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The Impact of Non-Traditional Banking and National-level Governance on Banking Performance: Evidence from the GCC Region

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Abstract

This thesis empirically investigates the impact of non-traditional banking activities (NTBAs), income diversification, and national governance on bank performance within the Gulf Cooperation Council (GCC) region, which includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The GCC presents a unique context due to its monarchical system of government, dependency on oil revenue, restricted democratic governance, and hybrid institutional characteristics, including high state ownership and the coexistence of Islamic and conventional banks. These features offer a crucial perspective for examining how banking strategies and governance frameworks affect banking performance in emerging markets.

The study is theoretically grounded in financial intermediation theory, modern portfolio theory, and institutional theory. It adopts a multi-method approach: the literature review chapters utilise bibliometric and content analysis to map and evaluate the NTBAs and GCC banking literature, while the empirical chapters employ fixed effects panel regression, marginal effects, and margins plots using an unbalanced panel dataset of 94 GCC banks spanning 2012–2022.

The findings indicate that increased dependence on NTBAs enhances profitability, however, simultaneously elevates insolvency risks. In addition, income diversification, both across interest and non-interest streams and across various non-interest streams, does not consistently improve performance. Conversely, it may increase operational complexity and risk, particularly in institutions with limited regulatory or management capacities. These results challenge the fundamental assumptions of modern portfolio theory. The thesis also finds that strong control of corruption consistently improves all dimensions of bank performance, whereas political stability only enhances asset quality and may reduce stability if not coupled with effective anti-corruption mechanisms, echoing Olson's theory of institutional sclerosis.

This study offers multiple significant contributions. It establishes an integrated framework connecting bank-level diversification with national governance in a distinct institutional context. It contests traditional theoretical assumptions by exposing context-dependent trade-offs between profitability and risk. Finally, it provides policy-relevant insights for formulating governance-aligned, region-specific banking strategies in resource-dependent and transitional economies.

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List of Abbreviations

BCE	Before the Common Era
CG	Corporate governance
IB	Islamic bank
IBD	Islamic bank dummy
GCC	The Gulf Cooperation Council
GFC	Global Financial Crisis
GLBA	Gramm–Leach–Bliley Act
LSDV	Least Squares Dummy Variable
NTBAs	Non-traditional banking activities
ROA	Return on Assets
SSB	Shariah Supervisory Board
WoS	Web of Science

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Declaration

This thesis is submitted in fulfilment of the requirements for the degree of Doctor of Philosophy at Bournemouth University, United Kingdom. I declare that this thesis represents my original work, except where quotations and citations are duly acknowledged. I further declare that this thesis has not been previously or concurrently submitted, either in whole or in part, for any other qualification at Bournemouth University or any other institution.

Chapters 3 and 4 have been published in two peer-reviewed journals: the *International Journal of the Economics of Business* and the *Journal of Applied Accounting Research*, respectively. I am the lead author of both papers, having contributed over 80% of the substantive content.

Elements of this thesis have also been disseminated through presentations at various academic conferences. A full list of publications and presentations is provided below:

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A bibliometric review of banking research in the GCC Region, MBAcademy International Business Conference, Bournemouth University, Bournemouth, UK, July 2023.

The impact of non-traditional banking on bank performance and risk-taking, Academy for Global Business Advancement Annual Conference, Istanbul, Turkey, July 2022.

Research on non-traditional banking activities: Bibliometric and content analyses, British Accounting and Finance Association (BAFA) Annual Conference, Nottingham University, Nottingham, April 2022.

Rajib Shome
May 2025

Dedication

From a naughty kid growing up in Dhaka to a university lecturer in the UK, I owe immense gratitude to every teacher who supported me along the way. I am especially indebted to Professor Moshfique Uddin, whose kindness, guidance, and wisdom, have been invaluable.

Chapter 1: General Introduction

1.1. Introduction

Banks are widely regarded as the foundation of modern economic systems, serving important roles in financial intermediation, economic stability, and national governance. Unlike other businesses, banks possess unique responsibilities as both commercial entities and fundamental institutions that support economic activities through their ability to mobilise deposits, allocate credit, generate and provide liquidity, and facilitate transactions. Banks were among the earliest enterprises to be regulated by the government (Benston 2004). Because of its significant importance to the economy, the banking sector is subject to more stringent laws and standards than most other firms. Unlike most industries, where risks can generally be mitigated through market discipline, banking failures are difficult to foresee and control and potentially can lead to widespread economic instability. A collapse in the banking system can trigger major economic recessions, as seen by the Great Depression (1930s) and the Global Financial Crisis of 2008-09 (GFC).

The banking system has experienced a profound transition globally throughout the centuries, evolving from simple lending and deposit institutions into complex financial conglomerates. Modern core commercial banking is divided into two categories: retail banking and wholesale banking (Hull 2012). Retail banking involves accepting deposits from individuals and small businesses while providing various lending products, including credit cards, auto loans, mortgages, and small business loans. In contrast, wholesale banking entails delivering banking services to medium and large business clients, investment managers, and various financial organisations. The magnitude of loans and deposits is considerably greater in wholesale banking than in retail banking. Today, in addition to conventional banking services, most commercial banks are increasingly incorporating diverse non-traditional investment banking operations into their business model, including raising debt and equity for corporate clients,

wealth management, proprietary and client securities trading via broking services, and various corporate advisory services (DeYoung and Torna 2013). These non-traditional banking activities (NTBAs) are considerably more profitable than conventional deposit-taking and lending; yet they also may involve substantially higher risk. This transition has been driven by the need for higher profitability, financial liberalisation, lower interest income, technical advancement, and increased competition (DeYoung and Torna 2013; Meslier et al. 2014; Kamani 2019; Qin and Zhou 2019; Landi et al. 2020). This shift spanned hundreds of years and was marked by periods of turmoil and regulatory transformation.

The banking sector frequently collaborates with many entities, particularly governmental institutions, to fulfil its intermediation roles and has emerged as a crucial component of the national governance system. This highlights the significance of a well-performing and efficient banking industry as a fundamental part of the framework for national governance. Banking laws and regulations tend to be more effective in countries with low corruption, stable political environments, and proficient legal frameworks (Beck et al. 2006); thus, strong anti-corruption initiatives and political stability are expected to improve banking performance. The following section will present a concise history of banking, essential for comprehending the context of this research.

1.2. Brief History of Banking

The history of banking activities dates to ancient civilisations, particularly in Mesopotamia around 2000 BCE, where temples and palaces functioned as primitive financial institutions, recording deposits and loans on clay tablets (Van de Mieroop 2008). Similar activities were noted in Ancient Egypt and Greece, where temples provided credit facilities and safeguarded wealth (Bank and Davies 2002; Redford 2005). The Roman Empire advanced these systems by establishing entities that provided credit and money exchange services (Harris 2008).

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Modern banking systems evolved in mediaeval Europe. The Bank of Venice (1170), the Bank of Barcelona (1401), and the Bank of Saint George in Genoa (1407) were among the earliest institutions to fund sovereign debt and facilitate public finance (Holdsworth 1918; Usher 1934). The establishment of the Bank of Amsterdam in 1609 and the Bank of England in 1694 marked a transition towards monetary regulation and central banking.

The Industrial Revolution stimulated the emergence of universal banking—large financial institutions providing both commercial and investment services concurrently. The Société Générale de Belgique, established in 1822, is recognised as the first universal bank, with analogous models spreading throughout Germany, France, and Switzerland (Van Overfelt et al. 2009; Ugolini 2010). German universal banks played a pivotal role in raising capital for industrialisation and fostering international trade (Cameron et al. 1967; Deeg 2003). Later on, the adoption of the Second Banking Directive in 1989 and the Directive on Investment Services in 1996 enabled European banks to pursue extensive functional diversification across various activities, including commercial banking, investment banking, insurance, and other financial services (Tison 1999; Baele et al. 2007).

In contrast, following the Great Depression, the United States implemented a restricted system through the Glass-Steagall Act of 1933, which delineated commercial and investment banking to mitigate conflicts of interest and bolster the stability of the banking industry (Kroszner and Rajan 1994; Puri 1996). In 1987, some of the provisions of the Glass-Steagall Act were eased, allowing certain banks to create subsidiaries for the underwriting of corporate securities. The act was ultimately repealed by the Gramm–Leach–Bliley Act (GLBA) of 1999, permitting U.S. banks to expand into NTBAs. Consequently, NTBAs emerged as a preferred source of revenue for banks owing to their enhanced profitability and minimal regulatory capital requirements (Landi et al. 2020). However, the banks' overdependence on NTBAs has been identified as a primary factor contributing to the GFC of 2007–09 (Brunnermeier et al. 2020). Today,

notwithstanding the adverse effects of the GFC, NTBAs generate significant revenue for banks in both developed and emerging economies.

1.3. Research Background

The impact of different NTBAs on banks' performance and stability has sparked a contentious academic debate over many years (Stiroh 2010; Saghi-Zedek 2016; Tran et al. 2020). Earlier studies in this field focus on rationalising the enactment of the Glass-Steagall Act of 1933, which was implemented under the assumption that the combination of traditional lending and securities businesses might cause conflicts of interest and destabilise the financial system (Kroszner and Rajan 1994; Puri 1996). The corresponding literature seeks to empirically investigate the claim that the involvement of US banks in underwriting activities before the enactment of the act contributes to heightened conflict of interest and instability within the banking system. Nevertheless, the majority of empirical research did not find substantial evidence supporting the Act (White 1986; Ang and Richardson 1994; Benston 1994; Kroszner and Rajan 1994; Steinherr and Huveneers 1994; Puri 1996; Kroszner and Rajan 1997).

Following the repeal of the Glass-Steagall Act, the research focus shifted to the impact of NTBAs on the performance and the stability of individual banks or the overall banking system; nevertheless, there is a lack of consensus among those studies. Some studies indicate that increased reliance on non-traditional income correlates with adverse effects on bank profitability and stability (DeYoung and Roland 2001; Stiroh 2004; Stiroh and Rumble 2006; Mercieca et al. 2007; Brunnermeier et al. 2012; Williams 2016; Brunnermeier et al. 2020). Moreover, multiple studies claim that banks' overreliance on diverse non-traditional sectors significantly contributed to the GFC of 2008-09 (DeYoung and Torna 2013; Engle et al. 2014; Brunnermeier et al. 2020). In contrast, a separate body of research suggests that non-traditional income sources improve banks' profitability and reduce insolvency risk (Baele et al. 2007;

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Albertazzi and Gambacorta 2009; Elsas et al. 2010; Kohler 2015; Saunders et al. 2020; Saklain and Williams 2024). Some studies also report mixed results in terms of profitability and stability (Lepetit et al. 2008; Demirgüç-Kunt and Huizinga 2010; Nguyen et al. 2012). These conflicting findings underscore the importance of further investigation into this issue across various financial systems.

Alongside optimising banks' participation in different non-traditional activities, another crucial component for establishing a stable and efficient banking system in the modern era is ensuring the presence of a strong national governance framework. Regulation and institutional quality serve as complementary external governance mechanisms for banks (Beck et al. 2006). The GFC has highlighted the importance of stronger national governance in the financial system (Özkan-Günay et al. 2013). National-level governance factors, such as corruption, insufficient law enforcement, and political instability can lead to weaker banking institutions, particularly in countries with fragile legal frameworks and inadequate governance (Porta et al. 1998; Barth et al. 2004). The probability of a banking crisis is positively associated with weaker institutions, especially those related to the legal framework, the level of corruption, and the stability of the government (Toader et al. 2018). Furthermore, corruption and political stability are deeply connected, particularly in developing and emerging countries (Shleifer and Vishny 1993; Farzanegan and Witthuhn 2017). Kumar et al. (2023) demonstrate that in emerging nations, elevated corruption is more detrimental than lower political stability, adversely impacting banking performance directly and amplifying the effects of reduced political stability on banking performance.

Conversely, counter-evidence also exists in the current literature indicating that corruption might enhance economic activity by circumventing lengthy administrative procedures, therefore expediting economic endeavours, especially in countries with weak institutions (Aidt 2009; Dreher and Gassebner 2013). Furthermore, Olson's theory of institutional sclerosis

assumes that politically stable societies subsequently promote the rise of strong interest groups, such as influential business lobbies and political elites, that put their own interests ahead of the general welfare of society or the economy (Olson 1982). In such countries, banks with political affiliations may receive different treatment, leading to inefficiencies in credit distribution due to politically driven lending, which eventually undermines sector resilience. The intriguing yet inconclusive debates regarding the relationship between corruption, political stability, and bank performance present further opportunities for research, particularly in nations with significant government engagement in the banking industry.

In this background, this PhD thesis investigates the impacts of NTBAs, income diversification, and national governance, particularly corruption control and political stability, on the performance of the banks in the Gulf Cooperation Council (GCC) region. GCC offers a unique setting to explore these issues. It is a political and economic alliance made up of six Arab countries in the Middle East: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. These countries are among the richest in the world due to their large oil reserves and are characterised by bank-based financial systems with strong state involvement and the coexistence of both Islamic and conventional banks, known as a dual banking system (Alqahtani et al. 2017; Alsharif 2021; Mabkhot and Al-Wesabi 2022).

1.4. GCC Region Banking Systems

The motivation for selecting the GCC region arises from its significant economic importance and unique governance characteristics. Each of these nations is a monarchy and ranks among the wealthiest, highly dependent on oil for its wealth. The GCC region is the largest regional exporter of crude oil, possessing almost 34% of global oil reserves (Alnori and Bugshan 2025) and accounting for 25% of worldwide oil production (Hakim and Alvi 2025). All GCC nations have a bank-based financial system with relatively under-developed financial markets,

resulting in a significant dependence on banks for non-traditional banking services (Abuzayed et al. 2018; AlKhouri and Arouri 2019; Maghyereh and Abdoh 2021). The majority of banks in this region are financially strong, well-capitalized, hold an extensive network of branches and have adopted modern banking services (Srairi 2010). In contrast to developed Western economies, the GCC region possesses a significant number of state-owned banks or private banks with substantial state ownership (Boulanouar et al. 2021). Additionally, the GCC banking sector is one of the largest Islamic banking markets, featuring a dual banking system that includes both Islamic and conventional banks (Mabkhot and Al-Wesabi 2022).

In reaction to the significant decline in oil prices in 2014, all GCC governments have expedited initiatives to reduce their reliance on hydrocarbon revenues by implementing long-term development strategies, such as UAE Vision 2021, Saudi Vision 2030, Qatar National Vision 2030, and Kuwait Vision 2035 (Khan et al. 2020). All these initiatives share a commitment to comprehensive economy-wide diversification, with the financial sector, particularly banking, serving as a fundamental pillar for fostering growth in non-oil sectors, supporting private businesses, and improving national competitiveness (Callen et al. 2014; Saxena and Al-Hadrami 2017; Mishrif and Al Balushi 2018). In this context, GCC banks are expected not only to strengthen their traditional intermediation roles but also to expand their involvement in various NTBAs (Ltaifa et al. 2018).

1.5. Problem Statement

In recent decades, commercial banks have increasingly expanded beyond traditional lending and deposit-taking to engage in NTBAs, such as asset management, brokerage, and fee-based services. While this shift towards NTBAs is well researched in developed economies and supported by financial intermediation and portfolio diversification theories, its implications in emerging, resource-dependent contexts remained less understood.

The Gulf Cooperation Council (GCC) countries provide a distinctive setting for examining NTBAs due to their oil dependence, state-dominated banking sectors, and dual financial systems comprising both Islamic and conventional banks. As part of broader economic transformation agendas, such as Saudi Vision 2030, Qatar National Vision 2030, and Kuwait Vision 2035, GCC banks are under increasing pressure to diversify their revenue streams through NTBAs (Ltaifa et al. 2018). However, it remains uncertain whether such strategies enhance profitability and instability in a region where institutional capacity and regulatory maturity are still evolving.

Concurrently, the influence of national-level governance, specifically corruption control and political stability, on banking performance has attracted growing interest. While these governance factors have been explored in macroeconomic research, their direct effects on bank-level performance are less frequently examined, especially in contexts like the GCC. The interaction between political stability and corruption control has also been rarely analysed, despite theoretical suggestions of Olson's institutional sclerosis theory assuming that political stability may be counterproductive in weak institutional environments (Olson 1982).

GCC policymakers are currently navigating financial liberalisation, economic diversification, and institutional reform. However, there is limited empirical guidance on how internal strategies like NTBAs, and national-level governance factors affect banking performance in this unique setting. This uncertainty can lead to poor regulatory decisions or risky banking practices that might undermine financial resilience. In this backdrop, this thesis investigates how NTBAs, income diversification and national governance variables, particularly control over corruption and political stability, influence bank profitability, stability, credit risk, and asset quality in the GCC region. The study aims to support more effective regulatory, policy, and strategic decision-making in emerging economies with unique institutional and economic structures.

1.6. Research Gap

Despite extensive research on banking performance, limited attention has been paid to how NTBAs and national-level governance variables influence banks in emerging markets. Most studies focus on developed market-based economies with mature regulatory systems, strong internal risk management capabilities and stable institutions (Baele et al., 2007; Stiroh, 2010; DeYoung & Torna, 2013). However, these findings may not be directly applicable to regions like GCC, which possess structurally distinct features including bank-based financial systems, state-dominated banking sectors, heavy reliance on oil revenues, and dual financial systems comprising both Islamic and conventional banks (Abuzayed et al. 2018).

In the case of NTBAs, existing literature often treats non-interest income as a single category, overlooking diversification within different sources, such as fees, trading income, and other components. Moreover, studies tend to evaluate either profitability or stability in isolation, rather than investigating the trade-offs between them. The role of internal bank characteristics, such as size, cost efficiency, liquidity, and bank type, as determinants of NTBA engagement also remains underexplored, particularly in resource-based and transitional banking systems like those of the GCC.

Similarly, national-level governance variables, particularly control of corruption and political stability, has received limited attention in empirical banking research. While widely studied in the macroeconomic and institutional economics literature (Mauro 1995; Roe and Siegel 2011; Rose-Ackerman and Palifka 2016; Cooray and Schneider 2018; Alhassan et al. 2021), the effects of these variables on bank-level performance indicators such as profitability, financial stability, credit risk, and asset quality are not well understood. Furthermore, most existing studies examine governance factors in isolation, overlooking their potential interaction effects (Kumar et al. 2023). For example, the impact of political stability on banking performance may

depend on the effectiveness of corruption control mechanisms. This interaction is especially relevant in the GCC, where the political landscape is structurally distinct from that of any other regions. No prior study has empirically examined the effects of corruption control and political stability on multiple dimensions of banking performance in the GCC. This leaves a significant gap in understanding how these national governance conditions shape financial sector outcomes in oil-dependent, state-influenced, and institutionally hybrid economies.

These gaps highlight a lack of academic research on how income diversification through NTBAs and national governance together shape bank performance in emerging, resource-based, and dual-banking systems like those in the GCC. By addressing these overlooked areas, this thesis contributes new empirical evidence and helps refine existing theories such as modern portfolio theory, financial intermediation theory, and theory of institutional sclerosis, particularly in the context of oil-rich and politically centralised economies.

In addition to the empirical gaps, this thesis also addresses two major literature-related gaps. First, there has been no comprehensive review of the NTBA research field. This thesis offers the first bibliometric and content analysis of NTBA literature, identifying key themes, influential contributions, and underexplored areas, particularly in emerging markets. Second, there has been no systematic review of banking research in the GCC region, despite its growing importance. The thesis fills this gap by providing the first bibliometric study of GCC banking literature, revealing fragmentation in the field and highlighting critical issues, such as Islamic banking, state ownership, and governance, that remain underexplored. These reviews form a strong foundation for the thesis's empirical investigations and clarify where original contributions can be made.

1.7. Research Questions

To address the research problem and fill the identified research gaps, this thesis is guided by the following three research questions:

1. What are the key bank-level, macroeconomic and institutional factors that determine the adoption of NTBAs among GCC banks?

2. What are the impacts of NTBAs and income diversification, both between interest and non-interest income, and within different non-interest income sources, on the profitability and stability of banks in the GCC region?

3. How do control of corruption and political stability, bot individually and interactively, affect bank profitability, stability, credit risk, and asset quality in the GCC region?

1.8. The Research Aims and Objectives

Based on the discussion outlined in the preceding sections, this thesis aims to examine the influence of NTBAs, income diversification, and national governance, particularly corruption control and political stability, on banking performance in the GCC region. The five primary objectives of this thesis are as follows:

1: To conduct a critical review of the NTBAs research domain, emphasising its development, present impact, and prospective research trajectories.

2: To provide an in-depth review of the literature on the banking systems of the GCC region.

3: To analyse the determinants of NTBAs in banks within the GCC region.

4: To evaluate the influence of non-traditional income and income diversification on the profitability and stability of banks in the GCC region.

5: To examine the individual and interaction impacts of corruption control and political stability on the performance of banks in the GCC region.

This thesis consists of two literature reviews and two empirical chapters. Chapter 3 addresses Objective 1, while Chapter 4 addresses Objective 2. Both chapters are literature reviews. Chapter 5 focuses on Objectives 3 and 4 through empirical analysis, and Chapter 6 addresses Objective 5, also through empirical investigation. Further details of each chapter are provided under organisation of the thesis section (1.10).

1.9. Integrated Thesis Format

This PhD thesis employs an integrated format, following the requirements specified in the Code of Practice for Research Degrees at Bournemouth University. This approach was selected to improve research productivity, professional growth, academic visibility, and collaboration prospects for early-career researchers. The Code permits the inclusion of "one or more papers or paper-style chapters" appropriate for submission and publication in peer-reviewed academic journals within an integrated thesis structure.

This thesis comprises four unique paper-style chapters in Chapters 3, 4, 5, and 6, to fulfil the aim of the thesis. These four chapters are independent papers, each comprising an introduction, literature review, methodology, findings, future research recommendations, and limitations. It contains two published papers, one paper under review on the date of thesis submission, and a manuscript ready for submission to a journal. To ensure the coherence of this thesis, it includes three traditional chapters in addition to these paper-style chapters (Chapter 1: General Introduction, Chapter 2: Methodology, and Chapter 7: General Conclusion).

1.10. Organisations of the Thesis

The thesis comprises seven chapters which are organised as follows:

Chapter 1 begins with a brief overview of the research, followed by a concise history of banking along with outlining the background and motivation for the study. Additionally, it provides the

structure for the remaining thesis sections and highlights its contribution to academia and practice.

Chapter 2 delineates the overall research philosophy and methodology employed in this thesis. The chapter commences with an overview of the philosophical stance of this thesis, followed by a discussion of the methodological choices of this thesis, highlighting the description of data sources, sample structure, and analytical techniques utilised in each of the four independent studies presented in chapters 3 to 6.

Chapter 3 provides a comprehensive literature review of the NTBAs research field. By employing bibliometric and content analysis techniques, this literature review paper attempts to answer the following research questions – (1) How has NTBA research evolved? (2) What are this field's most influential journals, articles, and institutes in this field? And who are the most influential authors? (3) What are the major research clusters and sub-clusters? (4) What are the potential future research avenues? The findings reveal two dominant research clusters: studies on the Glass-Steagall Act and universal banking and the post-Gramm–Leach–Bliley Act era. Within the latter cluster, seven sub-clusters are identified: profitability and insolvency risk, systemic risk, efficiency, market valuation, lending behaviour and liquidity creation, monetary policy, and digitalisation and fintech adoption. To the best of our knowledge, this is the first comprehensive review of the NTBA literature, providing meaningful insights for academics, industry practitioners, and regulators. The study also highlights key gaps in the existing literature and proposes directions for future research. This study was published in the *International Journal of Economics of the Business,* https://doi.org/10.1080/13571516.2024.2397513, (ABS 2-star, publication year – 2025).

Chapter 4 reviews the banking literature about the GCC region. This paper systematically reviews all research articles focused on the banking systems of the GCC region to examine

both the influential and intellectual foundations of the literature. The bibliometric analysis identifies the most impactful journals, articles, authors, universities, and countries contributing to this field. In addition, a thorough content analysis of highly cited studies is conducted to offer a comprehensive overview of the GCC banking literature and, more importantly, to identify and discuss the major thematic clusters within this body of research. The paper identifies and discusses five major research clusters: (1) bank efficiency, (2) corporate governance and disclosure, (3) performance and risk-taking, (4) systemic risk, bank stability and risk spillovers, and (5) intellectual capital. The study also highlights key gaps in the existing literature and proposes directions for future research. To the best of our knowledge, this is the first comprehensive review of GCC banking literature, offering valuable insights for regulators, industry practitioners, and academics. This study was published in the *Journal of Applied Accounting Research*, https://doi.org/10.1108/JAAR-03-2023-0070, (ABS 2-star, publication year – 2023).

Chapter 5 examines the determinants of NTBAs and impact of NTBAs and income diversification on the profitability and stability of GCC banks. The study is guided by three main research objectives: (1) to identify bank-level, institutional, and macroeconomic determinants of NTBA engagement, (2) to assess the impact of NTBAs and income diversification on bank profitability, and (3) to examine the influence of NTBAs and income diversification on bank stability. The analysis is grounded in financial intermediation theory, which supports diversification for efficiency gains, and portfolio diversification theory, which suggests that income diversification can improve banking performance by reducing earnings volatility. Using a panel dataset of 94 GCC banks from 2012–2022, the study employs a Least Squares Dummy Variable (LSDV) fixed effects regression to control for unobserved heterogeneity across banks, years, and countries. NTBAs are measured through the share of non-interest income (NON), while income diversification is captured through two distinct

indices: DIVinc (diversification between interest and non-interest income) and DIVnon (diversification within non-interest income types). Banking performance outcomes are captured through ROA (profitability) and Z-score (stability), with several control variables including bank size, liquidity, cost efficiency, governance quality, and economic freedom. The findings reveal that banks in the GCC that are more profitable, cost-effective, less liquid, and less stable are more inclined to participate in NTBAs. Furthermore, Islamic banks exhibit an increased preference for non-traditional banking compared to conventional banks. Moreover, economic freedom enhances banks' engagement in non-traditional operations, indicating that liberalised markets promote such banking activity. The study also indicates that increased dependence on non-interest revenue improves profitability while substantially reducing stability. Moreover, the diversification of income between interest and non-interest income sources and among different non-interest income sources does not improve profitability and stability, contrary to portfolio diversification theory. Instead, income diversification introduces operational inefficiencies and earnings volatility, which contribute to greater financial risk.

Chapter 6 investigates the influence of control over corruption and political stability on banking performance in the GCC region, using panel data from 88 banks between 2012 and 2022. The analysis focuses on four key dimensions of banking performance: profitability, stability, credit risk, and asset quality. Grounded in the theoretical perspectives of the "grease the wheels" vs. "sand the wheels" debate on corruption, as well as Olson's theory of institutional sclerosis, this chapter seeks to address the following research questions: (1) How does control over corruption influence banking performance in the GCC region? (2) What is the impact of political stability on banking performance in the GCC region? (3) To what extent does the interaction between political stability and control over corruption influence the performance outcomes of banks in the GCC region? Banking performance is assessed through profitability (ROA), stability (Z-score), credit risk, and asset quality. The analysis applies a robust methodological framework

that includes fixed effects (LSDV) panel regression with three-way controls (bank, country, year), as well as marginal effects and margins plot estimations. The findings reveal that effective corruption control consistently improves profitability, stability, and asset quality while reducing credit risk. On the other hand, the influence of political stability on bank stability is conditional on the control of corruption. Political stability lowers bank stability in a setting with weak control over corruption. However, as corruption control improves, the negative influence of political stability on financial stability diminishes. Moreover, political stability has a more significant positive effect on asset quality than the reduction of corruption.

Chapter 7 presents an overall conclusion of the thesis derived from the research findings of the four stand-alone chapters and highlights both the academic and practical implications of this research. It additionally outlines the limitations of this PhD thesis and suggests some prospective future research directions.

1.11. Contributions of the Research

This thesis makes significant contributions to the fields of banking, finance, and institutional economics through a structured empirical investigation into the role of NTBAs and national-level governance in determining bank performance across the GCC countries. The study comprises four research papers, each addressing specific facets of this broader research agenda. The contributions of each chapter are outlined below.

1.11.1. Academic Contribution

The first paper makes a significant academic contribution to the field of banking and finance by offering the first comprehensive, bibliometric and content-based review of the rapidly evolving literature on NTBAs. It documents the historical trajectory of the NTBAs research field and delineates two major thematic clusters within which it further identifies seven nuanced sub-clusters. Additionally, by integrating financial intermediation theory, modern

portfolio theory, and agency theory into the analytical framework, the research enhances the theoretical understanding of how diversification into NTBAs can simultaneously increase profitability while elevating risk for banks. The paper additionally presents a graphical overview of the NTBAs research field. Importantly, it highlights the geographical concentration of empirical studies in developed markets, thereby exposing a critical gap in the literature about emerging and developing economies. This contextual gap presents an opportunity for more empirical and comparative research, especially in regions with unique regulatory, institutional, and macroeconomic characteristics.

The second paper is the first scholarly attempt to comprehensively review the banking research landscape of the GCC region, establishing a standard for future thematic investigations. The study enhances knowledge by identifying five major research clusters in GCC banking literature, thus providing a systematic taxonomy of existing scholarly discussions and intellectual trends. This detailed classification allows scholars to comprehend both the scope and complexities of theoretical and empirical involvement in each domain while highlighting significant deficiencies, especially regarding governance, institutional frameworks, and systemic vulnerabilities within Islamic versus conventional banks. The study's call for future research on board heterogeneity, CEO political connections, and the role of national governance represents an important invitation for interdisciplinary dialogue between finance, corporate governance and institutional economics.

The third paper makes a substantial and timely academic contribution to the banking literature by empirically analysing the determinants and impact of NTBAS and income diversification in the GCC region—a region relatively underexplored in scholarly discourse but poses a unique institutional setting characterised by oil dependence, state ownership, and dual Islamic–conventional banking systems which warrant greater investigation. Academically, the study addresses a notable gap in the literature by evaluating not only the effect of NTBAs but also

the nuanced impact of income diversification at two distinct levels: between interest and non-interest income, as well as within different non-interest income sources. The findings show that though non-interest income is more profitable than interest income, greater diversification between them or among different non-interest income sources negatively affects both profitability and stability for GCC banks. This novel finding counters modern portfolio theory's expectation of risk mitigation through diversification and suggests that excessive complexity and managerial inefficiency in managing diverse income lines may erode banking performance in the GCC region.

The fourth paper provides the first comprehensive empirical research examining the effects of control over corruption and political stability, both independently and interactively, on banking performance in the GCC region, concentrating on four fundamental dimensions of performance: profitability, stability, credit risk, and asset quality. This research provides a contemporary and novel contribution to the literature on banking and institutional governance, especially in the context of oil-dependent, monarchy-led economies. Previous research has often examined corruption or political stability in isolation or within broader cross-country analyses; however, this study distinctly addresses the institutional particularities of the GCC, encompassing its state-dominated banking systems and dual Islamic-conventional financial system. From a theoretical perspective, the study contributes to our knowledge of how institutional quality influences financial intermediation by offering robust evidence demonstrating that corruption control consistently improves bank stability, profitability, and asset quality while lowering credit risk. It offers empirical evidence backing up the "sands the wheels" argument (Cooray and Schneider 2018), validating that corruption engenders inefficiencies and skews resource allocation within banks. Furthermore, it provides an insightful analysis of Olson's "institutional sclerosis" hypothesis (Olson 1982) by illustrating that political stability, without strong corruption control, may undermine bank stability—

thereby presenting a context-specific critique of the prevailing view that stability is universally advantageous. The interaction study further illustrates that the adverse impacts of political stability can be mitigated or reversed with the implementation of strong anti-corruption frameworks. This multifaceted approach signifies an important progression in comprehending how the interaction of governance elements influences banking systems in hybrid regimes characterised by concentrated political authority and state participation in banking.

1.11.2. Practical Contribution

The first paper offers vital guidance for banking professionals, regulators, and policymakers to navigate through a volatile financial landscape influenced by technology advancements, macroeconomic shocks, and evolving regulatory frameworks. Documenting the impact of various NTBAs on bank performance across different economic regimes provides stakeholders with a greater comprehension of the trade-offs between revenue diversification and financial stability. The findings of this research are especially relevant considering recent events, such as the failure of Silicon Valley Bank and the tightening of global monetary policy, which highlight the necessity to monitor operational and systemic risk amid significant interest rate fluctuations. Furthermore, the review identifies how institutional factors, including ownership structure, governance mechanisms, and regulatory quality, shape the performance outcomes of NTBAs. This has direct implications for policymakers seeking to balance innovation with prudential oversight.

The second study breaks down the operational and structural features of GCC banks, offering a wide range of understanding for regulators, practitioners, and policymakers interested in the banking systems of the GCC region. The study elucidates the differing impacts of non-interest income, ownership structures, and Shariah governance on risk and performance, providing practitioners with insights into strategic diversification, risk management, and compliance practices. The future research agenda of the paper provides an overall plan for synchronising

academic investigation with important industry and policy issues, including Islamic bank transparency, the efficacy of Shariah supervisory boards, and the long-term consequences of the GCC dual banking system.

The third paper provides critical insights for bank managers and regulators regarding the determinants and effects of engaging in NTBAs. It shows that increased reliance on non-interest income (such as fees, commissions, and trading profits) enhances profitability, a finding that may encourage banks to pursue more diversified product offerings. Nonetheless, the same chapter demonstrates that income diversification—both between interest and non-interest streams, as well as within non-interest sources—diminishes bank stability and profitability. These findings contest the premise of modern portfolio theory that more diversification inherently results in better outcomes and emphasise the necessity for a strategic rather than indiscriminate approach to NTBAs. This complex outcome has obvious ramifications for banking practices. It urges bank management to regard NTBAs not as replacements for conventional lending, but as supplementary services necessitating investment in internal capabilities, personnel training, compliance frameworks, and risk analytics. Banks that fail to align diversification strategies with operational efficiency and governance capabilities endanger stability and undermine their financial sustainability over the long term.

The fourth paper demonstrates major implications for policies for GCC nations. Firstly, policymakers should acknowledge that stability without transparency and accountability may cause institutional stagnation, favouritism, and vulnerability in the banking sector. Efforts to combat corruption, such as enhanced regulatory monitoring, increased judicial independence, and improved disclosure standards, are essential for ensuring that political stability improves, rather than hinders, bank performance. Secondly, the findings promote a more complex viewpoint on state participation. State-owned banks in the region exhibit more profitability and stability; yet they also carry higher credit risk, indicating a trade-off between political

protection and lending prudence. This study provides a novel and context-sensitive understanding of how national governance dynamics influence banking systems in the GCC. It offers a valuable framework for future research and a salient implication for policymakers: effective governance is not simply about reducing corruption or maintaining political stability in isolation, it is about understanding how these forces interact to shape the resilience of the banking system.

1.12. Chapter Summary

This chapter sets the foundation for the thesis. It begins by defining the notion of an integrated thesis, subsequently providing a synopsis of banking history, explaining the background and rationale for the research, outlining the thesis's structure and highlighting the study's contribution. This thesis makes several original contributions to both academic scholarship and banking policy. First, it offers the first comprehensive review of the NTBAs literature field using bibliometric and content analysis techniques, highlighting two main areas of research and multiple sub-themes. Second, it provides the pioneer overview of GCC banking research, pointing out fundamental deficiencies in the dual Islamic–conventional system, governance, and institutional quality. Third, using empirical investigations this thesis presents new evidence indicating that while non-interest income enhances profitability, income diversification can undermine stability, contradicting fundamental assumptions of modern portfolio theory. This thesis also presents the first study that empirically investigates the combined effects of political stability and corruption control on bank performance in the GCC region. The findings indicate that the advantages of political stability depend on the presence of efficient anti-corruption regimes, a conclusion with significant implications for regulatory design. These contributions collectively provide a context-specific understanding of banking resilience, institutional risk, and income structure in emerging, resource-abundant economies.

Chapter 2: Methodology

2.1. Introduction

This PhD research is positioned within the broader discourse on banking performance and risk in the banking systems of the GCC countries. The thesis investigates how NTBAs and national governance, particularly control of corruption and political stability, impact the performance of banks in the GCC region. This chapter outlines the overall research approach that underpins the thesis.

The study adopts a quantitative methodological approach grounded in deductive reasoning, reflecting a positivist philosophical stance. This stance is underpinned by a realist ontology, which assumes that social and economic phenomena exist independently of human perception; an objectivist epistemology, which holds that knowledge can be discovered through empirical data measurement and analysis; and axiological neutrality, within which the researcher remains detached and unbiased throughout the research process.

Quantitative research is a research strategy associated with any investigation conducted through the collection and analysis of numerical data (Bell et al. 2022). In line with this orientation, this research seeks to explain relationships among NTBAs, national-level governance mechanisms, and banking performance using empirical data and econometric modelling. The research utilises theoretical frameworks such as modern portfolio theory (Markowitz 1952), financial intermediation theory (Diamond 1984), and Olson's theory of institutional sclerosis (Olson 1982), to examine the associated hypotheses using panel data from commercial banks in six GCC countries.

The chapter begins by outlining the research philosophy and examining its ontological, epistemological, and axiological foundations. It then presents the methodological choices, followed by a brief description of data sources, sample size and structure, and analytical

techniques employed across the four paper-styled chapters. The chapter concludes with a summary.

2.2. Research Philosophy

Philosophical assumptions or basis are a fundamental element of every academic research, especially within the social sciences, where researchers need to make crucial decisions about how they perceive and investigate social reality (Benton and Craib 2023). Research philosophy refers to a system of beliefs and assumptions about how knowledge is developed and understood (Saunders et al. 2019). The notion that social science researchers need to recognise philosophical assumptions is grounded in a series of influential works of Guba and Lincoln (Coates 2024), who argue that all social inquiry is embedded within a paradigm, a set of basic beliefs shared by a research community (Guba and Lincoln 1981, 1982). A paradigm reflects a researcher's stance on what constitutes valid knowledge, how it should be obtained, and the role of the researcher in the knowledge-generation process (Levers 2013; Žukauskas et al. 2018).

The research paradigm addresses three essential enquiries: ontology, epistemology, axiology and methodology (Guba and Lincoln 1994, 2005). Ontology explores the nature of reality and what exists; epistemology examines how knowledge about that reality is acquired and what constitutes valid knowledge; axiology considers the role of values in shaping the research process, including the selection of topics, methods, and interpretation of findings; and methodology concerns the strategies and procedures used to investigate that reality (Guba and Lincoln 1994, 2005; Saunders et al. 2019). Consistent with this view, Bell et al. (2022) emphasise that ontology, epistemology, and methodology explain and examine the assumptions researchers employ during their research. McLachlan and Garcia (2015) emphasise the necessity of addressing ontological and epistemological assumptions before data

collection, asserting that these philosophical viewpoints shape our understanding of the social context and inform methodological decisions.

These four foundational enquiries, ontology, epistemology, axiology, and methodology, are embedded within a broader philosophical paradigm and collectively shape how researchers conceptualise their studies, formulate research questions, select methods, and interpret results. They provide the philosophical foundation that helps align the theory, research goals, and methods used in the study. The next section builds on this by positioning the study within the positivist paradigm and explaining how this paradigm informs the specific assumptions and methodological choices of the thesis.

2.2.1. Research Paradigm

The term paradigm is derived from the Greek word "pattern" and has been interpreted by scholars as a conceptual framework that directs the way researchers view, interpret, and investigate the world (Kivunja and Kuyini 2017). According to Hughes (2020), a paradigm is a specific perspective on the world that shapes a research topic and influences the way in which researchers think about and interact with it. Guba and Lincoln (1981, 1982) and Guba (1990) reinforce this notion by describing paradigms as sets of basic beliefs that guide action and are shared by a research community, whilst Brooke (2013) emphasises that every academic research is situated inside a specific paradigm. While many paradigms have emerged over time, four commonly adopted alternatives are positivism, interpretivism, constructivism, and pragmatism (Žukauskas et al. 2018; Bell et al. 2022). Each offers a distinct philosophical position and is associated with a particular research strategy and methods.

This research adopts positivism as the research paradigm, which asserts that reality exists independently of human cognition and that knowledge can be objectively acquired through empirical observation and measurement (Guba and Lincoln 1994; Comte and Bridges 2015;

Bell et al. 2022). Positivism is a philosophical approach linked to the natural sciences, which aims to produce clear, objective, and reliable knowledge. It originated in the ideas of Francis Bacon and Auguste Comte and was later developed by a group of early twentieth-century philosophers and scientists known as the Vienna Circle (Saunders et al. 2019). Positivist research assumes that the social world is governed by underlying laws and relationships that can be discovered using quantitative methods (Bryman 2016). It is characterised by deductive logic, hypothesis testing, value neutrality, and generalisability (Saunders et al. 2019).

