom. This shows that economies with higher economic freedom can better benefit from inward FBP than economies with low economic freedom. Also, as can be observed from 2 and 3, the interaction terms of Inward FBP and the CLCG variables are mostly higher for economies with a high level of economic freedom than economies with a low level of economic freedom. This is in line with the earlier hypothesis that – the positive moderating effect of country-level corporate governance structures on the relationship between FBP and BSS is higher for economies with a high level of economic freedom than for economies with a low level of economic freedom.

It can also be observed from the results in appendices 4 and 5 that the harmful effect of outward FBP is mostly devasting for economies with a low level of economic freedom than economies with a high level of economic freedom. This shows that economies with a higher level of economic freedom can better mitigate the banes of outward FBP. Further, the interaction terms of outward FBP and the CLCG variables are mostly higher for economies with high levels of economic freedom than economies with a low level of economic freedom, confirming our third hypothesis.

Summary and Conclusions

The study examined whether CLCGs and economic freedom condition the relationship between FBP and banking sector stability in SSA economies. By employing inward and outward measures of foreign bank penetration, the

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study finds that host economies gain more from foreign bank operations than home economies in terms of banking sector stability. Further, the study finds that the relationship between foreign bank penetration and banking sector stability strongly depends on some CLCGs and the level of economic freedom.

Specifically, we find that strengthening corporate board efficacy, auditing and reporting standards, regulation of securities and exchanges, and creditor rights protection will improve the banking sector stability gains associated with foreign bank penetration. By later dividing the full sample into economies with a high and low level of economic freedom, we also find that improvement in economic freedom also improves the banking sector stability gains associated with foreign bank penetration and that the positive moderating effect of CLCG is stronger for countries with a high level of economic freedom than those with a low level of economic freedom.

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Appendices to Chapter Six

Appendix 1 – Correlation matrix

Variables	lnZScore	lnIFBP	lnOFBP	ECB	SARS	EB	POMI
lnZScore	1.000						
lnIFBP	-0.049	1.000					
lnOFBP	-0.057	0.537***	1.000				
ECB	-0.011	0.060	0.184***	1.000			
SARS	-0.060	0.120**	0.270***	0.737***	1.000		
EB	0.044	0.114**	0.175***	0.599***	0.709***	1.000	
POMI	0.035	0.083	0.131**	0.680***	0.806***	0.737***	1.000
RESE	0.109*	0.092	0.243***	0.716***	0.857***	0.673***	0.803***
CRP	-0.025	-0.008	-0.010	0.407***	0.471***	0.286***	0.303***
EFW	0.190***	0.216***	0.374***	0.378***	0.448***	0.542***	0.382***
GOV	0.163***	0.113**	0.321***	0.387***	0.567***	0.698***	0.553***
lnROE	-0.175***	0.010	-0.052	-0.007	-0.006	0.070	0.032
lnNIM	-0.257***	0.126**	-0.084	-0.002	-0.069	-0.048	-0.133**
lnBDGDP	0.133**	0.116***	0.132**	0.297***	0.223***	0.221***	0.272***
lnCONCENT	-0.093*	-0.166***	-0.230***	-0.166***	-0.185***	-0.074	-0.178***
lnIS	0.046	-0.033	0.265***	0.432***	0.695***	0.499***	0.449***
lnINF	-0.089*	0.0433	-0.099**	0.0422	0.0781**	-0.064	0.034**
lnGDPPC	0.301***	0.025	0.292***	0.329***	0.571***	0.463***	0.468***

Variables	RESE	CRP	EFW	GOV	lnROE	lnNIM	lnBDGDP	lnCONCENT	lnIS	lnINF	lnGDPPC
RESE	1.000										
CRP	0.496***	1.000									
EFW	0.555***	0.380***	1.000								
GOV	0.601***	0.102*	0.687***	1.000							
lnROE	-0.049	0.084	-0.063	-0.017	1.000						
lnNIM	-0.036	0.227***	0.057	-0.214***	0.192***	1.000					
lnBDGDP	0.189**	-0.078	0.112***	0.102*	0.037	-0.134**	1.000				
lnCONCENT	-0.356***	-0.519***	-0.399***	-0.146***	0.100*	0.014	-0.123	1.000			
lnIS	0.611***	0.353***	0.394***	0.492***	0.001	-0.053	0.331**	-0.152**	1.000		
lnINF	0.059	0.083	0.146***	0.042	-0.099*	-0.0864	-0.230	0.093*	-0.116*	1.000	
lnGDPPC	0.587***	0.206***	0.378***	0.576***	0.028	-0.408***	0.212*	-0.185***	0.716***	-0.152*	1.000

*** p<0.01, ** p<0.05, * p<0.1. lnz-score represents the lag of the natural log of z-score, Inward FBP represents Inward Foreign bank penetration, Outward FBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.
Source: Field data (2022)

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Appendix 2: The effect of CLCGs on the relationship between IFBP and BSS across economies with weak level economic freedom. *Dependent variable: lnz-score*

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZScore	0.611***	0.701***	0.722***	0.732***	0.752***	0.756***
	(0.103)	(0.124)	(0.182)	(0.184)	(0.184)	(0.126)
lnIFBP	0.196**	0.161**	0.1916**	0.155**	0.090**	0.044**
	(0.098)	(0.080)	(0.076)	(0.066)	(0.041)	(0.019)
ECB	2.787**					
	(0.522)					
lnIFBP*ECB	0.141**					
	(0.063)					
SARS		0.810**				
		(0.348)				
lnIFBP*SARS		0.108***				
		(0.020)				
EB			2.283**			
			(1.091)			
lnIFBP*EB			-0.942***			
			(0.057)			
POMI				0.724***		
				(0.251)		
lnIFBP*POMI				0.181***		
				(0.041)		
RESE					0.284	
					(0.289)	
lnIFBP*RESE					-0.012***	
					(0.007)	
CRP						0.017**
						(0.008)
lnIFBP*CRP						0.065*
						(0.033)
GOV	0.390***	0.442***	0.114***	0.333***	0.322***	0.282***
	(0.065)	(0.021)	(0.015)	(0.061)	(0.031)	(0.101)
lnROE	0.035*	0.025***	0.098***	0.024***	0.039***	0.082***
	(0.019)	(0.003)	(0.016)	(0.003)	(0.004)	(0.005)
lnNIM	0.041**	0.042*	0.034*	0.035**	0.024**	0.025*
	(0.019)	(0.024)	(0.017)	(0.016)	(0.010)	(0.014)
lnBDGDP	0.073*	0.094***	0.080	0.099**	0.051***	0.091***
	(0.041)	(0.013)	(0.066)	(0.049)	(0.012)	(0.022)
lnCONCENT	-0.042***	-0.045***	-0.099***	-0.051*	-0.055**	-0.025*
	(0.003)	(0.016)	(0.022)	(0.026)	(0.013)	(0.013)
lnIS	-0.064**	-0.068**	-0.082**	-0.032*	-0.032*	-0.020*
	(0.0282)	(0.031)	(0.040)	(0.015)	(0.017)	(0.010)
lnINF	-0.099***	-0.019	-0.099***	-0.008***	0.008	-0.008**
	(0.001)	(0.016)	(0.005)	(0.002)	(0.007)	(0.004)
lnGDPPC	0.090	0.319***	0.275***	0.020	0.046***	0.182*
	(0.164)	(0.114)	(0.104)	(0.018)	(0.012)	(0.109)
_cons	2.742	2.353	0.856	0.127	-1.805	1.352
	(4.005)	(2.584)	(9.030)	(3.636)	(2.819)	(0.975)
AR1 (p-value)	0.0553	0.0810	0.152	0.115	0.0631	0.0662
AR2 (p-value)	0.248	0.192	0.113	0.270	0.225	0.221
Hansen-J (p-value)	0.960	0.980	0.818	0.984	0.945	0.962
Sargan(p-value)	0.208	0.0935	0.871	0.194	0.430	0.581

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, IFBP represents Inward Foreign bank penetration, ECB represents efficacy of corporate boards, SARS represents strength of

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auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.
Source: Field data (2022)

Appendix 3: The effect of CLCGs on the relationship between IFBP and BSS across economies with strong level of economic freedom. *Dependent variable: lnz-score*

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZScore	0.753***	0.756***	0.804***	0.842***	0.929***	0.507*
	(0.212)	(0.137)	(0.143)	(0.232)	(0.203)	(0.252)
lnIFBP	0.296***	0.292***	0.299***	0.300***	0.1964***	0.0914***
	(0.0323)	(0.0364)	(0.034)	(0.044)	(0.024)	(0.015)
ECB	4.283***					
	(0.366)					
lnIFBP*ECB	0.309***					
	(0.072)					
SARS		5.540**				
		(2.484)				
lnIFBP*SARS		0.293**				
		(0.130)				
EB			10.99*			
			(5.664)			
lnIFBP*EB			- 0.355*			
			(0.182)			
POMI				5.823**		
				(2.253)		
lnFBP*POMI				0.498**		
				(0.209)		
RESE					0.374	
					(0.353)	
lnIFBP*RESE					-0.016*	
					(0.009)	
CRP						0.099*
						(0.049)
lnIFBP*CRP						0.091**
						(0.040)
GOV	0.315***	0.266***	0.343***	0.746***	0.173***	0.518***
	(0.079)	(0.020)	(0.093)	(0.031)	(0.027)	(0.040)
lnROE	0.084*	0.070*	0.071*	0.086**	0.064***	0.074***
	(0.049)	(0.042)	(0.042)	(0.036)	(0.021)	(0.025)
lnNIM	0.062***	0.068***	0.060***	0.0645**	0.073**	0.062***
	(0.011)	(0.019)	(0.019)	(0.027)	(0.019)	(0.015)
lnBDGDP	0.063*	0.084***	0.060*	0.089**	0.077***	0.082***
	(0.031)	(0.023)	(0.036)	(0.034)	(0.018)	(0.019)
lnCONCENT	-0.041***	-0.046***	-0.062***	-0.048***	-0.069***	-0.058***
	(0.009)	(0.004)	(0.005)	(0.007)	(0.008)	(0.005)
lnIS	-0.075***	-0.062**	-0.060**	-0.072**	-0.064**	-0.068*
	(0.015)	(0.025)	(0.025)	(0.034)	(0.026)	(0.038)
lnINF	-0.087***	-0.029*	-0.086***	-0.062***	-0.093	-0.024*
	(0.004)	(0.015)	(0.004)	(0.008)	(0.054)	(0.012

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Appendix 3 continued

lnGDPPC	0.257**	0.383***	0.291**	0.204*	0.229**	0.719**
	(0.105)	(0.121)	(0.109)	(0.109)	(0.104)	(0.321)
_cons	-24.02	-19.27**	-37.43*	-20.39	-1.555	-5.595
	(39.32)	(8.417)	(19.97)	(14.18)	(4.842)	(3.440)
AR1 (p-value)	0.332	0.752	0.0891	0.0435	0.0717	0.220
AR2 (p-value)	0.960	0.692	0.240	0.685	0.751	0.477
Hansen-J (p-value)	0.889	0.994	0.873	0.985	0.994	0.884
Sargan(p-value)	0.911	0.245	0.873	0.907	0.249	0.0908

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, IFBP represents Inward Foreign bank penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

Appendix 4: The effect of CLCGs on the relationship between OFBP and BSS across economies with weak level of economic freedom