Given the aims of this thesis, which are to investigate the influence of NTBAs and national-level governance on the performance of banks in the GCC region, the positivist paradigm is the most suitable. This study aims to identify and empirically evaluate theory-driven hypotheses utilising a large panel dataset. The study seeks to identify statistically significant relations among measurable variables, including non-interest income, return on assets (ROA), Z-score, and governance indicators.

In contrast, interpretivism posits that reality is socially constructed and must be understood through the meanings and experiences of individuals (Bell et al. 2022). Interpretive research is shaped by the researcher's personal beliefs and perspectives about the nature of the world and the appropriate ways to understand and investigate it (Denzin and Lincoln 2008). Interpretivist researchers often employ qualitative methods such as interviews and ethnography to gain in-depth insights into how people understand and navigate their social worlds (Fossey et al. 2002)

Constructivism is conceptualized as having aspects of both the postpositivist and interpretivist paradigms but closely aligned with interpretivism and also challenges the idea of an objective reality (Crotty 1998; Levers 2013). It holds that knowledge and meaning are constructed through human interaction of the interpreter and the observed and knowledge of the observed is constructed rather than discovered (Levers 2013). Constructivist research seeks to explore

multiple realities rather than uncover a single truth, making it well-suited to studies examining personal perspectives, values, or cultural contexts (Lincoln et al. 2011).

Pragmatism, meanwhile, adopts a more flexible stance. It prioritises practical outcomes and problem-solving over philosophical alignment, often embracing mixed methods research, and combining quantitative and qualitative approaches. Pragmatists argue that the concept of truth is not necessarily about accurately mirroring an objective reality, but rather about its usefulness in predicting and guiding future experiences (Morgan 2007).

Consequently, this thesis embraces positivism as its foundational paradigm. It offers a logically coherent and methodologically strong basis for examining the structural and institutional factors influencing banking performance, in accordance with the realist ontological, objectivist epistemological, and value-neutral axiological perspectives outlined in this chapter.

2.2.2. Ontology

The primary objective of a social researcher is to understand the reality around them (Bell et al. 2022). The ontological assumption concerns the nature of reality and what can be known about the phenomena under investigation (Guba and Lincoln 1994; Saunders et al. 2019). These assumptions shape the researcher's worldview and thus, determine the objects to investigate. The ontological debate in the literature is often framed along a spectrum between realism and nominalism (Pasnau and Van Dyke 2014; Burrell and Morgan 2019). Realism argues that the social world exists outside of individual thinking or belief and is made up of real, structured elements that can be observed and measured, regardless of how people perceive them (Burrell and Morgan 2019). On the other hand, nominalism suggests that reality is socially constructed, meaning the social world is made up by the way people describe any event according to what they experience (Burrell and Morgan 2019).

This thesis adopts a realist ontological stance, which maintains that the social world is composed of objective, structured, and tangible phenomena that exist independently of individuals' beliefs or perceptions. Realists argue that social structures and variables such as political institutions, financial systems, banking performances and governance frameworks are not mere abstractions but empirical realities that can be observed, measured, and analysed systematically (Fleetwood 2005; Saunders et al. 2019). For example, indicators such as ROA, the Z-score, or bank size exist independently of individual interpretations. Indicators like control of corruption and political stability are aggregated perception-based measures. However, these perceptions are themselves shaped by real events and conditions beyond the control of individual respondents.

Realism is particularly appropriate for research in economics and finance, where the aim is to investigate regularities, causal relationships, and structural determinants of observed outcomes. In the context of this thesis, the assumption is that banking performance, governance quality, and non-traditional income are not solely products of subjective interpretation, but rather elements of a real and enduring financial and institutional environment that can be empirically modelled. This ontological position provides a foundation for employing econometric methods to uncover objective patterns and causal mechanisms using longitudinal data across multiple countries and banks. Conversely, the nominalist position is better suited to qualitative, interpretivism research designs that seek to explore subjective experiences and meanings.

2.2.3. Epistemology

Epistemology addresses the philosophical presumptions regarding the nature, sources, and limits of knowledge. It relates to the criteria for acceptable, legitimate, and credible knowledge, together with the methods of its acquisition and dissemination (Burrell and Morgan 2019). Epistemological positioning is critically important in research, as it directly impacts the

methodological approach, the researcher's functioning, and the interpretation of findings (Crotty 1998).

This study adopts an objectivist epistemology, which is closely aligned with the positivist paradigm underpinning the research. Objectivism assumes that knowledge exists independently of the researcher and can be discovered through empirical data, observation, and systematic analysis. It holds that the researcher can study social and economic phenomena objectively, without being influenced by personal values, cultural context, or social interactions (Saunders et al. 2019). From this epistemological standpoint, the researcher focuses on discovering observable and measurable facts and considers knowledge to be valid only when it can be empirically verified (Diesing 1966; MacLeod 2015). In line with positivist thinking, the goal is to uncover causal relationships among variables and formulate law-like generalisations, much like those produced in the natural sciences (Crotty 1998; Saunders et al. 2019). These generalisations allow for the explanation and prediction of social and organisational behaviour based on empirical evidence, rather than subjective interpretation.

In the context of this thesis, objectivist epistemology justifies the use of panel data and econometric modelling to explore how NTBAs and governance indicators—such as control of corruption and political stability—affect bank performance in the GCC region. Financial and institutional variables are treated as objective and measurable, allowing the researcher to draw reliable, theory-informed, and policy-relevant conclusions.

Alternative epistemologies, such as subjectivism, offer a contrasting view, emphasising the co-construction of knowledge between researchers and participants, often using qualitative methods like interviews, focus groups, or ethnography (Diesing 1966; Schwandt 1994; MacLeod 2015). While such approaches are highly valuable in exploring organisational behaviour, culture, or lived experiences, they are less suitable for research that seeks to quantify

the effects of institutional variables on bank performance (Diesing 1966; Saunders et al. 2019). The exploratory, interpretive nature of these paradigms does not align with the theory-testing and generalisability objectives of this study.

In summary, the adoption of an objectivist epistemology provides a consistent philosophical foundation for this research's quantitative and deductive design. It supports the generation of robust, generalisable knowledge through structured data collection and empirical testing (Saunders et al. 2019), which is essential for addressing the thesis's central research questions.

2.2.4. Axiology

Axiology involves the analysis of value, its significance, the hierarchy of values, and its interrelation with individuals, societies, and civilisations (Hill 1984). It concerns the role of values in the research process, including how the researcher's own beliefs may influence the research (Heron and Reason 1997; Guba and Lincoln 2005; Hartman 2011). One of the key axiological choices faced by researchers is whether to maintain value neutrality or allow their personal values to influence the research process (Saunders et al. 2019). This study adopts an axiological position of value neutrality, consistent with the positivist paradigm. The researcher does not attempt to influence the research outcomes through personal bias or ideological motivations but rather seeks to present findings based on rigorous empirical examination.

Although the selection of research topics—such as corruption and political stability—may reflect broader societal interests, the researcher and the research process itself remain impartial. Data is drawn from reputable secondary sources, such as BankFocus, WGI, and WDI, and analysis is conducted using transparent, replicable procedures.

Alternative axiological perspectives, particularly those associated with critical or participatory paradigms, encourage the explicit inclusion of researcher values and social justice aims (Lincoln et al., 2011).

Conversely, a value-bound or value-laden axiological stance advocates for the explicit incorporation of researcher values and social justice objectives into the research process (Heron 1996; Heron and Reason 1997; Lincoln et al. 2011; Saunders et al. 2019). This position is typically linked to normative or activist research, aiming not only to comprehend the world but also to contest power dynamics, advocate for equity, and facilitate significant transformation (Heron and Reason 1997; Saunders et al. 2019). Such a position is less compatible with the goals of this thesis. Here, the emphasis is on testing theoretically grounded relationships and deriving insights that can inform academic, regulatory, and policy discussions neutrally.

2.2.5. Methodology

Methodology refers to the overall strategy of research that links a researcher's philosophical beliefs with how the research is designed and carried out. It puts into practice the chosen views on ontology, epistemology and axiology, guiding how data is collected, analysed, and interpreted (Crotty 1998; Bell et al. 2022). Teddlie and Tashakkori (2011) assert that research methodology outlines the formulation and resolution of research questions, preferred designs, sampling rationale, analytical techniques, inferences derived from findings, and criteria for assessing quality.

In this thesis, the methodology follows a positivist paradigm, which integrates a realist ontology, an objectivist epistemology, and a value-neutral axiological stance. This approach is based on the belief that reality exists independently of the researcher and can be understood through objective, detached observation and empirical measurement. These philosophical foundations support the use of quantitative methodology through a deductive reasoning framework, which is well suited for analysing the effects of NTBAs and national-level governance factors, control over corruption and political stability, on bank performance in the GCC region. The research tests theory-based hypotheses using a large panel dataset compiled from several secondary sources, with numerically measured variables analysed through

econometric techniques to explore causal relationships between dependent and independent variables.

The deductive approach used in this research reflects three key characteristics highlighted by Saunders et al. (2019): (1) structured methodology, (2) operationalised concepts, and (3) generalisability. The deductive approach follows a structured methodology, where data collection and analysis follow a systematic and replicable process. It relies on operationalised concepts, meaning that all variables are clearly defined and measured in quantifiable terms. Finally, the approach aims for generalisability, to extend findings beyond the sample to wider banking and policy contexts. This approach focuses on explanation rather than interpretation, causality over description, and generalisation rather than context-specific insights (Bryman 2016; Saunders et al. 2019).

The commitment to neutrality, replicability, and analytical rigour is evident throughout the methodological design. The researcher is positioned as an impartial observer, and every effort is made to ensure objectivity in data collection and analysis. The use of structured datasets, clearly defined variables, such as ROA, Z-score, control of corruption indicator, and robust econometric models such as the Least Squares Dummy Variable (LSDV) estimator, marginal effects, and margins plot analysis ensure that the findings are transparent, replicable, and methodologically sound.

Alternative methodological approaches, such as qualitative methodology with an inductive approach, were considered but found unsuitable for the objectives of this study. While such approaches are useful for exploring meaning, institutional narratives, or participant perspectives (Saunders et al. 2019), they do not support the kind of large-scale, statistically driven analysis required for testing causal relationships and informing policy frameworks.

In summary, the chosen methodology of this thesis offers a coherent and consistent bridge between the philosophical underpinnings of the study and its empirical execution. It enables the researcher to systematically investigate complex relationships between NTBAs, national-level governance mechanisms, and banking performance in a region marked by unique economic and institutional characteristics.

2.3. Empirical Data Sources, Structure, and Analysis

This section explains the data sources used in this research, the structure of the panel dataset, the regression models adopted, and the diagnostic tests applied to ensure the reliability of the results. It also justifies the use of panel data, and the Least Squares Dummy Variable (LSDV) fixed effects method and outlines the methodological limitations.

2.3.1. Data Sources and Rationale for Panel Data

This research relies on three main data sources. Bank-level data were collected from the BankFocus database managed by Moody's Analytics, which offers detailed financial information on banks around the world. BankFocus is a reliable and widely used source in banking research. National governance indicators, specifically control of corruption and political stability, were taken from the Worldwide Governance Indicators (WGI), which is a reputable dataset developed by the World Bank to measure institutional quality across countries. Finally, macroeconomic indicators like GDP growth and inflation were sourced from the World Development Indicators (WDI), also maintained by the World Bank, providing consistent and internationally comparable economic data.

The panel dataset covers 94 banks in six Gulf Cooperation Council (GCC) countries, Saudi Arabia, UAE, Qatar, Bahrain, Kuwait, and Oman, over the period 2012 to 2022. The research chose 2012 as the starting point because it marks the initial phase of the implementation of the Basel III regulatory framework, which was introduced to strengthen bank capital requirements,

liquidity standards, and overall resilience following the global financial crisis. The end year, 2022, represents the most recent year for which complete data were available at the time of extraction. It is important to note that financial statements typically take up to a year to be processed and uploaded to the BankFocus database after the close of a financial year, which explains why 2023 data could not be included.

The final dataset is unbalanced due to missing values for some banks in certain years, which is common in empirical banking studies. The dataset includes conventional banks, Islamic banks, and state-owned banks, making it representative of the GCC region's diverse banking structure.

The use of panel data is both theoretically motivated and technically appropriate for this study. As argued by Baltagi (2008), panel data combines time-series and cross-sectional dimensions, offering several advantages:

- Tracking behaviour over time: Panel data makes it possible to capture the dynamics of bank behaviour, such as changes in profitability, risk, or governance, over time. This allows for a more realistic analysis than cross-sectional or time-series data alone (Hsiao, 2005).

- Controlling for unobserved heterogeneity: Panel data allows for better control of individual-specific, time-invariant factors (such as ownership type, managerial culture, or regulatory environment). This is especially important in the GCC where such institutional differences across banks and countries are significant (Baltagi & Levin, 1992).

- Improved efficiency and reduced multicollinearity: By using both within-bank and between-bank variations, panel data reduces the risk of multicollinearity, and produces more reliable coefficient estimates (Baltagi, 2008).

The use of panel data and fixed effects models is also supported by the theoretical foundations of this study. Financial intermediation theory and portfolio theory suggest that diversification decisions evolve over time and vary across institutions. Institutional theory and the "sand the

wheels" hypothesis suggest that governance factors can have heterogeneous effects depending on bank-specific and country-level contexts. These dynamic, multidimensional relationships are best captured through panel data and fixed effects estimation. Given the goals of this research, to evaluate how NTBA banking practices and national-level governance mechanisms influence bank performance across multiple dimensions over time, panel data was the most suitable choice.

2.3.2. Data Collection and Cleaning Procedure

The bank-level dataset used in this research was primarily sourced from the BankFocus database, which provides comprehensive financial statements and ownership data for banks globally. To ensure the relevance, comparability, and completeness of the dataset, several steps were followed during the data collection and cleaning process.

Initially, financial data were extracted for all commercial banks operating in the six Gulf Cooperation Council (GCC) countries: Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Oman, and Bahrain. The extraction focused on the years 2012 to 2022, aligning with the study period. The selection criteria included only banks that were:

1. Classified as commercial banks and Islamic banks (excluding central banks, investment banks, finance companies, credit unions, and others).

2. Consolidated accounts only (excluding unconsolidated statement do the parent bank or the subsidiaries).

3. Availability of key variables.

4. With at least 5 years of available data within the study period.

After applying these filters, cases of mergers or acquisitions were manually reviewed to avoid double-counting or including inactive institutions. Additionally, Islamic bank status and state ownership were identified based on the information provided in the BankFocus database and

verified through checking the annual reports. Table 2.1 outlines the data extraction procedure with clear inclusion and exclusion criteria.

Table 2.1. Data Extraction Procedure

Criteria	Inclusion	Exclusion	Number of banks
Country	GCC countries only	Banks from non-GCC countries	348
Bank specialisation	Commercial banks and Islamic banks only	Central banks, investment banks, finance companies, credit unions, and others	246
Consolidation standard	Consolidated statements with all subsidiaries only	Unconsolidated statements of the parent banks or subsidiaries	114
Key variables	Banks with the availability of key variables	Banks missing key variables	108
Availability of financial data (2012–2022)	Minimum of 5 years	Banks with less than five years data	94

2.3.3. Diagnostic Testing and Data Integrity Checks

To ensure the robustness of the regression results, following diagnostic tests were carried out:

- Endogeneity: The possibility of endogeneity was considered, particularly in cases where performance may affect diversification choices, but existing literature and relevant theories do not indicate reverse causality. However, Generalised Method of Moments (GMM) could not be applied as the models are not dynamic, and with T = 11, GMM would risk instrument proliferation and weak identification. The thesis also did not use instrumental variables (IV)

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because strong and valid instruments for both banking practices and governance are difficult to find in this context. Instead, the use of fixed effects regression model was chosen. The thesis took following steps to reduce endogeneity concerns:

- o Using three-way fixed effects (bank, country, year) to control for unobserved heterogeneity and omitted variability bias.

- o Data was collected from reputable sources and previous literature was strictly followed for author's calculation, so measurement error can be ruled out.

- o Governance variables are country-level and exogenous to individual bank decisions.

- o Interaction terms and marginal effects provide insight into conditional relationships, not just correlations.

- Heteroskedasticity: Robust standard errors were used in all regressions to address potential heteroskedasticity, ensuring valid inference even when error variance is not constant.

- Multicollinearity: Variance Inflation Factor (VIF) analysis was performed to test for multicollinearity. The results showed that VIF values were below the standard threshold of 10, indicating that multicollinearity was not a major concern.

- Non-Normality of Residuals: Normality of residuals was assessed using histograms and skewness-kurtosis tests.

- Missing Values: The panel is unbalanced due to missing data for some banks and years. Rather than imputing values, the analysis uses all available observations, which is common in panel regression.

- Outliers: Winsorisation was applied at the 1st and 99th percentile levels to reduce the effect of extreme outliers without eliminating observations entirely.

2.3.4. Regression Strategy and Model Selection

This section explains the rationale for the regression model used in the empirical chapters. Given the panel structure of the data, a fixed effects (FE) regression was selected for the empirical studies within this PhD thesis. To estimate the fixed effects model while retaining time-invariant variables such as Islamic bank dummy and state ownership, the Least Squares Dummy Variable (LSDV) approach was applied.

Pooled OLS vs Fixed Effects

Pooled OLS assumes that all banks are identical and ignores unobserved heterogeneity across banks. This assumption is not appropriate in the context of the GCC, where institutional and structural differences between banks are substantial. Using Pooled OLS would result in biased estimates. Fixed effects models, on the other hand, control for unobservable time-invariant characteristics by allowing each bank to have its own intercept, making them a more appropriate choice.

Random Effects vs Fixed Effects

Random effects (RE) models assume that the unobserved individual effects are uncorrelated with the explanatory variables. This strong assumption often does not hold in banking data. In bank data, unobserved characteristics like risk appetite, corporate culture, or internal governance may correlate with observed bank attributes. A Hausman test was conducted, and the results supported the fixed effects model over the random effects model. This confirmed that the fixed effects estimator is more appropriate for this study.

The fixed effects model is ideal for this research as it controls for unobserved differences across banks that are constant over time. These may include managerial styles, local institutional conditions, or regulatory factors unique to certain banks. Controlling for these fixed factors allows the model to better isolate the effect of the main independent variables, such as income diversification or governance quality, on performance outcomes.

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LSDV vs Regular Fixed Effects

A standard fixed effects model removes all time-invariant variables from the estimation. However, variables such as Islamic bank status or state ownership are critical for this thesis. The Least Squares Dummy Variable (LSDV) estimator was used because it allows for the inclusion of both entity (bank) and time dummies while keeping time-invariant regressors in the model. LSDV thus offers a more flexible and complete estimation strategy, especially when institutional characteristics of banks are part of the analysis.

2.3.5. Statistical Software

All econometric analyses in this thesis were conducted using STATA 17 software, a widely used and academically recognised statistical software package. STATA is particularly suitable for panel data analysis due to its powerful built-in routines for fixed effects (including LSDV), random effects, and robust diagnostics such as the Hausman test, multicollinearity checks (VIF), and tests for heteroskedasticity and autocorrelation. Its flexibility in handling large and unbalanced panel datasets, combined with user-friendly command structures and strong graphical capabilities (used for generating margins plots), makes it an ideal tool for applied research in economics and finance.

2.4. Research Overview

Following the integrated thesis structure, each chapter of this PhD thesis constitutes a comprehensive research piece, wherein the researcher employed several data sources along with diverse data collection and analysis techniques for the four papers included in this thesis. This section provides a synopsis of the overall thesis.

Figure 2.1 provides an overview of the research process outlining the sample size, data source, analysis techniques and publication status.

Essay -1:
Aim: To provide a comprehensive literature review of the NTBAs research filed

- Sample: 309 articles
- Data source: Web of Science
- Methods: Bibliometric analysis; content analysis
- Status: Published

Essay - 2:
Aim: To critically review the banking literature pertaining to the GCC region

- Sample: 199 articles
- Data source: Web of Science
- Methods: Bibliometric analysis; content analysis
- Status: Published

Essay - 3:
Aim: To examine the determinants of NTBAs and the effects of NTBAs and income diversification on banking performance

- Sample: 88 banks from GCC region (Panel data)
- Data source: BankFocus; Worldwide Governance Indicators (WGI); World Development Indicators
- Methods: Panel regression
- Status on the date of thesis submission: Ready to be submitted

Essay – 4:
Aim: To investigate the influence of control of corruption and political stability on banking performance

- Sample: 94 banks from GCC region (Panel data)
- Data source: BankFocus; Worldwide Governance Indicators (WGI); World Development Indicators
- Methods: Panel regression; marginal effects; margins plot
- Status on the date of thesis submission: Under review

Figure 2.1: Research Process

Paper-1: Non-Traditional Banking: Current State of Knowledge and Future Research Directions

This paper systematically examines the literature on NTBAs, focusing on their evolution, current influence, and future research directions. Various qualitative and quantitative methodologies exist for conducting a review paper, including traditional reviews, bibliometric reviews, structured literature reviews, and meta-analyses. This study employs the bibliometric literature review approach following the established bibliometric review protocol suggested by Donthu et al. (2021). Bibliometric analysis, originated by Pritchard (1969), is a systematic approach for analysing and outlining the intellectual framework of any scientific discipline using statistical techniques. Bibliometric analysis effectively manages large data sets (research papers) through a transparent and reproducible search and review methodology (Goodell et al. 2023).

To provide a comprehensive grasp of the NTBAs research field, this study also employs the content analysis technique, a qualitative method for analysing research papers, in addition to the statistical power of the bibliometric analysis (Stemler 2000). The review aimed to address four primary research questions: (1) How has NTBA research evolved? (2) What are this field's most influential journals, articles, and institutes in this field? And who are the most influential authors? (3) What are the major research clusters and sub-clusters? (4) What are the potential future research avenues?

The paper follows a two-step data collection approach. The preliminary search within the Web of Science (WoS) academic journal database yielded 1136 articles. The initial sample of articles was further refined using WoS categories: (economics or business finance or business or management), providing 74 articles. This was further narrowed down to Articles only: 700 articles, and then to English language only: 687 articles. In the second phase of our process, we analysed the content of the 687 articles before adding them to our final dataset. During this procedure, 394 articles were eliminated, and 16 articles were added, resulting in a final dataset of 309 articles for bibliometric and content analysis. The paper effectively delineates the intellectual structure of NTBAs research utilising sophisticated bibliometric techniques, including bibliographic coupling and keyword co-occurrence analysis.

Paper-2: Banking Research in the GCC Region and Agenda for Future Research – A Bibliometric Examination

This study presents an in-depth review of the influential and intellectual aspects of the body of literature concerning the banking activities in the GCC region. This study conducts a bibliometric meta-analysis of the banking literature in the GCC region, accompanied by a content analysis of highly cited papers to fulfil three principal research objectives: (1) to recognise the most influential journals, papers, authors, universities, and countries on the field

of GCC banking literature (2) to identify and analyse the key research themes within the corpus of GCC banking research (3) to discover the main gaps in current knowledge and propose avenues for future research. This essay established the foundation for the subsequent two empirical chapters, each examining distinct facets of the banking systems in the GCC region.

The preliminary search within the WoS database produced 351 articles. Upon filtering the resulting articles by WoS study fields (business finance, economics, business, management, or international relations), document type (articles exclusively), and language (English only), we concluded the initial step with 270 articles. In the subsequent phase, we reviewed the 270 papers to ascertain their suitability for inclusion in subsequent investigations. The paper only includes papers that examined the GCC banking system as a whole or compared GCC banks with those from other countries or regions. A total of 199 articles were selected for bibliometric and content analysis.

Paper-3: Non-Traditional Banking and Income Diversification in the GCC Region: Determinants, Profitability, and Stability

This paper investigates the determinants of NTBAs, the impact of NTBAs and income diversification on banks in the GCC region from 2012 to 2022. It addresses the following three key research questions: (1) What factors influence the adoption of NTBAs among GCC banks? (2) What is the effect of NTBAs and income diversification on bank profitability? (3) What is the effect of NTBAs and income diversification on bank stability? Drawing on modern portfolio theory and financial intermediation theory, the study aims to assess how non-interest income-generating activities influence both the profitability and stability of banks in the region.

This study utilises an unbalanced panel dataset comprising 94 commercial banks, 50 conventional banks and 44 Islamic banks, operating within the GCC countries spanning the years 2012 to 2022. The bank-level financial data are mostly obtained from BankFocus, whilst

country-level institutional and macroeconomic variables are derived from the Worldwide Bank Governance Indicators (WGI) and the World Bank Development Indicators (WDI).

The research uses ROA as a proxy of profitability and the natural logarithm of the Z-score as a measure of bank stability. The proportion of net non-interest revenue to total operational income is used to assess non-traditional banking activity. This study evaluates the impact of income diversification using two metrics: (1) Diversification of income between net interest income and non-interest income, and (2) diversification among various non-interest revenue streams. Several bank-level and macro-level control variables were also used in this study.

Due to the panel format of the data, the study utilises the LSDV regression estimator, incorporating three-way fixed effects: bank, country, and year fixed effects. The LSDV estimator was chosen for this study because conventional within-transformation fixed effects models exclude time-invariant variables (e.g., Islamic bank dummy), whereas LSDV preserves these significant institutional traits, enabling their effects to be measured accurately (Baltagi 2008; Wooldridge 2010). Chapter 5 provides an in-depth discussion of the data, variables, and econometric models.

Paper -4: Control of Corruption, Political Stability, and Banking Performance: Evidence from the GCC Countries

This study investigates the impact of corruption control and political stability on the performance of banks in the GCC region across various dimensions, including profitability, stability, credit risk, and asset quality, by addressing three primary research questions: What is the effect of control of corruption on banking performance? What is the effect of political stability on banking performance? What is the combined effect of corruption control and political stability on banking performance?

The data for this study were acquired from three sources. The national-level governance variables, corruption control and political stability, were obtained from the WGI database. Bank-specific data were sourced from the BankFocus database, which provides extensive financial and operational information on banks. The macroeconomic data were obtained from the WDI database. The final dataset comprises unbalanced panel data from 88 banks within the GCC nations, spanning the years 2012 to 2022. The sample comprises a combination of conventional and Islamic banks, specifically 50 conventional banks and 38 Islamic banks, alongside state-run and privately held institutions, so assuring a thorough representation of the GCC banking sector.

The research adopts the LSDV regression estimator, integrating three-way fixed effects: bank, country, and year. The application of dummy variables for Islamic banks and state-owned banks necessitates the use of the LSDV method rather than the within-transformation fixed effects regression method (Baltagi 2008; Wooldridge 2010). In addition to regression analysis, this study examines the conditional relationship between political stability and bank stability at various levels of corruption control using estimates from marginal effects and margins plot. A detailed discussion of the data, variables, and econometric models is provided in Chapter 6.

2.5. Methodological Limitations

While the methodology adopted in this thesis is appropriate given the research objectives and available data, there are some limitations. First, the study does not employ dynamic panel models, such as the Generalised Method of Moments (GMM), which are commonly used to address endogeneity through instrument-based techniques. However, the decision to not apply GMM was driven by practical and technical considerations. The dataset, though robust in scope (94 and 88 banks over 11 years), is unbalanced, with several banks having limited time-series observations. This violates key assumptions required for reliable GMM estimation, such as

having sufficiently long-time dimensions (T) and a large cross-sectional dimension (N). Moreover, GMM is highly sensitive to instrument proliferation and weak instrument problems, issues that are particularly problematic in small or moderately sized samples, as is the case here. Given these limitations, the fixed effects estimator was preferred as a more stable and interpretable technique for the available data structure.

Second, while sub-sample and sensitivity analyses are valuable robustness tools, the relatively modest size of the dataset limited the feasibility of conducting meaningful subgroup estimations (e.g., Islamic vs. conventional banks, or state-owned vs. private banks). Splitting the sample further would reduce statistical power and might generate unreliable or misleading results. Instead, this thesis addressed robustness by using multiple measures of the key explanatory and dependent variables, which allowed for cross-validation of the results across different specifications.

Future studies could incorporate sensitivity analysis (e.g. robustness checks with different estimation methods) and sub-sample analysis (e.g. comparing Islamic vs conventional banks, or state-owned vs private banks) to test the generalisability of results. These enhancements could provide deeper insights and improve the overall robustness of future research.

2.6. Conclusion

This chapter outlined the research philosophy and explained the methodological choices made in this thesis. It began by establishing the thesis's alignment with the positivist paradigm, followed by a discussion of the key philosophical assumptions—ontology, epistemology, axiology, and methodology. The chapter then described the reasons for adopting a quantitative methodology with a deductive reasoning approach, based on a realist view of reality, an objectivist view of knowledge, and a value-neutral position. It also explained the research design, data sources, and analytical methods used throughout the thesis. Overall, the chosen

methodology provides a coherent foundation for generating reliable, generalisable findings that contribute to understanding different banking practices and national-level governance variables that affect banking performance in the GCC region.

Chapter 3: Non-Traditional Banking: Current State of Knowledge and Future Research Directions[1]

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Non-Traditional Banking: Current State of Knowledge and Future Research Directions

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ABSTRACT

The collapse of Silicon Valley Bank and First Republic Bank has raised many concerns over the overall strength of the banking system, one of which is the operational and market risk banks take through their non-traditional banking activities (NTBAs). This paper uses bibliometric citation analysis and content analysis to examine the literature on non-traditional banking activities (NTBA), focusing on its evolution, current influence, and future research directions. The analysis covers 309 articles published between 1986 and 2024 collected from the Web of Science database. The findings reveal two dominant research clusters: studies on the Glass-Steagall Act and universal banking and the post-Gramm–Leach–Bliley Act era. Within the latter cluster, seven sub-clusters are identified: profitability and insolvency risk, systemic risk, efficiency, market valuation, lending behaviour and liquidity creation, monetary policy, and digitalisation and fintech adoption. Despite the lessons learned from the Global Financial Crisis, the shift away from the traditional banking model has significantly increased banks' risk exposure. However, the recent hikes in interest rates to stem inflation may force banks to change their investment strategies. We argue that banks will need to transform in the next decade. This study provides the regulators, practitioners, and academics with an in-depth understanding of the NTBA research field.

1. Introduction

Modern-day banking has shifted from its traditional business model that focused on earning interest income through deposit taking and lending towards a banking model that increasingly focuses on fee-generating activities and trading profit. Though earlier banking literature described banks as financial intermediaries engaged in deposit-taking and lending (Hyman 1972; Melitz and Pardue 1973; Pesek 1970; Towey 1974), banks have a long history of engaging in non-traditional banking activities (NTBA). Universal banking, a financial system in which banks offer an entire range of financial services, evolved in Belgium in the nineteenth century (Ugolini 2010). However, income from NTBA, such as brokerage commissions, investment income, and corporate advisory fees, has become an increasingly prominent source of revenue for banks (DeYoung and Torna 2013). This long-run shift towards non-traditional banking was influenced by deregulation (Kamani 2019), lower interest rate regime (Landi, Sclip, and Venturelli 2020), development in financial markets (Qin and Zhou 2019; Samarasinghe 2023), innovation in technology and finance (DeYoung and Torna 2013), and competition from nonbank competitors (Meslier, Tacneng, and Tarazi 2014). The repellent of the Glass-Steagall Act of 1933, which

separated commercial and investment banking in the US, highly encouraged the modern banking industry to move towards NTBA. The Glass-Steagall Act was abolished through the enation of the Gramm–Leach–Bliley Act of 1999, also known as the Financial Services Modernization Act, which allowed US commercial banks to engage more freely in non-traditional activities. Though both acts were enacted in the United States, they have global implications as the United States is the most significant player in the world financial system. Gradually, non-traditional activities became a popular source of income for banks due to their higher profitability, and they do not tie up significant amounts of regulatory capital (Landi, Sclip, and Venturelli 2020). As stated by Calmes and Theoret (2014), while banking regulations all over the globe have focused on tightening capital standards and liquidity requirements, financial institutions have shifted towards a market-based business model.

The impact of different NTBAs on banks' performance and risk exposure has sparked a contentious academic debate over the past two decades (Tran et al. 2020). However, whether diversification into NTBA positively or negatively impacts banks' performance and risk has remained undecided (Saghi-Zedek 2016; Stiroh 2010). Several studies, such as DeYoung and Roland (2001), Stiroh (2004), Stiroh and Rumble (2006), Mercieca, Schaeck, and Wolfe (2007), Lepetit et al. (2008a), Williams (2016) and Brunnermeier, Dong, and Palia (2020), demonstrated that higher non-traditional income is associated with a negative impact on bank profitability, risk and market valuation. Commentators have also blamed the Global Financial Crisis (GFC) on the over-reliance on non-traditional activity in the banking sector (Brunnermeier, Dong, and Palia 2020; DeYoung and Torna 2013; Engle et al. 2014). On the contrary, other studies showed that non-traditional income sources positively impact banks' profitability, risk, and market valuation (Albertazzi and Gambacorta 2009; Baele, De Jonghe, and Vennet 2007; Elsas, Hackethal, and Holzh€auser 2010; Kohler € 2015; Saklain and Williams 2024; Samarasinghe 2023; Saunders, Schmid, and Walter 2020). These contrary findings increase the relevance of studying this issue from different perspectives in different financial systems. Though, there are many review papers on similar aspects of banking, such as the banking crisis (Laeven 2011), credit risk (Zamore et al. 2018), and systemic risk (Silva, Kimura, and Sobreiro 2017), interestingly, best of our knowledge no review paper was written on the NTBA research field. Evidence shows that banks typically respond to a decrease in interest income due to lower and negative interest rates by increasing their non-interest-generating activities (Boungou and Hubert 2021; Lopez, Rose, and Spiegel 2020). With the banking system worldwide entering a high-interest regime along with the failures of Silicon Valley and the First Republic Banks, the future, and the uncertainty of the NTBA will continue to be debated, making this paper timely and first of its kind. Against this backdrop, we attempt to synthesise the extant literature on the NTBA research field. A systematic approach is applied to explore and explain the review's significant findings, highlighting the literature gaps. Thus, it provides a pathway for future research in NTBA research. This literature review attempts to answer the following research questions – (1) How has NTBA research evolved? (2) What are this field's most influential journals, articles, and institutes in this field? And who are the most influential authors? (3) What are the major research clusters and sub-clusters? (4) What are the potential future research avenues?

The paper is organised as follows: Section 2 is devoted to the methodology and data extraction process. Section 3 describes the initial descriptive statistics and results of performance analysis employing bibliometric techniques, followed by scientific mapping revealing the major research clusters. Section 4 presents a detailed analysis of the major research clusters and sub-clusters of NTBAs research field. Section 5 provides the theoretical underpinnings while Section 6 synthesises the research field. Section 7 presents the future research directions. Finally, in Section 8, we summarise our conclusions.

2. Methodology

A review paper critically evaluates relevant literature to provide readers with a comprehensive understanding of a research area (Palmatier, Houston, and Hulland 2018). Several qualitative and quantitative methods are available to conduct a review paper, such as traditional review, bibliometric review, structured literature review, and meta-analysis review. This paper follows the bibliometric review procedures suggested by Donthu et al. (2021). Bibliometric analysis, introduced by Pritchard (1969), is a rigorous method for interpreting and mapping the intellectual structure of any scientific field by using statistical methods (Baker, Kumar, and Pandey 2021b;

Donthu et al. 2021; Hota, Subramanian, and Narayanamurthy 2020). A vital strength of the bibliometric analysis is it increases the reliability of literature review studies by reducing the subjective bias, mostly seen in traditional qualitative literature reviews, by analysing large amounts of data and employing a transparent, reproducible search and review process (Bretas and Alon 2021; Goodell et al. 2023; Vogel and Guttel € 2013). Bibliometric analysis is suitable when the scope of the review is broad and the dataset is large for the manual review process used in traditional qualitative review or structured literature review (Donthu et al. 2021). Bibliometric review is the most suitable method for this paper because we have a large dataset and a broad research scope. In addition to the statistical power of the bibliometric analysis, we want to add qualitative insights to our paper. So, we combine bibliometric analysis with content analysis, a method of examining document trends and patterns (Stemler 2000). Both bibliometric analysis and content analysis have widely been used in combination to present a deeper understanding of a research field in management studies (García-Lillo, Seva-Larrosa, and Sanchez-García 2023; Kent Baker et al. 2020; Kumar et al. 2021; Shome, Elbardan, and Yazdifar 2023). Incorporating both qualitative and quantitative analysis makes this study more robust than other studies conducted with a single analytical approach.

The techniques for bibliometric analysis can be divided into performance analysis and science mapping (Donthu et al. 2021). Descriptive performance analysis examines the contributions of research constituents (e.g. authors, articles, universities, countries, and journals) to a given field. On the other hand, science mapping displays the relationships between research constituents. Different science mapping techniques, such as citation analysis, co-citation analysis, bibliographic coupling, and co-occurrence analysis, are available to present the intellectual structure of a research field (Baker, Kumar, and Pandey 2021a; Donthu et al. 2021). This paper uses the Bibliographic coupling analysis and keywords co-occurrence analysis to discover major research clusters and hot topics within the NTBA research field.

Bibliographic coupling operates with the assumption that if two publications share common references, they are similar in their content (Munim et al. 2020). For example, if five articles appear together in two scientific papers' reference lists, those two papers are connected with a coupling strength of five. A bibliometric coupling network map of the research field can be drawn by gathering all the coupling information for all relevant publications for the scientific field of interest (Budler, Zupi c, and Trkman 2021). According to Boyack and Klavans (2010), bibliographic coupling captures a research field more accurately than other citation-based bibliometric science mapping techniques.

While bibliometric coupling focuses on citing publications, keyword co-occurrence analyses keywords to examine the content of the actual publication (Donthu et al. 2021). Keyword co-occurrence analysis is a widely used method to discover the relationship between research articles and topics by counting the co-occurrence of keywords, and helpful in discovering research hotspots and central themes of a research field (Wan et al. 2023; Xu et al. 2021).

The appendix compares the different science mapping techniques and provides citation and co-citation science mapping analyses of our dataset. We employ VOSviewer software (Van Eck and Waltman 2010) and the Biblioshiny package in the R software (Ahmi 2022) for our analysis.

2.1. Sample selection and data collection

The paper follows a two-step data collection approach. First, we conducted a topic search, a combination of title, abstract, author keyword and keywords plus, on the Social Sciences Citation Index (SSCI) within the ISI Web of Science (WoS) academic journal database using a set of keywords (Bahoo, Alon, and Paltrinieri 2020; Linnenluecke 2017; Zamore et al. 2018). Due to the absence of any previous review study and to capture the whole research field, we did not use any time restriction in our search or any preference for specific journals.

In the second part of our process, we examined the resulting articles in detail. First, we read the abstract of an article to ensure its appropriateness for the analysis (Lopez- Fernandez, Serrano-Bedia, and Perez-Perez 2016). We retained the articles that explore the determinants of or the impacts of NTBA on individual banks or the overall banking system or use NTBA as a part of a wider context. If the abstract fails to provide enough information to verify a paper's suitability for analysis, we read the complete work to confirm it (Bretas and Alon 2021).

While doing the relevance check, we also searched the reference list of all the selected articles to find any relevant overlooked articles missed in the first search. In this process, 843 articles were removed from the initial dataset of 1136 and 16 articles were included, leaving 309 articles in the final dataset.

Table 1. Sample Selection Process.

	Criteria	Articles
1	("Bank" OR "Financial institution" OR "financial intermedia") AND ("Non traditional" OR "Non-traditional" OR "Nontraditional" OR "Non interest" OR "Noninterest" OR "Non-interest" OR "Universal" OR "Income Diversification" OR "Off-balance sheet" "fee income" OR "trading income" OR "Investment income" OR "Brokerage income") Web of Science – Social Science Index	1136
2	Refined by: Web of science categories: (economics or business finance or business or management)	740
3	Refined by: Document types: article only	700
4	Refined by: Languages: English only	687
5	After manual exclusion	293
6	After manual addition	309

The title, author name(s) and affiliation, journal name, number, volume, pages, date of publication, abstract and cited references were extracted from the WoS database for bibliometric analysis. Table 1 shows the sample selection process in detail.

3. Bibliometric analysis results

3.1. Initial data statistics

The 309 articles were written by 596 authors, published in 109 journals, and collectively cited 14,266 times, with an average citation per document of 46.16. The first paper in our dataset was written by Eugene White from Rutgers University, and published in Explorations in Economic History journal in 1986. Table 2 shows the summary statistics of our final dataset.

3.2. Publication and citation patterns

Figure 1 illustrates the annual production of NTBA articles and the yearly total citations received by those articles. The statistics show continuous growth in the literature, especially after the global financial crisis. Interestingly, the number of published articles in the NTBA research field has increased significantly since 2020, possibly due to the concern about global financial stability due to COVID-19, the Russia-Ukraine war, and rising inflation.

3.3. Most relevant journals, articles, institutions, and authors

Table 3 lists the top twenty (20) journals that publish articles on NTBA along with their ABS ranking based on the number of publications as well as total citations. Journal of Banking and Finance (44 articles) topped the list, followed by Research in International Business and Finance (13 articles), Journal of Financial Economics (12 articles) and Finance Research Letters (12 articles). Journal of Banking and Finance is also the most impactful journal with 4453 total citations, followed by the Journal of Financial Economics (1982), the Journal of Money Credit and Banking (1498) and the Journal of Financial Intermediation (1329). The data reveal that articles published in the higher ABS-ranked journals usually receive more citations.

Table 2. Summary Statistics of the Final Dataset.

Timespan	1986:2024
Articles	309
Journals	109
Authors	596
Annual Growth Rate %	7.19
Total citations	14,266
Average citations per doc	46.16
Author's Keywords	651
References	8721
Single-authored docs	78
Co-Authors per Doc	2.34
International co-authorships %	27.83
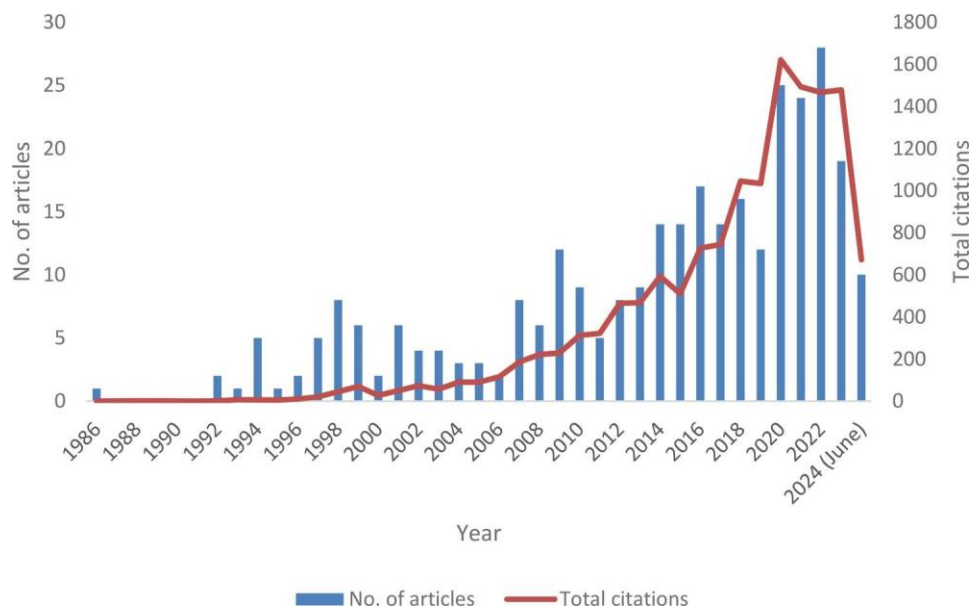
Figure 1. Yearly Publications and Total Citations.

Table 4 reports the 20 most cited articles with their journal name, total citations, research aim, research methods, and findings. The review finds that Demirguc̦-Kunt and € Huizinga (2010) is the most cited paper in this field, followed by Stiroh (2004) and Stiroh and Rumble (2006). The most cited articles focus mostly on the impact of non-traditional banking on the performance and risk exposure of individual banks. Table 5 ranks the top 20 institutes that publish in the field of NTBA, with Tilburg University (10 articles) leading the list, followed by Xi'an Jiaotong University (9 papers), Federal Reserve Bank (7 papers) and Ghent University (7 papers). The list

contains 15 institutions from developed countries (USA, Netherlands, Belgium, Australia, France, and Germany) and five institutions from emerging and developing countries (Taiwan, China, and Vietnam).

Table 6 lists the most productive and most cited authors in this field; Amine Tarazi, Maoyong Cheng, and Chiang C Lee jointly topped the list with 6 articles each followed by Caroline Fohlin (5 articles). However, Kevin J Stiroh is the most cited author (1271 citations), followed by Amine Tarazi (845 citations) and Olivier De Jonghe (701 citations).

Table 3. Most Productive and Impactful Journals in NTBA Research Field.

Journal (ABS ranking)	NP	FPY	Journal (ABS ranking)	TC	FPY
Journal of Banking & Finance (3)	44	1992	Journal of Banking & Finance (3)	4453	1992
Research in International Business and Finance (2)	13	2016	Journal of Financial Economics (4)	1982	1996
Journal of Financial Economics (4)	12	2017	Journal of Money Credit and Banking (4)	1498	1997
Finance Research Letters (2)	12	1996	Journal of Financial Intermediation (4)	1329	2001
Journal of International Financial Markets Institutions & Money (3)	9	2012	Journal of Financial Stability (3)	615	2009
Journal of Money Credit and Banking (4)	8	1997	Journal of Financial Services Research (3)	393	1999
Applied Economics (2)	8	2005	Journal of International Financial Markets Institutions & Money (3)	354	2012
Journal of Financial Services Research (3)	8	1999	Research in International Business and Finance (2)	272	2016
European Journal of Finance (3)	8	2011	Journal of Finance (4)	222	2002
Journal of Financial Stability (3)	8	2009	American Economic Review (4)	201	1994
Applied Economics Letters (1)	7	2011	Review of Financial Studies (4)	193	1997
Pacific-Basin Finance Journal (2)	7	2013	Economic Policy (3)	177	2011
North American Journal of Economics and Finance (2)	6	2014	Finance Research Letters (2)	143	2017
Journal of Financial Intermediation (4)	5	2001	North American Journal of Economics and Finance (2)	136	2014
International Review of Economics & Finance (2)	5	2016	Economic Modelling (2)	131	2017
Emerging Markets Finance and Trade (2)	5	2014	Explorations in Economic History (3)	109	1986
Journal of Finance (4)	4	2002	Journal of Monetary Economics (4)	99	1997
Australian Economic Papers (1)	4	2015	International Review of Economics & Finance (2)	93	2016
Economic Modelling (2)	4	2017	Japan and The World Economy (1)	90	2008
Quarterly Review of Economics and Finance (2)	4	2019	Journal of Economic Perspectives (4)	84	1994

NP = Number of Publications, TC = Total Citations, FPY = First year of publication.

3.4. Science mapping and content analysis

Figure 2 shows the bibliographic coupling network within the NTBA research field. The figure is constructed with 89 most cited articles selected with a criterion of 30 or more total citations. In this network mapping, nodes represent the articles, and the size of the nodes corresponds to the total number of citations for each article, whereas the edges illustrate the bibliographic relationship among the papers. The figure depicts that two major research clusters dominate the NTBA research field.

We conducted a keyword co-occurrence analysis to understand the area of research covered by these two major research clusters and to find out some potential sub-clusters within the two major research clusters. First, we conduct a keyword co-occurrence analysis (Figure 3) with all authors' keywords and keyword plus (1017 keywords) to find the hot spots in the NTBA research field. The figure shows the major hot spots in this research field are related to risk, profitability, efficiency, bank stability, universal banking, the Glass-Steagall Act, and monetary policy.

Table 4. Top 20 Most Cited Articles.

Author(s)	TC	Research aim	Method	Findings
Demirguc-Kunt and Huizinga (2010)	617	Examine the implications of bank activity and strategies for risk and return.	Panel regression	Expansion into NTBA offers diversification benefits, but banks relying highly on non-interest income are riskier.
Stiroh and Rumble (2006)	537	Do more diversified financial holding companies (FHCs) outperform more concentrated ones?	Panel regression	Diversification benefits are more than offset by increased exposure to riskier non-interest activities.
Stiroh (2004)	534	To examine the potential diversification benefits in the U.S. banking industry from the shift toward NTBA.	Vector autoregression (VAR) model	Greater reliance on non-interest income is associated with lower risk-adjusted profits and higher risk.
Laeven and Levine (2007)	534	To investigate the impact of diversification on the market valuation of financial conglomerates.	Panel regression	There is a diversification discount in terms of market valuation.
Demsetz and Strahan (1997)	452	To investigate the relationship between diversification, size and risk of bank holding companies.	Regression (OLS)	Large bank holding companies are better diversified than small ones. However, better diversification does not lead to reductions in risk.
Lepetit et al. (2008a)	411	To assess the risk implications of the changing structure of the European banking industry towards non-interest income-generating activities.	Panel regression	Higher reliance on non-interest-generating activities is associated with higher risk.
DeYoung and Roland (2001)	397	What is the impact of the shifts toward non-interest income on the volatility of bank earnings?	Regression (OLS)	Non-traditional activities are associated with higher profitability and higher revenue volatility.
Baele, De Jonghe, and Vennet (2007)	306	Do diversified banks have a comparative advantage over their specialised competitors?	Panel regression	NTBA positively affects bank franchise value and systematic risk, while the effect on idiosyncratic risk is nonlinear.
Mercieca, Schaeck, and Wolfe (2007)	289	To examine the impact of the shift towards NTBA on the performance of small European banks.	Regression (OLS)	No direct diversification benefits either within or across business lines.
DeYoung and Torna (2013)	281	Does NTBA contribute to the failures of US commercial banks during the financial crisis?	Multi-period logit	The probability of bank failure declined with pure fee-based non-traditional activities but increased with asset-based non-traditional activities.
De Jonghe (2010)	281	How does diversification towards NTBA impact the systemic risk of banks, especially during a banking sector crash?	Panel regression	Shift to NTBA increases banks' systemic risk. Smaller banks and better-capitalised banks perform better during extremely adverse conditions.

Table 4. Continued.

Author(s)	TC	Research aim	Method	Findings
Berger, Hasan, and Zhou (2010)	235	Should banks diversify across different products and geographic regions?	Panel regression	More focused banks are associated with higher profit and cost efficiency. Lack of managerial experience is the reason for the diversification discount.
Elsas, Hackethal, and Holzh€auser (2010)	234	How does revenue diversification affect banks' market valuation?	Panel regression	Diversification increases bank profitability and market valuations.
DeLong (2001)	242	To compare the stockholders' gain from focus versus diversified bank mergers.	Standard event study methodology	Bank mergers focusing on geography and activity diversification create value for shareholders.
Albertazzi and Gambacorta (2009)	198	How the link between bank profitability and the business cycle is affected by institutional and structural characteristics?	Panel regression	NTBA contributes to the profit stabilisation of banks.
Kroszner and Rajan (1994)	197	Do the commercial bank affiliates influence public investors into investing in low-quality securities?	Logistic regression	Commercial bank affiliates underwrote higher-quality and better-performing issues than independent investment banks.
Valverde and Fernandez (2007)	196	How does diversification impact the relationship between bank margins and market power for European banks?	Multi-output model	Market power increases as output becomes more diversified towards NTBA
Boyd, Graham, and Hewitt (1993)	191	To examine whether bank holding companies (BHCs) should be allowed to engage in nonbanking activities.	Simulation study	Mergers of BHCs with insurance firms may reduce risk, but mergers of BHCs with securities firms or real estate firms would increase risk.
Puri (1996)	179	To compare the pricing of securities underwritten by commercial and investment banks to examine the concern of conflicts of interest associated with the Glass-Steagall Act.	Regression (OLS), Probit regression	No evidence in favour of the Glass-Steagall Act. Investors are willing to pay a higher price for bank-underwritten corporate securities.
Vennet (2002)	184	To analyse the cost and profit efficiency of European universal banks and specialised banks.	Stochastic frontier analysis	Universal banks are more revenue-efficient than specialised banks.

Following the bibliographic coupling network mapping and keyword co-occurrence analysis, we conducted a detailed content analysis of all the selected articles. First, we selected 89 highly cited articles using a criterion of 30 or more total citations. These articles are used to form the bibliometric coupling in this paper. Then, we selected another set of recent articles by following two criteria: published on or after the year 2000 and published in ABS 2 or above ranked journal, 75 articles met the criteria. We add the second set of articles to capture any recent trends in the NTBA literature that are not captured by the analysis of the top cited articles, as articles require time to receive citations (Linnenluecke 2017). We then conducted a detailed assessment of the articles and developed a content analysis matrix using MS Excel. Following the content analysis coding protocol suggested by Gaur and Kumar (2018), we have included the following information in our matrix: title, authors, year of publication, research themes (indicated in science mapping), purpose and research questions, data type, data source, methodology, theories, key findings, and suggested future research directions. We divide the first set of articles (89 articles) between two significant clusters from the bibliometric coupling. Then, we try to make sense of those clusters in the view of the research hot stops given by the keyword co-occurrence analysis. Then, we add the second set of articles (75 articles) to our content analysis matrix to find out which cluster they belong to and if there is any recent trend.

Table 5. Most Productive Institutions.

Rank	Affiliations	Articles	Country
1	Tilburg University	10	Netherlands
2	Xi'an Jiaotong University	9	China
3	Federal Reserve Bank	7	USA
4	Ghent University	7	Belgium
5	National Sun Yat-sen University	6	Taiwan
6	University of Quebec	6	Canada
7	Monash University	5	Australia
8	University of Limoges	5	France
9	University of Pennsylvania	5	USA
10	Feng Chia University	4	Taiwan
11	National Chengchi University	4	Taiwan
12	New York University	4	USA
13	Texas A&M University	4	USA
14	University of Minnesota	4	USA
15	Ho Chi Minh University of Banking	3	Vietnam
16	Boston College	3	USA
17	California Institute of Technology	3	USA
18	International Monetary Fund	3	USA
19	Florida Atlantic University	3	USA
20	Goethe University	3	Germany

Table 6. Most Productive and Most Cited Authors.

Authors	NP	FYP	Authors	TC	FYP
Tarazi A	6	2008	Stiroh KJ	1271	2003
Lee CC	6	2014	Tarazi A	845	2008
Cheng MY	6	2014	DE Jonghe O	701	2007
Fohlin C	5	1998	Deyoung R	689	2001
Dang VD	4	2020	Demirguc-Kunt	616	2010
DE Jonghe O	4	2007	Huizinga H	616	2010
Stiroh KJ	4	2003	Lepetit L	577	2008
Theoret R	4	2010	Nys E	577	2008
Williams B	4	2013	Rous P	577	2008
Boyd JH	3	1993	Levine R	538	2007
Calmes C	3	2010	Rumble A	537	2006
Deyoung R	3	2001	Laeven L	533	2007
Gambacorta L	3	2009	Wolfe S	456	2007
Hackethal A	3	2001	Demsetz RS	452	1997
Lin YJ	3	2018	Strahan PE	452	1997
Perera S	3	2012	Gambacorta L	428	2009
Puri M	3	1994	Roland KP	397	2001
Saunders A	3	1997	Puri M	341	1994
Tran DV	3	2020	Boyd JH	324	1993
Walter I	3	1997	Baele L	306	2007
Wolfe S	3	2007	Vennet RV	306	2007
Molyneux P	3	2018	Vander Vennet R	293	2002
Nguyen M	3	2012	Mercieca S	289	2007
Zhao H	3	2014	Schaeck K	289	2007
Zhou MM	3	2010	Torna G	286	2013
Chen PF	3	2014	Hackethal A	284	2001
Zeng JH	3	2014	Zhou MM	275	2010

NP = Number of Publications, TC = Total Citations, FPY = First year of publication.
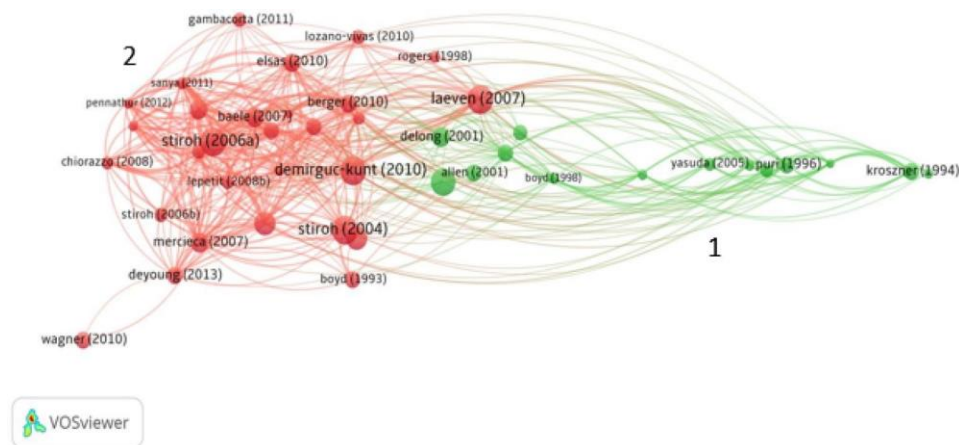
Figure 2. Bibliometric coupling showing linkage among articles.
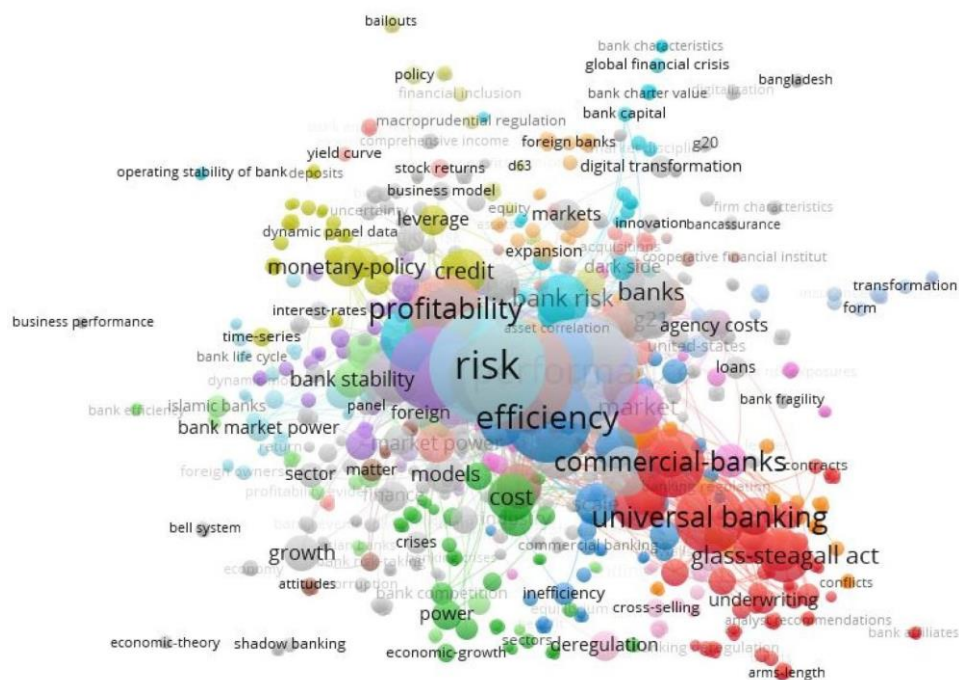
Figure 3. Keyword co-occurrence analysis.

Based on the content analysis of the articles, we name the first cluster (Cluster 1 in Figure 2) as the Glass-Steagall Act & universal banking studies and the second cluster (Cluster 2 in Figure 2) as the post-Gramm–Leach–Bliley Act studies. The first research cluster, "Glass-Steagall Act and universal bank studies", is relatively small while the second cluster, "post-Gramm-Leach-Bliley Act" studies is much larger and broader in variety of research focus. Based on the main subject of study, we found seven sub-clusters within the post-Gramm-Leach-Bliley Act studies cluster (a) profitability and insolvency risk, (b) systemic risk, (c) efficiency, (d) market valuation (e) lending behaviour and liquidity creation, (f) monetary policy and (g) digitalisation and fintech adoption. These themes are discussed in the next section.

4. Major Research Clusters

Research on NTBA has changed quite differently over time and has been motivated by several significant historical events. For instance, most of the early studies in this field were focused on the relevance and the implication of the Glass-Steagall Act of 1933 on the US banking sector. The corresponding literature emphasised the justification of the Act by empirically examining the allegation that US banks' engagement in underwriting business before the enactment of the act is responsible for raising conflict of interest and banking sector instability. However, after the repellent of the Act, the research focus shifted to the impact of NTBA on the performance and risk-taking of individual banks. The corresponding literature concentrated more on the banks' increasing trends toward NTBA and took different angles to measure their impact on respective banks' profitability, efficiency, and default risk. Another major event in NTBA research is the Global financial crisis of 2008/09. Scholars concentrate on the banking sector's systemic risk and individual banks' default risk post-crisis. Researchers also showed interest in the impact of non-traditional banking on banks' lending channels and liquidity creation functions during and after the crisis period.

4.1. Glass-Steagall Act and Universal Bank Studies

This cluster covers articles that focus on the justifications for the enaction of the Glass-Steagall Act, which strictly prohibits US commercial banks from engaging in securities market activities, the possible impacts of repellent of the act and introduction of a universal banking system may have, especially on the US economy.

The Glass-Steagall Act of 1933 was enacted with the belief that combining traditional lending and securities businesses may raise conflict of interest and destabilise the financial system (Kroszner and Rajan 1994; Puri 1996). However, White (1986) finds that the conventional banks that engaged in a security affiliate in the pre-Glass Steagall period had a lower probability of default. Ang and Richardson (1994), Puri (1994, 1996), Kroszner and Rajan (1994), and Gande et al. (1997) all examine the argument that bank securities affiliates intentionally influenced the public to invest in low-quality security issues before the Glass-Steagall Act period but find no significant evidence in favour of this conflict-of-interest argument and suggest that the act should be repealed. Moreover, Kroszner and Rajan (1994) and Puri (1994) both find that the bank affiliates underwrote higher-quality issues than the independent investment banks. Additionally, Puri (1996) finds that investors consider banks as better certifiers and are willing to pay higher prices for securities underwritten by banks than those supported by investment houses. Steinherr and Huveneers (1994) find that universal banks of 18 OECD countries achieve a better risk-return trade-off than the specialised banks. Finally, Benston (1994) argued that the Glass-Steagall Act was a misguided reaction to the financial crisis of the 1930s and should be repealed as the universal banking system can provide considerable benefits for the US economy.

On the contrary, Mester (1992) suggests that it is efficient for banks to specialise either in non-traditional or traditional banking activities and advocates for maintaining firewalls between commercial banking activities and investment banking activities if the Glass-Steagall Act is repealed. Boyd, Chang, and Smith (1998) stated that universal banks gain at the expense of their borrowers and the deposit insurer, Boot and Thakor (1997) demonstrate that banks lack the motivation to innovate in a universal banking setting as the benefits gained by one division erode those of the others. Das and Nanda (1999) state that the difference between commercial banking and investment banking is functional and inherent in those activities, which are unlikely to change with the removal of the Glass-Steagall Act.

The most important finding of this cluster is, though some of the conceptual papers supported the separation of conventional lending business and securities market operations on the grounds of intensifying moral hazard and agency problem, most of the empirical works failed to find strong evidence in favour of The Glass-Steagall Act.

4.2. Post Gramm–Leach–Bliley Act Studies

After the repellent of the Glass-Steagall Act in 1999, the research focus shifted to examining different NTBAs' impact on the banking system. We find a lack of consensus within almost all the sub-clusters, especially profitability, insolvency risk, efficiency, market valuation, and systemic risk. Those conflicting results can be due to differences in the sample period, sample country/region, and measurement of variables and for using a wide

variety of econometric analysis techniques. Those six sub-clusters within the post-Gramm-Leach-Bliley Act studies are described below.

4.2.1. Profitability and Insolvency Risk

The first sub-cluster within the Post Gramm–Leach–Bliley Act studies cluster covers the studies investigating how different NTBA influence individual banks' profitability and risk. This sub-cluster produces the highest number of articles but posts highly conflicting findings. DeYoung and Roland (2001) and Demirguc¸-Kunt and Huizinga (€ 2010) find that a higher ratio of non-interest to interest income is associated with higher profitability but greater bank risk. Stiroh (2004), finds a positive correlation between net interest income and noninterest income growth due to the bank's cross-selling strategies, which could expose different business lines to the same shock, thus increasing the insolvency risk. Similarly, Stiroh and Rumble (2006) and Stiroh (2006) conclude that gains from diversification into non-traditional activities are offset by the increased exposure to more volatile non-traditional activities. DeYoung and Torna (2013) show that the probability of bank failure declined with pure fee-based non-traditional activities but increased with asset-based non-traditional activities. However, they also find Williams (2016) finds that noninterest income positively relates to bank risk, while Lepetit et al. (2008a) show that higher risk is strongly correlated with commission and fee income than trading income.

On the contrary, Chiorazzo, Milani, and Salvini (2008), Albertazzi and Gambacorta (2009), Sanya and Wolfe (2011), Nguyen, Skully, and Perera (2012), Elsas, Hackethal, and Holzh€auser (2010), Kohler € (2015) and Saunders, Schmid, and Walter (2020) all show a significant positive relationship between banks' reliance on non-traditional income and profitability. Sanya and Wolfe (2011) and Saunders, Schmid, and Walter (2020) find no evidence that higher non-interest income increases bank insolvency risk, while, Edirisuriya, Gunasekarage, and Perera (2019) found diversification into non-interest income has no impact on bank risks. Nguyen (2012) finds that non-traditional activities are negatively correlated with risk-adjusted profitability measures between 1997 and 2002 but positively correlated for the subsequent period.

Studies also focused on bank-level variables that may influence the relationship between NTBA and bank performance and risk. For instance, DeYoung and Torna (2013) indicate banks' risk-taking culture as they found banks with higher non-traditional activities also tend to take more risk in their traditional lines of business. Saghi-Zedek (2016) found banks with institutional controlling shareholders enjoy diversification benefits while banks with more family or/and state shareholders experience diversification discounts. Pennathur, Subrahmanyam, and Vishwasrao (2012) report that higher fee income and fee-based income significantly reduce the risk for public sector banks but increase the risk for private sector banks. Ahamed (2017) finds that banks with lower asset quality benefit more from income diversification than those with higher asset quality. Lee, Yang, and Chang (2014) find that non-interest activities raise bank risk in high-income countries while increasing profitability or reducing risk in middle- and low-income countries. Similarly, Li and Zhang (2013) show that the marginal benefit of diversification decreases with the increase in noninterest income, which is the case in high-income developed countries. Finally, Saklain and Williams (2024) find that a higher level of diversification into non-interest income-generating activities improves profitability and reduces bank risk in countries with low regulatory restrictions and a more market-based financial structure.

Mainly research articles from developed economies dominate this sub-cluster; however, scholars have recently focused more on emerging and developing countries. Studies found the problem of over-diversification of the developed economies while emerging and developing countries often suffer under-diversification and managerial inexperience, making their banks less cost-efficient. Papers within this sub-cluster used many variables to measure bank profitability and insolvency/default risk. However, return on assets (ROA) and return on equity (ROE) have emerged as the most used measures of profitability, while the Z-score is the most used measure for insolvency risk.

4.2.2. Systemic risk

The second sub-cluster, which emerged very strongly after the global financial crisis, covers articles that examine the impact of NTBA on systemic risk and banking sector stability. For example, the conceptual work of Wagner (2010) argues that diversification reduces individual banks' probability of failure, making banks more similar and increasing the risk of systemic failure in the banking industry. Among the empirical studies De Jonghe (2010) and

Brunnermeier, Dong, and Palia (2020) find that non-traditional income positively correlated with systemic risk for European and US banks, respectively, during the global financial crisis. However, Saunders, Schmid, and Walter (2020) and Weiß, Bostandzic, and Neumann (2014) find no evidence of a statistically significant positive relationship between noninterest income and systemic risk using a US bank dataset and a global dataset, respectively.

De Jonghe, Diepstraten, and Schepens (2015) show that the effect of non-interest income on systemic risk exposures varies with bank size and a country's institutional setting. They suggest that noninterest income decreases the systemic risk exposure of large banks and increases the same for small banks. The diversification benefit of large banks disappears in countries with more private and asymmetric information, corruption, and concentrated banking markets. Additionally, Kamani (2019) finds trading activities increase small banks' exposure to systemic risk, whereas commissions and fees activities only increase large banks' exposure to systemic risk. Moreover, Qin and Zhou (2019) argue that the impact of NTBA on systemic risk exposure is higher in a market-based economy compared to a bank-based economy. They argue that uniform international standards should not be imposed in the same way in different economies, as advocated by international organisations like the Basel Committee. On the contrary, Samarasinghe (2023) finds as stock market liquidity increases, banks diversify more into non-traditional activities, thereby increasing overall banking stability, and these effects are more pronounced in countries with developed financial markets and high investor protection. Research papers based on developed economies heavily dominate this subcluster. These studies use several measures of systemic risks, however, two of the most widely used are Marginal Expected Shortfall (Acharya, Engle, and Richardson 2012) and DCoVaR (Adrian and Brunnermeier 2016).

4.2.3. Bank Efficiency

This sub-cluster covers studies that explore how different NTBAs influence bank efficiency in terms of cost, revenue, and profit. For example, Vennet (2002) finds that European financial conglomerates with diversified products are more revenue-efficient than their more specialised competitors. While, Rime and Stiroh (2003) find no evidence of substantial efficiency gains, both cost and profit, for the largest universal banks in Switzerland. Similarly, Berger, Hasan, and Zhou (2010) find more focused banks are associated with higher yields and cost-efficiency. Furthermore, Lozano-Vivas and Pasiouras (2010) find, on average, cost efficiency increases with non-interest income but post mixed results concerning profit efficiency. Among the more recent studies, Beccalli and Rossi (2020) empirically document that the separation of lending and investment activities generates economic inefficiencies in costs but efficiencies in revenues and profits, while Doan, Lin, and Doong (2018) find that increased diversification tends to improve bank efficiency, state ownership diminishes the impact of diversification on efficiency in both developed and developing countries, while foreign ownership amplifies the effect of diversification on efficiency in developing countries. Most of the studies within this subcluster use Stochastic Frontier Analysis (SFA) or Data Envelope Analysis (DEA) techniques for calculating bank efficiency scores.

4.2.4. Market Valuation

This sub-cluster covers studies that explore how different NTBAs influence the market valuation of commercial banks. For example, Laeven and Levine (2007), using a dataset of global banks, examine the impact of diversification on the valuation of financial conglomerates and find a diversification discount. Schmid and Walter (2009) find similar results using a large dataset of US banks: however, they find combinations between commercial and investment banking activities exhibit a significant valuation premium. On the contrary, Elsas, Hackethal, and Holzh€auser (2010), using bank data from nine developed economies, find that diversification increases banks' profitability and stock market valuation and the positive impact held even during the global financial crisis. Similarly, Baele, De Jonghe, and Vennet (2007) and Van Lelyveld and Knot (2009) post that a higher share of non-interest income in total income positively affects banks' franchise values for European banks.

4.2.5. Lending Behaviour and Liquidity Creation

This sub-cluster focuses on studies that examine the impact of NTBA on banks' lending behaviour and liquidity creation function. For example, Lepetit et al. (2008b) find that the banks that are more reliant on non-traditional activities usually under-price lending products to cross-sell non-traditional products. This strategy can increase the insolvency risk of the banks even after earning higher income from non-traditional activities. On the contrary, Abedifar, Molyneux, and Tarazi (2018) find no adverse influence of different NTBA on loan quality and bank credit risk of US commercial banks, interestingly not even in the case of systemically important banks and distressed banks. However, they also find evidence of cross-subsidisation between several non-traditional activities and lending businesses. However, they conclude that large banks benefit from joint production of non-interest income and lending, even after charging lower interest rates on loans. Similarly, Neuhann and Saidi (2018) conclude that universal banks finance firms with higher volatility but with higher total factor productivity. On the other hand, Torna (2018) finds that large US banks holding more significant amounts of risky non-traditional banking assets gravitate their loan portfolios away from business and consumer loan sectors, significantly restraining business and consumer lending.

Both Hou et al. (2018) and Dang (2020) indicate that diversification between net interest income and non-traditional bank activities reduces liquidity creation. However, Hou et al. (2018) find that increased bank diversification within non-traditional activities leads to increased liquidity creation. On the other hand, Berger et al. (2024) report universal banking increases bank liquidity creation. Tran (2020) finds evidence of lower liquidity creation for more diversified US banks during normal times but more liquidity during times of crisis. On the contrary, Vinas (2021) finds that universal banks and commercial banks had similar credit supply in France before the global financial crisis; however, universal banks had a strongly lower credit supply during the crisis.

4.2.6. Monetary policy

This sub-cluster covers studies that explore how different monetary policies impact banks' non-traditional activities. For example, Landi, Sclip, and Venturelli (2020) investigate the impact of the Federal Reserve's decision to maintain a lower interest regime and show that a prolonged period of lower interest rates deteriorates the interest income margins of US banks and forces them to shift towards noninterest sources of revenues to maintain the targeted performance. Furthermore, Lopez, Rose, and Spiegel (2020) and Boungou and Hubert (2021) investigate the impact of negative policy rates on banks' profitability using global datasets and both papers find that banks attempt to offset their interest income losses with gains from non-traditional activities. Likewise, Albertazzi and Gambacorta (2009) found similar results for banks from 10 industrialised countries and Molyneux et al. (2021) for Italian banks.

4.2.7. Digitalisation and fintech adoption

This is the newest research theme in the NTBA research field that mostly studies the impact of digitalisation and fintech adoption on banks' non-traditional banking activities. Interestingly, this subcluster is mostly focused on China and other emerging countries. Analysing 101 banks in China between 2011 and 2021, Tang et al. (2024) find a strong and positive association between Fintech adoption and income diversification of banks. Nguyen, Ho, and Nguyen (2023) report similar results for Vietnamese banks. Similarly, He, Song, and Chen (2023) examine the effect of 36 Chinese listed banks' fintech adoption on bank risk-taking to report how fintech adoption effectively reduces banks' risk-taking, especially for those with a high share of non-interest income. On the contrary, using bank-level data from 29 Asian banks, Khattak et al. (2023) find diversification into non-traditional activities makes banks risky and fragile in the presence of digital transformation, whereas in banks with a lower level of diversification, digital transformation tends to enhance stability.

5. Theoretical underpinnings

The main theories applied by the highly cited studies in the field of non-traditional banking are the theory of financial intermediation (Mester 1992; Schmid and Walter 2009; White 1986), modern portfolio theory (Boyd, Graham, and Hewitt 1993; Demsetz and Strahan 1997; Stiroh 2004; Stiroh and Rumble 2006) and agency theory (Ang and Richardson 1994; Kroszner and Rajan 1994; Puri 1996; Steinherr and Huveneers 1994). Several studies refer to more than one theory (De Jonghe, Diepstraten, and Schepens 2015; Mester 1992; Williams 2016). Apart

from these theories, Kanatas and Qi (1998) use contract theory. Additionally, Mester (1992) mentions an information-theoretic explanation of banking, and Boot and Thakor (1997) explore financial innovation.

Most studies in this field focus on the modern portfolio theory that suggests diversification into NTBA provides banks with a risk separation and reduction effect.

However, other studies relied on agency theory. They argued that diversification into complex, opaque, and non-traditional activities might raise moral hazard and agency problems, especially if bank managers have excessive management power and significant free cash flows.

Earlier papers (Mester 1992; White 1986) relied on the seminal works by (Benston and Smith, 1976) Campbell and Kracaw (1980) and Diamond (1984) for theoretical reasoning. All these works are around the theory of financial intermediation and find income diversification reduces client's marginal transportation cost, inconvenience cost for services, probability of bankruptcy (Benston and Smith 1976), monitoring cost (Diamond 1984); increases information production efficiency (Campbell and Kracaw 1980), economies of scale and economies of scope (Benston and Smith 1976); overcomes the problem of asymmetric information and improves the overall efficiency of the financial intermediary (Diamond 1984).

Theories of financial intermediation assume that diversification within the intermediary is vital to the possible net advantage of intermediation (Campbell and Kracaw 1980; Diamond 1984). Diversified banks sell multiple financial products, both traditional and non-traditional, to the same line of customers. As a result, banks can obtain superior private information about their clients while selling different non-traditional products and use that information to reduce the uncertainty associated with their lending business. Access to such non-public information can reduce banks' client acquisition costs, monitoring costs and overall risk. The theory of financial intermediation also assumes that mixing traditional and non-traditional activities can help banks achieve operational synergies, scope, and scale economics by spreading the fixed costs and managerial overheads over various product lines and generating income from weekly sources correlated.

On the other hand, studies that deal with the efficiency of universal banking and the justification of the Glass-Stegall Act, such as Puri (1994, 1996), Kroszner and Rajan (1994), and (Kroszner and Rajan, 1997) relied on agency theory and raised a crucial debate on whether there is a conflict of interest and moral hazard problem when banks act as underwriters for new debt and equity issues to a firm they have also made loans to.

Most recent studies on NTBA use the theoretical lenses of both modern portfolio theory and agency theory to examine how bank income diversification impacts banks' performance and risk-taking (Stiroh 2004; Stiroh and Rumble 2006; DeYoung and Torna 2013; Tran et al. 2020). Modern portfolio theory assumes that concentrated revenue streams can adversely impact banks' revenue volatility; thus, income diversification into non-traditional activities could decrease banks' revenue volatility by generating cash flows from no or weak correlated sources. Therefore, diversification into NTBA improves banks' stability by reducing their idiosyncratic risk. On the other hand, agency theory assumes that diversification of activities might enhance the ability of insiders to expropriate financial institution resources for private gain and thereby lower the bank's market value. Generally, these studies point out that due to no or weak correlation between NTBA and traditional interest-generating activities, diversification into NTBA leads to a more stable revenue stream and reduction in insolvency risk, as suggested by modern portfolio theory, but this comes with the cost of heightened agency problems, leading to inefficient use of resources and reduces stability. So, the extent of these risk diversification benefits depends on the co-movements of the incomes from these risky non-traditional activities and the agency costs that arise from engaging in different complex activities.

6. A synthesis of non-traditional banking literature

Figure 4 presents a synthesis of the NTBA research field, outlining the antecedents, theories applied, significant control variables, data sources and analysis methods.
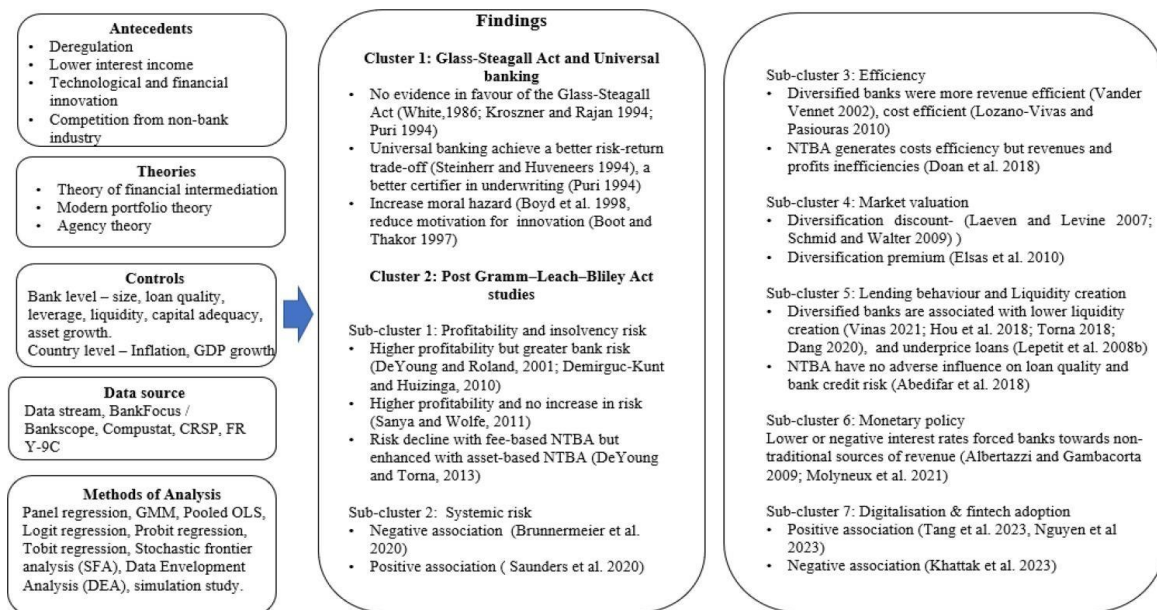
Figure 4. A Synthesis of the Literature on NTBA.

7. Future Research Directions

The extant literature has created an extensive knowledge repository on NTBA across different research clusters and sub-clusters. However, empirical evidence from developed countries is ambiguous in this research field, while empirical evidence from emerging and developing economies is limited. This suggests the research field has many potentials and avenues to grow. In addition, there is a lack of consensus in almost every aspect, as seen in the major research cluster section. Through content analysis of the most influential articles, this research has tried to find the future research directions suggested by scholars and the most important ones are briefly discussed below under each research cluster.

7.1. Glass-Steagall Act and Universal Bank Studies

Kroszner and Rajan (1994) raised an important question concerning the political motivation behind the Glass-Stegall Act. Why was it passed if the evidence did not support the arguments favouring the Glass-Stegall Act of 1933? Scholars interested in the history of political economy might try to answer this question in the future. Puri (1999) suggests future research to test the rationales of The Glass-Stegall Act in countries where commercial banks are allowed to engage in underwriting activities. After seeing that commercial banks are gradually being able to engage in some form of investment banking activities, Gande et al. (1997) suggest that future research should investigate the impact of the repellent of the Glass-Stegall Act on the underwriting business of commercial banks.