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZScore	0.709*	0.796**	0.717***	0.894**	0.641**	0.462*
	(0.342)	(0.293)	(0.189)	(0.337)	(0.258)	(0.219)
lnOFBP	-1.415***	-0.478***	-0.462***	-0.356***	-0.334**	-0.383**
	(0.092)	(0.099)	(0.108)	(0.105)	(0.141)	(0.147)
ECB	1.061***					
	(0.097)					
lnOFBP*ECB	0.112***					
	(0.039)					
SARS		0.192*				
		(0.097)				
lnOFBP*SARS		0.249***				
		(0.077)				
EB			-0.126*			
			(0.073)			
lnOFBP*EB			-0.140***			
			(0.028)			
POMI				-0.044***		
				(0.011)		
lnOFBP*POMI				0.037**		
				(0.017)		
RESE					0.154	
					(0.105)	
lnOFBP*RESE					0.020**	
					(0.010)	
CRP						0.018***
						(0.002)
lnOFBP*CRP						0.019*
						(0.010)
GOV	0.347	0.190*	0.309**	0.159*	0.366***	0.624***
	(0.321)	(0.101)	(0.154)	(0.092)	(0.099)	(0.103)
lnROE	0.016*	0.078**	0.041*	0.080**	0.044	0.054**
	(0.010)	(0.030)	(0.021)	(0.039)	(0.051)	(0.027)

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Appendix 4 continued

lnNIM	0.017	0.022	0.014*	0.034*	0.029**	0.034**
	(0.012)	(0.021)	(0.009)	(0.017)	(0.015)	(0.013)
lnBDGDP	0.008***	0.006	0.007**	0.007***	-0.005	0.005***
	(0.002)	(0.005)	(0.003)	(0.002)	(0.003)	(0.001)
lnCONCENT	-0.021**	-0.013	-0.017**	-0.038***	-0.049***	-0.069**
	(0.008)	(0.009)	(0.008)	(0.011)	(0.018)	(0.027)
lnIS	-0.076**	-0.110	0.019*	0.033*	0.025	-0.043
	(0.036)	(0.098)	(0.012)	(0.017)	(0.016)	(0.031)
lnINF	-0.057***	-0.048***	-0.043*	-0.076**	-0.052**	-0.051*
	(0.011)	(0.022)	(0.022)	(0.037)	(0.022)	(0.028)
lnGDPPC	0.216*	0.425**	0.215**	0.312**	0.425***	0.389**
	(0.109)	(0.166)	(0.107)	(0.128)	(0.110)	(0.159)
_cons	-2.759	-0.333	-1.597	-0.0378	-0.149	0.889
	(2.530)	(5.548)	(1.212)	(1.776)	(1.524)	(1.623)
AR1 (p-value)	0.230	0.0610	0.0237	0.163	0.0430	0.146
AR2 (p-value)	0.533	0.934	0.892	0.664	0.665	0.986
Hansen-J (p-value)	0.991	0.969	0.936	0.993	0.994	0.997
Sargan(p-value)	0.160	0.522	0.102	0.296	0.134	0.397

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, OFBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

Appendix 5: The effect of CLCGs on the relationship between OFBP and BSS across economies with strong level of economic freedom

	(1)	(2)	(3)	(4)	(5)	(6)
L.lnZScore	0.802***	0.855***	0.710***	0.429*	0.965***	0.492***
	(0.266)	(0.187)	(0.135)	(0.224)	(0.205)	(0.132)
lnOFBP	-0.674**	-0.172*	-0.174*	-0.271**	-0.165*	-0.314***
	(0.241)	(0.097)	(0.094)	(0.112)	(0.101)	(0.094)
ECB	1.205**					
	(0.090)					
lnOFBP*ECB	0.126***					
	(0.036)					
SARS		0.220**				
		(0.097)				
lnOFBP*SARS		0.404***				
		(0.081)				
EB			-0.108**			
			(0.052)			
lnOFBP*EB			-0.054***			
			(0.011)			
POMI				0.045***		
				(0.010)		
lnOFBP*POMI				0.042**		
				(0.019)		
RESE					0.150	
					(0.102)	

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Appendix 5 continued

lnOFBP*RESE					0.033**	
					(0.016)	
CRP						0.012***
						(0.003)
lnOFBP*CRP						0.026*
						(0.014)
GOV	0.334	0.207**	0.318***	0.525**	0.502**	0.197*
	(0.350)	(0.0969)	(0.114)	(0.200)	(0.187)	(0.104)
lnROE	0.093*	0.095***	0.023*	0.045*	0.018	0.066***
	(0.048)	(0.027)	(0.015)	(0.025)	(0.029)	(0.016)
lnNIM	0.027**	0.027	0.039**	0.036	0.029*	0.064**
	(0.011)	(0.019)	(0.017)	(0.028)	(0.018)	(0.026)
lnBDGDP	0.053	0.066***	0.069	0.072**	0.071***	0.092
	(0.033)	(0.024)	(0.059)	(0.035)	(0.011)	(0.061)
lnCONCENT	-0.049**	-0.027**	-0.028*	-0.026**	-0.022**	-0.021*
	(0.022)	(0.013)	(0.017)	(0.012)	(0.010)	(0.011)
lnIS	-0.070*	-0.050	-0.018	-0.026	-0.016	-0.075***
	(0.036)	(0.035)	(0.013)	(0.044)	(0.023)	(0.024)
lnINF	-0.085***	-0.091***	0.052***	-0.077	-0.024**	-0.093***
	(0.021)	(0.016)	(0.014)	(0.064)	(0.010)	(0.025)
lnGDPPC	0.549***	0.282**	0.223**	0.583***	0.981**	0.480***
	(0.147)	(0.107)	(0.102)	(0.143)	(0.384)	(0.100)
_cons	-0.882	-0.650	-0.374	0.848	-0.853	2.157*
	(1.597)	(1.959)	(2.650)	(1.560)	(1.281)	(1.052)
AR1 (p-value)	0.0815	0.0105	0.0420	0.0636	0.0129	0.125
AR2 (p-value)	0.381	0.381	0.629	0.217	0.234	0.175
Hansen-J (p-value)	0.999	0.943	0.960	0.997	0.941	0.576
Sargan(p-value)	0.519	0.141	0.622	0. 560	0.169	0.263

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.010. lnz-score represents the natural log of z-score, OFBP represents outward Foreign bank Penetration, ECB represents efficacy of corporate boards, SARS represents strength of auditing and reporting standards, EB represents ethical behavior of firms, POMI presents protection of minority shareholder interest, RESE represents regulations of security and exchanges, CRP represents creditor right protection, EFW represents the index of economic freedom of the world, GOV represents Governance, ROE represents return on equity, Net Interest Margin, BDGDP represents banking sector deposit to GDP, CONCENT represents banking sector concentration, IS represents Information Sharing, INF represents Inflation and GDDPC represents real GDP per capita.

Source: Field data (2022)

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CHAPTER SEVEN

FOREIGN BANK PENETRATION, BANKING SECTOR REGULATIONS AND BANKING SECTOR STABILITY IN SSA

Abstract

This chapter employs recent banking regulation dataset to study the direct effect of banking sector regulations on banking sector stability, as well as how banking sector regulations moderates the relationship between foreign bank penetration and banking sector stability in SSA. The study finds that there is no consistency in the direction of relationship between banking sector regulations and banking sector stability. Moreover, the study finds that due to the heterogeneity in the level of compliance to banking sector regulations among the sampled SSA economies, regulatory arbitrage could potentially harm the banking sector stability of SSA economies. Thus, it is recommended that SSA economies should commit to ensuring that foreign banks adhere strongly to the international banking regulations so that the harmful effect of possible regulatory arbitrage on banking sector stability could be reduced.

Introduction

For the past three decades, evidence from the KOF's globalisation index has shown that globalisation increased by 45% (*see* Yin, 2020). Undoubtedly, the increase in globalisation has affected both the financial and real sectors of several economies. Specifically for the financial sector, cross-border banking has increased across Europe and the Americas and has gained much ground across the African continent in the past two decades (Ngwu, Ogbechie & Ojah, 2019; Yin, 2020). According to Yin (2019), foreign bank penetration has

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increased in the past few decades, following the advancement in world economic integration.

Usually, foreign banks operate in host economies by establishing branches or through cross-border lending. Through the increment in avenues for capital acquisition and provision of innovative technologies, foreign banks can improve resource distribution in the host country (Fischer, 2015). Foreign banks also participate in the risk-sharing of the host country's financial sector because they boost credit supply during economic downturns to insulate the host economy from shocks (Chen, Nazir, Hashmi & Shaikh, 2019).

Given the worldwide increase in foreign banking, understanding the implications of bank globalisation on the banking sector of host economies is quite essential. Despite the fact that bank globalisation has drawn the attention of bank supervisors, bank executives, academicians and the government, the argument on the impact of foreign banking on the host economy's banking sector has never been conclusive. While some literature argues for a favourable impact on host economy's financial sector, others argue that foreign bank operations hurt the financial system of host economies (*see* Houston, Lin & Ma, 2012; Claessens, Demirgüç-Kunt and Huizinga, 2001; Ghosh 2016; Chen et al., 2019; Sissy, Amidu & Abor, 2017).

With this, economies that have witnessed increases in foreign bank operations, whether from the view of home country or host country, should be wary of its implications on the financial sector. Some studies argue that foreign bank presence can affect the performance, efficiency and stability of the banking system in the host nation via the competition channel (Ghosh, 2016; Yin, 2019; Yin, Yang & Lu, 2020; Yin, 2021; Kusi, Agbloyor, Simplice &

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Abor, 2021). The last factor, banking sector stability, has precipitated a lot of new attention following the recent global financial crises.

Markowitz's (1952) international portfolio diversification theory suggests that a positive relationship between foreign bank penetration and banking sector stability could exist. Kouretas and Tsoumas (2016) posit that expansion of foreign bank activity across several economies will enable foreign banks to diversify their loans and deposits portfolios. Once these banks achieve a balanced portfolio of their loans and deposits, they can insulate the host economy from banking sector instability during periods of banking sector crises. On the part of customers, there will be diversification benefits because the presence of foreign banks will allow bank customers to have an internationally diversified investment.

Another strand of literature, which stems from the traditional "competition-stability theory", argues that foreign bank penetration can enhance the stability of the host country's banking system as a result of competition (*see* Allen & Gale, 2004). This is because competition reduces financial intermediation cost, which increases borrowers' loan repayment power to avoid non-performing loans and banking sector instability (Chen, Nazir, Hashmi & Shaikh, 2019; Kouretas & Tsoumas, 2016). In addition, foreign bank penetration could pressure local banks to be innovative and improve their quality of service (Sissy, Amidu & Abor, 2017). From the home country's perspective, when domestic banks expand their business operations to foreign economies, they can acquire new skills, technologies, innovative ideas and products that will benefit the home country's banking sector.

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The opposite view that foreign bank penetration could hurt banking sector stability primarily can be explained from the competition-fragility hypothesis by Allen and Gale (2005). The central argument of the competition-fragility hypothesis is that intense competition among banks drives down their market power and profits. Thus, it can be predicted that the influx of foreign banks may create a high level of competition among the firms in the banking industry, reduce their profits and increase their fragility. Even in the absence of contagion and moral hazard problems, the high level of competitive pressures caused by the influx of foreign banks could drive down banking profits to the extent that they cannot protect possible loan losses (Bremus, 2015).

Furthermore, foreign banks can leverage economies of scale to select customers with high creditworthiness and leave customers with low credit ratings to domestic banks (Cull & Peria, 2007). This will then increase the level of risk born by domestic banks and negatively affect the banking sector's stability. In addition, in periods of economic crises, foreign banks can easily withdraw from the local market, thereby reducing credit availability and financial stability in the host country (Peek & Rosengren, 2000).

From the ongoing discourse, it is apparent that the impact of foreign banking on a host country's banking sector stability can be observed from different perspectives. Therefore, recent literature on the foreign banking and banking sector stability nexus is gradually drawing toward examining the cross-country heterogeneity in the relationship between foreign banking and banking sector stability (*see* Kusi, Agbloyor, Simplice, & Abor, 2021; Ying 2019). By taking an institutionalist approach, this study empirically examines whether the

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impact of foreign bank penetration on banking sector stability could be altered by the level of compliance to international banking regulations.

The recent financial crisis has renewed the interest in the role of banking supervision and regulation to protect financial systems globally. This has resulted in a number of banking sector regulatory reforms, thereby making banking sector regulations more global (Triki, Kouki & Pietro, 2016). One of the most notable banking sector regulatory reforms is global agreement of the Basel Committee on international banking and supervision regulations, with the recent package referred to as Basel III. While there seems to be some empirical evidence on the association between banking regulation and banking stability (e.g., Fang, Hasan & Marton,2014; Bushman, 2016), the evidence is limited regarding how banking regulations affect the relationship between foreign banking and banking sector stability.