7.2. Profitability and insolvency risk

As diversification towards NTBA has become an integral part of the banking business model worldwide, Stiroh (2004) suggests that future research should focus on maximising gains from revenue diversification. Similarly, Williams (2016) encourages future studies to investigate the optimal mix between size, risk, and revenue diversification. According to Chiorazzo, Milani, and Salvini (2008), future research should focus on the relationships between the degree of cross-selling of different products between traditional and non-traditional banking activities and profitability. Sanya and Wolfe (2011) suggest investigating how bank-specific idiosyncrasies, such as managerial capacity and experience, corporate governance mechanisms, and ownership structure, determine banks' portfolio choices. Pennathur, Subrahmanyam, and Vishwasrao (2012) suggest future research should focus on investigating how banks with different ownership structures maximise their gains from a diversified portfolio in different emerging economies, while De Jonghe, Diepstraten, and Schepens (2015) suggest exploring how ownership structure and internal governance mechanisms influence the risk and return relationship among non-traditional banking activities, conflicts of interest and risk in large banking

groups. On the other hand, Ahamed (2017) wants future research to explore which ownership groups benefit more from income diversification.

7.3. Systemic Risk

Nguyen (2012) believes it would be interesting to examine in future research whether the banks that are financially constrained and more involved in non-traditional activities are more likely to fail than other banks. He also encourages future research to study the herding behaviour of banks in traditional and non-traditional banking activities during the global financial crises. On the other hand, De Jonghe, Diepstraten, and Schepens (2015) want future research to explore which specific non-traditional source of revenue is most affected by exogenous state-level regulatory changes in the US market. Qin and Zhou (2019) assume that non-traditional activities will become an important trigger for systemic risk contribution in bank-based economies, so future research should focus more on bank-based economies. In two recent studies, Brunnermeier, Dong, and Palia (2020) and Saunders, Schmid, and Walter (2020) investigated the impact of NTBA on bank profitability and systemic risk, after contradictory results. Future research might examine the reasons for the conflicting results between similar studies.

7.4. Lending behaviour and liquidity creation

Lepetit et al. (2008b) suggest future research should investigate the impact of non-traditional banking services on interest margins and loan pricing using individual borrower-level data for loan pricing and default. On the other hand, Abedifar, Molyneux, and Tarazi (2018) find that larger banks cross-subsidize lending products from their non-interest activities, so they are curious to know why banks with high spreads also have high service charges. Valverde and Fernandez (2007) suggest that future research investigates the impact of bundling different traditional and non-traditional banking products on bank lending and credit risk, considering the contestability of banks and other non-price factors. Hou et al. (2018) believe it would be interesting to investigate whether the relationship between bank diversification and liquidity creation changes across heterogeneous banks considering other variables such as capitalisation, size, and liquidity position of banks.

7.5. Bank efficiency

Vennet (2002) suggests that future research should examine the sources of efficiency differences between universal and specialised banks. Berger, Hasan, and Zhou (2010) observe that foreign ownership and conglomerate affiliation tend to mitigate the diseconomies of diversification in Chinese banks and think it might be beneficial to investigate the impact of foreign banks' entry into other emerging markets.

7.6. Market valuation

After finding significant evidence of a diversification discount on the valuation of financial conglomerates, Schmid and Walter (2009) ask why, given the evidence of a significant conglomerate discount, the management and boards of such banks persist in diversification strategies. In this note, we suggest future studies can empirically compare the results of the studies focused on NTBA and changes in banking model strategies.

7.7. Monetary policy

Landi, Sclip, and Venturelli (2020) report since the outbreak of the global financial crisis, the ECB has taken massive unconventional monetary policy measures to stimulate the Eurozone economy, which shifted Euro area banks towards noninterest income activities, and within noninterest activities banks shift from investment banking activities to asset management and distribution of investment products. According to them, assessing how these business changes in the context of negative interest rates affect banks' profitability and risk can be an important future research agenda (Landi, Sclip, and Venturelli 2020). Similarly, Lopez, Rose, and Spiegel (2020) encourage future research to investigate whether the gains from higher non-interest activities due to the negative rate regime are sustainable over a longer period.

7.8. Digitalisation and fintech adoption

He, Song, and Chen (2023) suggest future studies focus on the effects of adopting different types of fintech technologies and different fintech business models in risk management on NTBA. Future research can also focus on potential liquidity shortages and over-diversification caused by market competition and adaptation of new technology (Tang et al. 2024).

8. Conclusion

This paper investigates the influential perspectives and the intellectual structure of non-traditional banking activities research by systematically reviewing a sample of 309 articles published between 1986 and 2024 using bibliometric and content analysis methods. To the best of our knowledge, this is the first review paper on NTBAs research field. This paper contributes to the banking literature by capturing the historical evolution of the NTBA research field, grouping NTBA research articles into major thematic clusters, compiling and analysing the key findings and providing avenues for future research. The sample dataset shows that many prominent scholars from reputed institutes have contributed to this research field and the research works have been published in higher-ranked journals. In terms of authors' contribution, Amine Tarazi, Maoyong Cheng and Cheiang C Lee are jointly the most productive, while Kevin J Stiroh is the most cited. The Journal of Banking and Finance is the most productive journal and Tilburg University is the most productive institute. The content analysis of the highly cited NTBA research articles revealed two main clusters: Glass- Steagall Act and Universal banking studies and post-Gramm–Leach–Bliley Act studies and seven subclusters within post-Gramm–Leach–Bliley Act studies: (a) profitability and insolvency risk, (b) systemic risk, (c) efficiency, (d) market valuation, (e) lending behaviour and liquidity creation, (f) monetary policy, and (g) digitalisation and fintech adoption.

This study finds the NTBA research field is highly concentrated on the banks from developed economies, especially the US. Very few studies focus on emerging and developing economies. For instance, there is very little research on the Middle East, South Asia and East Asian region and NTBA research on South American banks is non-existent. Due to regulatory and governance differences, generalisation of the developed country results may not be appropriate in developing economies. So, future studies in this field should focus more on emerging and developing countries. We suggest future NTBA research based on developing and emerging countries may focus on the differences in institutional quality, such as government effectiveness, political stability, regulatory quality and control of corruption, mainly because institutional quality can have a complementary relationship with bank regulations and supervision.

Broadly, the NTBA research field can be viewed as an empirical and conceptual endeavour to generate new knowledge by investigating how banks deal with adversity during different important real-world events that have significant economic impacts. It is likely that future studies to focus more on the consequences of significant recent events, developments, and crises, such as BREXIT, COVID-19, war in Ukraine and rising inflation around the world. The consequence of the war in Ukraine and the pandemic has impacted the global economy through higher inflation. Most central banks are exercising monetary policies through hikes in interest rates to control inflationary pressure. Higher interest rates are likely to motivate banks to switch to traditional lending activities. However, if this high-interest rate regime persists for a longer period, a crisis might be seen in the housing market which may negatively impact banks' lending business. Therefore, we assume this research field will likely be dominated by research papers on the impact of higher interest rates on NTBAs.

This study is not free from any bias or limitation. The bibliometric analysis assumes that highly cited articles are more important and influential. However, it takes time for a research article to be recognised for its true potential. So, in a bibliometric study, more recent articles might not show their true potential. We recommend future research should repeat the study once a decade to understand the important changes in the NTBA research field. This paper studies the entire NTBA research field; in contrast, future research may wish to study a specific section of the NTBA research field by conducting a structured literature review or a meta-analysis review. Our paper categorised the articles based on the science mapping techniques and by the main area of study, however, future research may also attempt to categorise the articles differently, such as, by study types, research objectives, and methods used. Our paper is based on all the NTBA papers indexed in the Social Science Index within the WoS database; another approach can be a literature review of the articles published only in the top finance journals.

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Appendix

Table A1. Comparison between different science mapping techniques.

Technique	Assumption	Usage	Unit of analysis
Citation analysis	Intellectual linkages between publications are formed when one publication cites the other.	To analyses the relationships among most influential publications in a research field.	Documents
Co-citation analysis	Publications that are cited together frequently are similar thematically.	To analyses the relationships among cited publications to understand the development of the foundational themes in a research field.	Documents
Bibliographic coupling	Two publications sharing common references are also similar in their content.	To analyses the relationships among citing publications to understand the present development of themes in a research field.	Documents
Keyword co-occurrence analysis	Words that frequently appear together have a thematic relationship with one another.	To explore the relationships among topics in a research field by focusing on the main content of the publication.	Key words

Source: Adopted from Donthu et al. (2021).
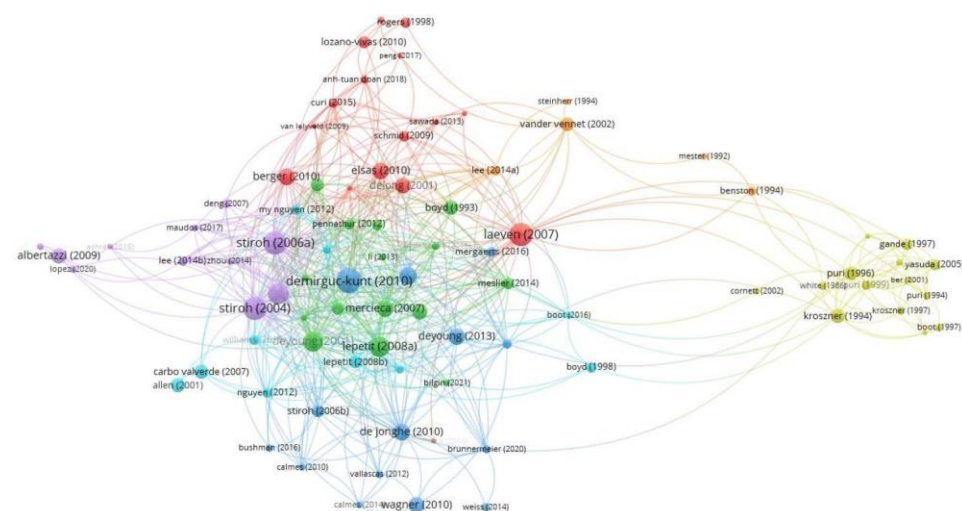
Figure A1. Citation analysis of NTBA research field.
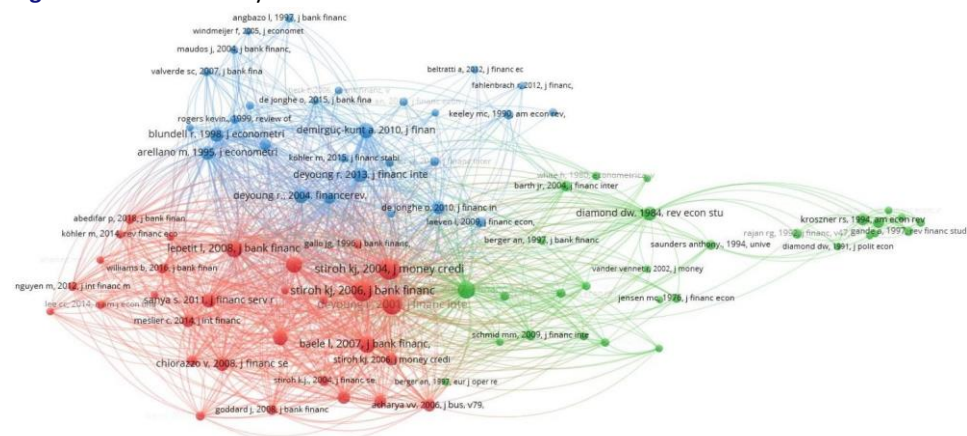
Figure A2. Co-citations analysis of NTBA research field.

Chapter 4: Banking Research in the GCC Region and Agenda for Future Research – A Bibliometric Examination[2]

Abstract

Purpose - This paper provides a comprehensive review of the influential and intellectual aspects of the literature on the Gulf Cooperation Council (GCC) region's banking activities.

Design/methodology/approach – This study undertakes a bibliometric meta-analysis review of the GCC region banking literature, covering 199 articles published between 2004 and 2022, extracted from the Web of Science (WoS) database, followed by a content analysis of highly cited papers.

Findings - This paper identifies the influential aspects of the GCC region banking literature in terms of journals, articles, authors, universities, and countries. The paper also identifies and discusses five major research clusters: (1) bank efficiency; (2) corporate governance (CG) and disclosure; (3) performance and risk-taking; (4) systemic risk, bank stability and risk spillovers and (5) intellectual capital (IC). Finally, it identifies gaps in the literature and highlights some important research issues that provide directions for future research.

Research limitations/implications - This paper is limited to the articles indexed in the WoS database and written in English. Though the WoS database encompasses a wide range of multidisciplinary journals, there is a chance that some relevant articles are not included in the WoS database or written in another language.

Practical implications - This study provides regulators, practitioners and academics with valuable insight and an in-depth understanding of the banking system of the GCC region.

Originality - To the best of the authors' knowledge, this is the first review paper on GCC region banking literature.

Keywords - GCC region, Banking, Bibliometric analysis, Content analysis

Article classification - Literature review

4.1. Introduction

Established in 1981, the Gulf Cooperation Council (GCC) is a political and economic union between six Arab countries, all situated in the Middle East and governed based on an Islamic ethical system: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) (Durugbo et al. 2020). GCC region has high economic importance for being the world's largest regional exporter of crude oil, holding approximately 45% of the world's total oil reserves and responsible for one-fifth of the world's oil production (Mirzoev et al. 2020; Maghyereh and Abdoh 2021). GCC countries have similar government systems, economic policies and financial regulations, including free trade and capital movements with a high level of trade openness (Khan et al. 2021). The banking industry in the GCC countries is relatively young, with the oldest banks dating back to the 1950s (Al-Muharrami et al. 2006; Ben Khediri et al. 2015). The majority of banks in this region are financially strong, well-capitalised, hold an extensive network of branches and have adopted modern banking services (Srairi 2010). Additionally, the GCC banking sector is one of the largest Islamic banking markets (Alqahtani et al. 2017a).

The GCC banking industry has some unique features that distinguish it from the banking industry in developed countries. Unlike the banking sectors in the developed and some emerging economies, the banking sector of GCC countries is highly concentrated (Miah and Uddin 2017), with the top ten (10) GCC banks holding around 50% of the total market share (Boulanouar et al. 2021). Another important distinction is the ownership structure. In developed economies, bank ownerships are usually widely held by institutional shareholders. In contrast, even after several legal and regulatory reforms (Al-Hassan et al. 2010), the majority of the commercial banks in the GCC region are family-owned with substantial government shareholding and most of the specialised banks are wholly owned by the government (Srairi 2010; Boulanouar et al. 2021). All the GCC countries have a bank-based financial system with

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relatively under-developed financial markets (Abuzayed et al. 2018; Maghyereh and Abdoh 2021) and rely highly on the banking sector for providing diversified non-traditional banking activities, such as securities market operations, insurance, corporate advisory (AlKhouri and Arouri 2019). Also, GCC banks fund government activities by holding government securities at a significantly higher level compared to the global average (Abuzayed et al. 2018; Al-Hassan et al. 2022). These unique features provide the relevance of studying the GCC region's banking sector from different perspectives.

Due to the critical roles banks perform in society, banks have a broad and sizeable impact on many social challenges. Banks intermediate amongst diverse parties to facilitate financial transactions. Banks directly impact people by managing their money and wealth. Banks also shape the business through the allocation and distribution of capital to each line of business in the real economy, from retail and small businesses to corporate borrowers. Therefore, research on banking activities in different regions has significant importance to regulators, policymakers and academics around the globe. There are many review papers on different aspects of banking, such as banking crisis (Laeven 2011), Islamic banking (Alshater et al. 2021; Ikra et al. 2021), credit risk (Zamore et al. 2018), systemic risk (Silva et al. 2017), corruption on banking (Bahoo 2020) and political risk on banking (Janbaz et al. 2022). However, we could not find any banking literature review paper that focuses on the GCC region or any other specific region. Based on the economic importance of the GCC region as the world's largest exporter of crude oil, an efficient and sound banking system is very important for these countries. Against this backdrop, this paper systematically reviews all the research articles focussed on the GCC region's banking system to analyse the influential and intellectual aspects of the literature. The bibliometric review examines the influential aspects of GCC region banking literature to find out the most impactful journals, articles, authors, universities and countries. This study also conducts a thorough content analysis of the highly cited articles to provide a comprehensive

overview of the GCC banking system and, more importantly, identifies and discusses the major themes within the corpus of the GCC banking research field. In addition, this paper indicates the main gaps in existing knowledge and provides future research directions. To the best of our knowledge, this is the first paper that reviews the banking literature of the GCC region and provides regulators, industry practitioners and academics with valuable insight, in-depth understanding and future indications on the banking sector of the GCC region.

The paper is organised as follows. In the next section, we describe the banking sector of GCC countries, highlighting the importance of the region's banking system. Then we describe the methodology and data extraction process followed by initial descriptive statistics, results of performance analysis employing bibliometric techniques and scientific mapping revealing the major research clusters. After that, we present a detailed content analysis of highly cited articles along with some future research directions based on our content analyses. Finally, we provide our concluding remark.

4.2. GCC Banking Sector

The GCC, or the Cooperation Council for the Arab States of the Gulf, is a regional intergovernmental political and economic union of six Arab states of the Persian Gulf: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE. All these countries are monarchies, have the same social characteristics and are amongst the wealthiest nations with a heavy dependence on oil for their wealth. In the year 2022, the gross domestic product (GDP) per capita of all six GCC countries was much higher than the world average of $12,647.5, with Bahrain US$30,152, Kuwait $43,233.5, Oman US$25,056.8 and Saudi Arabia US$30,436.3[3]. All national currencies in the GCC region are directly pegged to the U.S. dollar to avoid currency fluctuation and eliminate uncertainties in international transactions. Only the Kuwaiti Dinar is

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[3] Source: World Bank database.

pegged to an undisclosed basket of currencies, but the basket is heavily weighted towards the US dollar (Adedeji et al. 2019). The rationale behind this currency peg is that the oil price is fixed in dollars. As oil is the primary source of revenue for all GCC countries, any exchange rate fluctuation could drastically reduce the income of those countries if the currencies were not pegged with the US dollar. However, this currency pegging restricts the independence of monetary policy in GCC countries, forcing macroeconomic management to rely mostly on fiscal policy and prudential regulations (Basu et al. 2015).

Unlike the market-based Western economies, the financial systems of GCC countries are highly reliant on banks. At the end of 2020, GCC Banks' total assets reached $2.6 trillion, about 180% of GCC GDP, from $1.6 trillion or 102% of GDP in 2013 (Al-Hassan et al. 2022). In all GCC countries, the banking sector is the second-largest contributor to the country's GDP after the oil and gas sector (Ali et al. 2022). Among the GCC countries, the UAE has the most extensive banking sector, Saudi Arabia is the largest regional economy, and Bahrain ranks first for banking system depth (Khan 2022). The GCC banking systems are highly concentrated: the top four banks account for more than 40 per cent of assets in the UAE and Bahrain, about 60 per cent of assets in Saudi Arabia, and about 70 per cent of assets in Kuwait, Qatar, and Oman (Ltaifa et al. 2018). The GCC banking sector is one of the world's largest Islamic banking markets, with a dual banking system where Islamic banks operate alongside conventional banks (Mabkhot and Al-Wesabi 2022).

In the GCC region, central governments and the nonfinancial corporate sector are the two primary net borrowers from banks. On the creditors' side, the household sector and external capital flows remain an essential source of funds to the banking system, followed by the nonfinancial corporation and government sectors (Al-Hassan et al. 2022). Nonbank financial institutions (NBFIs), such as pension funds, asset management and finance companies, and insurance, generally do not engage in credit intermediation (Ltaifa et al. 2018). Additionally,

GCC region banks play an essential role in the intermediation of foreign capital, and the foreign capital inflows are matched mainly by the banks' build-up of foreign assets. During the past decade, the financial assets and liabilities denominated in foreign currency almost doubled, from around 90 per cent in 2010 to about 180 per cent of GDP in 2020 (Al-Hassan et al. 2022).

A wave of reforms to the financial stability policy framework and financial safety nets along with improved banking supervision enhanced the banking sector resilience in the GCC region (Ltaifa et al. 2018; Qanas and Sawyer 2022). However, due to the high level of state ownership and lesser presence of foreign banks, the GCC banking system remained less competitive than many other developed banking markets, such as Singapore and Hong Kong (Alqahtani et al. 2017a). With around 16% of loan portfolios in the trade and services sectors, asset quality in the banking systems is susceptible to any external shock like the COVID-19 pandemic (Al-Hassan et al. 2022). Though the GCC banks are well-capitalised and profitable, there are concerns that weaker economic activity, lower oil prices and higher inflation can lead to a deterioration in asset quality and a decrease in capital buffers.

4.3. Methodology

Following Linnenluecke (2017) and Bretas and Alon (2021), this paper combines bibliometric analysis and content analysis methods to review the banking literature of the GCC region. This paper follows the bibliometric research protocol suggested by Donthu et al. (2021) and the content analysis protocol suggested by Gaur and Kumar (2018). Bibliometric analysis is a useful method to interpret and map the intellectual structure of a scientific field by employing statistical methods (Hota et al. 2020; Baker et al. 2021b). A key strength of the bibliometric analysis is that being a quantitative technique, it is more powerful and efficient than the human mind in reviewing voluminous literature (Wolf 1986). The bibliometric approach increases reliability and reduces the subjective bias of literature reviews by analysing a large number of

data and employing a transparent, reproducible search and review process (Vogel and Güttel 2013; Bretas and Alon 2021). Combining bibliometric techniques with content analysis, a research technique used to identify and summarise the trends in the extant literature and measure latent constructions of a research field (Duriau et al. 2007; Short and Palmer 2008; Gaur and Kumar 2018), allows scholars to develop a comprehensive understanding of the intellectual structure of a research field and guide them to develop a set of future research directions (Hota et al. 2020).

According to Donthu et al. (2021), the techniques for bibliometric analysis can be divided into two categories:(1) performance analysis and (2) science mapping. Descriptive performance analysis examines the contributions of research constituents (e.g., authors, articles, universities, countries and journals) to a given field. On the other hand, science mapping displays the relationships between research constituents (Baker et al. 2021b). Different science mapping techniques, such as citation analysis, co-citation analysis and bibliographic coupling, are instrumental in presenting the intellectual structure of a research field (Baker et al. 2021a).

This paper uses the Bibliographic coupling technique to identify the major research clusters in the GCC banking literature. Bibliographic coupling operates with the assumption that if two publications share common references, then they are similar in their content (Munim et al. 2020) and amongst all the citation-based bibliometric science mapping techniques, bibliographic coupling captures a research field most accurately (Boyack and Klavans 2010). This paper employs the Biblioshiny package within the R studio software for performance analysis and VOSviewer software for bibliographic coupling.

4.3.1. Sample Selection and Data Collection

This study used a two-stage data extraction approach (Bretas and Alon 2021), first, we performed a topic search, a combination of title, abstract, author keyword and keywords plus,

within the Institute for Scientific Information (ISI) Web of Science (WoS) academic journal database using a combination of the following keywords: ("Bank*" OR "Financial institution*" OR "financial intermedia*") AND ("GCC" OR "Gulf Countries"). WoS is a prominent academic database that includes five databases, recognising many high-quality journals starting from 1900, covers more than 21,000 journals with over 174 million records and has been used by many previous influential bibliometric literature review articles (Maditati et al. 2018; Zamore et al. 2018; Bahoo et al. 2020). The initial search provided us with 351 articles. After filtering the resulting articles by WOS research categories (business finance or economics or business or management or international relationship), document type (articles only) and language (English only), we were left with 270 articles at the end of the first stage.

In the second step, we examined the 270 articles (through a review by two authors) to ensure their appropriateness for inclusion in further analysis. We only included the articles that explored the GCC banking sector as a whole or compared GCC banks with banks of other countries or regions. The articles that failed to qualify for the final dataset primarily focussed on the stock market, insurance sector, or macroeconomic growth. Finally, 199 articles were selected for bibliometric analysis and their title, author name(s) and affiliation, journal name, number, volume, pages, date of publication, abstract and cited references were extracted for bibliometric analysis. Table 4.1 illustrates the detailed data searching and extraction process.

Table 4.1: Sample Section Process

	Criteria	Articles
1	("Bank*" OR "Financial institution*" OR "Financial intermedia*") AND ("GCC" OR "Gulf Countries")	351
2	Refined by: Web of science categories: (business finance or economics or business or management or international relationship)	285
3	Refined by: Document types: article only	272
4	Refined by: Languages: English only	270
5	After manual exclusion by reading all the article abstract	199

After extracting the data for bibliometric analysis, we further select key articles for the content analysis. First, we selected 51 highly cited articles with ten or more total citations. We then conducted a detailed assessment of the articles and developed a content analysis matrix using MS Excel. Following the content analysis coding protocol suggested by Gaur and Kumar (2018), we have included the following information in our matrix: title, authors, year of publication, research themes, purpose and research questions, data type, data source, methodology, theories, key findings and suggested future research directions.

4.4. Bibliometric Analysis

4.4.1. Initial Data Statistics

The 199 articles in our sample were written by 367 authors and published in 89 journals. All these articles are collectively cited 2309 times, with an average citation per document of 11.60. The first paper in our dataset was published in 2004 in Service Industries Journal. The summary statistics of our final dataset are shown in Table 4.2.

Table 4.2: Summary Statistics of The Sample Dataset

Timespan	2004:2022
Journals	89
Articles	199
Annual growth rate (%)	9.89
Total Citations	2309
Average citations per doc	11.60
References	8413
Author's Keywords	547
Authors	367
Authors of single-authored documents	36
Single-authored documents	49
Documents per Author	0.542

Figure. 4.1 illustrates the annual production of banking literature focussed on the GCC region and yearly total citations. Though the first article was published in 2004, the GCC banking literature started rising in 2015 right after the historical oil price crash of 2014 (Siddiqui et al. 2020). The figures show a continuous growth in the GCC banking literature from 2015, especially since there has been a big spike in recent years which depicts the growing importance of the GCC region in the banking literature.
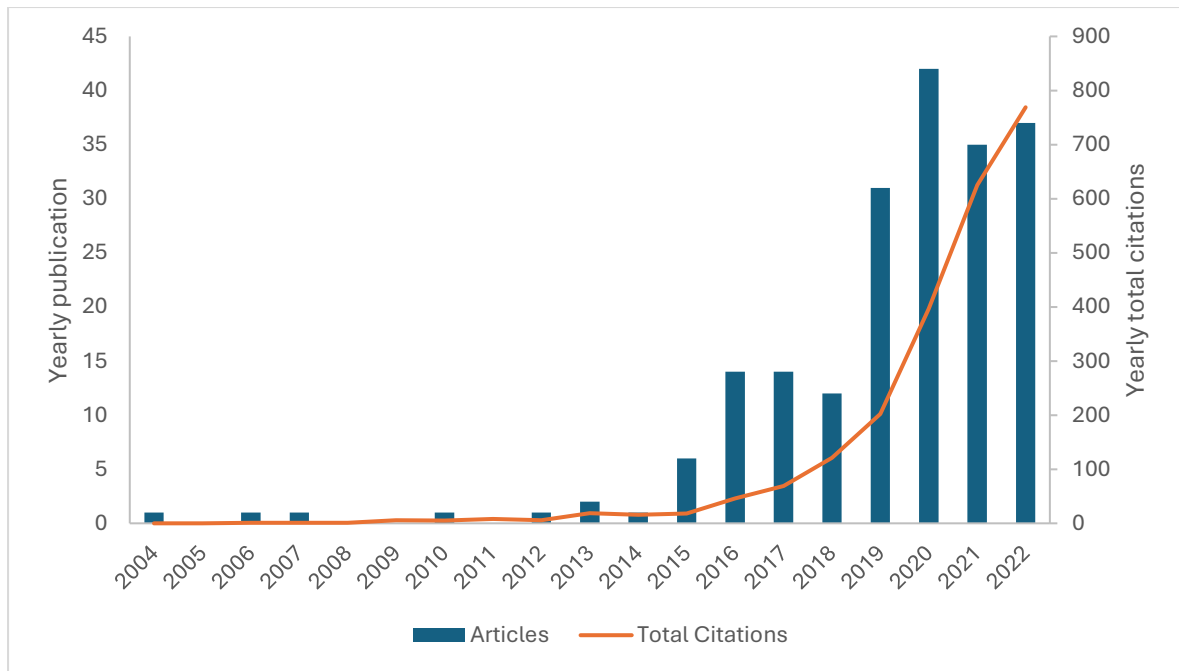
Figure 4.1: Yearly Production of Banking Research in the GCC Region and Total Citations

4.4.2. Most relevant Journals, Articles, Universities, And Authors

Table 4.3 reports the top 20 journals that publish banking articles focussed on the GCC region.
These 20 journals have published at least three (3) or more articles and accounted for around
60% of the total citations (1386 total citations). Amongst the rest 69 journals, 21 journals
published two (2) articles, and 48 journals published one (1) article; however, those journals
are not reported in this paper due to space limitations. The result shows that the *Journal of
Islamic Accounting and Business Research* topped the list with 24 articles, followed by the
International Journal of Islamic and Middle Eastern Finance and Management (18 articles)
and the *Pacific-Basin Finance Journal* (six articles). However, articles from the *International
Journal of Islamic and Middle Eastern Finance and Management* received the highest number
of citations (243 total citations), followed by *Research in International Business and Finance*
(207 total citations).

Table 4.3. Most Productive Journals

Rank	Journals	NP	h_index	TC
1	Journal of Islamic Accounting and Business Research	24	6	133
2	International Journal of Islamic and Middle Eastern Finance and Management	18	7	243
3	Pacific-Basin Finance Journal	6	6	146
4	Research in International Business and Finance	5	5	207
5	Journal of International Financial Markets Institutions & Money	5	4	161
6	Managerial Finance	5	4	81
7	International Journal of Emerging Markets	5	3	21
8	Applied Economics	5	3	16
9	Economic Systems	4	3	80
10	Journal of Islamic Marketing	4	2	24
11	International Journal of Accounting and Information Management	3	3	60
12	International Journal of Financial Studies	3	3	51
13	Global Finance Journal	3	3	48
14	International Journal of Managerial Finance	3	2	28
15	Borsa Istanbul Review	3	2	23
16	Journal of Risk and Financial Management	3	1	17
17	Journal of Economic and Administrative Sciences	3	3	15
18	International Journal of Finance & Economics	3	3	15
19	Cogent Economics & Finance	3	1	12
20	Asian Journal of Business and Accounting	3	2	5

NP = Number of publications, TC = Total citations

Table 4.4 lists the top ten (10) most cited banking articles from the GCC region, along with the names of their authors, journals, year of publication, total citations and average total citations per year. Platonova et al. (2018) is the most cited article, with 173 total citations, followed by Srairi (2010) and Al-Muharrami et al. (2006) with 120 and 88 total citations respectively.

Table 4.5 reports the top 20 most impactful authors within our sample dataset along with their current affiliation. The table reveals that Saif-Alyousfi from Taiz University is the top author.

Table 4.4. Top Ten (10) Most Cited Articles

	Title	Authors (year)	Journal	TC	TC/t
1	The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking Sector	Platonova et al. (2018)	*Journal of Business Ethics*	173	28.83
2	Cost and profit efficiency of conventional and Islamic banks in GCC countries	Srairi (2010)	*Journal of Productivity Analysis*	120	8.57
3	Market structure and competitive conditions in the Arab GCC banking system	Al-Muharrami et al. (2006)	*Journal of Banking and Finance*	88	4.89
4	Islamic versus conventional banks in the GCC countries: A comparative study using classification techniques	Ben Khediri et al. (2015)	*Research in International Business and Finance*	75	8.33
5	A new inverse DEA method for merging banks	Gattoufi et al. (2014)	*IMA Journal of Management Mathematics*	70	7
6	Competition, concentration and risk taking in Banking sector of MENA countries	Gonzalez et al. (2017)	*Research in International Business and Finance*	61	8.71
7	Financial stability of Islamic banking and the global financial crisis: Evidence from the Gulf Cooperation Council	Alqahtani and Mayes (2018)	*Economic Systems*	55	9.17
8	Islamic bank efficiency compared to conventional banks during the global crisis in the GCC region	Alqahtani et al. (2017)	*Journal of International Financial Markets Institutions and Money*	51	7.29
9	What can we learn about Islamic banks efficiency under the subprime crisis? Evidence from GCC Region	Belanes et al. (2015)	*Pacific-Basin Finance Journal*	48	5.33
10	Efficiency and stability: A comparative study between Islamic and conventional banks in GCC countries	Miah and Uddin (2017)	*Future Business Journal*	47	6.71

TC = Total citations, TC/t = Average citations per year

with the highest number of articles (seven articles), followed by Alqahtani and Buallay (six articles each). However, Mehmet Asutay from Durham University is our sample's most cited author (203 total citations from four articles).

Table 4.5. Most Impactful Authors (Sort By the Number of Publications)

	Author	Current affiliation	NP	h_index	TC
1	Saif-Alyousfi Ayh	Taiz University	7	5	86
2	Alqahtani F	National Development Fund	6	6	176
3	Buallay A	Brunel University	6	5	117
4	Mayes Dg	University of Auckland	4	4	159
5	Grassa R	Higher Colleges of Technology	4	4	89
6	Kamarudin F	University of Putra Malaysia	4	4	82
7	Hammoudeh S	Drexel University	4	3	37
8	Asutay M	Durham University	4	3	203
9	Brown K	Monash University	3	3	104
10	Miah Md	University of Nizwa	3	2	70
11	Saha A	Flame University	3	3	60
12	Al-Yahyaee Kh	Sultan Qaboos University	3	2	38
13	Al-Muharrami S	Sultan Qaboos University	2	2	89
14	Ben Khediri K	University Of Carthage	2	2	63
15	Ismail Knik	University Utara Malaysia	2	2	49
16	Molyneux P	Bangor University	2	2	48
17	Alandejani M	King Abdulaziz University	2	2	40
18	Nassir Am	Xiamen University of Malaysia	2	2	32
19	Al-Gasaymeh A	Applied Science Private University	2	2	31
20	Ousama Aa	Qatar University	2	2	30

Amongst the 20 most productive universities (Table 4.6) that publish articles on the GCC region banking sector, Qatar University topped the list with 16 articles, followed by Ahlia University (14 articles) and Manouba University (11 articles). Amongst these 20 universities, eight universities (40%) are from the GCC region, 15 universities (75%) are from developing and emerging countries and five universities (25%) are from developed countries.

Table 4.6. Most Productive Universities Based on Number of Publications

Rank	University	Articles	Country
1	Qatar University	16	Qatar
2	Ahlia University	14	Bahrain
3	Manouba University	11	Tunisia
4	King Abdulaziz University	10	Saudi Arabia
5	Sultan Qaboos University	9	Oman
6	Brunel University	8	United Kingdom
7	Taibah University	8	Saudi Arabia
8	University Utara Malaysia	8	Malaysia
9	Taiz University	7	Yemen
10	University of Portsmouth	7	United Kingdom
11	Durham University	6	United Kingdom
12	University of Tunis	6	Tunisia
13	International Islamic University	5	Malaysia
14	Saudi Electronic University	5	Saudi Arabia
15	University of Hafr Al Batin	5	Saudi Arabia
16	Universiti Malaysia Terengganu	5	Malaysia
17	University of Sharjah	5	United Arab Emirates
18	University of Putra Malaysia	4	Malaysia
19	Drexel University	4	USA
20	University of Auckland	4	New Zealand

Table 4.7 lists the 22 countries that contributed to the GCC region's banking literature with a minimum of two (2) articles. Saudi Arabia is the country with the highest number of publications (29 articles), followed by the UEA (23 articles) and the United Kingdom (21 articles).

Table 4.7. Most Productive Countries Based on the Number of Publications

Ranks	Country	NP	Ranks	Country	NP
1	Saudi Arabia	29	12	India	4
2	UEA	23	13	Kuwait	4
3	United Kingdom	21	14	Pakistan	4
4	Tunisia	20	15	Yemen	4
5	Qatar	16	16	France	4
6	Bahrain	15	17	Italy	2
7	Malaysia	15	18	Cyprus	2
8	Oman	7	19	Turkey	2
9	USA	7	20	China	2
10	Australia	6	21	Indonesia	2
11	Jordan	4	22	Spain	2

Table 4.8 reports the top 20 journals referred by the articles within our sample dataset. The table shows 706 articles from the Journal of Banking and Finance, followed by the Journal of Financial Economics (254) and the Journal of Finance (192).

Table 4.8. Most Referred Journals

Rank	Sources	Articles
1	*Journal of Banking and Finance*	706
2	*Journal of Financial Economics*	254
3	*Journal of Finance*	192
4	*International Journal of Islamic and Middle Eastern Finance and Management*	178
5	*Journal of International Financial Markets Institutions and Money*	144
6	*Journal of Intellectual Capital*	143
7	*Journal of Econometrics*	141
8	*Pacific-Basin Finance Journal*	141
9	*Research in International Business and Finance*	128
10	*Journal of Money, Credit and Banking*	114
11	*Journal of Business Ethics*	100
12	*Journal of Financial Services Research*	99
13	*American Economic Review*	90
14	*Journal of Islamic Accounting and Business Research*	88
15	*Journal of Financial Intermediation*	86
16	*Emerging Markets Review*	83
17	*Journal of Accounting and Economics*	80
18	*Journal of Financial Stability*	76
19	*Economic Modelling*	73
20	*Econometrica*	69

4.4.3. Bibliographic Coupling

Figure 4.2 depicts the bibliographic coupling network mapping for the GCC region banking research field, which is dominated by five major research clusters. This bibliographic coupling network mapping is constructed using 52 articles with at least ten or more citations. Based on our content analysis of these articles within each cluster, we named the primary research cluster as (1) bank efficiency (represented by green lines), (2) corporate governance and disclosure (represented by red lines), (3) performance and risk-taking (represented by blue lines), (4) systemic risk, bank stability and risk spillovers (represented by yellow lines) and (5) intellectual capital (represented by purple lines). The next section discusses these research clusters in detail.
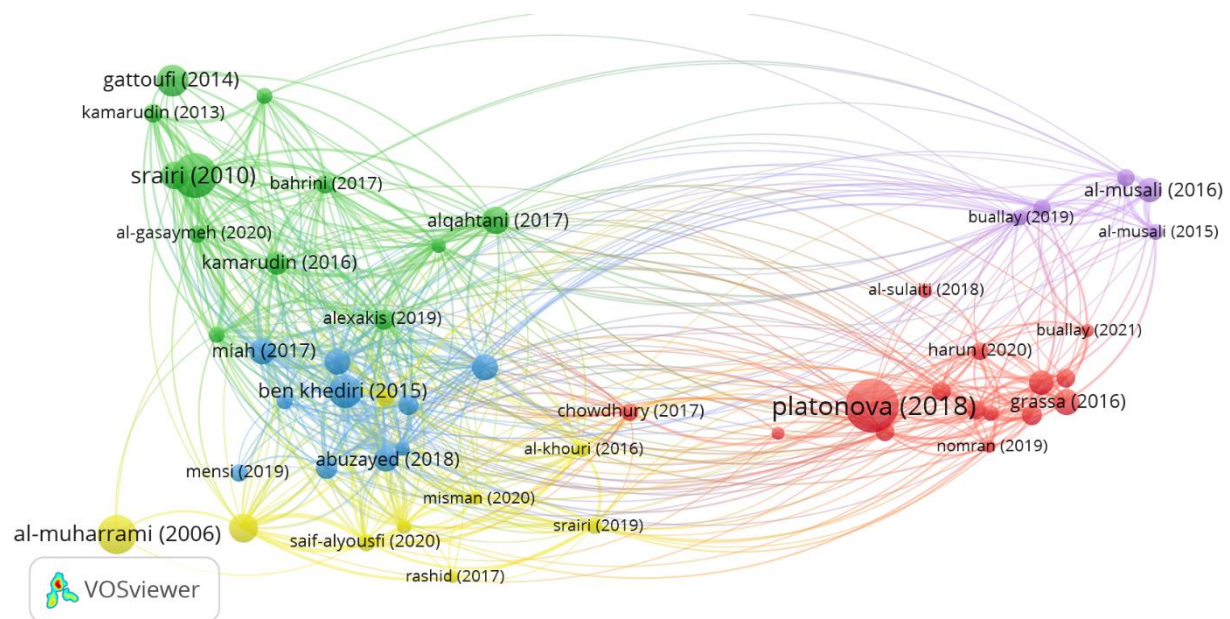
Figure 4.2: Major Research Cluster Identified Through Bibliometric Coupling

4.5. Major Research Themes

This section discusses the five major research clusters within GCC region banking literature. A detailed analysis of the top-cited papers is also given in Appendix 1.

4.5.1. Bank Efficiency

This cluster covers studies that investigate the efficiency of the commercial banks operating in the GCC region by taking different angles, such as a comparison between Islamic and conventional banks (Srairi 2010; Kamarudin et al. 2013), impact of Global Financial Crisis (GFC) (Belanes et al. 2015; Alqahtani et al. 2017a; Alexakis et al. 2019), merger and acquisition in banking (Gattoufi et al. 2014) and country-level governance (Kamarudin et al. 2016; Al-Gasaymeh 2020). Srairi (2010) is the most cited article in this cluster (120 citations) followed by Gattoufi et al. (2014) with 70 citations.

Srairi (2010) finds that GCC banks are relatively more efficient at generating profits than controlling costs and conventional banks are more efficient than Islamic banks in terms of both cost and profit efficiency levels. Kamarudin et al. (2016) find similar revenue, cost and profit efficiency results. A possible reason for Islamic banks' lower cost performance is the higher costs associated with maintaining the Shariah Supervisory Board (SSB) and developing complex Shariah-compliant products (Alexakis et al. 2019).

Alqahtani et al. (2017a) find that during the GFC, Islamic banks were more cost-efficient than conventional banks and managed to narrow down the inherent gap in terms of profit efficiency. This result supports the theoretical argument that Islamic banks were less exposed to the GFC due to their constraints on trading prohibited assets under Islamic finance principles. However, when the financial shock spilt over to the real economy during the later stage of the GFC, Islamic banks suffered more than conventional banks in terms of profit efficiency and lost the cost-efficiency superiority gained during the GFC (Alqahtani et al. 2017a). This result may suggest that Islamic banking is closely linked to real economic conditions, while conventional banking is more closely linked to the global financial industry.

Kamarudin et al. (2016) report that greater voice and accountability, government effectiveness, and the rule of law enhance the revenue efficiency of both Islamic and conventional banks. Al-Gasaymeh (2016) reports that banks from low country risk and low market concentration are more efficient, whilst Al-Gasaymeh (2020) reports that enhancing economic freedom is crucial for this region to attract more investments and create a more efficient banking system.

4.5.2. Corporate Governance and Disclosure

This cluster explores studies investigating the relationship between corporate governance (CG) and the financial performance of commercial banks in the GCC region. Specifically, these articles cover different CG mechanisms (Kolsi and Grassa 2017; Al-Malkawi and Pillai 2018), Shariah governance (Grassa 2016; Ajili and Bouri 2018; Nomran and Haron 2019; Elamer et al. 2020), board structure (Bukair and Rahman 2015), corporate social responsibility (Platonova et al. 2018; Harun et al. 2020) and sustainability reporting (Buallay and Al-Ajmi 2020). The most cited article in this cluster is Platonova et al. (2018) followed by Grassa (2016) with 173 and 37 total citations respectively.

Bukair and Rahman (2015) find that board size and composition have a negative effect, whilst the separation of the CEO and chairman roles has no effect, and the independence of the chairman has a positive effect on GCC banks' performance. Srairi (2019) reports that the average transparency index of Islamic banks in GCC countries is relatively low, these banks must improve their transparency through better disclosure, especially on both CG and Sharia governance. Grassa (2016) reports that the credit ratings of Islamic banks in Southeast Asia are higher than GCC Islamic banks. On the other hand, Elamer et al. (2020) state that GCC banks have a more robust Shariah governance structure and higher operational risk disclosures compared to non-GCC banks from the Middle East and North Africa (MENA) region.

Platonova et al. (2018) find a significant positive relationship between corporate social responsibility disclosure (CSRD) and the financial performance of GCC Islamic banks. In a similar study, Harun et al. (2020) report a significant positive association between board size and CSRD practices and a significant negative association between CEO duality with CSRD. However, both studies report a lack of CSRD practices amongst the Islamic banks in GCC countries and conclude that Islamic banks should enhance their CSRD practices to ensure that their operations and activities are in line with Islamic banking principles rather than diverging from such ethical behaviour for the sake of making more profit (Platonova et al. 2018; Harun et al. 2020). Buallay and Al-Ajmi (2020) show that audit committee (AC) size, independence and number of meetings positively impact sustainability disclosure, whilst, interestingly, AC members' financial expertise restricts sustainability disclosure.

4.5.3. Performance and Risk-taking

This cluster covers studies that investigate the performance and risk-taking behaviour of the commercial banks in the GCC region from different perspectives, such as comparison between Islamic and conventional banks (Ben Khediri et al. 2015; Alqahtani et al. 2017b), nonperforming loans (Alandejani and Asutay 2017), diversification (Ashraf et al. 2016; AlKhouri and Arouri 2019), loss provisioning (Zoubi and Al-Khazali 2007), market structure (Al-Muharrami et al. 2006; Saif-Alyousfi et al. 2020) and transparency (Srairi 2019). Al-Muharrami et al. (2006) is the most cited article within this cluster (88 total citations) followed by Ben Khediri et al. (2015) with 75 total citations.

Alqahtani et al. (2017b) investigate the operating performance of Islamic and conventional banks (before, during and after the 2007 GFC) and find that Islamic banks are better capitalised, more liquid and have higher intermediation levels, whilst conventional banks out-perform Islamic banks in management efficiency, fee income, return on shareholders' equity and asset quality. In a similar study, Ben Khediri et al. (2015) find that Islamic banks are more profitable,

more liquid, better capitalised, have less credit risk, are less involved in off-balance sheet activities and have more operating leverage. However, Gonzalez et al. (2017) show that Islamic banks are riskier than conventional banks due to the complexity of the Islamic banking model, finance contracts and operational limitations on investment and risk management activities. Alandejani and Asutay (2017) find that Islamic Banks' lending portfolios in the GCC region are highly concentrated towards real estate and construction projects, which increases the risk exposure of Islamic banks. Hence, they suggest the GCC Islamic banks should diversify their lending portfolio to other sectors within the real economy.

Ashraf et al. (2016) find that GCC banks engaged more in fee-based non-traditional activities are less risky than banks that generate their incomes mainly from traditional intermediation activities. Abuzayed et al. (2018) find evidence of a non-linear relationship between non-interest income and stability, indicating that a higher level of diversification reduces bank risk. On the contrary, AlKhouri and Arouri (2019) suggest that investors should rely more on banks' loan specialisation whilst valuing banks rather than on their ability to diversify across revenues and non-interest income. They report that a higher level of non-interest income diversification has a negative association with the performance of Islamic banks, whilst it does not affect conventional banks. Additionally, they find asset diversification positively impacts Islamic banks and is valued positively by investors; however, it is valued negatively by conventional banks' investors.

Saif-Alyousfi et al. (2020) find that higher market power, lower level of competition and lower concentration in the banking market increase bank's risk-taking and decrease the stability of lower capitalised, less liquid and small banks in contrast to the highly capitalised, highly liquid and large banks. Ashraf et al. (2016) report that a higher concentration of ownership in any type of shareholding is associated with higher insolvency risk. Srairi (2019) finds that increased transparency has significantly reduced insolvency risk for Islamic banks. Al-Shboul et al.

(2020) find that conventional banks are less exposed to political risk than Islamic banks. Gonzalez et al. (2017) find that an increase in competition leads to an increase in the insolvency risk for the banks in the GCC region.

4.5.4. Systemic risk, bank stability and risk spillovers

This cluster includes studies focussing on banking sector systemic risks and stability and risk spillover to the banking sector from commodity markets. Alqahtani and Mayes (2018) is the most cited article in this cluster, with 37 total citations, followed by Abedifar et al. (2017) with 28 total citations.

Abedifar et al. (2017) explore the systemic importance of Islamic banking and the stability of dual banking systems and find that the conventional banks with Islamic windows are the most systemically vulnerable and interconnected. Alandejani et al. (2017) argue that Islamic Banks in the GCC region are more vulnerable to the risk of failure than conventional banks because conventional banks are larger and more associated with government ownership. Similarly, Alqahtani and Mayes (2018) find that conventional banks are more stable than Islamic banks; however, the difference is significant for large banks but not for small ones. Abidi et al. (2022) find that robust internal governance mechanisms mitigate systemic risk for GCC region banks.

Mensi et al. (2019) examine the dynamic risk spillovers and hedging effectiveness between two important commodity markets, oil and gold, and the bank stock indices for GCC countries. They find that oil, gold and the conventional bank stock indexes of Saudi Arabia, Kuwait and Qatar are net contributors of volatility spillover to the other markets, whilst all the Islamic bank indexes and the conventional bank indexes of UAE and Bahrain are net recipients of volatility spillovers. Maghyereh and Abdoh (2021) find oil supply shocks cause economic instability and increase the banking sector systemic risk in the GCC region.

4.5.5. Intellectual Capital

This cluster covers studies that investigate the impact of intellectual capital (IC) on the financial performance of commercial banks operating in the GCC region. The most cited article within this cluster is Al-Musali and Ismail (2016) followed by Ousama et al. (2020), with 34 and 18 total citations respectively.

Al-Musali and Ismail (2016) report that IC positively impacts banks' financial performance indicators in all the GCC countries, whilst Qatar has the best IC performance and Bahrain has the least. Ousama et al. (2020) find that the human capital (HC) component of IC has a higher impact than the other two components, i.e., capital employed (CE) and structural capital (SC). In a similar study, Buallay et al. (2020) find that HC and CE influence operational performance; SC and CE influence financial performance, whilst market performance is influenced only by relational capital (RC).

Interestingly, Al-Musali and Ismail (2015) find that board demographic diversity, educational level and nationality have no association with the IC performance of the banks in the GCC region. A possible reason behind this insignificant relationship can be the presence of high information asymmetry within the CG environment of the GCC region (Chahine 2007) which hinders the efficiency of the qualified board members. Nawaz (2017) finds that IC helps GCC Islamic Banks improve their chances of survival and maintain their profitability before and after the GFC. Surprisingly, Shariah governance, which is the primary governance mechanism of IBs, has no significant role in this result (Nawaz 2017).

4.6. Future Research Directions

In this section, we explored future research avenues for GCC region banking literature. Through our content analysis of the highly cited papers, we first identified the future research directions suggested by existing literature and converted them into research questions

(Appendix 2). Finally, we identified several gaps in knowledge in the GCC banking literature and proposed our suggestions for future research.

Scholars suggested that the relationship between CG and financial performance can be further explored by adding other essential governance variables such as ownership structures, CEO compensation, gender diversity and SSB members' remuneration (Kolsi and Grassa 2017; Ajili and Bouri 2018). As the GCC banking sector is highly concentrated, we suggest that future research may investigate how different levels of ownership concentration and types of majority shareholders moderate the relationship between CG and bank performance.

GCC banks rely heavily on chief executive officers (CEOs) and influential board members for decision-making and those individuals are often appointed to steer the bank in conformity with the government's economic and political strategies (Ousama et al. 2020). Therefore, future studies should focus more on CEO and board members' attributes, political connections and influence. Besides empirical studies, qualitative studies based on interviewing CEOs, top executives and influential board members may shed more light on the uniqueness of the GCC banking sector. Bank directors from the GCC region work in an environment characterised by high information asymmetry (Chahine 2007) and do not receive sufficient and appropriate information about corporate strategy (Al-Musali and Ismail 2015). Future research may investigate whether this opaque environment leads to agency problems. Chahine and Tohmé (2009) claim that in the GCC region, the local directors are better connected with the top managers; hence there might be a possibility that the foreign directors are not able to make significant contributions to GCC banks. Future research may investigate whether foreign board members experience difficulties promoting better CG mechanisms in the GCC region.

Hofstede (1993) argues that organisations are culture-bound, and managers are not separable from their indigenous cultures. GCC countries have unique social and cultural environments

influenced by high group-ism, masculinity and hierarchical relationships (Kabasakal and Bodur 2002; Al-Omari 2008; Aldulaimi 2019) which differs from the developed countries. Future studies may focus on the influence of national and organisational culture on GCC region banks using different cultural models such as Hofstede's cultural dimensions and Maslow's hierarchy of needs. Also, future research can focus on the lack of diversity in GCC banks' boards, as they do not include ethnic groups in the boards, and there is a weak presence of women on those boards (Al-Musali and Ismail 2015).

Since the GCC region is one of the world's largest Islamic banking markets, a large body of banking literature based on this region either solely focuses on Islamic banking or compares Islamic banking with conventional banking from different angles. However, the findings from the studies raise several questions about the effectiveness of Islamic banking. The scope of Islamic CG extends beyond conventional CG practices and operates largely in line with the objectives of Islamic law (Obid and Naysary 2016). In Islamic banking, the SSB is the primary CG mechanism of IBs (Ajili and Bouri 2018). Belanes et al. (2015) find that though Islamic banks have succeeded in mobilising large amounts of deposits, especially during the GFC, this phenomenon cannot be explained by the better performance of Islamic banks compared to their conventional peers. Instead, the religious motivations of the depositors, who are looking for Sharia compliance, contributed to the increase in deposit volume. Ajili and Bouri (2018) and Nawaz (2017) conclude that Shariah governance falls short of explaining the growth trends in the Islamic banking industry. Similarly, Grassa (2016) reports that Islamic banks' credit ratings are negatively associated with the supervisory role of the Shariah board. Additionally, Platonova et al. (2018) find that most IBs report significantly less than the level expected by Islamic ethics. So, there might be a need for further research on the usefulness of the SSB.

Finally, as the GCC banking sector is very dynamic and highly connected with the Global economy, future research may also focus on how recent world events, such as COVID-19, the

Russia-Ukraine war, hikes in interest rates and rising inflation, affect the GCC banking sector and how GCC banks cope with those adverse situations.

4.7. Conclusion

This paper comprehensively analyses influential aspects and conceptual structure of banking research in the GCC region by systematically reviewing a sample of 199 articles published in 89 journals between 2004 and 2022 using bibliometric and content analysis methods. This sample of 199 articles was extracted from the WoS. To our knowledge, this is the first literature review paper on GCC region banking activities.

The results of bibliometric citations analysis, conducted using Biblioshiny Package of R software, show that the Journal of Islamic Accounting and Business Research and the International Journal of Islamic and Middle Eastern Finance and Management are the top two journals in terms of the number of articles published, however, articles from International Journal of Islamic and Middle Eastern Finance and Management received the highest number of citations. Saif-Alyousfi from Taiz University is the top author with the most articles, but Mehmet Asutay from Durham University is the most cited author within our sample. By employing the bibliographic coupling technique using VOSviewer software, this paper finds five major research clusters within GCC region banking literature: (1) bank efficiency, (2) CG and disclosure, (3) performance and risk-taking, (4) systemic risk, bank stability and risk spillovers and (5) IC. The paper provides a detailed content analysis of these research clusters, identifies future research agenda suggested by scholars and explores additional gaps in knowledge.

This paper is not free from any bias or limitation. The bibliometric analysis treats the importance and influence of an article based on its citations, but it takes time for a research article to be recognised for its true potential. So, more recent articles might not show their true

potential in a bibliometric study. Our analysis is also limited to articles indexed in the WoS database and written in English. Though the WoS database encompasses a wide range of multidisciplinary journals, there is a chance that some relevant articles are not included in the WoS database or written in another language, such as Arabic. Moreover, we could not discuss the findings of all the articles in the content analysis section due to space limitations. Future studies may incorporate other databases and articles written in other languages or use other literature review techniques to investigate the intellectual structure of GCC region banking literature.

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Appendices

Appendix - 1. Content analysis of top-cited papers, selection criteria Total citations (TC) = 10 or above

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Platonova et al. (2018)	173	24 IBs 2000-2014	Stakeholder theory	Bankscope Annual Reports	Panel regressions	CSR disclosure positively impacts the financial performance of GCC Islamic banks.
Srairi (2010)	120	71 banks 1999-2007			Stochastic frontier analysis (SFA)	GCC banks are relatively more profit-efficient than at controlling costs. Conventional banks are more efficient than Islamic banks, in terms of both cost and profit efficiency.
Al-Muharrami et al. (2006)	88	52 banks 1993-2002		Bankscope Annual Reports	Dynamic P–R model (Panzar and Rosse)	Kuwait, Saudi Arabia and UAE have moderately concentrated markets whilst Qatar, Bahrain and Oman have highly concentrated markets.
Ben Khediri et al. (2015)	75	44 CBs & 18 IBs 2003-2010		Bankscope	Linear discriminant analysis, Logistic regression, Neural network	Islamic banks are more profitable, more liquid, better capitalised, have lower credit risk, more operating leverage and are less involved in off-balance sheet activities than conventional banks.
Gattoufi et al. (2014)	70	42 banks			Inverse Data Envelopment Analysis	The bank that is willing to merge/acquire another bank needs to decide on the inputs and/or outputs level if an efficiency target for the new banking unit is set.

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Gonzalez et al. (2017)	61	365 banks 2005-2012		Bankscope	Panel regressions	Increase in competition leads to an increase in the insolvency risk for GCC banks.
Alqahtani et al. (2017a)	55	80 banks 1999 - 2012	Agency theory	Bankscope	Data envelopment analysis (DEA), Stochastic frontier analysis (SFA), Panel Regression	During the GFC, Islamic banks were more cost-efficient than conventional banks. After the GFC, Islamic banks suffered more compared to conventional banks in terms of both profit and cost efficiency.
Alqahtani et al. (2017b)	51	101 banks 1998-2012		Bankscope	Panel regressions	Islamic banks performed better in the early stages of the GFC, but they performed worse in the later stages with the real economic downturn.
Belanes et al. (2015)	48	30 IBs 2005 to 2011		Annual reports	Data envelopment analysis (DEA)	GFC had a negative impact on the efficiency of Islamic banks in the GCC region.
Miah and Uddin (2017)	47	76 banks 2005-2014			Ratio analysis, Stochastic Frontier Analysis (SFA), Pooled OLS regression	Conventional banks are more efficient in managing costs than their Islamic counterparts.
Grassa (2016)	37	80 Ibs 2005 - 2011	Agency theory	Annual reports, Zawya database, Bankscop	Logistic regression	The credit rating for GCC Islamic banks is lower than the credit rating of Southeast Asian Islamic banks.
Alqahtani and Mayes (2018)	37	76 banks 2000-2013		OSIRIS	Panel regressions	Conventional banks are more stable than Islamic banks,
Al-Musali and Ismail (2016)	34	73 banks 2008-2010	Resource-based theory		Value-added intellectual coefficient method OLS regression	Intellectual Capital has a positive impact on banks' financial performance in all the GCC countries.

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Zoubi and Al-Khazali (2007)	33	47 banks 2000-2003		Annual reports	Single-stage model, Pooled OLS regression	Banks in the GCC region, both Islamic and conventional, perform income smoothening through loss provisioning.
Abuzayed et al. (2018)	33	107 banks 2001-2014		Bankscope	Panel regressions	Income or asset diversification does not reduce banks' insolvency risk. Conventional banks appear to be more adversely impacted on the risk side than Islamic banks.
Bukair and Rahman (2015)	32	40 IBs 2008-2011	Stakeholder theory		Panel regressions	The size and composition of the board have a negative effect. The separation of CEO and chairman roles has no effect, and the independence of the chairman has a positive effect on bank performance.
Kamarudin et al. (2016)	29	74 banks 2007-2011	Regulation theory	Bankscope	Data envelopment analysis (DEA) Panel regression	Greater voice and accountability, government effectiveness, and rule of law enhance the revenue efficiency of both Islamic and conventional banks.
Abedifar et al. (2017)	28	79 listed banks 2005-2014		Bankscope	Panel regressions	Conventional banks with Islamic windows are the most interconnected and least resilient sector to a systemic event.
Ajili and Bouri (2018)	24	44 IBS 2010 - 2014	Agency theory, Stewardship theory, Stakeholder theory	Annual reports	Panel regressions	No statistically significant association between Corporate Governance quality and Islamic Banks' performance.
Alandejani et al. (2017)	23	39CBs & 18 IBs 1995-2011		Bankscope	Survival-time analysis	Islamic Banks are more likely to fail than Conventional Banks.

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Alexakis et al. (2019)	22	43 CBs & 19 IBs 2006-2012		Bankscope	Financial ratio analysis Malmquist productivity analysis	Islamic banks have lower cost performance and profit performance. No significant difference in revenue performance.
Ashraf et al. (2016)	21	125 banks 2000 - 2011		Bankscope	Panel regressions	Higher concentration of ownership is associated with higher insolvency risk. Banks with higher fee-based activities are more financially stable.
Elamer et al. (2020)	20	63 IBS 2006-2013	Agency theory, Signalling theory, Legitimacy theory, Resource dependence theory	Bankscope	Panel regressions	GCC banks have stronger governance structures and higher levels of operational risk disclosures compared to other MENA countries' banks.
Kamarudin et al. (2013)	20	47 CBs & 27IBs 2007-2011		Bankscope	Data envelopment analysis (DEA)	Conventional banks have higher efficiency levels for all three efficiency measures.
Kolsi and Grassa (2017)	20	29 IBs 2004-2012	Prospect theory, Agency theory, Alignment theory	Annual report	Panel regressions	Corporate governance structures significantly impact the discretionary loan loss provision in Islamic Banks.
Buallay and Al-Ajmi (2020)	19	59 listed banks 2013-2017	Legitimacy theory, Agency theory, Resource dependency theory	Annual reports, Bloomberg database	Panel regressions	A negative association between financial expertise and sustainability reporting.
Bahrini (2017)	19	33 IBs 2007-20012		Annual reports	Data Envelopment Analysis (DEA)	GCC Islamic banks had stable efficiency scores during the GFC and in the early post-crisis period.

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Harun et al. (2020)	18	39 Ibs 2010-2014	Stakeholder theory, Agency theory, Signalling theory, Legitimacy theory	Annual reports Bankscope Data stream Company websites	Panel regressions	Very low level of corporate social responsibility disclosure practices amongst the Islamic banks in GCC countries.
Saif-Alyousfi et al. (2020)	18	70 banks 1998-2016	Theory of competition-fragility, Theory of competition-stability	Bankscope	Panel regressions	A higher level of competition and a greater degree of concentration leads to higher insolvency risk.
Ousama et al. (2020)	18	31 IBs 2011-2013	Resource-based theory	Annual reports	Pooled OLS	Intellectual Capital has a positive impact on the financial performance of Islamic banks.
Buallay et al. (2020)	17	59 listed banks 2012-2016	Resources-based theory	Annual reports Other reports	Modified Value- added intellectual coefficient method.	Positive relationship between intellectual capital efficiency and financial performance and market valuation.
Mensi et al. (2019)	17	2006-2016		Bloomberg database	DECO-FIGARCH model Spillover index	Weak average conditional correlation between all the GCC bank stock indices and oil and gold markets.
Alandejani and Asutay (2017)	17	51 banks 2005-2011		Bankscope	Panel regressions	Sectoral distribution of financing portfolios has an adverse impact on the non-performing loans and credit risk exposure of Islamic banks.
Chowdhury et al. (2017)	17	29 IBs 2005-2013		Bankscope	Panel regressions	Equity financing has a significant impact on bank performance.
Al-Gasaymeh (2020)	16	90 banks 2003-2010		Bankscope	Stochastic frontier analysis (SFA)	Economic freedom helps in reducing potential bank costs.
Al-Gasaymeh (2016)	15	75 banks		Bankscope	Stochastic frontier analysis (SFA)	Banks with low country risk, and low market concentration

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
		2007-2014			Panel Regression	perform more efficiently.
Al-Musali and Ismail (2015)	15	44 banks 2008-2010	Upper echelon theory, Resource dependency theory	Annual reports	Value-added intellectual coefficient method Hierarchical regression	No evidence that board diversity has a positive impact on Intellectual Capital performance.
Aghimien et al. (2016)	15	43 banks 2007 - 2011		Bankscope	Data envelopment analysis (DEA)	Most of the GCC banks are operating within an optimal scale of efficiency
Al-Malkawi and Pillai (2018)	15	22 IBs 2005-2015	Agency theory, Alignment theory, Property rights theory,	Annual report	Panel regressions	Five conventional corporate governance mechanisms have a statistically significant relationship with the Islamic bank's performance.
Buallay et al. (2019)	14	21 listed IBs and 38 listed CBs 2012-2016	Resources-based theory	Annual reports	Modified Value- added intellectual coefficient method Panel regression	Islamic banks - positive relationship between Intellectual Capital (IC) and financial performance and market performance. Conventional banks - positive relationship between IC and operational performance and financial performance.
Miah and Suzuki (2020)	14	18 IBs 2015-2016		Annual reports	Comparative analysis	Islamic banks need to increase participatory financing to uphold the true spirit of Islamic finance.
Srairi (2019)	14	29 IBs 2013-2016		Bankscope	Panel regressions	Lack of transparency related to Islamic banks' corporate governance, Sharia governance and risk operations.
Al-Shboul et al. (2020)	13	191 CBs and 65 IBs		Bankscope	Panel regressions	Islamic banks in the GCC region are less exposed to political risk compared with

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
		2008-2017				those operating in other MENA countries.
AlKhouri and Arouri (2019)	13	22 listed IBs and 47 listed CBs 2003-2015		Bloomberg database	Panel regressions	Non-interest income diversification has a negative whilest asset-based diversification has a positive impact on bank performance.
Mohanty et al. (2016)	13	30 IBs and 13 CBs 1999-2010		Bankscope	Heteroskedastic stochastic frontier analysis (HSF)	The cost and profit efficiencies of Islamic banks are more volatile than that of conventional banks.
AlKhouri and Arouri (2016)	12	59 Banks 2004-2012		Bloomberg GulfBase Annual reports	Panel regressions	Stable banks tend to expand credit faster, and are more profitable, however, after a certain level of credit growth, banks become less stable.
Al-Sulaiti et al. (2018)	12	24 IBs 2012-2015		Annual reports	Comparative analysis using disclosure indexes	Islamic banks in Qatar tend to be more compliant compared to the Islamic banks in Bahrain.
Misman and Bhatti (2020)	10	40 IBs 2000 - 2011		Bankscope	Panel regressions	Financing quality positively affects credit risk. Larger IBs owned more assets with lower credit risk compared to smaller IBs.
Rashid et al. (2017)	10	39 IBs 2009-2014	Contingency theory	Bankscope Annual reports	Panel regressions	liquidity risk management in Islamic banks is dependent upon past liquidity conditions, bank size and loan loss provision, growth of broad money and growth of GDP.
Nomran and Haron (2019)	10	45 IBs 2007-2015	Agency theory	Bankscope	Panel regressions	Shariah governance practices for IBs in Southeast Asia are stronger compared to the GCC IBs.

Author(s)	TC	Sample size and period	Theory	Data source	Methods	Findings
Alfadli and Rjoub (2020)	10	62 listed banks 2011-2017	Market power theory, Efficiency structure theory, Portfolio theory	ORBIS	Panel regressions	Efficiency, credit risk, diversification and concentration ratio have a negative impact whilest the capital adequacy ratio has a positive impact on bank performance.

Appendix - 2. Future research questions suggested by scholars

Theme	Future research questions	Author(year)
Efficiency	What is the impact of off-balance sheet activities / NTBAs on the efficiency of GCC banks?	Srairi (2010)
	What are the differences between domestic and foreign banks, and state-owned banks versus private banks in terms of efficiency in the GCC region?	Srairi (2010)
	How do banking regulations, and the liberalisation of state-owned banks impact bank efficiency?	Al-Gasaymeh (2020)
Corporate governance and disclosure	How to standardise and unify the financial and annual reports of Islamic banks?	Platonova et al. (2018)
	What is the impact of Shariah governance on the risk-taking behaviours of Islamic banks?	Grassa (2016)
	What benefits does Shariah governance bring to equity shareholders of Islamic banks?	Grassa (2016)
	What are the differences between Islamic banks operating in Islamic countries and Western countries?	Bukair and Rahman (2015)
	How do the top five largest shareholders and managerial shareholdings impact the performance of Islamic banks?	Bukair and Rahman (2015)
	How do ownership structures, CEO compensation, gender diversity and remuneration of Shariah Supervisory Board members impact the financial performance of Islamic Banks?	Ajili and Bouri (2018)
	How do CEO bonuses, experience, and gender impact the earnings management practice of GCC banks?	Kolsi and Grassa (2017)
	To what extent do Islamic Banks use real earnings management with Murabaha, Mudaraba, and Musharaka transactions?	Kolsi and Grassa (2017)
	How do Sharia supervisory boards and governance structure affect Sharia non-compliance risk?	Elamer et al. (2020)
	How do the audit committee and risk committee influence the operational risk disclosure practices?	Elamer et al. (2020)

Theme	Future research questions	Author(year)
	How do Audit Committee attributes affect other forms of reporting, such as integrated reporting and intellectual capital reporting?	Buallay and Al-Ajmi (2020)
	What are the impacts of different board attributes on sustainability reporting over time?	Buallay and Al-Ajmi (2020)
	What are the non-economic consequences of corporate social responsibility disclosure in terms of banks' image and reputation?	Harun et al. (2020)
	How may the reporting of Zakat payments impact the performance of Islamic banks?	Nomran and Haron (2019)
Intellectual capital	How do different attributes of the CEO and the board affect the performance of intellectual capital?	Ousama et al. (2020)
	Do foreign board members experience difficulties in promoting better corporate governance and adding value to the intellectual capital performance of GCC banks?	Al-Musali and Ismail (2015)
	What role do independent directors play in developing IC performance?	Al-Musali and Ismail (2015)
	Whether the intellectual capital performance dynamics differ between the pre- and post-financial crisis periods?	Buallay et al. (2019)
	How to enact a clear and mandatory law related to Intellectual capital protection and reporting?	Buallay et al. (2020)

Chapter 5: Non-Traditional Banking and Income Diversification in the GCC region: Determinants, Profitability, and Stability

Abstract

This paper examines the determinants of NTBAs and the effects of NTBAs and income diversification on profitability and stability using a panel dataset of 94 commercial banks from the GCC region between 2012 and 2022. Using fixed effects panel regression (LSDV approach), this study reveals that more profitable and cost-efficient banks are more likely to engage in NTBAs. In contrast, less stable and less liquid banks also tend to increase their involvement in NTBAs. Islamic banks are also found to rely more on NTBAs, which may be due to structural constraints. The study further reports that NTBAs enhance profitability but reduce stability. However, income diversification, both between interest and non-interest income and within different non-interest income categories, is negatively associated with profitability and stability. This implies that greater income diversification may increase managerial complexity, overstretch institutional capacity, and weaken banks' ability to maintain stable performance. The findings highlight that while NTBAs can enhance returns, diversification strategies must be carefully aligned with operational capabilities and regulatory oversight to avoid undermining financial resilience in emerging banking systems like the GCC.

5.1. Introduction

Over the last four decades, the global banking industry has experienced significant changes in the composition of its revenue streams (Meslier et al. 2014; Brunnermeier et al. 2020; Saklain and Williams 2024). In response to regulatory liberalisation, prolonged periods of low interest rates, technological innovation, and intensified competition, banks across both developed and developing countries have increasingly diversified their revenue streams by engaging in different NTBAs beyond their traditional deposit-taking and lending functions (DeYoung and Torna 2013; Meslier et al. 2014; Landi et al. 2020; Samarasinghe 2023). These NTBAs include trading, corporate advisory services, brokerage, asset management, and various fee-based financial services. This shift has been justified by considering NTBAs' capacity to improve profitability, earnings stability, capital efficiency, and risk diversification (Saunders et al. 2020; Samarasinghe 2023).

This transformation has been facilitated by significant regulatory reforms, including the Second Banking Directive in Europe and the GLBA in the United States, which removed major obstacles preventing commercial banks from participating in investment banking and other nontraditional businesses that generate fees income or trading profit (Toll 1990; Tison 1999; Stiroh and Rumble 2006; Baele et al. 2007; Papanikolaou 2009). However, while the theoretical rationale, primarily grounded in financial intermediation theory and portfolio diversification theory, for such diversification, is convincing, the empirical literature offers inconclusive evidence of its impact on bank performance, especially regarding profitability and stability. The GFC of 2007–2009 drew greater attention to these banking practices, with many experts arguing that over-reliance on volatile non-interest income was a major contributor to the banking sector's collapse during the crisis (DeYoung and Torna 2013; Brunnermeier et al. 2020). There is also concern that engaging in diverse activities could make banks too big to fail or too complex to manage and regulate (Barth et al. 2004; Abedifar et al. 2018).

Conversely, Saunders et al. (2020), Kohler (2015), and Saklain and Williams (2024) demonstrate that non-traditional operations positively influence bank profitability and risk. Despite the growing body of research on NTBAs and income diversification, findings remain mixed, leaving it unclear whether diversification into NTBAs positively or negatively affects banking performance (Stiroh 2015; Šeho et al. 2024). Considering the contradictory empirical results of previous research, this paper enhances and supplements existing studies by investigating the determinants of NTBAs and the effects of NTBAs and income diversification on profitability and stability within the framework of the banking systems of the GCC, a political and economic union between six Arab countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. All these countries are monarchies, have similar social and economic characteristics and are amongst the wealthiest nations with a heavy dependence on oil for their wealth.

This research is especially important given the ongoing structural economic reform initiatives in the GCC nations to foster greater economic diversification. In reaction to the significant decline in oil prices in 2014, all GCC governments have expedited initiatives to reduce their reliance on hydrocarbon revenues by implementing long-term development strategies, such as UAE Vision 2021, Saudi Vision 2030, Qatar National Vision 2030, and Kuwait Vision 2035 (Khan et al. 2020). All these initiatives share a commitment to comprehensive economic diversification, with the financial sector, particularly banking, serving as a fundamental pillar for fostering growth in non-oil sectors, supporting private businesses, and improving national competitiveness (Callen et al. 2014; Saxena and Al-Hadrami 2017; Mishrif and Al Balushi 2018).

In this context, GCC banks are expected not only to strengthen their traditional intermediation roles but also to expand their involvement in various NTBAs, given that all six GCC countries operate bank-based financial systems with underdeveloped capital markets (Ltaifa et al. 2018).

Moreover, while banks in advanced economies largely returned to conventional, interest-based lending following the GFC, GCC banks have increasingly relied on NTBAs, though from a lower starting point (Abuzayed et al. 2018). This transition has taken place in a context where institutional infrastructure, market sophistication, and regulatory oversight may not be adequately prepared to address the risks linked to different non-traditional income sources. Consequently, there is a concern that banks, in their quest for new revenue streams, may engage in business sectors that subject them to greater earnings volatility, compliance risks, and operational complexities, especially in the absence of sufficient internal risk management capabilities (Stiroh and Rumble 2006; Berger et al. 2010; Brunnermeier et al. 2020).

In addition, unlike developed economies, the banking sector in the Gulf Cooperation Council (GCC) region is characterised by significant state ownership and fixed exchange rate regimes (Alqahtani et al., 2017a; Ltaifa et al., 2018; Alqahtani et al., 2020). Under such institutional and macroeconomic conditions, the motivations for and consequences of engaging in non-traditional banking activities (NTBAs) may differ significantly from those observed in more advanced financial systems. The GCC also represents the world's largest Islamic banking market (Mabkhot and Al-Wesabi, 2022). Islamic banks, guided by Shariah principles, are prohibited from interest-bearing lending and instead operate through profit-sharing, leasing, and fee-based contracts (Beck et al., 2013; Alqahtani et al., 2017a). This regulatory structure generates distinct NTBA profiles and risk-return dynamics, which are expected to diverge from those of conventional banks.

In this perspective, the GCC region offers a distinctive hybrid institutional framework, comprising bank-based, oil-dependent, and dual (Islamic–conventional) financial systems, to examine the influence of NTBAs and revenue diversification on banking performance. In this context, this study addresses the following research questions:

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1. What are the key bank-level, macroeconomic and institutional factors that determine the adoption of NTBAs among GCC banks?

2. What are the effects of NTBAs and income diversification, both between interest and non-interest income, and within different non-interest income sources, on the profitability of banks in the GCC region?

3. What are the impacts of NTBAs and income diversification, both between interest and non-interest income, and within different non-interest income sources, on the stability of banks in the GCC region?

To answer these questions, the chapter is guided by three principal research objectives:

1. To explore the bank-level, institutional-level, and macro-level determinants that affect the involvement of banks in various non-traditional banking operations.

2. To examine the impact of NTBAs and income diversification on bank profitability.

3. To investigate the influence of NTBAs and income diversification on bank stability or insolvency risk.

This study makes several distinct contributions to the banking and finance literature. First, it examines the profitability and stability implications of NTBAs within a distinctive institutional context, characterised by resource dependence, a dual (Islamic–conventional) banking system, and a bank-based financial system. This context is underrepresented in the existing literature, which predominantly focuses on industrialised, market-driven economies.

Second, the study employs a disaggregated approach to income structure by distinguishing income composition, diversification between interest and non-interest sources, and diversification within non-interest income categories. This decomposition enables a more nuanced assessment of whether performance outcomes are influenced by reliance on non-traditional income or by the dispersion of income sources. By making this distinction, the study

offers deeper insights into the structural trade-offs banks face when implementing diversified income strategies.

Third, the research design is methodologically robust. It employs an LSDV estimator with bank, year, and country fixed effects, enabling the model to control for unobserved heterogeneity while retaining time-invariant institutional characteristics—most notably, the Islamic bank dummy (IBD).

Fourth, the study simultaneously investigates the effects of NTBAs and income diversification on both profitability and financial stability, two core, yet often separately examined, dimensions of bank performance. This integrated perspective provides a more comprehensive understanding of the risk-return dynamics associated with income diversification, particularly in emerging markets where regulatory depth and internal risk management infrastructure may be limited.

Taken together, these contributions extend empirical understanding of NTBAs within GCC banking systems and generate practical insights for policymakers and bank executives aiming to balance financial innovation with long-term resilience.

The paper is structured as follows: Section 2 describes the theoretical framework for this study. Section 3 reviews the current literature. Section 4 outlines the data, variables, and methodology employed. Section 5 presents the empirical findings, and Section 6 provides the conclusion of the paper.

5.2. Theoretical Framework

The study's analysis is based on two fundamental theoretical frameworks: financial intermediation theory and portfolio diversification theory. Collectively, these frameworks

provide the rationale behind banks diversifying into non-traditional operations and the potential consequences of such actions.

5.2.1. Financial Intermediation Theory

The diversification of banking activities was first conceptualised in the financial intermediation model proposed by Diamond (1984). According to Diamond (1984), banks become efficient financial intermediaries by reducing the problems of asymmetric information and monitoring through activity diversification. By expanding their range of activities—such as combining lending with investment advisory services—banks may achieve economies of scope and lower the marginal cost of client oversight. Rajan (1992) and Saunders and Walter (1994) contend that diverse banks can obtain significant insights into their clients by offering one financial service, which may facilitate the provision of additional financial services to the same customers, thereby improving overall efficiency. Similarly, Demirguc-Kunt and Huizinga (2010) argue that cross-selling diverse products and leveraging customer information obtained from one business line to offer other services will result in lower client acquisition costs.

However, diversification into NTBAs may also exacerbate agency problems. Bank managers may be incentivised to engage in more profitable but much riskier activities in expectation of higher bonuses (Benston 1994). In addition, a conflict of interest might arise in combining investment banking activities with lending activities; for example, when banks underwrite securities for companies to which they have provided loans (Kroszner and Rajan 1994). These agency problems may become more pronounced and harder to monitor in larger and more complex institutions engaging in various activities. In the GCC, where banks often enjoy close links to the state (Ousama et al. 2020), the balance between scope economies and agency risks may play out differently than in developed economies.

5.2.2. Portfolio Diversification Theory

Portfolio diversification theory or modern portfolio theory (Markowitz 1952, 1991) also supports the expansion of commercial banks into non-traditional businesses. The theory posits that by combining diverse income streams with low correlation, a bank can stabilise total returns and reduce earnings volatility (Stiroh 2004). For example, fee income from advisory services or trading profits may remain consistent despite a decline in interest income resulting from reduced loan demand or diminished interest margins. However, subsequent research by Stiroh and Rumble (2006) indicates that the advantages of diversification may be offset by higher exposure to non-core risks, especially when banks lack adequate experience in managing complex NTBAs. Moreover, although cross-selling opportunities create diverse revenue streams for banks, diversification could make them more homogeneous, exposing them to the same types of shocks and resulting in systemic failure (Brunnermeier et al. 2020).

5.3. Literature Review

Most of the early empirical studies in the NTBAs research field concentrated on the importance and implications of the Glass-Steagall Act of 1933, which prohibited US commercial banks from participating in investment banking activities. The pertinent studies highlighted the rationale for the Act by empirically investigating the claim that US banks' involvement in underwriting activities before the Act's enactment contributed to conflicts of interest and instability within the banking system (Kroszner and Rajan 1994; Puri 1996). However, White (1986) reports that commercial banks involved in securities underwriting before the Glass-Steagall Act demonstrated a reduced likelihood of default. On the other hand, Ang and Richardson (1994), Puri (1994, 1996), Kroszner and Rajan (1994) and Gande et al. (1997) all look into the conflict-of-interest argument but end up finding no solid evidence to support it. As a result, they recommend that the law should be repealed. In essence, the majority of the

earlier studies produced findings that align with financial intermediation theory and portfolio diversification theory.