A pivotal study by Houston, Lin and Ma (2012) prompted the need to re-assess the motives of foreign bank entry to host economies. Houston et al. (2012) found evidence for the "race to the bottom hypothesis" that, the increase in foreign bank activity across several economies may be due to banking sector regulatory lapses, which could pose a great danger for the banking sector of the home and host economy. Recently, based on the public and the private group interest theories of regulations, Kusi et al. (2021) examined whether the relationship between foreign bank presence and banking sector stability is contingent on the regulatory regime present in the host economy.

Unlike the studies of Houston et al. (2012) and Kusi et al. (2021), this study explores different aspects of banking supervision and regulation, particularly by employing the dataset from Triki et al. (2016), to examine the

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role of banking regulations and supervision in the relationship between foreign bank penetration and banking sector stability from the home and host country perspective. The regulations data obtained from Triki et al. (2016) covers several aspects of the banking regulations issued by the Basel committee, and these include capital stringency, entry restrictions, activity restrictions, Transparency requirements, exit restrictions, diversification and liquidity restrictions, supervision quality, price controls and financial safety nets. The dataset has been employed by Triki et al. (2016) to examine the relationship between banking sector regulations and bank efficiency in Africa.

Another contribution made by this study is that it is probably the first to examine how foreign bank penetration, and not just foreign bank presence, affect banking sector stability of both the host and the home country. Previous studies such as Kusi et al. (2021) focused how foreign bank presence affects the stability of banks in the host country without considering the level of foreign bank activity and the possible implications for the home country. Also, investigating the relationship between foreign bank penetration and the stability of the home country's banking sector will provide cues to the home country's banking sector stability as their banks seek to expand to other banking markets.

This study focuses on SSA economies for a number of reasons. First, there have been a rapid increase in foreign bank activities in the sub-region, following the recent global financial crisis (IMF Report, 2019). Second, most countries in sub-region are at different stages in implementing Basel I, II, and III (Ngwu, Ogbechie & Ojah, 2019), which could provide arbitrage opportunities for cross-border bank expansion. Thus, the issue of regulation lapses could be more pervasive for these economies. The next section reviews

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literature on the linkages between foreign bank penetration, banking sector regulations and banking sector stability.

Literature Review

The following sub-sections provide the empirical review on the relationships between foreign bank penetration, banking sector regulations and banking sector stability.

Foreign Banking Penetration and Banking Sector Stability

The incentives for bank globalisation have been a subject of contention among academics, policymakers and policy practitioners. From Markowitz's (1959) theory of international portfolio diversification, it can be reasonably assumed that foreign banking allows the operations of cross-border banks (CBB) to be spread across several countries. This, in turn, limits the extent to which these CBB are susceptible to country-specific shocks. Thus, the extent to which country-specific risk can affect the entire banking network of CBB may be quite limited. On the part of bank depositors in the host country, they can diversify their risk by holding an internationally diversified portfolio.

Yin (2019) explained that foreign bank operations in the host country enable the host country banks to acquire new skills and technologies and find innovative ways of enhancing their quality of their banking services. Ukaegbu and Oino (2014) found that foreign bank entry is vital to the operations of the domestic banks. Some researchers posit that foreign bank entry enables domestic banks to increase banks' stability as a result of technical know-how, banking knowledge and banking expertise spillovers (*see* Goldberg, 2007; Lensink & Hermes, 2004).

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Foreign bank entry can encourage domestic banks to employ innovative systems to manage risk and this in turn improves the stability of the host country's banking sector (Wu, Chen, Jeon & Wang, 2017). From the home country point of view, it is also likely that when banks operate in foreign economies, they can also transfer new skills, innovations and technologies to enhance their banking operations in the home country. In what is termed the "competition-stability" theory of Allen and Gale (2005), banking competition drives down the prices of banking services which will avoid a situation where borrowers cannot repay loans. Yin (2019) therefore explains that foreign banking can bring about foreign competition which drives down the domestic banks' market power. This will lessen domestic banks' ability to charge high interest rates on loans and eventually reduce their associated loan portfolio default risk. With this, the resilience of the banking sector of both the host country and the home country is expected to improve when there is foreign bank penetration.

However, it is possible that when domestic banks expand their operations abroad, they may also transfer the host country's banking sector failures and inefficiencies to their home country. Similarly, an increase in foreign bank activities in a host country will increase the level of banking sector competition and thus may hurt the level of banking sector stability in the host country. The "competition-fragility" theory by Allen and Gale (2005) explains that intense rivalry among banks leads to increased banking sector fragility. In a rigorous competitive market, when earnings are under pressure, banks are incentivised to take excessive risks, thereby making the banking system more fragile.

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In a more competitive banking environment, banks are likely to demand less information from their borrowers, reducing their incentives to monitor them (Chen et al., 2019). Vives (2011) explained that intense competition reduces financial stability by exacerbating the investor coordination problem, increasing the incentives to take more risk, hence increasing the likelihood of failure. Thus, it could be assumed that foreign bank penetration may increase banking sector competition and lead to unintended adverse consequences.

From the ongoing discussions, it could be observed that an increase in foreign bank penetration can have critical implications for the stability of the banking system of the host and the home countries, although the direction is not apparent. The next section presents an overview of the state of Banking and Bank regulations in SSA as the study examines the role of banking regulations in the relationship between foreign banking and bank stability in SSA.

Overview of foreign Banking and Banking Sector regulations in SSA

According to Claessens and Horen (2014), cross-border banking had a significant role in the run-up to the 2007 financial crisis, with European banks serving as powerful financial intermediaries for the United States, crowding out the extent of the local financial sector's intermediation. Furthermore, foreign banking was blamed for fueling loan booms and property bubbles in Eurozone nations like Spain and Ireland. Thus, Schoenmaker and Wagner (2011) explained that foreign banking is one of the avenues for transferring shocks from one economy to another. It should however be highlighted that risk diversification is one of the key advantages of foreign banking since it allows banks to spread their risks across many nations, reducing their exposure to risk in a single economy market (Claessens, 2006).

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With the European Union (EU) foundation in 1993 through the Maastricht Treaty, foreign banking flourished across Europe starting in the year 2000. The establishment of a common European currency also addressed currency risk and further promoted cross-border banking through legal and regulatory harmonisation. Nevertheless, Europe was hardly hit by the 2007-2008 financial crises because of the region's rapid growth of foreign banking. As a result, the experience in Europe provides a relevant and worthwhile set of guidelines for regions that want to take advantage of growth-enhancing initiatives like foreign banking and wider economic integration. The advantages of foreign banking may be contingent on the alignment of legal institutions related to banking (Ngwu et al. 2019).

The landscape of foreign banking in Africa is comparable to that of the Eurozone, but with a slower pace of expansion. Available statistics show that between 2006 and 2018, the number of subsidiaries of foreign banks in host economies of SSA has more than tripled from 53 to 169 (IMF, 2019). Foreign banking in the SSA region has expanded not just in their physical footprints but also in cross-border lending and economic importance across several economies in the region (*see* Kusi et al., 2021). Foreign banking has grown in SSA due to greater prospects beyond national borders, the quest for larger market sizes, and the loosening of cross-border regulatory regimes (Beck, Fuchs, Singer & Witte, 2014; Kodongo, Natto & Biekpe, 2015).

Notwithstanding, when there is an increase in foreign banking in a region, a hurdle that becomes a great concern is a regulatory framework that ensures no regulatory arbitrage. Several SSA economies vary in their implementation of international banking regulations, including Basel I, II, and

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III (Ngwu et al., 2019). Such a problem is likely to increase the disadvantages of foreign banking, including having a detrimental impact on the stability of the entire SSA banking system.

Usually, the supervision of cross-border banks to align themselves with banking regulations is more difficult than purely domestic banks. This is because supervisors require access to information not only on banks' operations in the host economy, but also on their entire international operations. Due to uneven compliance to international banking regulations, another danger posed by foreign banking is the over-diversification of banking activities, which indicates that banks that diversify their loan portfolio usually do so to avoid prudence and efficient attitude in their operations (Acharya, & Yorulmazer, 2006).

Regarding regulatory coordination across economies in SSA, there are also linguistic barriers to contend with. The political/cultural gap between Francophone and Anglophone countries for instance, in SSA, and the subregion's proclivity for insisting on sovereignty in terms of regulations may hamper effective supervision of foreign banks by host countries. This is largely based on the premise that African countries have different histories, socio-political, economic and regulatory contexts, and these may shape the implementation of banking regulations.

The problem of a particular nation's religious insistence on autonomy deserves special attention, since some believe that applying international banking regulations alone may impinge on their "independence" (Bruno & Hauswald, 2013). Thus, the repercussions of the increase in foreign banking activity in a sub-region with a high level of heterogeneity in the application of

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international banking regulations need to be assessed. The next session provides a literature review on the role of banking regulations in the relationship between foreign bank penetration and banking sector stability in SSA.

Foreign Bank Penetration and Banking Sector Stability: The role of banking regulations

The relationship between foreign bank penetration, banking sector regulations and banking sector stability can be explained from the "race-to-bottom" view of regulatory arbitrage. The "race-to-bottom" view of regulatory arbitrage posits that the expansion of cross-border banking activity enables cross-border banks to shift their risk-taking activities from a less regulated environment to a more regulated one. Barth, Caprio and Levine (2006) argued that the differences in the level of compliance to international banking regulations issued by the Basel Accords could lead to an unintended consequence like shifting of risk – taking activities to a less regulated environment.

Houston et al. (2012) provide empirical evidence on the "race-to-bottom" view of regulatory arbitrage by examining the relationship between banking regulations and cross-border bank flows. Findings from Houston et al. (2012) suggest that the "race-to-bottom" may be destructive when foreign banks circumvent prudent regulations to make gains. Karolyi and Taboada (2015) similarly find that strong adherence to banking regulations may rather lead to value creation activities in the host economy. Thus, on the one hand, the argument here is that a destructive form of regulatory arbitrage may exist when international banking regulations weaken the relationship between foreign bank activity and bank stability. On the other hand, regulatory arbitrage may be quite

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benign when international banking regulations strengthen the relationship between foreign bank activity and banking sector stability in Africa.

This study examines how international banking regulations condition the relationship between foreign bank penetration and banking sector stability in SSA by employing international banking regulations data. There are good reasons to suspect that such interaction. High capital requirement is likely to increase bank soundness because it enhances shareholders' interest to monitor high risk taking, and it also serves as protection against losses suffered from non-performing loans (Mehran & Thakor, 2011). Supervisory power generally enhances bank stability (Barth et al., 2013). However, such a relationship may hold so long as they are independent because supervisory power is likely to be independent in an environment characterised by high corruption. Activity restriction is vital because when banks engage in many activities off their balance sheet, their business structure becomes complex, and bank monitoring becomes difficult for bank regulators (Pasiouras et al., 2009). Altogether, this shows that when economies comply with the set of banking sector regulations, it could reduce regulatory arbitrage and its negative implications on banking sector stability. This leads to the hypothesis that:

Hypothesis 1: When economies strongly adhere to international banking sector regulations, the banking sector regulations will positively moderate the relationship between foreign bank penetration and banking sector stability.

Research Methods

Variables and Data Sources

The study employed a panel data of 35 SSA economies between 2007 and 2017, because of data availability for the variables of interest. This study

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employs a dataset from Triki et al. (2017) to measure the level of compliance by the banking sector of an economy to the Basel Accord's banking regulations in several categories such as capital stringency, entry restrictions, activity restrictions, Transparency requirements, exit restrictions, diversification and liquidity restrictions, supervision quality, price controls and financial safety nets. These measures of banking regulations were built from the survey instrument adapted from one designed by the World Bank (*see* Triki et al., 2017; Barth, Caprio & Levine, 2013).