Following the repeal of the Glass-Steagall Act of 1933 by the GLBA in 1999, the research focus shifted to the effects of non-interest revenue on the performance and risk-taking behaviours of individual banks. The relevant literature focused mostly on the banks' growing tendencies towards non-interest income-generating activities, employing various methodologies to assess their effects on profitability, efficiency, and default risk. This shift indicated a theoretical belief aligned with portfolio theory, positing that banks diversify their revenue streams to reduce revenue volatility (DeYoung and Rice 2004). However, DeYoung and Roland (2001) and Landi et al. (2020) argue that the move towards non-interest income primarily resulted from declining lending interest rates and the shrinking market share of commercial banks in loans and deposits.

Among the notable empirical studies, Chiorazzo et al. (2008), using data from a sample of Italian banks between 1993 and 2003, reveal a significant positive relationship between revenue diversification into non-interest income and bank's risk-adjusted returns. Albertazzi and Gambacorta (2009) assert that revenue diversification can improve bank profitability, drawing on data from eleven industrialised nations between 1981 and 2003. Using data from nine developed Western nations between 1996 and 2008, Elsas et al. (2010) conclude that income diversification raises bank profitability and, consequently, market valuation.

In contrast, Stiroh and Rumble (2006) analyse US bank data from 1997 to 2002 and identify that diversification benefits exist; however, these advantages may be outweighed by heightened exposure to non-interest activities, which exhibit significantly higher volatility than conventional interest-earning activities, a finding that challenges modern portfolio theory. Similarly, Lepetit et al. (2008a), based on a large sample of European banks for the years 1996–

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2002, find that banks that have diversified into non-interest earning businesses pose a greater risk than banks that primarily engage in traditional intermediation operations. In addition, Lepetit et al. (2008b) examined 602 European banks from 1996 to 2002 and identified evidence of possible cross-selling between interest and non-interest items. They find that banks provide lower interest rates to clients to whom they also sell fee and commission services, resulting in a decrease in interest earnings and default risk, but an increase in the risk associated with non-interest earning products.

Conversely, Baele et al. (2007) reveal mixed results; a greater proportion of non-interest income in total revenue positively influences banks' market valuation, rendering those banks with higher non-interest income more attractive to stock market investors, however, these banks also exhibit higher systematic risk. Köhler (2014) examines German banks and discovers that retail-focused institutions exhibit more stability when they enhance non-interest income operations, in contrast to investment-oriented banks.

Following the GFC, many studies, such as by DeYoung and Torna (2013) and Brunnermeier et al. (2020), blamed the failures of U.S. commercial banks during the financial crisis on an overreliance on NTBAs. Brunnermeier et al. (2020) analysed data from 538 US banks between 1986 and 2008, revealing that the influence of non-interest income on systemic risk was significant during the financial crises of 1990 and 2007, but not evident before the 2001 high-tech bubble bust. Analysing bank data from Australia between 2002 and 2014, Williams (2016) concludes that the combination of interest and non-interest earnings does not yield portfolio diversification advantages; rather, the heightened complexity incurs agency costs that surpass any potential diversification benefits. However, he also indicates that specialisation mitigated risk for Australian banks before the global financial crisis; however, post-2008 crisis, revenue specialisation escalated bank risks, this contradicts the findings of Brunnermeier et al. (2020) about US banks.

On the contrary, Weiß et al. (2014) discover no empirical evidence supporting the hypotheses that non-interest income or the quality of a bank's loan portfolio are persistent predictors of systemic risk during financial crises but are primarily influenced by the attributes of the regulatory framework. Similarly, in their study of 12,296 US banks from 1984 to 2013, Saunders et al. (2020) conclude that a greater proportion of non-interest revenue relative to interest income correlates with enhanced profitability without significantly elevating bank-level risk. They also report the net benefits of non-traditional income surged throughout the 2000s, coinciding with the reduction of both interest rates and bank margins and did not contribute to the bank failures during the GFC. Using data from 6921 U.S. commercial banks between 2007 and 2016, Abedifar et al. (2018) conclude that NTBAs do not negatively affect bank credit risk. Saklain and Williams (2024) reveal, using a global sample of commercial banks from 126 countries, that in environments characterised by low regulatory restrictions and market-based financial systems, an increase in non-interest income reduces revenue volatility, mitigates loan losses, and improves bank stability. Wu (2024) examines the relationship between bank diversification and performance within the Japanese banking industry, concluding that diversification enhances bank profitability while simultaneously diminishing net interest margins, indicating that banks may utilise lending activities as a loss leader to promote non-interest-earning business segments.

A substantial proportion of the literature on bank revenue diversification focuses on the banking systems of the U.S., Europe, and other developed nations, with very limited research on the banking systems of emerging or developing countries (Abuzayed et al. 2018). Recently, there has been a shift in this pattern, with researchers increasingly focussing on the income diversification strategies of banks in emerging or developing countries. Sanya and Wolfe (2011) analysed a dataset of 226 listed banks from 11 emerging economies and concluded that diversification between interest and non-interest revenue, as well as among different non-

interest income sources, reduces insolvency risk and increases profitability. Meslier et al. (2014) found that revenue diversification has a favourable impact on bank profitability after assessing data from 39 Philippine commercial and universal banks between 1999 and 2005. By examining the context of four South Asian nations (Bangladesh, India, Pakistan, and Sri Lanka) from 1998 to 2008, Nguyen et al. (2012) reveal that income diversification contributes to enhanced banking stability. Wang and Lin (2021) analyse a sample of commercial banks across 14 Asia Pacific economies from 2011 to 2016 and concludes that income diversity enhances overall bank risk, with more significant impacts shown in the emerging economies of the region. Duong et al. (2025) find that ASEAN banks with greater income diversification tend to have higher liquidity and lower banking risk.

On the contrary, using bank data for 22 countries in Asia over the period 1995–2009, Lee et al. (2014) reveal that non-interest activities raise the risk for banks in high-income countries while enhancing profitability or mitigating risk for banks in middle and low-income countries. Berger et al. (2010), employing data from 88 Chinese banks between 1996 and 2006, find that diversification is linked to lower profits and higher costs. However, they believe that the Chinese banks' diversification discount is caused, at least in part, by the top management teams' lack of managerial experience and the absence of effective incentive programs for managers to maximise shareholder wealth. Utilising a sample of 28 Vietnamese commercial banks from 2010 to 2020, Nguyen and Nguyen (2023) ascertain that revenue diversification adversely impacts bank stability. Using data from GCC region banks between 2001 and 2014, Abuzayed et al. (2018) conclude that income diversification does not enhance bank stability. These diverse findings make it difficult to draw any conclusions on the influence of NTBA or income diversification on banking performance, necessitating further research in this area.

In summary, while the banking literature on NTBAs and income diversification has significantly expanded in recent years, it continues to be predominantly focused on developed,

market-based financial systems. Prior research has often viewed non-interest income as a uniform category, ignoring its internal complexity, and has instead concentrated on either profitability or stability in isolation. Moreover, the dual structure of banking systems, where Islamic and conventional banks operate under the same regulatory frameworks, has attracted insufficient empirical examination. The effects of income diversification on bank performance in emerging, resource-dependent, and state-influenced systems, such as those in the GCC, remain inadequately understood. This study addresses these gaps by disaggregating income structure into its compositional and distributional components (NON, DIVinc, DIVnon), jointly analysing profitability and financial stability, and situating the analysis within the unique institutional, economic, and regulatory landscape of the GCC. This provides new theoretical and empirical insights into ongoing debates about the trade-offs and institutional contingencies that shape the performance outcomes of NTBA strategies in dual-banking and transitional financial systems.

5.4. Research Hypotheses

Since the existing empirical literature on NTBAs and income diversification reports mixed results, this paper draws upon financial intermediation theory (Diamond 1984) and modern portfolio theory (Markowitz 1952), and formulates the following hypotheses:

H1: Greater engagement in NTBAs is positively associated with both profitability and stability in the GCC context.

The first hypothesis aligns with financial intermediation theory and previous empirical studies that suggest NTBAs improve earnings through product diversification and client retention (Chiorazzo et al. 2008; Albertazzi & Gambacorta 2009). It will be tested in the GCC context, where NTBAs are increasingly adopted but institutional capacity may vary significantly.

H2: Diversification between interest and non-interest income is positively associated with both profitability and stability in the GCC context.

H3: Diversification within non-interest income sources is positively associated with profitability and stability.

The second and third hypothesis is grounded in portfolio diversification theory, which suggests that banks can reduce risk and earnings volatility by diversifying income (Stiroh 2004; Baele et al. 2007; Elsas 2010; Saunders 2020).

Figure 5.1 presents the conceptual framework of this study.
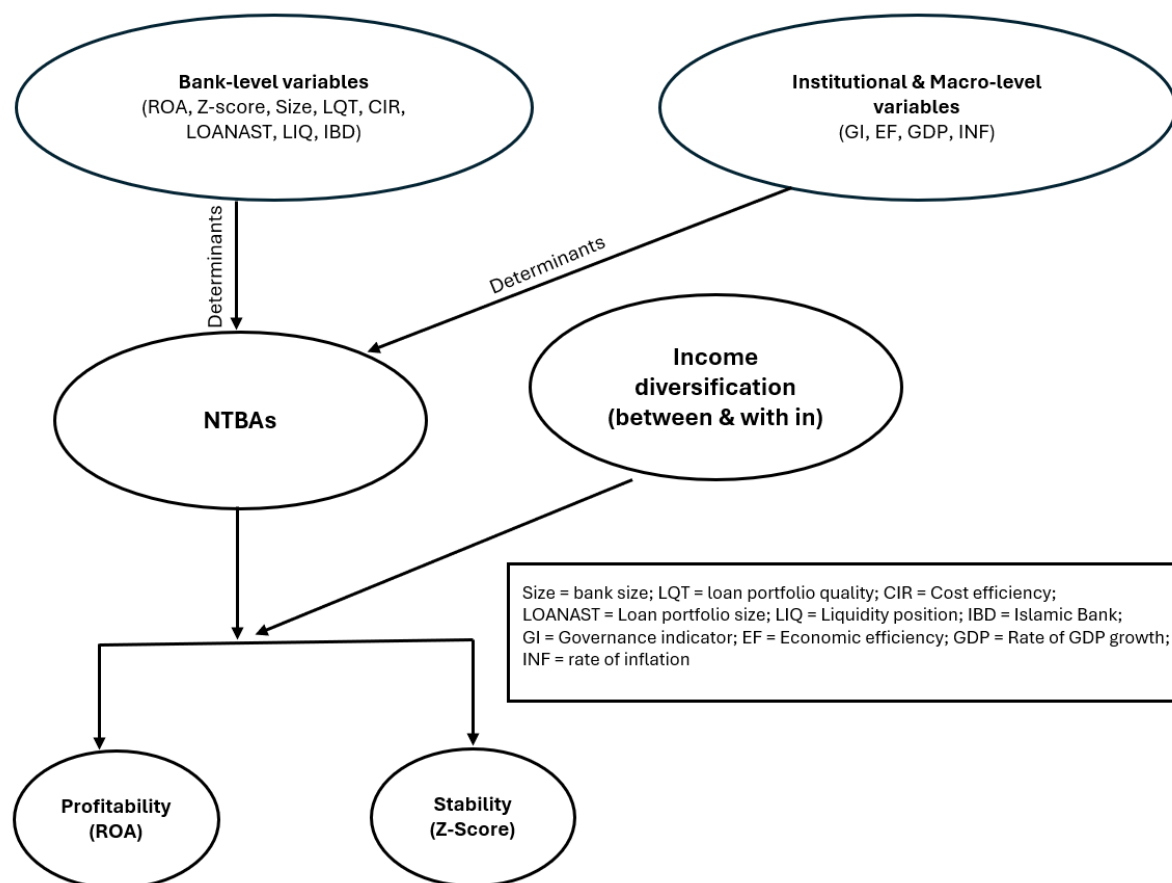
Figure 5.1. Conceptual Framework

5.5. Research Design

5.5.1. Data

This study utilises an unbalanced panel dataset comprising 94 commercial banks, 50 conventional and 44 Islamic banks, operating within the GCC countries spanning the years 2012 to 2022. The bank-level financial data are obtained from the BankFocus database, whilst country-level institutional and macroeconomic variables are derived from the WGI and the WDI databases. The dataset comprises both conventional and Islamic banks, with the IBD serving to differentiate between the two.

5.5.2. Variables

5.5.2.1. Non-interest income and income diversification

Following Stiroh (2004), Demirgüç-Kunt and Huizinga (2010) and Meslier et al. (2014), this research measures the non-interest income share of the revenue as follows:

NON = Net noninterest income share / Total Operating revenue

Here, total operating revenue is defined as net interest income plus net non-interest income.

In addition to the non-interest income ratio, this paper also investigates income revenue diversification between interest income and non-interest income. Following Stiroh and Rumble (2006), Delpachitra and Lester (2013), Abuzayed et al. (2018) and Abbas et al. (2025), this paper follows the below calculation for income diversification between interest income and non-interest income:

DIVinc = 1- [(Net interest income / Total operating income)^2 + (Net noninterest income / Total operating income)^2

The highest value DIVinc can take is 0.5, meaning the bank is perfectly diversified between net-interest and non-interest income. The lowest value DIVinc can take is 0: This occurs

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when the bank has only one income stream, either fully dependent on net-interest income or non-interest income.

Furthermore, following Sanya and Wolfe (2011), Amidu and Wolfe (2013), and Abuzayed et al. (2018), this paper uses the below calculation to measure diversification between different non-traditional income sources, such as fees and commission income, trading income, and other non-interest income:

Divnon = 1- [(Fees & Commission income / Net noninterest income)^2 + (Trading income/ Net noninterest income)^2 + (Other noninterest income/ Net noninterest income)^2]

The highest value DIVnon can take is 0.67. This occurs when Fee income = 0.33, trading income =.33 and other noninterest income = 0.33, meaning the bank is perfectly diversified between three types of noninterest income. While, if DIVnon = 0: this means the bank has only one type of noninterest income stream.

These three measures—NON, DIVinc, and DIVnon—capture different but complementary aspects of bank income structure. NON reflects the composition of a bank's income structure (i.e., the share of non-interest income relative to total income), while DIVinc and DIVnon capture income dispersion. In other words, NON reflects how much of a bank's income comes from non-traditional activities, whereas DIVinc reflects how evenly income is distributed across traditional and non-traditional sources. Additionally, DIVnon captures diversification within non-interest income, assessing how evenly revenue is distributed across different types of non-interest income streams—such as fees, trading income, and other services.

5.5.2.2. Bank Profitability

This research uses the ROA as the measure of profitability, a standard measure of profitability used by numerous banking literature. ROA is calculated as follows:

$$ROA = \text{Net income before tax} / \text{Total income}$$

5.5.2.3. Bank Stability

This paper uses the Z-score as the measure of stability. The Z-score functions as an inverse measurement of insolvency risk; a higher Z-score signifies a reduced risk of insolvency, whereas a lower Z-score implies a greater likelihood of insolvency. The Z-score is a widely used bank stability measure in the banking literature (Laeven and Levine 2009; Ashraf et al. 2016; Berger et al. 2017; Abuzayed et al. 2018; Bektas et al. 2022; Abbas et al. 2025). The theoretical underpinning behind the Z-score evolved from the insolvency concept of Roy (1952) and Altman (1968). The Z-score is calculated as follows:

$$\text{Z-score} = (ROA + E/A) / \sigma ROA;$$

here E/A = total equity / total assets & σROA is standard deviation of ROA

The equation illustrates that increased profitability and capitalisation enhance the Z-score, hence improving stability. An increased standard deviation of profits diminishes bank stability. Following Bektas et al. (2022), this research uses the logged Z-score.

5.5.2.4. Control Variables

This research utilises various bank-level, institutional, and macroeconomic control variables in the model configurations, based on the current literature (De Jonghe 2010; Sanya and Wolfe 2011; De Jonghe et al. 2015; Abuzayed et al. 2018; Saunders et al. 2020; Saklain and Williams 2024). This paper uses the following bank-level control variables: bank size, loan portfolio quality, cost efficiency, lending ratio, liquidity, and IBD. This study employs two institutional

governance variables to control for national-level governance. 1) Overall governance indicator and 2) Economic Freedom Index. Following Bektas et al. (2022) and Abuzayed et al. (2018), this research calculates an overall governance index by taking an average of six national-level governance variables: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption, sourced from the World Bank Governance Indicator database. The indicator ranges from -2.5 to +2.5, with higher values signifying better overall governance. The economic freedom index, developed by the Heritage Foundation, ranges from 0 to 100, with higher values reflecting greater economic freedom. The GDP growth rate and inflation rate are utilised to control for the impact of economic development on banking performance. Table 5.1 provides the list of variables along with their measurement technique, description, and source.

Table 5.1. Description of Variables

Variables	Measurement	Description	Source
Profitability and stability variables			
ROA	Net profit before tax / Total Assets	ROA measures profitability. A higher value means higher profitability.	BankFocus (Meslier et al 2014)
Z-score	Log of Z-score, here Z-score = [ROA + (Total equity / Total Assets)] / standard deviations of ROA	Measures stability or insolvency risk of individual banks. A higher Z-score means higher bank stability.	The author's calculation is based on BankFocus data following (Bektas et al. 2022).
Non-interest income and income diversification variables			
NON	(Net noninterest income share / Total operating revenue)	Measures banks' reliance on noninterest income sources. A higher value means a bank is more reliant on non-interest income.	The author's calculation is based on BankFocus data. (Doan et al. 2018).
DIVinc	1- [(Net interest income / Total operating income)^2 + (Net noninterest income / Total operating income)^2	Measures the impact of income diversification between net interest income and net noninterest income.	The author's calculation is based on BankFocus data following Abuzayed et al. (2018).
DIVnon	1- [(Fees & Commission income / Total noninterest income)^2 + (Trading income/ Total noninterest income)^2 + (Other noninterest income/ Total noninterest income)^2]	Measures the impact of diversification between different types of noninterest income sources.	The author's calculation is based on BankFocus data following Abuzayed et al. (2018).
Bank-level variables			
SIZE	log of Total assets	Measures bank size.	The author's calculation is based on BankFocus data. (Lepetit et al. 2008; (Abuzayed et al. 2018).
LQT	Impaired loans / Gross customer loans & advances	Measures lending portfolio quality.	The author's calculation is based on BankFocus data. (Ashraf 2017)
CIR	Cost-to-income ratio	Measures cost efficiency of the bank. A higher value	The author's calculation is based on BankFocus data. (Abuzayed et al.

Variables	Measurement	Description	Source
		shows lower cost efficiency.	2018; Abedifar et al. 2018).
LONAST	Total Loans over Total Assets	Measures lending ratio	The author's calculation based on BankFocus data. (Abbas et al. 2025).
LIQ	Liquid assets / total assets	Measures liquidity positions of the banks. A higher value shows a better liquidity position.	The author's calculation based on BankFocus data. (Abbas et al. 2025).
IBD	Equals 1 for Islamic banks, 0 otherwise	Islamic Bank Dummy	Annual report (Alqahtani et al. 2017b)
Institutional quality variables			
GI	Overall indicator of institutional quality. It takes a value between -2.5 (minimum governance) and 2.5 (maximum governance).	Measures overall national governance of the countries.	The author's calculation is based on WGI data following Bektas et al. (2022).
EF	The index of economic freedom ranges between 0 (no freedom) and 100 (maximum freedom).	Measures of Economic Freedom of the countries	The Heritage Foundation. (Bektas et al. 2022)
Macro-level variables			
GDP		Annual GDP growth rate by country	WDI (Bektas et al. 2022)
INF		Annual inflation rate by country	WDI (Bektas et al. 2022)

5.5.3. Model Specifications

The empirical analysis employs a LSDV approach, incorporating fixed effects for bank, year, and country. This method is chosen over the within transformation (demeaning) estimator to retain time-invariant regressors, notably the IBD, which is a critical variable of interest in the context of dual-banking systems in the GCC (Baltagi 2008; Wooldridge 2010). The within estimator would drop such time-invariant variables, making it unsuitable for assessing structural differences between Islamic and conventional banks (Wooldridge 2010).

The LSDV framework also allows for robust control of unobserved heterogeneity across banks and over time. Bank-fixed effects control for time-invariant characteristics such as managerial

style and risk appetite, while year and country-fixed effects capture temporal shocks and institutional differences (Torres-Reyna 2007; Greene 2012). Hausman tests support the use of fixed effects over random effects in all models (Hausman 1978; Baltagi 2008). Robust standard errors clustered at the bank level are used to account for serial correlation and heteroscedasticity (Arellano 1987).

The following panel regression models are estimated:

Model 1: Determinants of NTBAs

$$NON_{i,t,c} = \beta_0 + \beta_1 ROA_{i,t,c} + \beta_2 Zscore_{i,t,c} + \lambda \, Bank \; level \; variabless_{i,t,c} +$$
$$\measuredangle \, Institutional \; variables_{t,c} + Y Macro \; variables_{t,c}$$
$$+ \, Bank \; fixed \; effect + Time \; fixed \; effcect + Country \; fixed \; effect$$
$$+ \, \varepsilon_{i,t,c}$$

Model 2: Impact of NTBAs and income diversification on profitability

$$ROA_{i,t,c} = \beta_0 + \beta_1 NON_{i,t,c} + \beta_2 DIV_{i,t,c} + \lambda \, Bank \; level \; controls_{i,t,c} +$$
$$\measuredangle \, Institutional \; controls_{t,c} + Y Macro \; controls_{t,c} + \, Bank \; fixed \; effect$$
$$+ \, Time \; fixed \; effcect + Country \; fixed \; effect + \, \varepsilon_{i,t,c}$$

Model 3: Impact of NTBAs and income diversification on stability

$$Zscore_{i,t,c} = \beta_0 + \beta_1 NON_{i,t,c} + \beta_2 DIV_{i,t,c} + \lambda \, Bank \; level \; controls_{i,t,c} +$$
$$\measuredangle \, Institutional \; controls_{t,c} + Y Macro \; controls_{t,c} + \, Bank \; fixed \; effect$$
$$+ \, Time \; fixed \; effcect + Country \; fixed \; effect + \, \varepsilon_{i,t,c}$$

Where i indicates individual banks, t indicates time and c indicates country. Here, DIV represents either diversification between interest income and non-interest income (DIVinc) or diversification between different non-traditional income sources (DIVnon). λ represents a

vector of bank-level control variables while ⋋ and ϒ measures institutional and macro-level control variables respectively. Ɛ represents the error term.

To assess multicollinearity, Variance Inflation Factor (VIF) tests were conducted across all regression models. The mean VIF ranges between 1.74 and 1.79, with a range of 1.20 and 3.56. As no variable exceeds the commonly accepted threshold of 10, multicollinearity is not a concern in the estimation (Hair et al. 2019).

Model explanatory power is generally strong. The R-squared values range from approximately 0.54 in the profitability models to 0.95 in the stability models, indicating a high proportion of variance explained, particularly in models with the Z-score as the dependent variable. These results support the validity of the model specifications and underscore the significance of both bank-level and institutional factors in explaining NTBAs and their determinants and consequences.

5.6. Empirical Results

5.6.1. Descriptive Statistics

Table 5.2 reports the descriptive statistics of the variables used in the analysis for the period of 2012 to 2022. It presents the mean, standard deviation, minimum and maximum values for each variable. The average return on assets (ROA), which serves as the primary indicator of profitability, is 1.8%, with a maximum value of 45.1%, indicating considerable variation in profitability across banks. The mean value of the log Z-score, a widely used proxy for bank stability, is 3.70, suggesting a generally stable banking environment within the GCC, though the minimum value of 0.31 points to occasional instability in certain banks or years.

Regarding income structure, the average share of non-interest income (NON) is 36.4%, reflecting moderate reliance on NTBAs across the sample. The income diversification indices

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also show some variation: DIVinc, which measures diversification between interest and non-interest income, has a mean of 0.394, while DIVnon, capturing diversification within non-interest sources, averages 0.393. This suggests that, although NTBAs are increasingly important, banks in the region still earns major portion of their income from interest income streams.

In terms of control variables, the average size of banks (SIZE), is 15.94, with a wide range from 9.52 to 19.61. Quality of loans (LQT) have a mean of 17%, indicating overall good asset quality, though some variation exists. The average cost-to-income ratio (CIR) stands at 47.6%, implying moderate cost efficiency across the sample. Lending activity, proxied by LONAST, has a mean value of 0.589, while the liquidity ratio (LIQ) averages 0.317.

Dummy variables such as the Islamic bank dummy (IBD) show that 46.6% of the sample consists of Islamic banks, highlighting the dual nature of the GCC banking system. Regarding institutional quality, the governance index (GI) has a mean of 0.163 on a scale from -2.5 to 2.5, reflecting moderate governance strength in the region. Economic freedom (EF) scores average 68.08 out of 100, while macroeconomic indicators, GDP growth and inflation, have means of 2.8% and 1.78%, respectively, suggesting stable but modest economic performance during the study period. Overall, the descriptive statistics reveal substantial variation across banks in terms of profitability, stability, and income structure, validating the choice of panel regression to capture the dynamic relationships among these variables.

Table 5.2. Descriptive Statistics

	Mean	SD	Min	Max
ROA	0.018	0.023	0.000	0.451
Z-score	3.699	0.648	0.312	9.273
NON	0.364	0.186	0.005	1.000
DIVinc	0.394	0.108	0.000	0.500
DIVnon	0.393	0.128	0.000	0.670
SIZE	15.937	1.852	9.515	19.605
LQT	0.170	0.200	0.000	0.965
CIR	0.476	0.257	0.142	1.112
LONAST	0.589	0.182	0.010	0.976
LIQ	0.317	0.146	0.005	0.969
IBD	0.466	0.499	0.000	1.000
GI	0.163	0.369	-0.366	0.683
EF	68.078	5.792	55.500	77.600
GDP	2.798	3.012	-5.274	8.863
INF	1.775	1.698	-2.540	4.995

Table 5.3 provides the Pearson correlation coefficients among the variables used in the regression analysis. Most correlation values fall within acceptable ranges, suggesting no major concern of multicollinearity among the explanatory variables.

Profitability (ROA) shows a modest positive correlation with non-interest income (NON = 0.229), implying that greater reliance on NTBAs may improve bank profitability. However, ROA is negatively correlated with both types of diversification, DIVinc (–0.237) and DIVnon (–0.110), and with bank size (SIZE = –0.296), suggesting that larger or more diversified banks may face profitability challenges. Stability (Z-score) is negatively associated with ROA (–0.155) and NON (–0.205), indicating that while NTBAs might enhance returns, they may also reduce bank stability. Notably, NON is positively correlated with Islamic bank dummy (IBD = 0.266), which aligns with the operational model of Islamic banks that rely heavily on fee-based, non-interest income. NON also has a strong negative correlation with LONAST (–0.517), implying a trade-off between traditional lending and non-interest activities.

Table 5.3. The Correlation Matrix

Variables	ROA	Z-score	NON	DIVinc	DIVnon	SIZE	LQT	CIR	LONAST	LIQ	IBD	GI	EF	GDP	INF
ROA	1.000														
Z-score	-0.155	1.000													
NON	0.229	-0.205	1.000												
DIVinc	-0.237	0.026	-0.033	1.000											
DIVnon	-0.110	0.057	-0.018	0.220	1.000										
SIZE	-0.296	0.127	-0.283	0.461	0.218	1.000									
LQT	0.117	-0.059	-0.064	-0.114	-0.125	-0.130	1.000								
CIR	-0.014	-0.032	0.185	-0.096	-0.055	-0.295	0.059	1.000							
LONAST	-0.129	0.074	-0.517	0.090	0.157	0.221	-0.206	-0.260	1.000						
LIQ	-0.064	0.081	0.323	0.072	0.070	-0.034	-0.099	0.135	-0.679	1.000					
IBD	0.063	0.063	0.266	-0.145	-0.113	-0.271	0.059	0.232	-0.068	-0.110	1.000				
GI	-0.022	-0.264	0.046	0.254	0.070	0.078	-0.032	-0.137	0.070	-0.116	-0.219	1.000			
EF	-0.025	-0.205	0.220	0.263	0.062	-0.023	-0.075	-0.035	-0.140	0.106	-0.082	0.654	1.000		
GDP	0.067	-0.021	0.023	0.088	0.027	-0.012	0.053	0.023	-0.023	0.042	-0.051	0.159	0.035	1.000	
INF	0.011	0.062	0.009	0.021	0.071	0.006	0.017	0.007	-0.043	0.043	0.042	-0.047	-0.146	0.513	1.000

5.6.2. Regression Results

5.6.2.1. Determinants of Non-Traditional Banking

Table 5.4 displays the outcomes of the regression analysis, offering essential insights into the factors influencing NTBAs among banks in the GCC region from 2012 to 2022.

Table 5.4. Regression Results on The Determinants of NTBAs

VARIABLES	(1) NON	(2) NON	(3) NON
ROA		1.2898***	1.6140***
		(0.3782)	(0.3922)
Z-score			-0.0936***
			(0.0266)
SIZE	-0.0160	0.0010	-0.0278
	(0.0196)	(0.0169)	(0.0172)
LQT	-0.0020	-0.0024	-0.0019
	(0.0020)	(0.0021)	(0.0020)
CIR	-0.1441***	-0.1152***	-0.1222***
	(0.0307)	(0.0224)	(0.0212)
LONAST	-0.7023***	-0.6877***	-0.8420***
	(0.1410)	(0.1367)	(0.1512)
LIQ	-0.3430**	-0.2943**	-0.4444***
	(0.1456)	(0.1397)	(0.1516)
IBD	0.1735***	0.1942***	0.2378***
	(0.0394)	(0.0363)	(0.0375)
GI	-0.0574	-0.0586*	-0.0585*
	(0.0352)	(0.0347)	(0.0338)
EF	0.0026**	0.0025**	0.0026**
	(0.0013)	(0.0012)	(0.0012)
GDP	-0.0002	-0.0003	-0.0001
	(0.0018)	(0.0018)	(0.0017)
INF	-0.0012	-0.0012	-0.0006
	(0.0020)	(0.0020)	(0.0019)
Constant	0.9826***	0.6817**	1.4771***
	(0.3135)	(0.2653)	(0.3404)
Observations	831	831	831
Number of banks	94	94	94
R-squared	0.8196	0.8252	0.8276
Hausman Test			0.0000
Year FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The findings show that higher profitability, estimates (2) and (3), significantly influence banks in the GCC region to engage in NTBAs. The results suggest that the banks with higher profitability are more inclined to diversify their income sources beyond traditional interest-generating activities. Banks demonstrating strong profitability may have enhanced operational and managerial capabilities, along with an appetite to diversify into various non-interest income-generating businesses. In contrast, bank stability (estimate 3), shown by a negative and highly significant coefficient, is associated with reduced reliance on non-traditional revenue sources. This suggests that banks with a higher risk of insolvency are more likely to engage in NTBAs, maybe as an attempt to improve profitability and compensate for diminished earnings from traditional banking activities. This adverse association raises concerns that less stable banks seeking higher profits from non-interest revenue streams can become more susceptible to failure because of higher risk exposure and volatility.

The coefficients for cost efficiency across all models are negative and strongly significant, suggesting that banks with higher cost efficiencies are more inclined to participate in NTBAs. The negative and statistically significant coefficients for the loan-to-asset ratio or lending ratio suggest that banks with a greater dependence on traditional lending are less likely to diversify into fee-based and trading businesses. These findings support the conventional banking model, wherein loan intermediation serves as the principal source of revenue. The coefficients for liquidity are significantly negative across all models, suggesting that banks with greater liquidity are less likely to engage in NTBAs. A plausible explanation can be that banks with substantial liquidity may not need to pursue alternative revenue sources aggressively and instead depend more on traditional lending activities, whereas banks with lowered liquidity may be more compelled to generate income from non-interest-based activities to offset funding limitations. The positive and significant coefficients of Islamic banks (across models) indicate that Islamic banks in the GCC are more reliant on NTBAs compared to their conventional

counterparts. This is especially pertinent considering the distinctive characteristics of Islamic banking, where fee-based income is essential for revenue generation due to the prohibition of interest. The governance indicator is negative and statistically significant in estimates (2) and (3). This indicates that better institutional quality correlates with less dependence on non-traditional banking operations. One possible interpretation is that banks operating under stringent regulatory regimes may face more regulatory challenges while engaging in NTBAs. The coefficient for economic freedom is positive and highly significant in all estimations, indicating that a more liberalised economic environment promotes banks' involvement in non-traditional banking operations. This confirms the assertion that deregulated financial markets encourage banks to expand their activities beyond conventional lending into a wider range of financial services.

5.6.2.2. NTBA, Income Diversification and Profitability

Table 5.5 presents the regression results analysing the influence of NTBAs and income diversification on bank profitability in the GCC region between 2012 and 2022.

Table 5.5. Regression Results on NTBA, Income Diversification and Profitability

Variables	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA
NON		0.0241*		0.0418**		0.0248*
		(0.0132)		(0.0202)		(0.0133)
DIVinc			-0.0348*	-0.0572**		
			(0.0180)	(0.0270)		
DIVnon					-0.0006*	-0.0009**
					(0.0004)	(0.0004)
SIZE	-0.0131***	-0.0127***	-0.0124***	-0.0113***	-0.0130***	-0.0125***
	(0.0047)	(0.0044)	(0.0043)	(0.0034)	(0.0048)	(0.0044)
LQT	0.0003***	0.0004**	0.0003***	0.0003***	0.0004***	0.0005***
	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
CIR	-0.0224	-0.0189	-0.0220	-0.0158	-0.0223	-0.0186
	(0.0155)	(0.0146)	(0.0152)	(0.0137)	(0.0155)	(0.0146)
LONAST	-0.0113	0.0056	-0.0152	0.0117	-0.0117	0.0055
	(0.0190)	(0.0188)	(0.0197)	(0.0204)	(0.0189)	(0.0188)
LIQ	-0.0378*	-0.0295	-0.0360	-0.0206	-0.0382*	-0.0299
	(0.0225)	(0.0200)	(0.0220)	(0.0199)	(0.0225)	(0.0200)
IBD	-0.0161*	-0.0202*	-0.0123	-0.0172*	-0.0160*	-0.0203*
	(0.0094)	(0.0109)	(0.0079)	(0.0089)	(0.0095)	(0.0109)
GI	0.0010	0.0023	-0.0014	-0.0005	0.0010	0.0024
	(0.0034)	(0.0031)	(0.0044)	(0.0039)	(0.0034)	(0.0031)
EF	0.0001	0.0000	0.0002	0.0001	0.0001	0.0000
	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
GDP	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
INF	-0.0000	-0.0000	0.0000	0.0001	-0.0000	0.0000
	(0.0003)	(0.0003)	(0.0002)	(0.0002)	(0.0003)	(0.0003)
Constant	0.2333***	0.2096***	0.2331***	0.1918***	0.2315***	0.2062***
	(0.0802)	(0.0673)	(0.0781)	(0.0572)	(0.0805)	(0.0672)
Observations	831	831	831	831	831	831
Number of banks	94	94	94	94	94	94
R-squared	0.5372	0.5516	0.5545	0.5907	0.5378	0.5529
Hausman Test				0.0000		0.0000
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The coefficient for non-traditional income (NON) is positive and statistically significant in all estimations, suggesting that increased dependence on NTBAs correlates with enhanced profitability in GCC banks. This finding aligns with financial intermediation theory and the empirical studies of Sanya and Wolfe (2011) and Saunders et al. (2020), which posits that engaging in fee-based and trading activities can improve revenue generation by using economies of scope and cross-selling opportunities. The result supports the notion that NTBAs offer a valuable supplement to traditional banking income, particularly in environments characterised by constrained interest margins and liberalised markets.

In contrast, the coefficients on income diversification between interest and non-interest income (DIVinc) are negative and statistically significant. Similarly, diversification among non-interest income streams (DIVnon) also exhibits a negative and significant association with profitability. These results challenge the assumptions of modern portfolio theory and the findings of Saklain and Williams (2024), which suggest that diversification reduces earnings volatility and improves performance through risk-spreading.

The divergent effects of NON and diversification variables may suggest that while engaging in NTBAs intrinsically enhances profitability, broad-based income diversification may not yield similar benefits. One possible explanation can be that banks with targeted specialisation in specific NTBA segments may benefit from focused expertise and cost synergies, whereas banks attempting to diversify widely across multiple non-interest streams may incur diseconomies of scale and internal inefficiencies, as increased diversification may impose additional managerial, technological, and compliance burdens. This is particularly relevant in the GCC context, where infrastructure for sophisticated financial services is somewhat underdeveloped relative to mature economies. Overall, the results suggest that profitability gains from non-interest income depend not merely on the presence of NTBAs within the

income structure but on the strategic coherence, execution capacity, and regulatory environment in which diversification occurs.

Among the control variables, the coefficient for bank size is consistently negative and statistically significant, suggesting that larger banks in the GCC region tend to be less profitable. This finding may reflect diseconomies of scale or the challenges associated with managing increasingly complex and diversified institutions. Loan quality (LQT) exhibits a positive and statistically significant relationship with profitability across all model specifications. This reinforces the widely accepted view that asset quality is a critical driver of banking performance, as lower levels of non-performing loans reduce provisioning costs and support more stable income generation. The liquidity ratio (LIQ) is negative but only weakly significant in some models (estimations 4 and 8), this may be due to the opportunity cost of holding large volumes of non-yielding or low-yielding liquid assets, which could otherwise be deployed in more profitable lending or investment activities. Finally, the dummy variable for Islamic banks (IBD) is negative and statistically significant in most models, indicating that Islamic banks are, on average, less profitable than their conventional counterparts. This finding is consistent with previous empirical evidence in the region and may stem from several structural and operational constraints specific to Islamic banking (Alqahtani et al. 2017b).

5.6.2.3. NTBA, Income Diversification and Stability

Table 5.6 displays the regression findings examining the impact of non-traditional banking operations on bank stability in the GCC region from 2012 to 2022.

Table 5.6. Regression results on NTBA, income diversification and stability

VARIABLES	(10) Z-score	(11) Z-score	(13) Z-score	(14) Z-score	(15) Z-score	(16) Z-score
NON		-0.2843**		-0.1994		-0.2729**
		(0.1262)		(0.1377)		(0.1270)
DIVinc			-0.3806***	-0.2739*		
			(0.1257)	(0.1411)		
DIVnon					-0.0168***	-0.0137***
					(0.0023)	(0.0029)
SIZE	-0.3529***	-0.3575***	-0.3451***	-0.3505***	-0.3486***	-0.3537***
	(0.0403)	(0.0401)	(0.0395)	(0.0393)	(0.0404)	(0.0403)
LQT	0.0067***	0.0061***	0.0062***	0.0059***	0.0094***	0.0084***
	(0.0022)	(0.0017)	(0.0014)	(0.0013)	(0.0007)	(0.0010)
CIR	-0.1523	-0.1933*	-0.1486	-0.1784*	-0.1492	-0.1891*
	(0.0931)	(0.1017)	(0.0906)	(0.0994)	(0.0918)	(0.1007)
LONAST	-1.6880***	-1.8877***	-1.7303***	-1.8585***	-1.6998***	-1.8893***
	(0.3221)	(0.3476)	(0.3279)	(0.3467)	(0.3213)	(0.3467)
LIQ	-1.7351***	-1.8326***	-1.7156***	-1.7895***	-1.7466***	-1.8381***
	(0.3288)	(0.3378)	(0.3348)	(0.3389)	(0.3284)	(0.3371)
IBD	0.4096***	0.4589***	0.4505***	0.4736***	0.4111***	0.4582***
	(0.1375)	(0.1415)	(0.1368)	(0.1395)	(0.1378)	(0.1417)
GI	0.0040	-0.0123	-0.0218	-0.0260	0.0047	-0.0111
	(0.0694)	(0.0671)	(0.0697)	(0.0684)	(0.0695)	(0.0672)
EF	0.0016	0.0023	0.0026	0.0028	0.0016	0.0023
	(0.0025)	(0.0025)	(0.0026)	(0.0025)	(0.0025)	(0.0025)
GDP	0.0028	0.0028	0.0030	0.0029	0.0028	0.0027
	(0.0035)	(0.0035)	(0.0036)	(0.0035)	(0.0035)	(0.0035)
INF	0.0057	0.0054	0.0065*	0.0060	0.0065*	0.0060
	(0.0039)	(0.0038)	(0.0038)	(0.0038)	(0.0039)	(0.0038)
Constant	9.3063***	9.5857***	9.3038***	9.5005***	9.2550***	9.5328***
	(0.7044)	(0.7112)	(0.6964)	(0.7076)	(0.7056)	(0.7136)
Observations	830	830	830	830	830	830
R-squared	0.9460	0.9471	0.9471	0.9475	0.9463	0.9472
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The coefficient for non-interest income (NON) is negative and statistically significant in estimations (11) and (16), and negative but insignificant in estimation (14). These results suggest that a greater reliance on NTBAs is associated with higher insolvency risk or reduced stability. This finding aligns with prior studies indicating that non-interest income sources, such as trading and fee-based services, are generally more volatile and sensitive to macroeconomic fluctuations than traditional interest income (Stiroh 2004; Brunnermeier et al. 2020). Unlike

interest income, which tends to be more stable and predictable, NTBAs often involve market-based activities that are procyclical and risk-intensive, thus increasing earnings volatility and insolvency risk (Brunnermeier et al. 2020).

The coefficients for diversification between interest and non-interest income (DIVinc) are negative and statistically significant. These results indicate that a greater balance between interest and non-interest income is associated with lower bank stability. These findings run counter to the predictions of modern portfolio diversification theory, which posits that combining uncorrelated income streams should reduce risk and enhance stability. The coefficients for diversification among different non-interest income sources (DIVnon) are also negative and statistically significant, indicating that greater diversification across various non-interest income streams, such as trading, broking, corporate advisory, and fee-based services, correlates with reduced stability. This finding suggests that rather than yielding the expected risk-mitigating benefits, such diversification may increase instability. A key explanation lies in the fundamentally different institutional capacities and specialised expertise required to manage these distinct business lines effectively. The results here reflect a scenario of poorly managed diversification, where the theoretical benefits of risk smoothing through revenue diversification are undermined by execution and structural shortcomings, such as limited internal expertise, inadequate risk controls, or a lack of supporting infrastructure. For example, trading and broking activities demand real-time market expertise, advanced analytics, and risk management systems capable of handling high-frequency transactions and market volatility. In contrast, fee and commission-based income in corporate advisory services relies heavily on relationship management, long-term client engagement, and complex financial structuring capabilities. These divergent skills are rarely interchangeable and often require separate teams, systems, compliance mechanisms, and governance structures. In this context, diversification can become more of a burden, particularly in banking environments, like those in the GCC,

where capital markets are still developing, and regulatory frameworks may not fully support sophisticated NTBA risk management.

Among the control variables, bank size is consistently associated with lower financial stability. This may reflect diseconomies of scale, complexity costs, or greater systemic exposure in larger banks. Loan quality (LQT) is positively and strongly associated with stability across all models, reaffirming the importance of sound credit risk management in maintaining solvency. Cost efficiency (CIR) is negatively associated with insolvency risk, albeit only weakly significant in some models, suggesting that inefficiencies in operations can marginally erode the stability of banks. The lending ratio (LONAST) has a strong and negative association with stability, highlighting the vulnerability of banks that are overly dependent on traditional lending, especially in the absence of diversification benefits. Liquidity (LIQ) is also negatively associated with stability across all models, a counterintuitive result that may reflect an inefficient allocation of liquid assets or hoarding behaviour in response to risk aversion. While liquidity is often viewed as a stabilising buffer, excess liquidity not deployed effectively can signal underperformance or defensive positioning, which may diminish profitability and indirectly weaken solvency.

IBD yields a positive and highly significant coefficient in all models, suggesting that Islamic banks in the GCC are more stable than their conventional counterparts. This could be attributed to their prohibition of interest-bearing instruments, risk-sharing contractual structures, and more conservative asset allocation—which cumulatively enhance financial resilience. Lastly, inflation (INF) shows a weak but positive association with stability in some specifications.

5.6.2.4. Overall Discussion

The empirical findings of this study indicate that banks that are more profitable, cost-efficient, and liquidity-constrained are much more likely to participate in NTBAs. Islamic banks exhibit

greater involvement in NTBAs, aligning with their dependence on fee-based, non-interest income streams because of Shariah compliance. In addition, less stable banks are more likely to engage in NTBAs, indicating that weaker institutions may resort to these activities to offset poor performance in their core operations. DeYoung and Torna (2013) demonstrate that banks engaged highly in non-traditional activities are more likely to assume greater risks in their conventional operations. This suggests that NTBAs may not mitigate risk but rather replicate or potentially exacerbate a bank's overall risk-taking behaviour.

This study further reveals that a higher share of non-interest income (NON) is positively associated with profitability however, both diversification between interest and non-interest income (DIVinc) and diversification among non-interest income sources (DIVnon) are associated with lower profitability and reduced stability. These results suggest that while NTBAs can enhance earnings, managing a more complex and dispersed income structure may introduce new risks and inefficiencies. While financial intermediation theory (Diamond 1984; Rajan 1992) explains the profitability benefits of NTBAs, the results relating to income diversification (DIVinc and DIVNon) challenge the expectations of modern portfolio theory. Diversification between and within income types are both consistently associated with reduced stability and lower profitability. This finding aligns with the cautionary insights of Stiroh and Rumble (2006) and Brunnermeier et al. (2020), who argue that expansion into volatile, non-core activities, particularly when not matched by risk governance and managerial expertise, can reduce risk-adjusted returns and heighten insolvency risk. This is also consistent with findings from (Chiorazzo et al. 2008; Albertazzi and Gambacorta 2009; Chiorazzo et al. 2018), who argue that income diversification can support profitability under conditions of sufficient scale and operational sophistication. However, in the GCC context, these conditions may not always be present.

The findings also align with those of Berger et al. (2010), who argue, in the case of China, that expansion into non-traditional income sources may overburden managerial capacity, particularly when banks lack the organisational expertise or internal controls required to manage different business lines. NTBAs often demand highly specialised skill sets, technological systems, and governance arrangements. For instance, trading and investment services require market-facing technical skills, while corporate advisory involves relationship management and bespoke deal structuring. Without the operational capacity to coordinate and oversee these distinct activities, diversification can increase managerial complexity, reduce cost efficiency, and ultimately weaken performance.

This argument is particularly salient in the GCC context, where two institutional characteristics compound the challenge. First, the dual banking system—where Islamic and conventional banks coexist under shared regulatory frameworks—requires banks to accommodate diverse compliance and operational standards, which may stretch organisational boundaries. Second, the high level of state ownership and intervention may constrain merit-based management practices, dilute incentives for efficiency, and distort strategic focus. These dynamics suggest that the negative effects of income diversification in the GCC are not necessarily a function of diversification itself but of institutional and managerial incapacity to execute diversification effectively.

These results provide mixed support for the theoretical expectations set out in the hypotheses. H1, which proposed that greater engagement in NTBAs is positively associated with both profitability and stability, is partially supported. While the findings reveal a positive and statistically significant relationship between NTBAs and profitability, they also indicate a negative association with bank stability, suggesting a trade-off between return and risk. H2, which hypothesised that diversification between interest and non-interest income enhances both profitability and stability, is rejected, as the empirical evidence shows negative effects on

both performance dimensions. Similarly, H3, which expected that diversification within non-interest income sources would improve profitability and stability, is also rejected, with results showing statistically significant negative associations. These outcomes challenge the predictions of modern portfolio theory and align more closely with critical perspectives that emphasise the complexity, volatility, and governance burdens associated with income diversification in emerging banking environments like the GCC.

In summary, the findings indicate that NTBAs may indeed enhance bank profitability, but diversification, particularly across heterogeneous income streams, can create coordination problems, increase risk exposure, and reduce financial stability. The results challenge assumptions derived from developed markets and underscore the importance of context-sensitive models of diversification. For banking systems in transition, like those in the GCC, a strategic and capability-aligned approach to NTBA development is likely to be more effective than broad, unstructured diversification.

5.7. Conclusion

This paper investigates the determinants of NTBAs and the effects of NTBAs and income diversification on profitability and stability in the GCC banking sector over the period 2012 to 2022. Drawing on a panel dataset of 94 commercial banks, both conventional and Islamic banks, this study applies the LSDV regression model with bank, year, and country fixed effects.

The empirical analysis yields three main findings. First, banks that are more profitable, more cost-efficient, and less liquid are more likely to engage in NTBAs. Islamic banks exhibit greater dependence on non-traditional income streams, a pattern consistent with the structural constraints of Islamic finance, such as the prohibition of interest and the resulting emphasis on fee-based and asset-backed activities. Notably, less stable banks also show greater involvement

in NTBAs, suggesting that these activities may be used to compensate for declining traditional income, potentially increasing their exposure to volatility.

Second, the study finds that NTBAs positively contribute to profitability. This finding supports the assumptions of financial intermediation theory that engaging in different NTBAS, in addition to conventional lending, enables banks to optimise informational synergies and capitalise on economies of scope, resulting in increased profitability. However, the study finds that NTBAs reduces stability of banks. Nonetheless, the study reveals that diversification, both between interest and non-interest income (DIVinc) and within non-interest sources (DIVnon), is negatively associated with profitability. These results suggest that broad-based diversification, if poorly executed, may increase managerial complexity and operational inefficiencies, particularly in financial systems with limited institutional capacity.

Third, and most critically, the analysis reveals that NTBAs, and both forms of income diversification are negatively associated with banking stability. These findings challenge the assumptions of modern portfolio theory, which suggests that diversification should reduce risk through income smoothing. Instead, the evidence shows that in the context of GCC, diversification can weaken bank stability if it does not match the bank's operational capabilities.

While the study offers novel insights into the literature, it also highlights several limitations that open avenues for future research. First, although a dummy variable is used to control for differences between Islamic and conventional banks, the analysis does not undertake a dedicated comparative investigation. Future research could explore this dimension more explicitly. Future research could also broaden the comparison by looking beyond the GCC region to include dual banking systems in Southeast Asia (e.g., Malaysia, Indonesia), South Asia (e.g., Bangladesh, Pakistan), and the MENA region (e.g., Egypt, Iran, Yemen), where

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Islamic and conventional banks operate in parallel. Second, the use of annual data limits the capacity to explore how non-traditional income fluctuates within shorter time horizons or responds to sudden macroeconomic events, such as commodity price shocks, higher volatility in the stock market or global financial disruptions. Future studies should consider datasets with higher frequency, such as quarterly data, to capture short-term adjustments in bank revenue structures and risk exposure. Finally, future research may consider using dynamic panel data models to complement fixed effects approaches, as these can offer additional insights into the evolving nature of bank performance and strategy over time.

In conclusion, NTBAs provide significant profitability benefits for GCC banks but pose risks to stability when poorly managed or pursued without operational capabilities. As GCC banks diversify their income streams into various NTBAs, careful synchronisation between diversification strategies and organisational capabilities will be crucial for maintaining long-term financial stability.

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Chapter 6: Control of Corruption, Political Stability, and Banking Performance: Evidence from GCC Countries

Abstract

This study examines the influence of corruption control and political stability on banking performance in the GCC region using an unbalanced panel dataset of 88 banks across six GCC countries between 2012 and 2022. Employing fixed effects panel regression (LSDV approach), marginal effects, and margins plot analysis, the study explores both the direct and interactive effects of national-level governance on bank profitability, stability, credit risk, and asset quality. The findings reveal that enhanced control over corruption consistently improves profitability, stability and asset quality while reducing credit risk. In contrast, the effect of political stability on bank performance is conditional on the level of corruption control: in environments with weak control over corruption, political stability undermines bank stability; however, this adverse effect diminishes as corruption control improves. Moreover, political stability shows a more profound positive influence on asset quality than does corruption control. The results also indicate that Islamic banks exhibit lower profitability but greater stability, while state-owned banks demonstrate higher profitability and stability, though they have higher credit risk. These findings provide significant policy implications to enhance governance frameworks to foster resilient banking systems in oil-dependent economies.

6.1. Introduction

In the modern-day financial system, the banking sector's reliability and resilience have emerged as critical components of economic prosperity. Researchers have extensively studied the banking system from various perspectives, including profitability (Albertazzi and Gambacorta 2009), efficiency (Fiordelisi et al. 2011), lending behaviour (Bechara et al. 2024), credit risk (Imbierowicz and Rauch 2014), stability or insolvency risk (Saunders et al. 2020), systemic risk (Brunnermeier et al. 2020), liquidity creation (Tran 2020), and crises (Bongini et al. 2019). The internal determinants of bank performance, such as bank size (Kamani 2019), ownership (Abidi et al. 2022), specialisation (Alqahtani et al. 2017), income diversification (Abedifar et al. 2018), human capital (D'Amato et al. 2024), and board characteristics (Berger et al. 2014), have all been thoroughly analysed in prior literature. The banking sector frequently engages with other entities, especially governmental bodies, to perform its intermediation functions and has become an essential element of the national governance structure (Bektas et al. 2022). However, few studies have examined the effects of external factors, such as differing national governance structures, on bank performance and resilience. Jude and Levieuge (2017) and Abdulahi et al. (2019), assert that nations with strong national governance achieve more rapid and sustained growth compared to those with inadequate governance systems. Banking regulations appear to be more effective in countries characterised by low corruption, stable political environments, and competent legal systems (Beck et al. 2006); therefore, stringent anti-corruption measures and political stability are likely to enhance banking performance.

Studies have employed several indicators to assess the quality of governance at the national level, including control over corruption, political stability, absence of violence, rule of law, regulatory quality, democracy, economic efficiency, and voice and accountability. Among these variables, control over corruption and political stability are considered the most important factors of national governance (Aloui 2019; Kumar et al. 2023). Corruption has been defined

as the misuse of entrusted authority in public or corporate positions for personal benefit, manifesting in various forms such as bribery, extortion, collusion, cronyism, fraud and related actions (Bhargava 2005; Kaufmann et al. 2011; Chen et al. 2015). Corruption deteriorates societal trust, exacerbates poverty and inequality, undermines democratic institutions, and incites conflicts. Prior studies generally indicate that corruption hinders economic growth (Mauro 1995; Erum and Hussain 2019) and results in a less efficient financial system (Cooray and Schneider 2018). Park (2012) suggests corruption could even be a significant catalyst for financial crises. Furthermore, corruption is regarded as a primary factor contributing to political instability and conflict (Kumar et al. 2023). Conversely, an alternative body of research indicates that corruption accelerates economic activity to circumvent lengthy bureaucratic processes (Shleifer and Vishny 1993; Méon and Sekkat 2005; Aidt 2009). Chen et al. (2013) provide empirical evidence indicating that bribery, rather than firm performance, predominantly determines private firms' ability to obtain bank loans in China.

Political instability is often defined as the presence of violent political actions in society, such as anti-government campaigns, terrorist attacks, political assassinations, domestic or foreign conflicts, and any similar political unrest (Alhassan et al. 2021). Political instability also includes unforeseen changes in laws and regulations, taxation policies, impending elections, and unexpected shifts in the corporate environment (Giambona et al. 2017). Studies such as Alesina et al. (1996), Roe and Siegel (2011) and Alhassan et al. (2021) find that political instability hinders economic progress, financial development, and financial inclusion. Conversely, Olson (1982) argues that higher political stability creates an opportunity for special interest groups or political elites to engage in corruption over time. Jou et al. (2017), assert that governments establish relationships with banks during politically stable eras to fulfil their aims; when these governments fall, the banking sector experiences instability.

Corruption and political stability are deeply connected, particularly in developing and emerging countries (Shleifer and Vishny 1993; Farzanegan and Witthuhn 2017). Consequently, assessing the combined effects of corruption and political stability on bank performance is both important and interesting. Kumar et al. (2023) is the only study found to have examined the combined impacts of political stability and corruption on bank performance to find that heightened corruption and political instability negatively impact banks' earnings, asset quality, and managerial efficiency, while positively affecting liquidity.

Against this background, this paper examines the impact of control of corruption and political stability on bank performance in the GCC region. Bank performance is assessed across four dimensions: profitability, stability, credit risk, and asset quality. Specifically, the study aims to address the following research questions:

1. How does control of corruption influence bank profitability, stability, credit risk, and asset quality in the GCC region?

2. How does political stability affect bank profitability, stability, credit risk, and asset quality in the GCC region?

3. How does the interaction between control of corruption and political stability influence bank profitability, stability, credit risk, and asset quality in the GCC region?

The GCC region, which includes Saudi Arabia, the United Arab Emirates, Kuwait, Qatar, Oman, and Bahrain, possesses significant economic importance and unique political characteristics. Each of these nations is a monarchy and ranks among the wealthiest, heavily reliant on oil for their prosperity. The GCC region is the largest regional exporter of crude oil, possessing almost 34% of global oil reserves (Alnori and Bugshan 2025) and accounting for 25% of worldwide oil production (Hakim and Alvi 2025). All GCC nations have a bank-based financial system with relatively underdeveloped financial markets (Abuzayed et al. 2018;

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Maghyereh and Abdoh 2021). In this region, banks finance government activities, through holding government securities, at a significantly higher level compared to the global average (Abuzayed et al. 2018; Al-Hassan et al. 2022). The majority of banks in this region are financially strong, well-capitalised, possess a large branch network, and have embraced modern banking services (Srairi 2010). In contrast to developed economies, the GCC region possesses a significant number of state-owned banks or private banks with substantial state ownership (Boulanouar et al. 2021). The GCC banking sector ranks among the largest Islamic banking sectors globally, featuring a dual banking system that includes both Islamic and conventional banks (Mabkhot and Al-Wesabi 2022). This dual structure requires the implementation of parallel systems for compliance, risk management, and product development, which can result in a loss of managerial focus and a strain on operational capacity. All these make the GCC region an ideal case for examining the effects of corruption and political stability on bank performance.

The paper is structured as follows: Section 2 reviews the current literature. Section 3 outlines the data, variables, and methodology employed. Section 4 presents the empirical findings, and Section 5 provides the conclusion of the paper.

6.2. Literature Review

The effects of corruption and political stability on economic growth and development have been extensively examined in economic research. The impact of these two national governance variables on stock market performance has been extensively studied in finance literature; however, research regarding their effect on bank performance is limited.

6.2.1. Bank Performance

In his famous work, Joseph Schumpeter contended that the functions of banks, such as mobilising savings, assessing and financing projects, managing risk, overseeing managers, and

facilitating transactions, are crucial for technological innovation and economic advancement (Schumpeter 1911). This perspective is supported by numerous seminal works (Bencivenga and Smith 1991; King and Levine 1993; Beck and Levine 2004; Demirgüç-Kunt et al. 2013). The modern-day financial system relies on an efficient, high-performing, and robust banking sector as a key catalyst for economic growth (Zeqiraj et al. 2020). National governance variables, such as corruption control and political stability, have been recognised as critical elements influencing a nation's overall financial system (Levine 1998; Porta et al. 1998; Barth et al. 2004). But only recently have scholars begun to examine how such national governance factors affect the functioning of banks. Bougatef (2017) employs measures of profitability to assess the performance of Tunisian banks. Abuzayed et al. (2024) also utilise profitability as an indicator to evaluate the performance of banks across 160 nations. Ho et al. (2019) evaluated the impact of anticorruption initiatives on the stability of banks in 40 countries from 1987 to 2013. Following Laeven and Levine (2009) and Fazio et al. (2015), Ho et al. (2019) quantify bank stability using the natural logarithm of a bank's z-score. The z-score measures a bank's proximity to insolvency, indicating if its average equity is adequate to absorb losses. On the other hand, Park (2012) examines the influence of corruption on the banking sector and economic growth via the lens of loan portfolio quality and credit risk. This study seeks to examine the influence of corruption control and political stability on bank performance by utilising four principal dimensions: profitability, stability, credit risk, and asset quality, each representing unique aspects of operational effectiveness and success.

6.2.2. Corruption and Bank Performance

The examination of corruption's repercussions on economic activity and financial development has a longstanding presence in economic literature and offers two distinct perspectives: (1) corruption 'sands the wheels' and (2) corruption 'greases the wheels' (Cooray and Schneider 2018). However, the majority of studies endorse the 'sands the wheels' hypothesis, positing that

corruption exacerbates inefficiency and costs associated with economic activities, ultimately resulting in diminished economic growth and development (Mauro 1995; Rose-Ackerman and Palifka 2016; Cooray and Schneider 2018). The other viewpoint posits that corruption facilitates economic activity by bypassing long administrative processes, thereby accelerating economic activities, particularly in nations with weak institutions (Méon and Sekkat 2005; Aidt 2009; Méon and Weill 2010; Dreher and Gassebner 2013). In addition, the resource curse theory claims that countries abundant in natural resources are more susceptible to extensive corruption (Vicente 2010; Apergis and Ben Ali 2020), and rent-seeking behaviour among political elites (Auty 2001), primarily due to their typical dependence on a corrupt patronage system (Collier and Hoeffler 2005; Bhattacharyya and Hodler 2010). However, Wiens (2014) contends that resource-abundant economies with deficient institutions are likely to encounter the resource curse, whereas nations with robust institutions are anticipated to evade the curse and prosper.

Corruption in the banking sector manifests in multiple ways, such as embezzlement by fraudulent bank officials, accepting bribes from clients to speed up lending processes for unqualified clients, investing in high-risk assets for personal profit, inflating profit figures to secure increased salaries and bonuses, and participating in insider trading of bank or client stocks. Abuzayed et al. (2024), using a global dataset, report that corruption raises risks and reduces bank profitability. Asteriou et al. (2021) report analogous findings for banks across 19 Eurozone nations for the period from 2005 to 2018. Ho et al. (2019) reveal a positive correlation between high anticorruption ratings and enhanced banking system stability. Kumar et al. (2023), using data from 21 emerging countries, assert that increased corruption adversely impacts asset quality, profits, and management efficiency, while positively influencing banks' liquidity. Park (2012) identifies that corruption exacerbates the level of non-performing loans within the banking sector, causing a misallocation of bank resources to unviable projects, which

subsequently hampers economic growth. Tao et al. (2023) state that anticorruption activities substantially decrease non-performing loans in China. Osei-Tutu (2022) identifies evidence of a detrimental impact of increased corruption on bank cost efficiency in both developed and developing nations. La Porta et al. (2002) claim that nations with increased government control of banks are correlated with elevated corruption levels, resulting in suboptimal lending decisions which undermine both profitability and stability. Studies like Garmaise and Liu (2005) and Ho et al. (2019), however, point out that anti-corruption initiatives only work in settings where corruption is strong; in countries with low levels of corruption, additional measures to combat corruption have little to no effect.

In contrast, Bougatef (2017) reveals that, for Tunisian banks from 2003 to 2014, there was a positive correlation between bank profitability and the degree of corruption. Chen et al. (2013) demonstrate that bribery predominantly influences the degree to which private firms obtain bank loans in China. They also report that businesses with better financial performance are typically more willing and able to pay higher bribes to receive bigger loans. Beck et al. (2006) report that stronger oversight power is associated with increased corruption in bank lending. Lalountas et al. (2011) assert that in countries with pronounced risk aversion in the banking sector, corruption can provide benefits by facilitating more bank lending and may lead to short-term profitability gains.

There is ample evidence in the current banking literature indicating that corruption adversely affects bank profitability, stability, and efficiency (Ho et al. 2019; Asteriou et al. 2021; Osei-Tutu 2022; Tao et al. 2023; Abuzayed et al. 2024). Consequently, this study posits the following hypothesis following the 'sands the wheels' perspective of corruption:

H1. Control over corruption positively affects bank performance.

6.2.3. Political Instability and Bank Performance

Conventional wisdom believes that a stable political environment promotes economic growth and prosperity. Alesina et al. (1996) demonstrate that political instability leads to diminished economic growth. Nonetheless, evidence suggests that sluggish economic development may also result in political instability (Easterly 2007). Roe and Siegel (2011) assert that political instability exacerbates financial development. Alhassan et al. (2021) find that political instability adversely affects financial inclusion in the MENA area. Lensink et al. (2000) conclude that a rise in political risk leads to an increase in capital flight. Lehkonen and Heimonen (2015) claim that enhanced political stability results in increased stock returns. Huang et al. (2015) find that international political instability increases the investment uncertainty perceived by bond investors. They also point out that international political risk exhibits a diminished negative impact on bond prices when the debtor nation maintains a stable political system. Collier and Hoeffler (2005) provide evidence that countries abundant in natural resources are more susceptible to political disputes. Saif-Alyousfi (2020) examines the effects of the Yemen War on the banking sector of the GCC region, revealing a substantial adverse effect on deposits and loans of banks in the region. Kumar et al. (2023), reveal that political stability positively impacts banks' profitability, asset quality, and managerial efficiency while improving liquidity in 21 emerging countries.

On the contrary, Olson's theory of institutional sclerosis assumes that, over time, politically stable societies promote the emergence of powerful interest groups, including influential business lobbies and political elites, which prioritise their private agendas over the collective societal or economic welfare (Olson 1982). In a politically stable yet institutionally weak environment, rent-seeking behaviours hinder economic growth and diminish institutional efficacy, resulting in what Olson referred to as "institutional sclerosis" (Olson 1982). In many economies, particularly those with significant government involvement in the banking sector,

institutional sclerosis impairs regulatory authorities' capacity to implement prudent banking practices. In such societies, banks with political connections may obtain preferential treatment, resulting in inefficiencies in credit allocation due to politically motivated lending, which ultimately diminishes sector resilience. Coates et al. (2010) present significant empirical evidence supporting Olson's argument in OECD nations. Jou et al. (2017), argue that governments establish relationships with banks during politically stable periods to fulfil their aims; when these governments weaken or fall, the banking sector becomes unstable. Furthermore, by examining bank data from 98 nations between 1998 and 2007, Ashraf (2017) finds that banks take more risks when political stability is present. He contends that enhanced political stability elevates banks' risk by intensifying competition in the credit market from alternative financing sources and creating moral hazard issues stemming from the anticipation of government bailouts during adverse economic times. This paper follows Kumar et al. (2023) and adheres to the conventional wisdom regarding political stability's influence on banking performance and posits the following hypothesis:

H2. Political stability positively affects bank performance.

Figure 6.1 presents the conceptual framework of this study.

6.3. Methodology

This study examines the influence of control over corruption and political stability on bank performance across multiple dimensions, including profitability, stability, credit risk, and asset quality, using a panel dataset from 88 banks in the GCC region spanning 2012–2022. The methodology integrates panel regression analysis with marginal effects and margins plot estimation to explore both the direct and interactive effects of corruption control and political stability on bank performance. Fixed effects are incorporated at the bank, country, and year levels to account for unobserved heterogeneity.
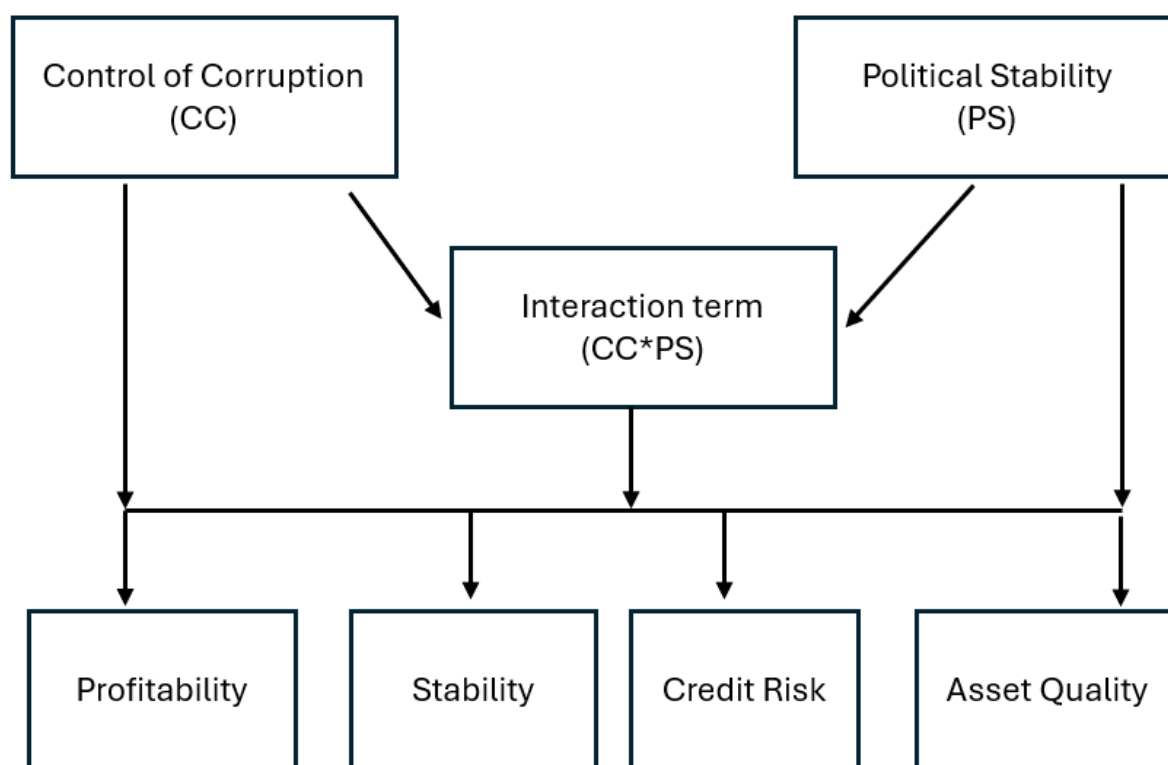
Figure 6.1. Conceptual Framework

6.3.1. Data

The data for this research were obtained from three sources. Bank-specific data were obtained from the BankFocus database, which offers comprehensive financial and operational information on banks. National governance variables, control of corruption and political stability, were sourced from the WGI database. The macroeconomic data were sourced from the WDI database maintained by the World Bank. The final dataset contains panel data from 88 banks in the GCC countries, covering the period 2012–2022. The sample includes a mix of conventional and Islamic banks, 50 conventional banks and 38 Islamic banks, as well as state-owned and privately owned banks, ensuring a comprehensive representation of the GCC banking sector.

6.3.2. Measurement of Variables

Table 6.1 provides the list of variables along with their measurement technique, description, and source.

Table 6.1. Description of Variables

Variables	Measurement	Description	Source
Dependent variables			
ROA	Net profit before tax / Total Assets	ROA measures profitability. A higher value means higher profitability.	BankFocus (Meslier et al 2014).
Z-score	Log of Z-score, here Z-score = [ROA + (Total equity / Total Assets)] /standard deviations of ROA	Measures insolvency risk or stability of individual banks. A higher Z-score means higher bank stability.	Authors' calculation using BankFocus data following Ho et al. (2019) and Bektas et al. (2022).
CR	Loan loss provisions / Gross loans and advances	Measures credit risk of individual banks. A higher value means higher credit risk.	BankFocus. (Bektas et al. 2022).
AQ	Impaired loans / Total Equity	Measures asset quality. A higher value means lower asset quality.	Authors' calculation using BankFocus data following Cantero-Saiz et al. (2024).
Independent variables			
PS	Indicator of political stability and absence of violence/terrorism, measuring perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.	Measures political stability. It takes values from −2.5 to 2.5, with higher scores corresponding to better political stability.	WGI database (Bektas et al. 2022).
CC	Indicator that captures public perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption.	Measures control over corruption. It takes values from −2.5 to 2.5, with higher scores referring to better control over corruption.	WGI database (Bektas et al. 2022).

Variables	Measurement	Description	Source
CCPS	CC*PS	The interaction term between political stability (PS) and control over corruption (CR)	Authors' calculation following Kumar et al. (2023).
Bank-level controls			
SIZE	Log of Total assets	Measures bank size.	Authors' calculation based on Bankscope data
NON	(Net noninterest income share / Total operating revenue)	Measures bank's reliance on noninterest income sources. A higher value means a bank is more reliant on noninterest income.	Authors' calculation based on BankFocus data following (Doan et al. 2018).
CAR	Capital adequacy ratio	Measures how well a bank can meet its obligations. A higher ratio shows a better ability to meet debt obligations.	BankFocus
LIQ	Liquid assets / total assets	Measures liquidity positions of the banks. A higher value shows a better liquidity position.	BankFocus
CIR	Cost-to-income ratio	Measures cost efficiency of the management. A higher value shows a lower cost efficiency.	BankFocus
IBD	Equals 1 for Islamic banks, 0 otherwise	Islamic Bank Dummy	Annual report
STATE	Equals 1 for state-owned banks, 0 otherwise	State-owned bank dummy	Annual report
Macro-level controls			
GDP		Annual GDP growth rate by country	WDI database
INF		Annual inflation rate by country	WDI database

6.3.3. Model and Econometric Specification

6.3.3.1. Regression analysis

The models in this study are estimated using the Least Squares Dummy Variables (LSDV) approach with fixed effects at the bank, country, and year levels. This method is well suited for panel data settings where unobserved heterogeneity may exist across individual entities and over time (Baltagi 2008; Wooldridge 2010). The basic model is as follows:

$$Y_{i,t,c} = \beta_0 + \beta_1 CC_{t,c} + \beta_2 PS_{t,c} + \beta_3 CCPS_{t,c} + \lambda Bank\ controls_{i,t,c}$$
$$+ \Upsilon Macro\ controls_{c,t} + Bank\ fixed\ effect + Time\ fixed\ effcect$$
$$+ Country\ fixed\ effect + \varepsilon_{i,t,c}$$

Where i indicates individual banks, t indicates time (years) and c indicates country. Y represents a vector of dependent variables which consists of profitability, stability, credit risk, and asset quality. Here, β_1, β_2, and β_3 measure control of corruption, political stability and interaction of control of corruption and political stability respectively. λ represents a vector of bank-level control variables while Υ measures macro-level control variables. Fixed effects are incorporated for banks, years, and countries to account for time-invariant characteristics specific to banks (such as business models), country-specific institutional and regulatory frameworks (such as legal systems and cultural norms), and time-specific global shocks (such as financial crises or oil price volatility) (Greene 2012; Hsiao 2014).

The inclusion of fixed effects mitigates the risk of omitted variable bias by isolating the within-bank, within-year, and within-country variation in the explanatory variables (Arellano 2003; Wooldridge 2010). This specification is especially important in multi-dimensional panel contexts like the GCC area, where institutional and economic conditions differ among nations and fluctuate over time.

6.3.3.2. Marginal effects analysis

This study uses marginal effects and margins plot to assess how the impact of political stability on bank performance varies by levels of corruption control. We only calculated the marginal effect where we found significant results for the interaction term between control over corruption and political instability. The marginal effect of political stability on bank performance is calculated by using the following equation:

$$\frac{\partial Y_{itc}}{\partial PS} = \beta_2 + \beta_3 CC_{ict}$$

This expression captures how the impact of political stability (PS) varies across different levels of corruption control (CC). Marginal effects are calculated for six values of CC: -2.5, -1.25, -0.5, 0.5, 1.5, and 2.5, representing weak to strong governance environments. Statistical significance and confidence intervals for the marginal effects are derived using the delta method.

6.4. Empirical Results

6.4.1. Descriptive Statistics

Table 6.2 reports the descriptive statistics of the variables used in the analysis for the period of 2012 to 2022. It presents the mean, standard deviation, minimum and maximum values for each variable. The average ROA is 0.018, with values ranging from 0.001 to 0.451, indicating substantial variation in profitability among GCC banks. The Z-score has a mean of 3.699 and ranges up to 9.273, showing that while most banks fall within a moderate stability range, some institutions demonstrate considerably higher levels of financial resilience. Credit risk (CR) has a relatively low mean of 0.066 but a maximum of 6.882 and a standard deviation of 0.294. This suggests that although most banks manage credit risk well, a few exhibit significantly elevated risk, potentially reflecting deteriorating loan performance or weak underwriting standards. The

asset quality (AQ) variable also shows wide dispersion, with a mean of 21.79 and a maximum

of 95.37, highlighting substantial differences in the strength of loan portfolios across banks.

In terms of governance indicators, political stability (PS) shows a mean value of 0.126 (ranging

from −1.335 to 1.224), reflecting moderate levels of political stability in the GCC region. This

suggests that while political environments are generally stable, there are variations across

countries that may affect banking performance. In contrast, control over corruption (CC) has a

higher mean of 0.456 (ranging from −0.360 to 1.274), indicating a relatively stronger

institutional framework for managing corruption. These figures imply that, on average, GCC

countries exhibit better performance in controlling corruption than in maintaining high levels

of political stability, making both variables important yet distinct in their potential influence

on bank-level outcomes.

Table 6.2. Descriptive Statistics

Variables	Mean	SD	Min	Max
ROA	0.018	0.023	0.001	0.451
Z-score	3.699	0.648	0.312	9.273
CR	0.066	0.294	0.002	6.882
AQ	21.790	21.321	0.027	95.371
CC	0.456	0.521	-0.360	1.274
PS	0.126	0.678	-1.335	1.224
SIZE	15.937	1.852	9.515	19.605
NON	0.364	0.186	0.005	1.000
CAR	21.939	21.028	0.001	125.000
LIQ	0.317	0.146	0.005	0.969
CIR	0.476	0.257	0.142	1.112
IBD	0.466	0.499	0.000	1.000
STATE	0.303	0.460	0.000	1.000
GDP	2.798	3.012	-5.274	8.863
INF	1.775	1.698	-2.540	4.995

Table 6.3 Provides the Correlation Matrix of the Variables. Control over corruption (CC)

shows a weak positive correlation with ROA (0.008), suggesting a limited direct link between

anti-corruption effectiveness and profitability. However, CC is negatively correlated with Z-

score (−0.225), indicating that banks in environments with stronger corruption control may not necessarily experience higher financial stability. Interestingly, CC is positively associated with asset quality (AQ) (0.232), implying that lower corruption is linked with fewer impaired loans relative to equity, reflecting stronger asset management practices. The correlation between CC and credit risk (CR) is nearly zero (−0.004), suggesting no clear pattern in this bivariate relationship.

Political stability (PS) exhibits weak and negative correlations with all four-performance metrics: ROA (−0.028), Z-score (−0.188), CR (−0.055), and AQ (0.085). While these correlations are not strong, the direction suggests that higher perceived political stability does not consistently lead to better banking outcomes in the GCC context. The moderate positive correlation between CC and PS (0.658) confirms some alignment between the two governance indicators, but their distinct relationships with performance outcomes support their separate inclusion in the analysis. In particular, the contrasting directions of CC and PS with respect to different dimensions of bank performance support the need to examine their individual and interaction effects more formally in the regression analysis.

Table 6.3. The Correlation Matrix

Variables	ROA	Z-score	CR	AQ	CC	PS	SIZE	NON	CAR	LIQ	CIR	IBD	SATE	GDP	INF
ROA	1.000														
Z-score	-0.155	1.000													
CR	0.122	-0.080	1.000												
AQ	-0.134	-0.306	0.079	1.000											
CC	0.008	-0.225	-0.004	0.232	1.000										
PS	-0.028	-0.188	-0.055	0.085	0.658	1.000									
SIZE	-0.296	0.127	-0.165	-0.083	0.122	0.120	1.000								
NON	0.229	-0.205	-0.046	0.224	0.026	-0.114	-0.283	1.000							
CAR	0.539	-0.097	0.102	-0.136	-0.094	-0.190	-0.474	0.291	1.000						
LIQ	-0.064	0.081	-0.059	-0.081	-0.121	-0.262	-0.034	0.323	0.204	1.000					
CIR	-0.014	-0.032	0.091	0.086	-0.143	-0.175	-0.295	0.185	0.068	0.135	1.000				
IBD	0.063	0.063	0.065	0.034	-0.211	-0.251	-0.271	0.266	0.036	-0.110	0.232	1.000			
STATE	-0.019	0.057	-0.057	0.075	0.357	0.323	0.307	-0.086	-0.082	-0.090	-0.186	-0.113	1.000		
GDP	0.067	-0.021	0.029	0.044	0.206	0.052	-0.012	0.023	0.009	0.042	0.023	-0.051	0.025	1.000	
INF	0.011	0.062	-0.005	-0.045	-0.074	-0.044	0.006	0.009	-0.022	0.043	0.007	0.042	-0.038	0.513	1.000

6.4.2. Profitability

Table 6.4 presents regression results that illustrate the effects of control over corruption, political stability, and their interaction on the profitability of GCC banks.