The survey conducted by Triki et al. (2017) was a 2-part survey on the state of banking regulation compliance in Africa. Since such data is not annually available, this study follows the approach of existing banking regulation studies such as Demirgüç-Kunt, Laeven & Levine (2003), Houston et al. (2012), Triki et al. (2017), and Danisman and Demirel (2019) and employ data from the 2007 survey data for the period 2007 – 2009 and the 2010 survey data for the period 2010 – 2017. An argument that could be raised against this method is that the level of compliance to banking regulations might have changed over the said periods. However, empirical studies in the African continents have provided evidence of insignificant variations in banking regulations data as compared to other developed economies (*see* Triki et al., 2017; Murinde, 2012; Kasekende, Bagyenda, Brownbridge, 2011).

Next, data on receipts of foreign bank lending by host economies in SSA is obtained from the Bank for International Settlement (BIS) database and scaled by GDP to measure the level of inward foreign bank penetration in host economies. Further, to assess the relationship between foreign bank penetration and banking sector stability from the home country perspective, data on the ratio

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of foreign claims of BIS reporting banks to GDP (%) is obtained from the Global Financial Development Database to measure the extent to which the banking sector of an economy has perpetrated that of other economies. Data on banking sector stability was measured by the z-score and was obtained from the Global Financial Development Database.

In line with existing studies on determinants of banking sector stability (see Ozili,2018), the study controls for some banking sector-specific variables, other institutional structures and macroeconomic variables. The variables, their measurement and data sources are presented in Table 15.

Table 15: Variable, Definition and Sources

Variables	Definition	Data Source
Z-score	It measures the extent to which bank's performance and risk aversion level can enable then to avoid losses. It is calculated as $(ROA_{it} + ETA_{it})/\sigma_{ROA,}$ where ROA represents return on assets, ETA is the equity to asset ratio and σ_{ROA} represents the standard deviation of return on assets.	World Bank's Global Financial Development Database
Inward foreign bank penetration	Constructed as Ratio of consolidated banking claims on a host economy by foreign countries to the GDP	consolidated banking claims on a host economy by foreign countries is sourced from BIS statistics and GDP data was sourced from WDI.
Outward foreign bank penetration	Ratio of consolidated banking claim against foreign countries to the GDP	World bank's global financial development database
Bank regulation Measures: Capital stringency, entry restrictions, activity restrictions, Transparency requirements, exit restrictions, diversification and liquidity restrictions, supervision quality, price controls and financial safety nets	Indices constructed using the approach suggested by Barth et al. (2013). For a details on the questions, weights and coding that were used in constructing the indices, see Triki et al. (2017).	Data was obtained from Triki et al. (2017).

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Table 15 continued

Banking Sector competition	Measured as the concentration ratio of the banking sector. High concertation implies low competition level and vice versa.	World Bank's Global Financial Development Database
Net Interest margin	Measured as (interest revenue on loans – interest expense on deposits)/Average earning assets	World Bank's global financial development database
Return on Equity	Measured as net income divided by total equity.	World Bank's global financial development database
Liquid asset to deposit ratio	Measured as the ratio of Liquid assets to deposits and short-term funding. The numerator and denominator are aggregated on the country level before division.	World Bank's global financial development database
Cost-to-income ratio	Measured as total cost incurred by banks as a percentage of the income earned by incurring those cost.	World Bank's global financial development database
Economic freedom	Index of economic freedom measured on scale of 1 – 10. Where 1= low level of economic freedom and 10= high level of economic freedom.	Fraser Institute
Economic growth	Measured as real GPD per capita	World bank's WDI dataset
Inflation	Changes in consumer price index	World bank's WDI dataset

Specification of the Empirical Model

Based on the nature and structure of the data, a panel data estimation technique is employed to estimate the results. This study follows extant banking stability literature in Africa (Kusi et al., 2021; Ozili, 2018; Triki et al., 2017) to specify the empirical models. To assess how banking regulations condition the effect of foreign bank penetration on bank sector stability, the study first specifies the unconditional effect in equation (1) by including both foreign bank

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penetration and bank regulations as regressors but with no interaction term. Next, the study specifies equation (2) by modifying equation (1) to include an interaction term between each bank regulation variable and the foreign bank penetration variables to assess the conditional effect of foreign bank penetration on banking sector stability in SSA.

$$BSS_{i,t} = \gamma_o + \gamma_1 BSS_{i,t-1} + \gamma_2 FBP_{i,t} + \gamma_3 BSR_{i,t} + \gamma_4 Z_{i,t} + \mu_i + \eta_t + \varepsilon_{i,t} \quad (1)$$

$$BSS_{i,t} = \gamma_o + \gamma_1 BSS_{i,t-1} + \gamma_2 FBP_{i,t} + \gamma_3 BSR_{i,t} + \gamma_4 (FBP * BSR)_{i,t} + \gamma_5 Z_{i,t} + \mu_i + \eta_t + \varepsilon_{i,t} \quad \ldots\ldots \quad (2)$$

Where *BSS* represents banking sector stability, *FBP* represents foreign bank penetration variables, *BSR* is a vector of banking sector regulation variables, *Z* is a vector of the control variables. μ_i denotes a set of unobserved country-specific characteristics and η_t represents time-specific characteristics. $\varepsilon_{i,t}$ represents the error term.

Estimation Procedure

An econometric problem that could arise from estimating regression is endogeneity bias. Endogeneity problems arise due to significant correlations between the error term and the regression coefficients. Typically, endogeneity is caused by reverse causality and variable persistence. The empirical specification in equations 1 and 2 are likely to suffer from endogeneity problems because a stable banking sector could attract more foreign bank penetration, leading to plausible reverse causality. Also, variables like banking sector regulations and banking sector stability are likely to be persistent over time. To control for the possible endogeneity concerns, it is vital to employ a panel econometric approach that could alleviate endogeneity in the empirical specification.

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In line with recent literature that employs panel data estimation techniques, this study employs the two-step system GMM to estimate the empirical specifications. This instrumental variable estimator deals with endogeneity problems, and it is more efficient when the cross-section dimension of the panel data has a wider span than the time-series dimension. The system GMM employs internal instruments such as lags and differences of the variable even though internal instruments have been criticised to be weakly exogenous (Blundell & Bond, 1998). Thus, this study employs several variables used in previous theoretical and empirical literature to instrument the foreign bank and the regulatory variables. These variables could shape foreign bank penetration and bank regulations but may not exhibit a first-order effect on banking sector stability.

First, the study employs FDI inflows as an instrument for inward penetration of the banking sector. This is because increases in FDI inflows may be associated with an increase in the level of foreign firms (including banks) in a host economy. Next, this study employs FDI outflows as an instrument for outward penetration of the banking sector of foreign economies, and this is because increases in FDI outflows signify increase in the level of domestic firms' (including banks) activity in foreign countries.

For the bank regulations variables, we employ the following variables as instruments: year of independence, legal origin, ethnic fractionalisation and religion. Following Beck et al. (2006), we employ the number of years since an economy gained independence as an instrument because economies that gained independence at an earlier time are likely to adopt more beneficial banking sector regulations. In addition, the study employs legal origin as an instrument

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for the banking sector regulations because Barth et al. (2004) and Beck et al. (2006) argue that a country's set of regulations are influenced by their colonial history.

This study performs instrument validity and over-identification restrictions test to assess the validity of all the instruments employed in the SGMM estimations. Another important diagnostic test that is performed for all SGMM estimates is the Arellano and Bond autocorrelation test. For the results to be adequate, there must be no autocorrelation in the second order (AR2).

Empirical Results

The descriptive statistics of the variables are presented in Appendix 1 of this chapter. Descriptive statistics is employed to detect possible outliers in the dataset. Thus, any variable that raises suspicion of outliers is transformed into natural logarithms before employing them in the regression analysis. Using a threshold of 0.80 (*see* Kenedy, 2008), the results on the pairwise correlation matrix between the key variables presented in Appendix 2 show the non-existence of high pairwise correlation among the independent variables. However, since the banking sector regulation variables may be related in terms of functionality, this study follows the approach of Triki et al. (2017) and does not include them in the same regression model.

To examine the link between FBP and BSS, the study employs two main measures: inward foreign bank penetration and outward bank penetration. From the regression diagnostics in all the models in Tables 16,17, 18 and 19, the study does not reject the null hypothesis of over-identifying restrictions by Sargan and Hansen tests. Further, the Arellano and Bond test of no second-order

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autocorrelation (AR (2)) for all the models are not rejected at 5% level. These diagnostics altogether shows that the estimated results are reliable.

Table 16 shows the SGMM results of the equation of BSS on inward foreign bank penetration (hereafter, IFBP) and banking sector regulations. The results from Table 16 show that inward foreign bank penetration is positively associated with increases in banking sector stability. This finding is constant across the different columns (i.e., from column 1 to 9). This result is in line with the "competition-stability view". The economic intuition behind this finding is that inward foreign bank penetration brings about foreign competition which drives down the market power of all banks in the host economy. This will in turn lessen domestic banks' ability to charge high-interest rate on loans and eventually reduce its associated loan portfolio default risk, thereby improving the overall resilience of the banking sector. Also, inward foreign bank penetration leads to efficiency and managerial competence transfers to the domestic banking sector, and this improves the resilience of the sector. The results also imply the increased competition in the banking sector caused by inward foreign bank penetration is likely to reduce financial intermediation costs charged by firms in the banking sector, improve the loan repayment power of borrowers and avoid banking sector instability. These finds are in line with that of Yin (2019); Chen, Nazir, Hashmi and Shaikh (2019); and Kusi et al. (2021) that find a positive relationship between foreign banking and banking sector stability.

The results from Table 17 rather show that outward foreign bank penetration is negatively related to banking sector stability. This finding is constant across the different models (i.e, from model 1 – model 9). This result

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is in line with our earlier argument that when domestic banks expand their operations abroad, they may also transfer the host country's banking sector failures and inefficiencies to their home country.

The banking sector regulation variables employed in this study mostly exhibit a negative relationship with banking sector stability in Table 16 and 17.

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Table 16: Host-country effect – Foreign Bank Penetration and host country Banking Sector Stability. *Dependent variable: lnz-score*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L.lnZScore	0.672***	0.758***	0.615***	0.698***	0.659***	0.695***	0.652***	0.683***	0.510***
	(0.049)	(0.055)	(0.073)	(0.074)	(0.079)	(0.062)	(0.079)	(0.044)	(0.0668)
lnIFBP	0.039*	0.050*	0.040*	0.044**	0.048**	0.042*	0.016***	0.033**	0.048**
	(0.022)	(0.025)	(0.023)	(0.018)	(0.019)	(0.024)	(0.006)	(0.015)	(0.018)
ENTR	-0.022*								
	(0.014)								
ACTR		-0.069**							
		(0.028)							
TRANSP			-0.071*						
			(0.035)						
CAPS				-0.042**					
				(0.021)					
LIQD					0.080**				
					(0.034)				
PRC						0.053***			
						(0.017)			
SUPQ							-0.199***		
							(0.049)		
FSN								-0.030*	
								(0.017)	
EXTR									0.042***
									(0.01)
GOV	0.025***	0.079***	-0.080	0.060***	0.056**	0.019	0.027	0.180	-0.100
	(0.008)	(0.016)	(0.086)	(0.019)	(0.014)	(0.073)	(0.101)	(0.126)	(0.075)
lnCONCENT	-0.070***	-0.0141	0.040	-0.050***	-0.074***	-0.012***	-0.062	-0.046	-0.066***
	(0.008)	(0.008)	(0.078)	(0.008)	(0.008)	(0.009)	(0.078)	(0.060)	(0.008)
lnNIM	0.027***	0.011*	0.034***	0.037***	0.047***	0.029***	0.023***	0.024***	0.038***
	(0.060)	(0.006)	(0.005)	(0.007)	(0.009)	(0.009)	(0.004)	(0.006)	(0.005)
lnROE	0.017	0.021*	0.033***	0.029**	0.037**	0.010	0.022*	0.028***	0.029**
	(0.012)	(0.011)	(0.010)	(0.013)	(0.014)	(0.011)	(0.011)	(0.010)	(0.012)
lnLIQRES	-0.013	-0.040	-0.077	0.035	-0.051***	-0.022*	-0.011	-0.060***	-0.010
	(0.0110)	(0.046)	(0.130)	(0.022)	(0.010)	(0.012)	(0.008)	(0.010)	(0.011)
lnBCIR	-0.039**	-0.07***	-0.067***	-0.078***	-0.081***	-0.050**	-0.011	-0.042***	-0.073***
	(0.016)	(0.022)	(0.014)	(0.023)	(0.019)	(0.019)	(0.012)	(0.015)	(0.017)
lnINF	-0.018***	-0.02***	-0.046***	-0.080**	-0.034	-0.019	0.057***	-0.023	-0.099***
	(0.002)	(0.003)	(0.002)	(0.023)	(0.028)	(0.019)	(0.010)	(0.024)	(0.020)

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Table 16 continued

EFW	0.008	0.097**	0.033	0.069	0.055	0.011	0.008	0.066	0.092*
	(0.051)	(0.041)	(0.048)	(0.047)	(0.055)	(0.051)	(0.053)	(0.051)	(0.052)
lnGDPPC	0.025***	0.023	0.064***	0.017	0.058***	0.042	0.103**	0.070***	0.110**
	(0.003)	(0.029)	(0.012)	(0.037)	(0.011)	(0.026)	(0.047)	(0.010)	(0.041)
Constant	-0.330	-0.048	-0.631	-0.950	-0.444	-1.017	0.553	-1.210**	-1.752**
	(0.742)	(0.645)	(0.563)	(0.658)	(0.777)	(0.672)	(0.587)	(0.556)	(0.657)
Observations	270	270	270	270	270	270	270	270	270
No of grps.	33	33	33	33	33	33	33	33	33
No. of instr.	26	26	27	25	25	25	24	24	25
AR1 (pvalue)	0.0773	0.0250	0.0202	0.0894	0.0174	0.0251	0.0382	0.0695	0.0262
AR2 (p-value)	0.427	0.327	0.247	0.282	0.232	0.402	0.660	0.361	0.172
Hansen-J (p-value)	0.832	0.951	0.883	0.866	0.890	0.921	0.975	0.841	0.912

Standard errors in parentheses* p<0.10, ** p<0.05, *** p<0.010. l.lnZ-score represents the lag of the natural log of the z-score, lnIFB represents the natural log of inward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions, GOV represents Governance, CONCENT is banking sector concentration ratio NIM represents Net interest margin, ROE represents Return on Equity, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, GDPPC represents GDP per capita, INF represents Inflation, EFW represents economic freedom of the word index.

Source: Field data (2022)

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Table 17: Home-country effect – Foreign Bank Penetration and home country Banking Sector Stability *Dependent variable: lnz-score*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L.lnZScore	0.848***	0.832***	0.825***	0.664***	0.700***	0.784***	0.558***	0.688***	0.753***
	(0.050)	(0.054)	(0.056)	(0.0865)	(0.087)	(0.093)	(0.100)	(0.071)	(0.084)
lnOFBP	-0.228*	-0.363***	-0.761**	-0.177*	-0.588***	-0.115**	-0.344*	-0.073*	-0.274**
	(0.132)	(0.131)	(0.322)	(0.099)	(0.169)	(0.048)	(0.185)	(0.037)	(0.132)
ENTR	-0.047*								
	(0.023)								
ACTR		-0.067***							
		(0.018)							
TRANSP			-0.090**						
			(0.040)						
CAPS				-0.083***					
				(0.017)					
LIQD					0.126***				
					(0.038)				
PRC						0.066***			
						(0.020)			
SUPQ							-0.198***		
							(0.066)		
FSN								-0.026**	
								(0.013)	
EXTR									0.033***
									(0.010)
GOV	0.261***	0.062*	0.050	0.014	0.105*	0.147**	0.103	0.085***	0.087***
	(0.043)	(0.036)	(0.043)	(0.043)	(0.060)	(0.055)	(0.071)	(0.015)	(0.011)
lnCONCENT	-0.098	-0.026***	-0.019	-0.011	-0.012	-0.017**	-0.041	-0.027	-0.011
	(0.062)	(0.007)	(0.060)	(0.072)	(0.098)	(0.008)	(0.063)	(0.057)	(0.008)
lnNIM	0.036***	0.024***	0.028***	0.036***	0.048***	0.044***	0.032***	0.028***	0.035***
	(0.006)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)

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Table 17 continued

lnROE	0.039***	0.049***	0.040***	0.040***	0.029***	0.035***	0.030***	0.026***	0.033***
	(0.007)	(0.006)	(0.004)	(0.007)	(0.007)	(0.010)	(0.007)	(0.006)	(0.008)
lnLIQRES	-0.014	0.046	-0.021**	0.042	-0.037	-0.09***	-0.097***	-0.028***	-0.093***
	(0.010)	(0.065)	(0.008)	(0.052)	(0.013)	(0.010)	(0.008)	(0.008)	(0.010)
lnBCIR	-0.054***	-0.049***	-0.043***	-0.037***	-0.035***	-0.035**	0.019	-0.028**	-0.031***
	(0.010)	(0.010)	(0.008)	(0.009)	(0.009)	(0.013)	(0.012)	(0.013)	(0.011)
lnINF	-0.024**	-0.042***	-0.029***	-0.022	-0.012	-0.019	-0.029***	-0.025***	-0.045
	(0.011)	(0.012)	(0.010)	(0.013)	(0.016)	(0.013)	(0.010)	(0.009)	(0.097)
EFW	0.020	0.023	0.021**	0.090**	0.010	0.018	0.021	0.016	0.021
	(0.048)	(0.038)	(0.008)	(0.038)	(0.039)	(0.047)	(0.031)	(0.036)	(0.047)
lnGDPPC	0.031***	0.025***	0.047**	0.054	0.037	0.096	0.154***	0.067	0.075
	(0.002)	(0.003)	(0.019)	(0.038)	(0.030)	(0.057)	(0.054)	(0.040)	(0.052)
Constant	0.255	0.776**	0.686**	-0.129	0.916*	-0.321	0.521	0.394	-0.129
	(0.377)	(0.357)	(0.281)	(0.254)	(0.479)	(0.304)	(0.326)	(0.356)	(0.395)
Observations	274	274	274	274	274	274	274	274	274
No. of groups	33	33	33	33	33	33	33	33	33
No. of instruments	27	27	27	27	27	24	24	27	25
AR1 (p-value)	0.0281	0.0346	0.0401	0.0135	0.0118	0.0986	0.0177	0.0521	0.0604
AR2 (p-value)	0.713	0.571	0.652	0.577	0.819	0.770	0.602	0.713	0.748
Hansen-J (p-value)	0.952	0.960	0.853	0.873	0.957	0.957	0.966	0.987	0.952

Standard errors in parentheses* p<0.10, ** p<0.05, *** p<0.010. l.lnZ-score represents the lag of the natural log of the z-score, lnOFB represents the natural log of outward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions, GOV represents Governance, CONCENT represents banking sector concentration, NIM represents Net interest margin, ROE represents Return on Equity, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, GDPPC represents GDP per capita, INF represents Inflation, EFW represents economic freedom of the word index.

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Specifically, while entry restriction was found to be negatively associated with banking sector stability, exit restrictions were rather found to have a positive relationship. This could probably mean that entry restrictions limit competition, and since competition is necessary to ensure banking sector stability, entry restrictions eventually harm banking sector stability. Similarly, the results on exit restrictions imply that when banks do not exit the banking sector, they continue to add to the level of competition in the sector and this improves the robustness of the banking sector. A high entry restriction prevents stronger banks from entering the banking sector to improve the overall stability of the sector whilst a high level of exit restrictions forces weaker banks to find innovative ways of improving their performance to stay relevant in the sector. These intuitions are in line with the competition-stability view.

The study finds liquidity and diversification requirements as well as price controls to be positively related to the banking sector's stability. This finding on price controls points out that restrictions on banks' ability to charge interest rates improve the banking sector's stability. This result affirms the earlier finding that when the ability of banks to charge high-interest rates are lessened, loan portfolio default risk is reduced, which improves the banking sector's overall resilience. Also, this finding imply that price controls encourage more thorough credit appraisal given that restrictions induce forced competition, thereby avoiding adverse selection and moral hazard problems. In line with the information asymmetry theory, high interest rate only attracts risky borrowers. In line with the results on liquidity and diversification requirements, higher liquidity and diversification requirements force banks to maintain liquidity and keep a well-balanced loan portfolio, it could improve banking

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sector stability. This means that when firms in the banking sector of SSA economies keep a well-diversified asset portfolio, they can reduce their risk of failure. This is in line with the arguments of Kouretas and Tsoumas (2016).

Meanwhile, the study finds a negative effect of financial safety nets on banking sector stability. These results imply that financial safety nets provide implicit guarantee for banks in instances of banks failures and this increases the risk appetite of firms in the banking sector, which eventually erodes the resilience of the banking sector. This finding corroborates the argument of Anginer, Demirguc-Kunt, Huizinga and Ma (2018) that deposit insurance could potentially harm banking sector stability. Activity restrictions also exhibit a negative impact on banking sector stability. These results lend support to the view that when bank activities are highly restricted, it reduces the income diversification ability of banks, reduces performance and their stability. This corroborates the finding of Barth et al. (2001; 2013), Pasiouras, Tanna and Zopounidis (2009), and Tiriki et al. (2017).

Moreover, the study finds that a high level of transparency requirements reduces the level of Banking sector stability in the sample SSA economies. In line with the argument of Tiriki et al. (2017), although information disclosure by banks ensures market discipline and banking sector stability, information disclosure is costly in the sampled SSA economies and, therefore, the cost of private monitoring outweighs the benefits in terms of efficiency and stability.

Similarly, the study finds that stringent capital requirements negatively affect banking sector stability in the sampled SSA economies. In line with the argument of Calomiris and Kahn (1991), these results imply that increased capital requirements raise the agency cost from the debt holders-shareholder

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relationship, negatively affecting performance and stability. Since the SSA economies are mostly classified as developing, the results could also mean that stringent capital requirements reflect unwarranted government interferences in the banking sector, leading to inefficient credit allocation and eventually harming banking sector stability. Thus, this finding corroborates the arguments of Chortareas, Girardone and Ventouri (2001), who find that stringent capital requirements negatively affect banking sector performance in developing economies.

Finally, the results Tables 16 and 17 mostly show a negative effect of supervision independence and quality of banking sector stability. These results provide some cues that supervision independence and quality could only positively influence banking sector stability when the supervisory authorities are indeed independent. In our sampled SSA economies, where supervisory authorities are mostly not independent (*see* Triki et al., 2017), giving them more power is likely to encourage corruption instead of discipline in the banking sector. Therefore, corrupt supervisory authorities allow banks to make poor lending decisions, thereby increasing the overall risk of banks' loan portfolios and the stability of the banking sector. This finding empirically corroborates that of Demirguc-Kunt and Detragiache (2011), which reveal that lack of technical capability to enforce compliance to banking sector regulations actually raises the risk level of the banking sector. Our finding also confirms that of Barth et al. (2004) who show that banking supervision in developing countries rather weakens banking sector efficiency.

To finetune this chapter's central argument, we investigate how the relationship between foreign bank penetration and banking sector stability is

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affected by banking sector regulations. Thus, we modify the baseline models reported in Table 16 and 17 by including interaction terms between the foreign bank penetration variables and the bank regulation variables and present them in Tables 18 and 19.

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Table 18: The effect of banking sector regulations on the relationship between IFBP and BSS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
L.lnZScore	0.755***	0.790***	0.772***	0.767***	0.728***	0.774***	0.670***	0.693***	0.761***
	(0.092)	(0.052)	(0.056)	(0.060)	(0.061)	(0.059)	(0.054)	(0.056)	(0.0723)
lnIFBP	-0.239**	-0.327***	-0.145**	0.012**	-0.127***	-0.020***	-0.247***	-0.033***	0.04105*
	(0.112)	(0.103)	(0.055)	(0.005)	(0.041)	(0.007)	(0.086)	(0.008)	(0.0210)
ENTR	-1.366**								
	(0.591)								
lnIFBP*ENTR	0.066**								
	(0.028)								
ACTR		1.619***							
		(0.530)							
lnIFBP*ACTR		0.081***							
		(0.026)							
TRASNP			-0.385***						
			(0.125)						
lnIFBP*TRANS			0.016**						
			(0.006)						
CAPS				0.271**					
				(0.129)					
lnIFBP*CAPS				0.016**					
				(0.007)					
LIQD					-0.646***				
					(0.209)				
lnIFBP*LIQD					0.029***				
					(0.010)				
PRC						-0.852**			
						(0.416)			
lnIFBP*PRC						0.043**			
						(0.021)			
SUPQ							-1.135***		
							(0.366)		
lnIFBP*SUPQ							0.051***		
							(0.019)		
FSN								-0.268**	
								(0.102)	
lnIFBP*FSN								0.012**	
								(0.005)	

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Table 18 continued

EXTR									0.163*
									(0.081)
lnIFBP*EXTR									-0.009**
									(0.004)
GOV	0.014	0.133**	0.023	0.072*	0.045*	0.021	0.017	0.087	0.041
	(0.100)	(0.057)	(0.030)	(0.041)	(0.023)	(0.048)	(0.056)	(0.103)	(0.044)
lnCONCENT	0.019	-0.010	-0.016***	-0.041	-0.013	-0.010	0.047	0.057	-0.069
	(0.120)	(0.008)	(0.006)	(0.105)	(0.009)	(0.008)	(0.048)	(0.050)	(0.054)
lnNIM	0.010	0.025***	0.015***	0.019***	0.0200***	0.024***	0.018**	0.017**	0.019**
	(0.008)	(0.007)	(0.004)	(0.007)	(0.005)	(0.008)	(0.007)	(0.008)	(0.008)
lnROE	0.041***	-0.010	0.041***	0.052***	0.046***	0.038***	0.031***	0.030***	0.049***
	(0.014)	(0.009)	(0.009)	(0.008)	(0.007)	(0.009)	(0.008)	(0.011)	(0.010)
lnLIQRES	-0.029*	-0.081	-0.092	-0.015**	-0.012**	-0.024***	-0.035***	-0.031***	-0.014*
	(0.014)	(0.139)	(0.066)	(0.007)	(0.006)	(0.005)	(0.008)	(0.007)	(0.007)
lnBCIR	0.027	0.028	-0.019***	-0.019*	-0.021*	-0.016	-0.013	-0.067	0.093
	(0.022)	(0.021)	(0.005)	(0.010)	(0.011)	(0.118)	(0.020)	(0.214)	(0.107)
lnINF	-0.079	-0.052***	0.041	-0.017**	-0.026**	-0.022**	-0.018*	-0.053	-0.020***
	(0.180)	(0.018)	(0.078)	(0.008)	(0.010)	(0.008)	(0.009)	(0.085)	(0.006)
EFW	0.059	0.067	0.061***	0.086***	0.018	0.052***	0.022	0.017	-0.041
	(0.043)	(0.057)	(0.017)	(0.028)	(0.035)	(0.019)	(0.049)	(0.047)	(0.024)
lnGDPPC	0.035	0.036	0.039***	0.062**	0.049**	0.061**	0.081**	0.099**	0.080**
	(0.043)	(0.320)	(0.014)	(0.028)	(0.024)	(0.025)	(0.034)	(0.038)	(0.038)
_cons	5.489**	-5.622**	3.607***	-2.294**	3.199***	0.895***	5.888***	0.863*	-1.135
	(2.591)	(2.329)	(1.196)	(1.112)	(0.888)	(0.281)	(1.851)	(0.451)	(0.962)
Observations	270	270	288	288	288	288	288	288	288
No of groups	33	33	33	33	33	33	33	33	33
No. of instruments	26	26	27	25	25	25	24	24	25
AR1 (p-value)	0.0236	0.0149	0.0577	0.0103	0.0153	0.0291	0.0228	0.0370	0.0170
AR2 (p-value)	0.603	0.560	0.330	0.474	0.321	0.536	0.326	0.481	0.302
Hansen-J (p-value)	0.786	0.858	0.861	0.914	0.957	0.923	0.809	0.848	0.922

Standard errors in parentheses* p<0.10, ** p<0.05, *** p<0.010. l.lnZ- represents the lag of the natural log of the z-score, lnIFBP represents the natural log of inward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions, GOV represents Governance, CONCENT represents banking sector concentration NIM represents Net interest margin, ROE represents Return on Equity, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, GDPPC represents GDP per capita, INF represents Inflation, EFW represents economic freedom of the word index.

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In Table 18, interestingly, the results show that the introduction of the interaction terms causes the inward foreign bank penetration variables to mostly attain negative coefficients in some instances and lesser positive coefficients in other instances as compared to the positive coefficients attained in Table 16. This means that even though inward foreign bank penetration improves banking sector stability via competition, the heterogeneous nature of the level of compliance with international banking regulations across the sampled SSA economies could cause regulatory arbitrage (Ngwu et al., 2019). In line with our earlier argument, such a problem is likely to increase the disadvantages of foreign banking, including having a detrimental impact on the stability of the entire SSA banking system. This result corroborates the argument of Acharya and Yorulmazer (2006) who posit that uneven compliance to international banking regulations leads to over-diversification of banking activities, which is an indication that foreign banks do so to avoid prudence and efficient attitude in their operations, eventually reducing the resilience of the host economy's banking sector.

As can be observed from Table 19, the interaction terms between the bank regulation variables and inward foreign bank penetration are all positive except for exit restriction. The positive interaction terms, therefore, point to the fact that the issue of regulatory arbitrage and its harmful effect on banking sector stability could be reduced when SSA economies commit to ensuring that foreign banks adhere strongly to the international banking regulations. The exit restriction results show that lowering restrictions for inward foreign bank penetration will crowd out opportunistic foreign banking operations that weaken the stability of the host economies' banking sector.

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Table 19: The effect of banking sector regulations on the relationship between OFBP and BSS

	(1) lnZScore	(2) lnZScore	(3) lnZScore	(4) lnZScore	(5) lnZScore	(6) lnZScore	(7) lnZScore	(8) lnZScore	(9) lnZScore
L.lnZScore	0.815***	0.846***	0.851***	0.798***	0.670***	0.666***	0.681***	0.763***	0.473***
	(0.093)	(0.059)	(0.101)	(0.093)	(0.093)	(0.090)	(0.052)	(0.124)	(0.168)
lnOFBP	-0.033*	-0.017	-0.032*	-0.012	-0.051*	-0.07***	-0.060**	-0.074***	-0.049*
	(0.019)	(0.016)	(0.017)	(0.021)	(0.026)	(0.016)	(0.028)	(0.023)	(0.025)
ENTR	-0.063								
	(0.071)								
lnOFBP* ENTR	0.053*								
	(0.030)								
ACTR		-0.161***							
		(0.056)							
lnOFBP*ACTR		0.059**							
		(0.024)							
TRANSP			-0.195**						
			(0.090)						
lnOFBP*TRANS			0.079**						
			(0.036)						
CAPS				-0.091***					
				(0.032)					
lnOFBP*CAPS				0.018**					
				(0.008)					
LIQD					-0.180***				
					(0.061)				
lnOFBP*LIQD					0.090***				
					(0.031)				
PRC						0.070**			
						(0.026)			
lnOFB*PRC						0.067***			
						(0.001)			
SUPQ							-0.205***		
							(0.061)		
lnOFBP*SUPQ							0.081*		
							(0.045)		
FSN								0.032	
								(0.033)	
lnOFB*FSN								-0.030**	
								(0.014)	

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Table 19 continued

EXTR									-0.137**
									(0.054)
lnFOB*EXTR									0.032*
									(0.017)
GOV	0.151**	0.256***	0.086	0.169**	0.294***	0.237**	-0.097	0.148	0.091
	(0.069)	(0.090)	(0.084)	(0.062)	(0.067)	(0.106)	(0.060)	(0.152)	(0.062)
lnCONCENT	-0.013	-0.010	-0.010	-0.002	-0.059	-0.023***	-0.021	0.094	-0.023***
	(0.009)	(0.008)	(0.007)	(0.066)	(0.090)	(0.005)	(0.081)	(0.061)	(0.008)
lnNIM	0.029***	0.014	0.029***	0.035***	0.030***	0.063***	0.009	0.025***	0.047***
	(0.007)	(0.010)	(0.007)	(0.009)	(0.010)	(0.013)	(0.011)	(0.009)	(0.010)
lnROE	0.037***	0.004	0.022*	0.022*	0.026**	0.037***	0.029***	0.026**	0.017
	(0.006)	(0.012)	(0.012)	(0.013)	(0.009)	(0.009)	(0.009)	(0.012)	(0.016)
lnLIQRES	0.085	-0.048	-0.069	0.022	-0.022***	-0.021	-0.081	-0.027**	-0.036
	(0.120)	(0.012)	(0.117)	(0.121)	(0.001)	(0.107)	(0.130)	(0.013)	(0.097)
lnBCIR	-0.043***	-0.013	-0.022	-0.018	-0.012	-0.039***	-0.018	-0.028*	-0.011
	(0.011)	(0.020)	(0.019)	(0.013)	(0.019)	(0.013)	(0.020)	(0.016)	(0.016)
lnINF	-0.030***	-0.024*	-0.040**	-0.035**	-0.027	-0.035	-0.028	-0.036**	0.038
	(0.009)	(0.012)	(0.015)	(0.013)	(0.017)	(0.027)	(0.020)	(0.014)	(0.126)
EFW	0.058***	0.028***	0.015**	0.060	0.027	0.029	0.016**	0.040	0.011*
	(0.014)	(0.009)	(0.006)	(0.043)	(0.046)	(0.036)	(0.008)	(0.062)	(0.006)
lnGDPPC	0.009	0.053	0.004	0.019	0.079	0.091**	0.120***	0.016	0.147**
	(0.034)	(0.043)	(0.053)	(0.053)	(0.048)	(0.037)	(0.031)	(0.074)	(0.066)
_cons	0.552	2.102***	2.315***	0.952**	1.796***	-0.274	1.742*	1.336**	0.230
	(0.391)	(0.619)	(0.661)	(0.449)	(0.590)	(0.350)	(0.885)	(0.598)	(0.365)
Observations	274	274	274	274	274	274	292	274	274
No. of groups	33	33	33	33	33	33	33	33	33
No. of instruments	27	27	27	27	27	24	24	27	25
AR1 (p-value)	0.0589	0.0298	0.0151	0.0250	0.0649	0.0198	0.0130	0.0297	0.0123
AR2 (p-value)	0.577	0.891	0.754	0.700	0.477	0.492	0.494	0.604	0.583
Hansen-J (p-value)	0.884	0.978	0.993	0.965	0.990	0.928	0.992	0.988	0.939

Standard errors in parentheses* p<0.10, ** p<0.05, *** p<0.010. l.lnZ-score represents the lag of the natural log of the z-score, lnOFB represents the natural log of outward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions, GOV represents Governance, CONCENT represents banking sector concentration, NIM represents Net interest margin, ROE represents Return on Equity, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, GDPPC represents GDP per capita, INF represents Inflation, EFW represents economic freedom of the word index.

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When foreign bank penetration is measured by outward foreign bank penetration (see Table 19), the interaction terms between banking regulations are mostly positive, and this also shows that, even though domestic banks that expand their operations abroad may transfer banking sector failures to their home country, the extent of the negative impact on host country's banking sector stability could be lessened when these domestic banks adhere to prudential regulations. However, the interaction term coefficient between financial safety and outward foreign bank penetration is negative. This could imply that since financial safety nets provide implicitly guarantee for banks in instances of banks failures, they do not take prudential steps to avoid the transfer banking sector failures to their host economies.

For the control variables, governance and economic freedom mostly show a positive effect on banking sector stability in all the regression results in Tables 16,17, 18 and 19. This means that banks are likely to be more stable in economies characterised by strong institutional quality. Further, the results across Tables 16 – 19 mostly show that countries whose banking sector is characterised by a high net interest margin, high returns on equity and low cost-to-income ratio are likely to have a stronger banking sector. These findings that banking sector performance is positively related to bank sector stability corroborate that of Ozili (2018). The negative link between the liquid reserve ratio and banking sector stability may imply that banks in the sampled SSA economies are more prone to take an excessive risk when they feel they have enough liquid reserves, putting their stability at risk. Across all the results, banking sector concentration has a negative impact on banking sector stability, indicating that a high degree of concentration diminishes the level of

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competition necessary to guarantee the sector's stability. Finally, inflation and GDP have a negative and positive influence on banking sector stability, respectively, which is consistent with previous research such as Feghali, Mora, and Nassif (2021); and Morgan and Pontines (2014).

Summary and Conclusions

The central objective of this chapter was to examine how banking sector regulation affects the relationship between foreign bank penetration and banking sector stability in a sample of SSA economies. By employing a new data set from a new survey conducted by AfDB and first employed by Triki et al. (2017), this study expands the extant literature on the relationship between banking sector regulations and banking sector stability in SSA. Moreover, the study is first to be best of knowledge, on how banking sector regulation affects the relationship between foreign bank penetration and banking sector stability, dedicated to a developing region like SSA. The results from the study show that inward foreign bank penetration positively affects the banking sector stability of SSA economies, while outward foreign bank penetration has a negative influence on the banking sector stability of SSA economies. Also, the study finds that there is no consistency in the direction of relationship between banking sector regulations and banking sector stability. While some exhibit a positive effect, some others exhibit a negative effect on banking sector stability.

Moreover, the study finds that due to the heterogeneity in the level of compliance to banking sector regulations among the sampled SSA economies, regulatory arbitrage could potentially harm the banking sector stability of SSA economies. Further, the study finds that the harmful effect of possible regulatory arbitrage on banking sector stability could be reduced when SSA economies

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commit to ensuring that foreign banks adhere strongly to the international banking regulations. These findings have good policy implications as they emphasise the need to adapt some relevant sections of banking regulations to improve the stability of the banking sector of SSA economies. Also, in a sub-region where most economies are unnecessarily fixated on their domestic banking sector regulations, countries commit to ensuring that foreign banks adhere strongly to the international banking regulations to avoid adverse consequences on banking sector stability. This study may not offer support for one-size-fits-all domestically but rather supports one-size-fits-all for foreign banks.

Appendices to Chapter Seven

Appendix 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lnZScore	384	2.575	.481	.755	3.655
OFBP	451	51.633	43.926	.137	84.57
IFBP	456	20.461	21.999	6.993	32.415
ENTR	407	3.778	1.816	1.042	7.708
PRC	407	4.387	1.284	1.607	8.214
TRANSP	407	8.437	.952	5.655	9.881
EXTR	407	4.617	3.191	.833	10
ACTR	407	5.661	1.774	2.778	8.889
LIQD	407	5.225	1.147	2.708	7.083
PRC	407	1.547	1.91	0	6.667
FSN	407	3.705	1.086	0	9.286
SUPQ	407	4.42	.806	2.881	5.823
GOV	451	-.577	.586	-1.664	.854
CONCENT	376	73.147	18.303	32.521	100
NIM	369	6.415	4.74	1.68	14.105
ROE	372	24.702	14.474	-13.535	86.815
LIQRES	379	35.193	15.515	10.564	85.722
BCIR	381	61.006	14.976	24.753	202.041
INF	458	7.153	6.873	-8.975	44.391
EFW	395	6.157	.817	3.21	8.04
GDPPCC	462	2246.564	2825.546	172.496	15945.265

l.lnZ-score represents the natural lag of the log of z-score, , lnIFBP represents the natural log of inward foreign bank penetration lnOFBP represents the natural log of outward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions, GOV represents Governance, COCENT is banking sector concentration, NIM represents Net interest margin, ROE represents Return on Equity, BCIR is bank cost to income ratio, LIQRES represents liquid reserves ratio, GDPPC represents GDP per capita, INF represents Inflation, EFW represents economic freedom of the word index.

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Appendix 2: Pairwise correlations

Variables	lnZScore	l.lnZscore	lnOFBP	lnINFBP	ENTR	PRC	TRANSP	EXTR	ACTR	LIQD	PRC	FSN	SUPQ
lnZScore	1.000												
L.lnZScore	0.949***	1.000											
lnOFBP	-0.103**	-0.130**	1.000										
lnIFB	0.026	0.028	0.194***	1.000									
ENTR	0.116**	0.121**	-0.236***	0.060	1.000								
PRC	-0.184***	-0.189***	-0.195***	-0.102**	-0.005	1.000							
TRANSP	-0.168***	-0.173***	0.098*	0.095*	0.229***	0.023	1.000						
EXTR	-0.207***	-0.224***	0.292***	0.157***	-0.198***	-0.041	0.087*	1.000					
ACTR	-0.061	-0.080	0.131***	0.107**	0.011	-0.075	0.186***	0.587***	1.000				
LIQD	0.085*	0.070	-0.093*	-0.118**	-0.050	0.081*	0.064	0.259***	0.384***	1.000			
PRC	0.172***	0.191***	-0.160***	-0.042	0.342***	-0.071	0.015	-0.649***	-0.389***	-0.542***	1.000		
FSN	0.120**	0.122**	-0.158***	0.016	0.424***	-0.241***	0.374***	0.099**	0.037	0.125**	0.098**	1.000	
SUPQ	-0.022	-0.032	-0.048	0.092*	0.514***	0.039	0.505***	0.506***	0.551***	0.322***	-0.096*	0.715***	1.000

*** *p<0.01*, ** *p<0.05*, * *p<0.1* l.lnZ-score represents the natural lag of the log of z-score, lnOFB represents the natural log of outward foreign bank penetration, ENTR represents entry restrictions, ACTR represents activity restrictions, TRANSP represents Transparency requirement, CAPS capital stringency, LIQD represents liquidity diversification, PRC represents price control, SUPQ represents supervision quality, FSN represents financial safety net, EXTR represents exit restrictions

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CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The four empirical studies conducted in the area of foreign bank penetration, institutional structures and banking sector stability are summarized and concluded in this chapter. This chapter also provides the practical implications and policy recommendations for this study. The chapter starts out with the summary of the key findings, then moves on to the conclusion and practical implications of the study findings, contributions to theory and empirics and finally, recommendations for policy and practice.

Summary of Key Findings

This study aimed to examine the role of institutional structures (i.e., country-level corporate governance structures, economic institutions, political institutions and banking sector regulations) in the relationship between foreign bank penetration and banking sector stability. The specific objectives of the study were:

1. To assess the relationship between country-level corporate governance structures (CLCGs) and banking sector stability in sub-Saharan Africa.
2. To evaluate the relationship among economic institutions, political institutions and bank sector stability in sub-Saharan Africa.
3. To analyse the role of country-level corporate governance in the relationship between foreign bank penetration and banking sector stability in sub-Saharan African economies with a low and high level of economic freedom

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4. To investigate the role played by banking sector regulations in the relationship between foreign bank penetration and banking sector stability in SSA.

To achieve the research objectives, the study presented an empirical paper on each of the four objectives. The summary of all four papers is presented in the following four paragraphs:

Pro-stakeholder country-level corporate governance structures (CLCGs) structures represent important institutional factors essential to monitoring the risk-taking incentives of both banks and non-banking institutions and are therefore required to ensure banking sector stability. As presented in chapter four, the first objective uncovered the effect of pro-stakeholder CLCGs like efficacy of corporate boards (ECB), ethical behaviour of firms (EBF), strength of auditing and reporting standards (SARS), protection of minority shareholder interest (POMI), creditor right protection (CRP), and regulation of security and exchanges (RESE) on banking sector stability in SSA. As a further analysis, the study provided evidence for the Hierarchy of Institutions Hypothesis (HIH), by examining the moderating role of political institutions in the relationship between CLCGs and banking sector stability. The estimates from the SGMM reveal that strengthening CLCGs like ECB, SARS, CRP, and RESE will enhance banking sector stability in SSA. However, the results show a negative effect of EBF and POMI on banking sector stability, signifying that ethical compliance is costly and minority shareholders' interests are dominated by the majority in the sampled SSA economies. Further analysis show that political institutions positively moderate the relationship between CLCGs and banking sector stability.

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The second objective (empirical paper) as presented in chapter five chapter examined the effect of economic institutions on banking sector stability in a sample of SSA economies. That chapter further tests Hierarchy of Institutions Hypothesis in the relationship between economic institutions and banking sector stability. The study provides evidence of the conditioning effects of political institutions on the relationship between economic institutions and banking sector stability, but the direction of these conditioning effects depends on the particular economic institution involved. The findings of the study show that economic institutions such as LSPR, REG, and SM exhibit an unconditional positive effect on banking sector stability. However, SOG and FTTI show an unconditional negative effect on banking sector stability. The study also finds that political institutions enhance the positive effect of LSPR, REG, and SM on banking sector stability. Additionally, the enhancing effect of SOG and FTTI on banking sector stability is improved in the presence of strong political institutions.

The third objective (empirical paper) as presented in chapter six examined whether CLCGs and economic freedom condition the relationship between FBP and banking sector stability. By employing inward and outward measures of foreign bank penetration, the study finds that host economies gain more from foreign bank operations than home economies in terms of banking sector stability. Further, the study finds that the relationship between foreign bank penetration and banking sector stability strongly depends on pro-stakeholder CLCGs and the level of economic freedom. Specifically, we find that strengthening corporate board efficacy, auditing and reporting standards, regulation of securities and exchanges and creditor rights protection will

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improve the banking sector stability gains associated with foreign bank penetration. By later dividing the full sample into economies with a high and low level of economic freedom, we also find that improvement in economic freedom improves the banking sector stability gains associated with foreign bank penetration and also enhances the positive moderating effect of CLCGs on the relationship between FBP and banking sector stability.

The fourth objective (empirical paper) examines how bank regulations affect the relationship between foreign bank penetration and banking sector stability in a sample of SSA economies. The results from the study show that inward foreign bank penetration positively affects the banking sector stability of SSA economies, while outward foreign bank penetration has a negative influence on the banking sector stability of SSA economies. Also, the study finds no consistency in the direction of the relationship between banking sector regulations and banking sector stability. While some exhibit a positive effect, others negatively affect the banking sector's stability. Moreover, the study finds that due to the heterogeneity in the level of compliance to banking sector regulations among the sampled SSA economies, regulatory arbitrage could potentially harm banking sector stability of SSA economies. Further, the study finds that the adverse implications of possible regulatory arbitrage on banking sector stability could be reduced when banking regulators in SSA economies enforce compliance to international banking regulation standards.

Conclusion on the hypotheses and Practical Implication of Findings

The conclusion on the hypotheses for each objective and the practical implications for their respective findings are presented in Table 20.

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Table 20: Conclusion on hypotheses and practical implications

Chapter	Hypotheses	Decision	Practical Implications
4	H_1: There is a positive effect of corporate board efficacy on banking sector stability.	Accepted	This finding implies that in an economy where corporate boards are concerned with maximizing the interest of all stakeholders, banks are likely to be stable as compared to economies where corporate boards are focused on maximizing only the interest of shareholders.
4	H_2: There is a positive impact of strong auditing and reporting standards on banking sector stability.	Accepted	This finding implies that when auditing and reporting standards are adopted by banking and non-banking firms, information asymmetry that leads to adverse selection and moral hazard problems caused by bank and non-banking firms to each other is minimized, thereby enhancing banking sector stability.
4	H_3: A high level of corporate ethics has a positive effect on banking sector stability.	Rejected	This finding shows that ethical compliance in weak institutional regimes like that of SSA economies may be costly and this may reduce banking sector profitability and stability. Thus, strengthening institutional structures will positively make ethical compliance contribute to banking sector stability.
4	H_4: Protection of minority shareholder interest is positively associated with banking sector stability.	Rejected	This result shows that when an economy is characterized by a low level of concentrated ownership of firms, the risk appetite of minority shareholders is aligned with that of majority shareholders. Since majority shareholders (of banks) are interested in high returns on their investment, banks are likely to take on high risks and endanger the entire banking sector.
4	H_5: Creditor Right Protection has a positive effect on banking sector stability.	Accepted	The results advocate that strong creditor rights ensure the security of collateral, and thus banks are likely to make lower-risk investments with the deposit made by creditors. In addition, this result also implies that in economies characterized by strong credit rights protection, borrowers are likely not to create moral hazard problems for banks since banks can seize the collateral attached to the loan contracts.
4	H_6: Effective regulation of security and exchanges has a positive effect on banking sector	Rejected	The hypothesis was rejected because the results were positive but not statistically significant. This could mean that even though banks dominate capital market trading in most SSA economies, the underdeveloped nature of our capital

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Table 21 continued

	stability in SSA economies.		markets weakens the importance of security and exchange regulation to banking sector stability.
5	H_1: There is a significant positive effect of legal system and property rights on banking sector stability	Accepted	The practical implication of this finding is that LSPR ensures completeness of loan and deposit contracts and eventually strengthens the robustness of the banking sector.
5	H_2: There is a positive effect of government size on banking sector stability in SSA.	Rejected	This is probably because in the sampled SSA economies, as revealed by the descriptive statistics, government size is low because government decisions mostly dominate that of other economic agents on average. The practical implication of this result is that a high level of government dominance in the outcomes of several sectors of the economy will derail the sound allocation of financial resources to all economic agents, and eventually harm the stability of the banking sector. This is because in such economies, the loan portfolio of banks is dominated by state-owned enterprises (SOEs). These SOEs will likely renege on loan contracts and endanger the banking sector.
5	H_3: There is a positive effect of sound money on banking sector stability	Accepted	A low level of inflation leads to correct inferences on expected real investment returns, results in proper lending and borrowing decisions and eventually enhances banking sector stability.
5	H_4: Freedom to trade internationally positively affects banking sector stability.	Rejected	Since competition usually improves banking sector stability, this finding could imply that imports usually outcompete domestic firms, which usually make up a substantial portion of bank's loan portfolio. Thus, opening up international trade could indirectly affect banking sector stability negatively.
5	H_5: There is a positive effect of political institutions on banking sector stability	Accepted	This finding implies that political institutions improve the information environment and reduce information asymmetry and its associated adverse selection problems in the credit market.
5	H_6: Strong political institutions positively moderate the relationship between economic institutions and banking sector stability.	Accepted	This result implies that there is the existence of hierarchy in institutional structures and that the economic institutions will greatly improve banking sector stability when there are strong political institutions.

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Table 22 continued

6	$H_{1:}$ Foreign bank penetration has a significant influence on bank sector stability, even though the effect can be positive or negative	Accepted	The study found that inward foreign bank penetration improves the stability of the host economy's banking sector because inward Foreign Bank Penetration brings about the competition that improves efficiency, profitability, and eventually stability. There are also positive spillovers from the foreign banks to the host economy regarding managerial competence. However, the study finds that outward Foreign Bank penetration harms the banking sector of the home economy. This implies that inefficiencies in the banking sector of the host economy are likely to the home economy. This eventually reduces the level of the home country's banking sector stability.
6	$H_{2:}$ Country-level corporate governance structures positively moderate the relationship between Foreign Bank Penetration and banking sector stability	Partially Accepted	The study finds that except for two of the CLCGs, CLCGs positively moderate the relationship between Foreign Bank Penetration and banking sector stability. The negative evidence was found for CLCGs that are generally weak in the sampled SSA economies. The practical implication here is that the positive relationship between FPB and Banking sector stability will improve when there are strong CLCGs.
6	H_3: The positive moderating effect of country-level corporate governance structures on the relationship between FBP and BSS is higher for economies with high level of economic freedom than economies with low level of economic freedom.	Accepted	The practical implication is that economic freedom makes CLCGs more effective in fashioning out banking sector stability outcomes. Thus, economic freedom can positively complement pro-stakeholder CLCG structures in influencing the relationship between foreign banking and bank sector stability.
7	$H_{1:}$ International banking sector regulations positively moderate the relationship between Foreign Bank Penetration and banking sector stability.	Rejected	The findings imply that heterogeneity in the level of compliance to banking sector regulations among the sampled SSA economies allows foreign banks to take advantage of regulatory arbitrage, potentially harming the banking sector stability of SSA economies.

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Contribution to theory and empirics

The results in this thesis contribute to the existing literature in a number of ways. Specifically, to enrich the fledging literature on banking sector stability, this thesis took a holistic view of how foreign bank penetration and institutional structures are related to banking sector stability. By examining the country-level corporate governance and banking sector stability relationship, this thesis contributes to the law and finance theory by demonstrating how pro-stakeholder CLCGs affect the banking sector's stability. Previous literature that examines the relationship between corporate governance and banking sector outcomes has done so by employing the traditional corporate governance theories because most of these studies were conducted at the firm level.

Some recent studies have cautioned against the shareholder perspective of corporate governance in the banking sector and have rather advocated for a stakeholder perspective. This study is to the best of knowledge the first to provide empirical evidence on how pro-stakeholder corporate governance structures affect the stability of the banking sector. For example, Kusi et al. (2021) provide evidence for the relationship between pro-shareholder CLCGs and bank stability. Instead, this study examines how pro-stakeholder CLCGs matter to banking sector stability by employing country-level data. Importantly, country-level studies are more relevant for national policy.

The second objective examined relationship between economic institutions and banking sector stability. This objective provides empirical evidence on the New Institutional Theory and the emerging literature on the relationship between institutional structures and banking sector outcomes. It is a well-known fact that most studies employing the New Institutional Theory

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examine the relationship between institutional structures and economic growth variables. Meanwhile, some attempts have been made in recent literature to employ the new institutional theory to explain the relationship between institutional structures and financial sector outcomes.

Thus, the second objective extends the argument of the New Institutional theory to explain that even though institutional structures are important in economic activities, such economic activities can occur in several aspects of the economy, including the financial sector. This study is probably the first to examine the relationship between several economic institutions and banking sector stability in a sample of developing economies. This study differentiates itself from that of Sarpong-Kumankoma et al. (2020) that examines how an aspect of economic freedom, i.e., financial freedom, affects bank stability. Therefore, this study makes the point that a broad array of economic institutions is relevant to the banking sector's stability, and that strengthening economic institutions would boost economic growth, increase income levels and enhance the banking sector's stability.

The third objective examines the roles of CLCGs and economic freedom in the relationship between foreign bank penetration and banking sector stability. Examining the relationship between foreign bank penetration and banking sector stability contributes to the competition stability theory in some ways. First, this paper introduces foreign bank perpetration as a source of competition that can positively influence the banking sector's stability. Second, this study examines the relationship between foreign bank penetration and banking sector stability from the perspective of the host and home country. Studies that have employed the competition-stability theory to explain the

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relationship between foreign banking and bank stability have done so only from the host country's perspective (*like* Kusi et al.,2021). Thus, this objective introduces a new paradigm to the relationship between foreign bank penetration (FBP) and banking sector stability.

By examining the role of CLCGs in the relationship between FBP and banking sector stability, this study provides additional evidence that the potentially adverse effect of FBP on banking sector stability could be reduce and the positive effect would be enhanced by strengthening pro-stakeholder CLCGs. Finally, this objective provides additional empirical evidence that the positive effect of CLCGs on the relationship between FBP and banking sector stability is enhanced in economies with a high level of economic freedom. Thus, this study provides first-time evidence on how economic freedom makes CLCGs more effective.

The fourth objective examines how adherence to international banking sector regulations affects the relationship between FBP and banking sector stability. Previous studies (*like* Triki et al., 2017) that employ a broad array of banking regulations have only examined its direct effect on bank efficiency. This study contributes to the "race to the bottom hypothesis" – a hypothesis that describes a scenario marked by a gradual weakening or degradation of standards, notably (in commercial situations) as a result of competitive pressure. Specifically, the study finds that the increase in foreign bank activity across several economies may be due to banking regulation lapses, and this could pose a great danger to the banking sector of the home and host economy. The study also offers evidence of the ongoing debate on "one-size-fits-all" for the banking sector by showing that adherence to an omnibus set of banking sector

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regulations may prevent possible banking sector inefficiencies caused by foreign banks' perpetration.

Policy Recommendations

There must be selective Foreign Bank Penetration

The empirical evidence indicates a significant positive impact of inward foreign bank penetration on banking sector stability but an adverse negative effect of outward foreign bank penetration on banking sector stability. This result does not necessarily imply that the banking sectors in SSA economies should favour or reject foreign bank penetration. It is recommended that as foreign bank penetration continues to increase in the region, host economies should put in measures to strengthen their institutional structures to avoid any possible negative effect on banking sector stability. Home economies should also take the necessary steps to balance their investment portfolio in the sub-regions so they do not transfer inefficiencies in the host economy to their banking sector. Thus, home economies could build a loan portfolio of economies that are characterized by a high and low level of economic stability.

Strengthening of Country-level Corporate Governance Structures

The findings of the direct role of CLCGs in enhancing banking sector stability and its enhancing role in the relationship between foreign bank penetration and banking sector stability have important policy implications since the level of foreign bank penetration in the sub-region keeps increasing. Sub-Sahran African economies are advised to take the following actions:

- ensure that appropriate, actionable safeguards are put in place to protect the interests of minority owners, such as fortifying the institutional frameworks within their economies;

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- make an effort to support indigenous businesses operating ethically, which may be accomplished through mandating the creation of ethics and compliance departments inside companies, and provision of rewards to ethical firms.
- strengthen rules that protect banks as creditors, enabling them to enforce seizure of collateral when borrowers default on loan contracts.
- Put in efforts to ensure convergence in adopting international auditing and reporting standards like the IFRS and the IAS.
- ensure that corporate board decisions and policies reflect that of all stakeholders and not only shareholders, as the stakeholder perspective of corporate governance is gradually becoming international best practice in corporate governance.

Strengthening Economic and Political Institutions

The findings from this thesis show that economic institutions such as the legal system and property rights, regulations, and sound money exhibit a positive relationship with banking sector stability. This means that governments in Sub-Sharan countries should strengthen property rights protection, advance optimal credit, business and labour market regulations, and also put in necessary monetary and fiscal policy to ensure stable inflation and exchange rate. The results on freedom to trade internationally imply that as international trade continues to increase in the sub-region, SSA nations should support local businesses to survive competition from imports. This is because local businesses usually form a larger part of the banking sector loan portfolio and therefore supporting them will reduce incidences of non-performing loans in the banking sector. Further, since the government sector usually dominates businesses in

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developing economies, governments in SSA should support state-owned enterprises to repay loans on time. Putting in all these measures is likely to enhance the banking sector's performance and subsequently stability. However, these measures will yield better results when government decisions mostly favour democracy because strengthening economic institutions will require the involvement of a host of economic agents.

Selective implementation of Banking Sector Regulations

The banking industry is a complex and tightly regulated sector in most economies. Banking sector regulations have evolved to reduce bank vulnerability and help the financial systems remain stable. In this regard, the Basel Committee has proposed several banking sector regulations to reduce banking sector fragility that may be caused by banking sector globalization. However, recent thinking suggests that the banking sector regulations are not one-size-fits-all and that banking regulations should be tailored toward the peculiar feature of an economy's banking sector. This study finds evidence in this regard which suggest that banking sector regulators in every economy should adapt but not adopt the Basel Accords to regulate purely domestic banks. However, since the study finds that the Basel accords enhance the banking sector stability gains from foreign bank penetration, it is cogent that banking regulators in host economies ensure that there is a high level of compliance of foreign banks to international banking regulations (i.e., the Basel accords). With this, there is likely to be low incidences of regulatory arbitrage by foreign bank entrants.

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