Table 6.4. Impact of Corruption Control and Political Stability on Bank Profitability

	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA
CC		0.0055*		0.0056*	0.0057**
		(0.0035)		(0.0033)	(0.0029)
PS			0.0001	0.0003	-0.0003
			(0.0034)	(0.0032)	(0.0026)
CCPS					0.0008
					(0.0029)
SIZE	-0.0056***	-0.0057***	-0.0056***	-0.0057***	-0.0056***
	(0.0020)	(0.0020)	(0.0020)	(0.0020)	(0.0022)
NON	0.0029	0.0034	0.0029	0.0035	0.0036
	(0.0049)	(0.0051)	(0.0047)	(0.0049)	(0.0048)
CAR	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
LIQ	-0.0091*	-0.0087*	-0.0091*	-0.0087*	-0.0088*
	(0.0054)	(0.0053)	(0.0053)	(0.0052)	(0.0051)
CIR	-0.0501***	-0.0508***	-0.0501***	-0.0508***	-0.0508***
	(0.0117)	(0.0119)	(0.0117)	(0.0119)	(0.0119)
IBD	-0.0091***	-0.0091***	-0.0091***	-0.0091***	-0.0090***
	(0.0029)	(0.0028)	(0.0028)	(0.0028)	(0.0027)
STATE	0.0154***	0.0154***	0.0154***	0.0154***	0.0153***
	(0.0035)	(0.0035)	(0.0035)	(0.0035)	(0.0037)
GDP	0.0003*	0.0002	0.0003*	0.0002	0.0002
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
INF	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0002)
Constant	0.1213***	0.1158***	0.1213***	0.1154***	0.1140***
	(0.0346)	(0.0331)	(0.0365)	(0.0346)	(0.0377)
Observations	800	800	800	800	800
Number of banks	88	88	88	88	88
R-squared	0.7933	0.7952	0.7933	0.7952	0.7952
Hausman Test					0.0000
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Estimate (1) presents regression results solely for the control variables; estimate (2) incorporates control over corruption; estimate (3) integrates political stability; estimate (4) combines both control over corruption and political stability; and estimate (5) encompasses both control over corruption and political stability as well as their interaction term.

The coefficient for control over corruption is consistently positive and statistically significant at the 10% level in estimates 2 and 4 and at the 5% level in estimate 5. These findings indicate that greater control of corruption enhances bank profitability. When corruption diminishes, banks are likely to encounter fewer inefficiencies resulting from bribery, fraud, or resource misallocation. It ensures that loan distribution and banking activities are based on merit, hence increasing profitability. The results support the idea that corruption diminishes financial efficiency (Cooray and Schneider 2018) and are also in line with the empirical findings of Kumar et al. (2023) and Abuzayed et al. (2024). On the contrary, the coefficient for political stability is statistically insignificant in all models, indicating that political stability does not directly influence profitability in the GCC banking industry. The interaction term between control over corruption and political stability is positive although statistically insignificant. This outcome indicates that the interplay of political stability and corruption control does not substantially affect profitability.

The coefficient for bank size is negative and statistically significant in all models, indicating that larger banks in the GCC have experienced lower profitability during the research period. The negative and substantial coefficient for liquidity indicates that liquidity correlates with diminished profitability. This illustrates the opportunity cost of maintaining liquid assets, which yield lower returns relative to lending or investment activities. The coefficient for the cost-to-income ratio (CIR) is negative and statistically significant in all models, indicating that increased cost inefficiency substantially diminishes profitability. The coefficient for Islamic banks is negative, indicating that Islamic banks in the GCC demonstrate lower profitability

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than conventional banks. The positive and statistically significant coefficient for State banks indicates that State-owned banks are more profitable compared to publicly held banks, perhaps due to preferential treatment, implicit government guarantees, or access to cheaper and more stable funding sources. This illustrates the distinctive framework of GCC economies, wherein governmental participation plays an important role in the banking sector. The coefficient for GDP growth is positive and statistically significant in certain estimations (1 & 3), whereas it is positive yet statistically insignificant in others (2, 4 & 5).

6.4.3. Stability

Table 6.5 presents the findings of estimates 6 to 10 aimed to ascertain the impacts of control over corruption, political stability, and their interaction on the bank stability of GCC region banks. Estimate (6) reports regression results pertaining solely to control variables, encompassing both bank-level and macro-level factors. Estimate (7) includes control over corruption, estimate (8) encompasses political stability, estimate (9) combines both control over corruption and political stability, and finally, estimate (10) contains both control over corruption and political stability along with their interaction term.

The coefficient for control over corruption is positive and statistically significant at the 1% level in all estimates where it appears (7, 9 & 10). These results suggest stronger control over corruption enhances bank stability. By reducing corrupt practices such as embezzlement, fraud, and preferential lending, banks can allocate resources more efficiently, leading to a stronger financial position and reduced insolvency risk. This finding aligns with the result of Abuzayed et al. (2024) which suggests that corruption undermines bank stability through increased inefficiency and misallocation of resources. Conversely, political stability exerts a negative and statistically significant impact on bank stability at the 5% level in estimates 8 and 9, and at the 1% level in estimate 10. These findings indicate that enhanced political stability correlates with lower bank stability. This apparently paradoxical outcome is in line with the findings of Ashraf

(2017) and Olson's theoretical assertion that prolonged stability promotes rent-seeking behaviour and institutional sclerosis (Olson 1982, 2022). In the GCC setting, where governments significantly influence the banking industry, political stability may foster increased state participation in banking operations leading to frequent favouring of political goals over financial prudence.

Table 6.5. Impact of Corruption Control and Political Stability on Bank Stability

	(6) Z-score	(7) Z-score	(8) Z-score	(9) Z-score	(10) Z-score
CC		0.1818***		0.1768***	0.1966***
		(0.0417)		(0.0413)	(0.0401)
PS			-0.0772**	-0.0704**	-0.1423***
			(0.0349)	(0.0342)	(0.0498)
CCPS					0.1007**
					(0.0456)
SIZE	-0.2328***	-0.2348***	-0.2356***	-0.2372***	-0.2298***
	(0.0436)	(0.0421)	(0.0435)	(0.0420)	(0.0425)
NON	-0.1182	-0.1002	-0.1241	-0.1061	-0.0952
	(0.1222)	(0.1178)	(0.1195)	(0.1155)	(0.1176)
CAR	0.0115***	0.0118***	0.0116***	0.0119***	0.0121***
	(0.0021)	(0.0020)	(0.0021)	(0.0020)	(0.0021)
LIQ	-0.3378**	-0.3250**	-0.3342**	-0.3221**	-0.3283**
	(0.1325)	(0.1289)	(0.1348)	(0.1313)	(0.1370)
CIR	-0.2007	-0.2241	-0.1997	-0.2225	-0.2246
	(0.1725)	(0.1704)	(0.1707)	(0.1690)	(0.1684)
IBD	1.1923***	1.1921***	1.1877***	1.1878***	1.1986***
	(0.0880)	(0.0838)	(0.0897)	(0.0858)	(0.0837)
STATE	0.7833***	0.7841***	0.7881***	0.7884***	0.7753***
	(0.0874)	(0.0824)	(0.0867)	(0.0822)	(0.0824)
GDP	0.0021	0.0009	0.0018	0.0007	0.0004
	(0.0034)	(0.0034)	(0.0034)	(0.0034)	(0.0034)
INF	0.0066*	0.0057	0.0058	0.0050	0.0040
	(0.0038)	(0.0037)	(0.0037)	(0.0037)	(0.0037)
Constant	6.0153***	5.8330***	6.1167***	5.9304***	5.7575***
	(0.7205)	(0.7041)	(0.7194)	(0.7052)	(0.7158)
Observations	800	800	800	800	800
Number of banks	88	88	88	88	88
R-squared	0.9422	0.9439	0.9428	0.9443	0.9447
Hausman Test					0.0000
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The coefficient for the interaction term between corruption control and political stability is positive and statistically significant (Estimate 10). This important outcome indicates that effective anti-corruption initiatives mitigate the adverse effects of political stability on bank stability, hence enhancing banking resilience. This reinforces the idea that effective governance frameworks can mitigate the adverse effects of political stability, following theories of institutional quality. The coefficients for control over corruption are consistently greater in magnitude than those for political stability, and the interaction term is smaller than the direct effect of control over corruption yet remains significant. The greater coefficients for control over corruption indicate that it is a more important factor of bank stability than political stability within the GCC environment. This illustrates the immediate effect of anti-corruption initiatives on diminishing inefficiencies and cultivating confidence within the banking system. The significant yet smaller magnitude of the interaction term suggests that although the interplay between these variables is considerable, their collective influence is weaker than the individual effect. This discovery indicates that the advantages of anti-corruption initiatives are mostly autonomous from political stability.

The coefficient for bank size is negative and significant in all models, indicating that larger banks demonstrate reduced stability. The positive coefficient for capital adequacy indicates that increased capital adequacy bolsters bank stability by offering a more robust safeguard against prospective losses. Conversely, the effect of liquidity is negative, indicating that increased liquidity correlates with diminished stability. The positive coefficient for Islamic banks suggests that they have greater stability than conventional banks in the GCC. This finding contradicts Bektas et al. (2022) which find that conventional banks are more stable than Islamic banks. In addition, State-owned banks demonstrate greater stability. In the GCC, where governments significantly influence economic activities, state backing strengthens bank stability.

Table 6.6 provides the marginal effects of political stability on bank stability at six different levels of control over corruption, ranging from -2.5 to 2.5. These results offer insights into how the relationship between political stability and bank stability evolves across varying governance environments in terms of corruption control.

Table 6.6. Impact of Political Stability on Bank Stability at Different Levels of Corruption Control

Delta-method						
PS_at	dy/dx	std. err.	t	P>t	95% conf. interval	
1	-0.3939296	0.1544564	-2.55	0.011	-0.6971891	-0.0906701
2	-0.293279	0.1103682	-2.66	0.008	-0.5099757	-0.0765824
3	-0.1926285	0.0683512	-2.82	0.005	-0.326829	-0.058428
4	-0.091978	0.0364558	-2.52	0.012	-0.1635552	-0.0204007
5	0.0086726	0.0463958	0.19	0.852	-0.082421	0.0997661
6	0.1093231	0.0845135	1.29	0.196	-0.0566105	0.2752566

1. CC = -2.5, 2. CC = -1.25, 3. CC = -0.5, 4. CC = 0.5, 5. CC = 1.5, 6. CC = 2.5

Note: This table shows the marginal impact of political stability on the bank stability at different levels of corruption on a scale of 0–6, where a higher number shows lower corruption.

The results depict that at a lower level of control over corruption (at CC = -2.5, -1.5, -0.5, and 0.5), the marginal effects of political stability on bank stability are negative and significant. However, the strength of the negative relationship diminishes as control over corruption improves, from -0.3939 at CC = -2.5 to -0.0919 at CC = 0.5. The magnitude of the negative effects decreases as control over corruption increases, suggesting that stronger control over corruption moderates the adverse impact of political stability on bank stability. On the other hand, at a higher level of control over corruption, (at CC = 1.5 and 2.5), the marginal effect of political stability is positive but statistically insignificant. This suggests that when corruption is relatively well-controlled, political stability is less likely to foster rent-seeking or resource misallocation.

Figure 6.1 illustrates the average marginal effects of political stability on bank stability, conditional on varying levels of control over corruption. The vertical axis represents the effect

size (marginal effect of political stability on the dependent variable), while the horizontal axis represents different levels of control over corruption, ranging from -2.5 (low control over corruption) to 2.5 (high control over corruption). The error bars depict the 95% confidence intervals for the estimated marginal effects. When control over corruption is at its lowest value (-2.5), the marginal effect of political stability is strongly negative (approximately -0.4) and statistically significant, as the confidence interval does not include zero. The marginal effects show a clear upward trend as control over corruption increases, transitioning from significant negative effects at low control over corruption to insignificant or weakly positive effects at high level of control over corruption.
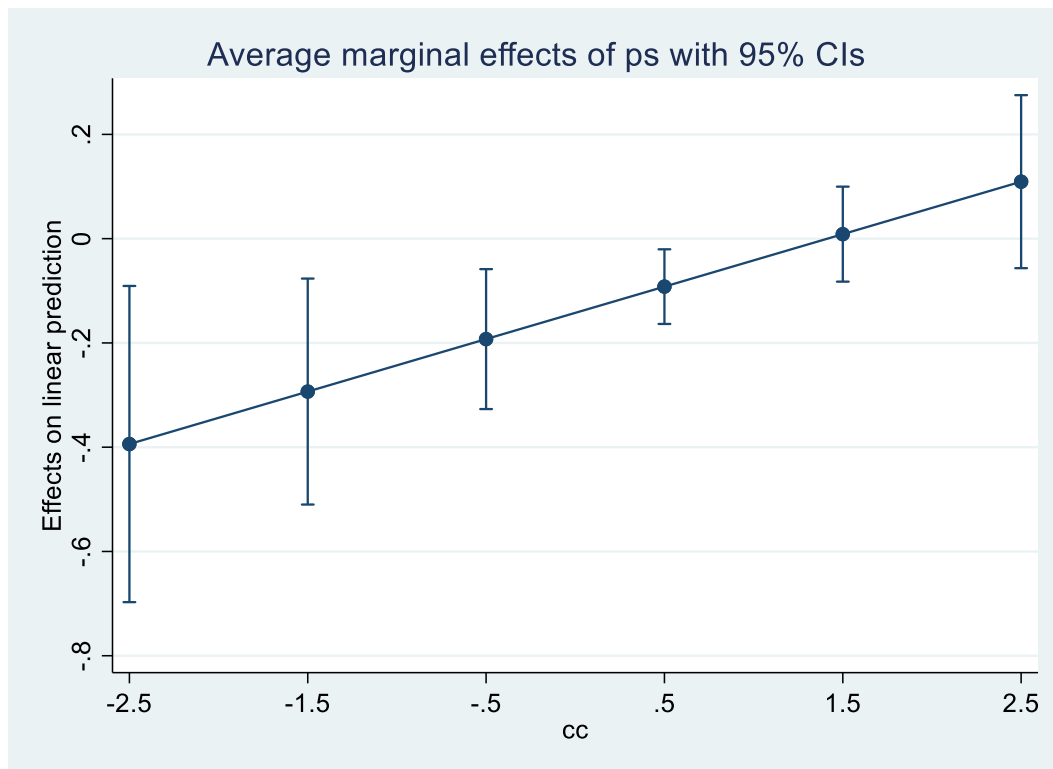

Figure 6.2: Margins plot: Impact of Political Stability on Bank Stability at Different Levels of Corruption Control

6.4.4. Credit Risk

Table 6.7 presents 11 to 15 estimates that seek to ascertain the impact of control over corruption, political stability, and their interaction on the credit risk of GCC banks.

Table 6.7. Impact of Corruption Control and Political Stability on Credit Risk

	(11) CR	(12) CR	(13) CR	(14) CR	(15) CR
CC		-0.0344***		-0.0345***	-0.0338***
		(0.0104)		(0.0101)	(0.0098)
PS			-0.0011	-0.0023	-0.0051
			(0.0088)	(0.0084)	(0.0097)
CCPS					0.0039
					(0.0097)
SIZE	-0.0321**	-0.0308**	-0.0321**	-0.0309**	-0.0305*
	(0.0154)	(0.0152)	(0.0154)	(0.0153)	(0.0158)
NON	-0.0197	-0.0233	-0.0197	-0.0233	-0.0228
	(0.0220)	(0.0221)	(0.0221)	(0.0222)	(0.0220)
CAR	-0.0004	-0.0004	-0.0003	-0.0004	-0.0004
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
LIQ	0.1166***	0.1148***	0.1165***	0.1147***	0.1143***
	(0.0401)	(0.0384)	(0.0405)	(0.0388)	(0.0387)
CIR	-0.0195	-0.0144	-0.0194	-0.0142	-0.0141
	(0.0388)	(0.0387)	(0.0386)	(0.0384)	(0.0386)
IBD	-0.0389***	-0.0381***	-0.0390***	-0.0382***	-0.0377***
	(0.0133)	(0.0133)	(0.0134)	(0.0134)	(0.0140)
STATE	0.0520**	0.0503**	0.0521**	0.0504**	0.0497*
	(0.0254)	(0.0252)	(0.0255)	(0.0253)	(0.0262)
GDP	-0.0005	-0.0002	-0.0005	-0.0003	-0.0003
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)
INF	0.0005	0.0007	0.0005	0.0007	0.0006
	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)
Constant	0.5183**	0.5384**	0.5196**	0.5414**	0.5323**
	(0.2505)	(0.2509)	(0.2529)	(0.2533)	(0.2642)
Observations	794	794	794	794	794
Number of banks	87	87	87	87	87
R-squared	0.7266	0.7326	0.7266	0.7327	0.7328
Hausman test					0.0004
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Estimate (11) offers regression outcomes pertaining solely to control variables, encompassing both bank-level and macro-level factors. Estimate (12) encompasses control over corruption, estimate (13) includes political stability, estimate (14) contains both control over corruption and political stability, and finally, estimate (15) incorporates both control over corruption and political stability along with their interaction term.

The coefficient for control over corruption is negative and statistically significant at the 1% level in all models in which it is included (Estimates 12, 14, and 15). The findings indicate that enhanced control over corruption lowers credit risk. By mitigating corruption, banks are less prone to sanction loans based on non-meritocratic factors, such as bribery or political influence, leading to enhanced credit evaluation procedures and reduced default rates. These findings align with Park (2012), Chen et al. (2013) and Abuzayed et al. (2024) who assert that corruption incentivises banks to allocate funding to suboptimal projects, hence exacerbating bad loans in the banking sector and increasing credit risk. The coefficients for political stability are small and statistically insignificant across all models (Estimates 13, 14, and 15), indicating that political stability does not directly influence credit risk in the GCC banking industry. The interaction between corruption control and political stability is not statistically significant as well (Estimate 15). This indicates that the combined impact of these two governance variables does not affect credit risk for banks in the GCC region.

The coefficient for bank size is negative and statistically significant across all models, indicating that larger banks have less credit risk. The liquidity coefficient is positive and statistically significant in all models, indicating that more liquidity correlates with heightened credit risk. This contradictory outcome may suggest that banks possessing surplus liquid assets could relax their lending criteria to leverage their liquidity, leading to more precarious loan portfolios. Islamic banks demonstrate lower credit risk relative to conventional banks, consistent with Islamic banking principles, including risk-sharing systems and the restriction

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of excessive risk-taking, which mitigate default risks. Conversely, state-owned banks exhibit higher credit risk. This may stem from government-mandated lending practices that prioritise political or social goals over stringent creditworthiness standards. Although state backing enhances bank stability, it may create a moral hazard in credit distribution, hence elevating credit risk.

6.4.5. Asset Quality

Table 6.8 presents 16 - 20 estimates for assessing the impact of control over corruption, political stability, and their interaction on the asset quality of banks in the GCC region. Estimate (16) reports that present regression outcomes exclusively related to control variables. Estimate (17) encompasses control over corruption, estimate (18) includes political stability, while estimate (19) contains both control over corruption and political stability, and finally, estimate (20) incorporates both control over corruption and political stability along with their interaction term.

The coefficient for control over corruption is negative and statistically significant at the 5% level in all models where it appears (Estimates 17, 19, & 20). These results suggest that stronger control over corruption improves asset quality. These results support prior findings that corruption undermines the integrity of credit allocation processes, exacerbating non-performing loans and reducing asset quality (Park 2012; Chen et al. 2013; Kumar et al. 2023). The coefficient for political stability is also negative and statistically significant at the 1% level across all models where it is included (Estimates 17, 19, & 20). These findings align with Kumar et al. (2023) indicating that enhanced political stability augments asset quality. Interestingly, the coefficients for political stability are consistently greater in magnitude than those for control over corruption, suggesting that political stability exerts a more significant influence on asset quality than control over corruption. This highlights the importance of stable governance structures in fostering borrowers' performance, and confidence and ensuring

timely repayment of loans. The interaction term between control over corruption and political stability is not statistically significant. This result may indicate that corruption control and political stability independently contribute to asset quality rather than having a synergistic impact.

Table 6.8. Impact of Corruption Control and Political Stability on Asset Quality

	(16) AQ	(17) AQ	(18) AQ	(19) AQ	(20) AQ
CC		-8.3579**		-8.7132**	-7.8187**
		(3.5853)		(3.5333)	(3.4080)
PS			-9.2204***	-9.4017***	-14.0038***
			(2.8163)	(2.7668)	(4.0062)
CCPS					6.4099
					(4.4358)
SIZE	1.0594	1.4385	0.7115	1.0999	1.9205
	(3.8569)	(3.8407)	(3.8958)	(3.8798)	(3.9121)
NON	20.1815**	19.5036**	19.4986**	18.7784**	19.8706**
	(9.5107)	(9.4050)	(9.5391)	(9.4097)	(9.3656)
CAR	-0.5111***	-0.4995***	-0.5276***	-0.5158***	-0.4913***
	(0.1685)	(0.1678)	(0.1663)	(0.1652)	(0.1645)
LIQ	-4.7212	-6.0500	-4.6965	-6.0813	-7.3279
	(10.2448)	(10.1614)	(10.2161)	(10.0877)	(10.1273)
CIR	8.8809	10.3460	9.2294	10.7637	11.3970
	(9.8559)	(9.8065)	(9.6882)	(9.6189)	(9.6595)
IBD	-9.1864	-9.1177	-9.5582	-9.4938	-8.6858
	(9.9359)	(10.0562)	(9.6864)	(9.7996)	(9.9483)
STATE	-4.8170	-5.3236	-4.1670	-4.6823	-6.0619
	(7.1949)	(7.3441)	(7.1871)	(7.3272)	(7.3415)
GDP	-0.3977	-0.3308	-0.4263	-0.3570	-0.3583
	(0.3582)	(0.3641)	(0.3593)	(0.3660)	(0.3667)
INF	-0.0309	0.0010	-0.1133	-0.0817	-0.1450
	(0.3412)	(0.3437)	(0.3355)	(0.3381)	(0.3478)
Constant	25.6505	29.1898	38.5776	42.5215	26.1583
	(60.6307)	(60.3569)	(61.4858)	(61.2878)	(61.9691)
Observations	765	765	765	765	765
Number of banks	84	84	84	84	84
R-squared	0.6905	0.6926	0.6952	0.6974	0.6984
Hausman test					0.0002
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The coefficients for non-interest income are positive and statistically significant, indicating that increased dependence on non-interest income is associated with lower asset quality. The negative coefficient for the capital adequacy ratio indicates that increased capital adequacy enhances asset quality. A well-capitalized bank has a greater capacity to withstand losses, implement rigorous credit requirements, and sustain a more robust loan portfolio.

6.5. Conclusion

Using a bank-level panel dataset from 88 banks between 2012 and 2022 from 6 countries from the GCC region, this study investigates the influence of control over corruption and political stability on bank performance, as assessed by profitability, stability, credit risk, and asset quality. The analysis utilises various econometric methods, such as fixed effects regression models, marginal effects, and margins plot, to explain the relationship between national-level governance and bank performance in a region characterised by different governance structures and significant dependence on oil revenues.

The findings indicate that enhanced control over corruption enhances profitability, promotes stability, mitigates credit risk, and improves asset quality. These results support the premise that corruption undermines financial efficiency (Cooray and Schneider 2018) and align with the empirical findings of Tao et al. (2023), Ho et al. (2019), Kumar et al. (2023) and Abuzayed et al. (2024). However, the influence of political stability on bank performance is complex and context dependent. This study finds that in settings with inadequate corruption control, political stability adversely affects bank stability. This counterintuitive finding aligns with the empirical study of Ashraf (2017) and Olson's theory of institutional sclerosis, which posits that politically stable societies promote powerful interest groups, including business lobbies and political elites, who prioritise their private interests over collective economic welfare (Olson 1982). Nevertheless, the study additionally finds that enhanced control over corruption mitigates the

negative effects of political stability on bank stability. Conversely, political stability enhances asset quality, and in fact, political stability exerts a more significant positive influence on asset quality than corruption control. Additionally, Islamic banks exhibit lower profitability and greater stability compared to conventional banks. State-owned banks exhibit higher profitability and stability; nonetheless, they carry heightened credit risk relative to privately held banks. This study advances the literature by demonstrating the moderating influence of corruption control on the association between political stability and banking performance, providing new perspectives on the performance of banks in oil-dependent GCC nations.

This study has significant policy ramifications for the GCC region. Policymakers must prioritise anti-corruption reforms to strengthen bank resilience and ensure political stability bolsters, rather than undermines financial results. Future research may examine the impact of additional governance measures, such as regulatory quality and the rule of law, and their interplay with corruption and political stability. A comparative analysis among regions could enhance the generalisability and contextual understanding of the findings. Future research may also seek to study non-linearities and thresholds in governance effects and assess the long-term impacts of governance improvements using dynamic panel models.

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Chapter 7: General Conclusion

7.1. Introduction

This thesis explores how NTBAs and national-level governance, particularly control over corruption and political stability, affect bank performance in the GCC region. It traced the evolution of banking from its early historical roots to the present era, where financial liberalisation, technological advancements, and intense competition have encouraged banks to engage more actively in different NTBAs such as fee-based services, trading and broking, investment advisory, and asset management (DeYoung and Torna 2013; Meslier et al. 2014; Kamani 2019; Landi et al. 2020). These non-interest-generating activities are operationally distinct from banks' traditional functions of deposit-taking and lending, and they require different skill sets and managerial capabilities. In theory, combining interest and non-interest income—each of which responds differently to market and economic fluctuations—should smooth earnings, reduce volatility, and enhance financial stability. However, in practice, NTBAs can increase banks' exposure to risk and operational complexity, potentially undermining long-term performance and resilience (Brunnermeier et al. 2020).

Concurrently, events such as the GFC have heightened the emphasis on national governance, emphasising that effective national governance is crucial for a strong and stable financial sector (Bektas et al. 2022; Kumar et al. 2023). The crisis demonstrated how weaknesses in regulations, governance, and political systems may result in significant issues within the financial industry (DeYoung and Torna 2013). Consequently, there is an increasing acknowledgement that banks function well within a broader framework encompassing legislation, political governance, and public institutions (Beck et al. 2006; Abuzayed et al. 2024). It is assumed that a country characterised by low corruption, stable governance, and an effective judicial system is more likely to enforce its banking regulations efficiently. Therefore, improving national governance is not only good for politics or society—it directly supports the

performance and stability of the banking industry. However, an alternative strand of research suggests that corruption may stimulate economic activity by enabling firms to bypass lengthy and burdensome bureaucratic procedures (Shleifer and Vishny 1993; Méon and Sekkat 2005; Aidt 2009; Chen et al. 2013). Moreover, sustained political stability under a long-standing regime can foster the rise of entrenched interest groups—such as powerful business lobbies and political elites—who prioritise their own interests over the collective public welfare, ultimately undermining economic efficiency and long-term growth (Olson 1982; Ashraf 2017; Jou et al. 2017).

This thesis addressed these dual concerns through four interconnected studies, two literature reviews and two empirical studies. The empirical investigation focuses specifically on the banking sector in the GCC region, contributing to a layered understanding of banking behaviour in an economic environment characterised by oil dependence, hybrid institutional structures, and dual Islamic–conventional banking systems. The GCC represents a structurally unique and economically transitioning region, making it a particularly relevant context for studying the interplay between banking practices and national governance.

The primary aim of the thesis is to examine the impact of NTBAs and national governance, in particular corruption control and political stability, on the performance of the banking industry in the GCC region.

The specific research objectives are:

1: To conduct a critical review of the NTBA research domain, emphasising its development, present impact, and prospective research trajectories.

2: To provide an in-depth review of the literature on the banking systems of the GCC region.

3: To analyse the determinants of NTBAs in banks within the GCC region.

4: To evaluate the influence of non-traditional income and income diversification on the profitability and stability of banks in the GCC region.

5: To examine the individual and interaction impacts of corruption control and political stability on the performance of banks in the GCC region.

Chapter 3 addresses Objective 1, while Chapter 4 addresses Objective 2. Both chapters are literature reviews. Chapter 5 focuses on Objectives 3 and 4 through empirical analysis, and Chapter 6 addresses Objective 5, also through empirical investigation.

7.2. Summary of Research Methods

The thesis comprises four interrelated chapters using distinct but complementary research methods. The methodological framework across the four empirical chapters adhered to a positivist paradigm and relied on quantitative techniques.

Chapter 3 and Chapter 4 adopt a bibliometric and content analysis approach, identifying the influential aspects, mapping the intellectual structure and recognising the gaps in the current literature about NTBAs and GCC banking, respectively. Chapter 3 analyses 309 articles published between 1986 and 2024, while Chapter 4 examines 199 articles focused on the GCC banking sector published between 2004 and 2022. Both studies employ several citation-based performance analysis and science mapping techniques, such as bibliometric coupling, co-citation, and keyword co-occurrence, employing Biblioshiny package within R software and VOSviewer software. Both studies are published in ABS-ranked peer-reviewed journals.

Chapters 5 and 6 utilise panel regression analysis, drawing on an unbalanced dataset of 94 and 88 banks, respectively, over the period 2012–2022. Chapter 5 employs the LSDV estimator to account for unobserved heterogeneity across banks, countries, and years. The analysis investigates the determinants of NTBAs and the impact of NTBAs and income diversification

on profitability and stability. Chapter 6 applies a similar LSDV model to examine the direct and interaction effects of corruption control and political stability on four performance metrics: profitability, stability, credit risk, and asset quality. In addition, marginal effects and margins plot analysis are used to explore how political stability's impact on banking performance varies with different levels of corruption control.

Both empirical chapters employ a robust set of bank-level, institutional, and macroeconomic control variables, with data sourced from BankFocus, the Worldwide Governance Indicators, and the World Development Indicators. Diagnostic tests (e.g., multicollinearity via VIF, Hausman tests for model selection) affirm the reliability of the empirical specifications.

7.3. Summary of Findings

This section provides a summary of the research findings from the three articles.

Paper-1: Non-Traditional Banking: Current State of Knowledge and Future Research Directions

This paper comprehensively reviews the NTBA research field by analysing a sample of 309 peer-reviewed articles published between 1986 and 2024 extracted from the WoS database. Using bibliometric mapping and content analysis, it traces the intellectual evolution of the NTBA literature, identifies leading contributors, and outlines future research directions. The analysis reveals that the NTBA research field has developed along two primary clusters: (1) studies surrounding the Glass-Steagall Act and Universal Banking, which focus on the early debate over the separation of commercial and investment banking; and (2) post-GLBA studies, which reflect the era of deregulation and financial innovation following the repeal of Glass-Steagall Act in 1999. Within the post-GLBA cluster, seven key sub-clusters were identified: (a) profitability and insolvency risk, (b) systemic risk, (c) efficiency, (d) market valuation, (e) lending behaviour and liquidity creation, (f) monetary policy, and (g) digitalisation and fintech

adoption. These sub-clusters collectively reflect how NTBAs have been studied through the lens of bank performance, risk exposure, and strategic adaptation in response to changing economic conditions and regulatory environments.

The evolution of NTBA research has been shaped by several key historical and economic events. Early debates were influenced by the Glass-Steagall Act of 1933, which legally separated commercial and investment banking in the United States (Kroszner and Rajan 1994), and the GLBA of 1999, which repealed that separation and initiated a new phase of financial deregulation and liberalisation (Fahlenbrach et al. 2011; DeYoung and Torna 2013). The GFC of 2007–2009 then prompted renewed scrutiny of banks' growing reliance on non-interest income and the systemic risks associated with NTBAs (Brunnermeier et al. 2020; Saunders et al. 2020). Going forward, NTBA research is likely to be shaped by the implications of Brexit, the COVID-19 pandemic, the Russia–Ukraine war, rising global inflation, and the resulting monetary tightening policies. These ongoing developments are expected to impact banks' income strategies and risk profiles and will likely drive future studies on how NTBAs perform under prolonged economic uncertainty and elevated interest rate environments.

The review also highlights that NTBA research is heavily skewed towards developed economies—particularly the United States—where most of the early and influential studies have been conducted. Regions such as the Middle East, including the GCC countries, South Asia, East Asia, and South America remain significantly underrepresented in this body of literature. This is a critical limitation given that regulatory structures, governance quality, and financial systems in these regions differ considerably from those in advanced economies, making direct generalisations problematic.

Paper-2: Banking Research in the GCC Region and Agenda for Future Research – A Bibliometric Examination

This paper provides an in-depth analysis of the banking literature in the GCC region, analysing 199 peer-reviewed articles published in 89 journals between 2004 and 2022. The bibliographic coupling analysis uncovers five dominant research clusters: (1) bank efficiency, (2) corporate governance (CG) and disclosure, (3) performance and risk-taking, (4) systemic risk, stability and risk spillovers, and (5) intellectual capital (IC). These clusters reflect the distinct characteristics and evolving priorities of banking research within a region shaped by oil dependence, Islamic ethics, and a dual banking structure comprising both conventional and Islamic financial institutions.

Among these five clusters, bank performance and risk-taking is the largest and most conceptually rich cluster, covering profitability, liquidity, credit risk, non-interest income, and capital adequacy. Within this cluster, the dimension of NTBAs or non-interest income is becoming increasingly prominent, particularly given the growing pressure on banks in the GCC to diversify revenue sources in response to economic diversification agendas (Ashraf et al. 2016; Abuzayed et al. 2018; AlKhouri and Arouri 2019).

The Islamic vs. conventional banking comparison appears consistently across multiple clusters (Alandejani et al. 2017; Alqahtani et al. 2017; Alexakis et al. 2019; Srairi et al. 2022). Furthermore, the issue of Shariah governance, positioned inside the corporate governance and disclosure cluster, emerged as particularly important. Several studies, such as Grassa (2016) and Elamer et al. (2020) highlight the dual role of Shariah Supervisory Boards in ensuring religious compliance and managing operational risk. Yet, the effectiveness of Shariah governance remains contested (Nawaz 2017; Ajili and Bouri 2018).

In summary, this review provides a comprehensive overview of the evolving but still fragmented body of literature on GCC banking. It emphasises the complex interplay between performance, risk, governance, and religious compliance, and calls for more context-specific research that captures the hybrid nature of banking systems in the GCC region.

Paper-3: Non-Traditional Banking and Income Diversification in the GCC region: Determinants, Profitability, and Stability

This study offers an empirical investigation into the determinants of NTBAs and the impacts of NTBAs and income diversification on the profitability and stability of the GCC region's banking sector from 2012 to 2022. The analysis is framed within the theoretical perspectives of financial intermediation theory and modern portfolio theory.

The study reveals that more profitable, more cost-efficient, and less liquid banks are more likely to engage in NTBAs. Additionally, banks with lower stability are also significantly more involved in NTBAs, suggesting that these activities may be employed as compensatory mechanisms to offset declining margins from traditional interest-based lending. Islamic banks, constrained by Shariah principles prohibiting interest, show a systematically higher reliance on non-traditional income—particularly fee-based and asset-backed contracts. These findings reinforce earlier literature suggesting that fee-income reliance is structurally embedded within Islamic finance (Beck et al. 2013; Alqahtani et al. 2017). Moreover, the study finds that stronger institutional quality is associated with lower engagement in NTBAs, possibly due to stricter regulatory oversight. Conversely, greater economic freedom encourages banks to expand into non-traditional activities, supporting the view that deregulation promotes diversification (Fahlenbrach et al. 2011; DeYoung and Torna 2013; Brunnermeier et al. 2020).

The study finds evidence in support of financial intermediation theory by demonstrating that NTBAs have a positive and statistically significant effect on profitability. Revenue streams

from different non-interest income-generating sources allow banks to leverage customer relationships and informational synergies, aligning with the predictions of Diamond (1984) and Kroszner and Rajan (1997). However, when diversification is measured either between interest and non-interest income or across non-interest sources, the effects on profitability are negative. These findings challenge the assumptions of modern portfolio theory (Markowitz 1952), which predicts that combining less correlated income sources should reduce volatility and enhance performance. Instead, the result suggests that diversification may increase managerial complexity and operational inefficiency, particularly in institutional contexts with constrained human capital and infrastructure.

Finally, the study finds that all forms of income diversification are negatively associated with bank stability. This result diverges from portfolio theory's core assumption of risk reduction via income smoothing and aligns more closely with critical perspectives that argue NTBAs introduce higher earnings volatility and elevate systemic risk (Stiroh and Rumble 2006; Brunnermeier et al. 2020). The instability may arise more prominently when banks lack the internal capabilities required to manage multiple income streams that demand distinct skill sets, technological infrastructures, and governance arrangements. Overall, the empirical evidence of this study aligns with DeYoung and Roland (2001) and Demirguc-Kunt and Huizinga (2010), who argue that NTBAs enhance profitability but greater diversification into NTBAs increases bank risks, and with Berger et al. (2010), who highlight the managerial burden and potential inefficiencies in diversified banking models in less developed financial systems.

Paper-4: Control of Corruption, Political Stability, and Banking Performance: Evidence from the GCC Countries

This study presents an empirical investigation into the effects of control over corruption and political stability on the performance of banks in the GCC region. Using panel data from 88

banks from six GCC countries over the period 2012–2022, the study evaluates four key performance dimensions: profitability, financial stability, credit risk, and asset quality.

The findings confirm that greater control of corruption enhances profitability, improves bank stability, reduces credit risk, and strengthens asset quality. These results are consistent with the "sand the wheels" hypothesis (Cooray and Schneider 2018), which argues that corruption undermines financial efficiency and institutional performance by increasing operational inefficiencies, distorting resource allocation, and eroding public trust. Empirical support for these effects is found in prior studies by Ho et al. (2019), Kumar et al. (2023) and Abuzayed et al. (2024), all of which emphasise that lower corruption facilitates more prudent lending, lowers loan default rates and encourages merit-based financial intermediation.

In contrast, political stability exhibits a more complex and conditional influence. On one hand, political stability exerts a positive effect on asset quality, indicating that stable governance environments foster borrower discipline and repayment reliability. On the other hand, political stability has a negative effect on bank stability when corruption control is weak. This counterintuitive finding aligns with Olson's theory of institutional sclerosis (Olson 1982), which posits that prolonged political stability, in the absence of institutional accountability, allows political elites and interest groups to exploit the system, leading to inefficiency, favouritism, and regulatory capture. These dynamics may weaken banking supervisory discipline and promote risky or politically motivated lending—ultimately eroding banking resilience.

The interaction between political stability and control over corruption is statistically significant for bank stability, but not for profitability, credit risk, or asset quality. This suggests that while both governance dimensions independently influence bank performance, their joint effect is most pronounced in shaping banking stability. The evidence indicates that the benefits of

political stability on banking stability are contingent upon the effectiveness of anti-corruption measures.

7.4. Contribution to Academia

This thesis advances academic knowledge in banking, finance, and institutional governance by integrating two critical yet underexplored themes in emerging market contexts: bank-level income diversification through non-traditional banking activities (NTBAs) and country-level governance, specifically corruption control and political stability. It investigates how these dimensions affect different measures of banking performance, such as profitability, stability, credit risk, and asset quality, within the distinct institutional and economic setting of the GCC.

While income diversification has been extensively studied in developed economies, its dynamics in emerging contexts such as the Gulf Cooperation Council (GCC) remain insufficiently understood. This represents a critical gap in the literature, as the GCC region is structurally distinct from developed economies due to its state-dominated banking systems, oil-dependent macroeconomic environment, and dual banking structure comprising both Islamic and conventional banks. These factors can influence both the underlying motives for, and the resulting consequences of, diversification, leading to outcomes that may be very different from those seen in developed or other emerging economies. For instance, state ownership may reduce competitive pressure and encourage politically influenced lending, while Islamic banks, constrained by Shariah law, tend to engage more in fee-based services, thus shaping unique NTBAs profiles and risk-return dynamics. Additionally, in recent years, GCC banks have been increasingly diversifying into NTBAs in response to economic diversification agendas and declining interest margins, making this an appropriate, timely and policy relevant topic of investigation.

National-level governance, especially the roles of corruption control and political stability, is a relatively new theme in banking research and has not yet been systematically explored in the context of GCC countries. These two dimensions capture deeper institutional characteristics that influence both market discipline and regulatory enforcement. No prior study has jointly assessed the influence of these governance factors on multiple dimensions of bank performance, including profitability, stability, credit risk, and asset quality, in the GCC region.

By integrating these two distinct research streams, NTBAs at the micro (bank) level and governance at the macro (country) level, this thesis offers a novel, multidimensional understanding of how internal banking strategies and external institutional conditions interact to shape banking outcomes in a unique regional setting. This dual focus is a distinctive contribution to the academic literature and sets the thesis apart as an original and comprehensive study of GCC banking.

The thesis draws on multiple theoretical frameworks to guide its analysis. Financial intermediation theory (Diamond 1984) explains how diversification into NTBAs may allow banks to leverage informational advantages and enhance client relationships, while portfolio diversification theory (Markowitz 1952) suggests that combining income sources with low correlation should reduce earnings volatility. However, this thesis finds evidence that challenges the assumptions of modern portfolio theory, especially in contexts where internal operational capacity is limited or diversification leads to operational overstretch. Furthermore, the study of governance is grounded in the "sand the wheels" and "grease the wheels" perspectives on corruption (Cooray and Schneider 2018), which debate whether corruption impedes or facilitates financial activity, as well as Olson's (1982) theory of institutional sclerosis, which posits that long-standing political stability can enable rent-seeking by entrenched elites. By empirically testing these theories in the GCC context, the thesis not only

validates but also refines their applicability in bank-based, state-influenced, and oil-reliant economies.

Chapter 3 provides the first comprehensive review of the NTBAs research field. While many finance scholars have examined NTBAs from various perspectives, no prior study has systematically reviewed the field to capture its complexity. This research traces the historical development of NTBA studies, identifying two main thematic clusters and seven detailed sub-clusters, including topics such as profitability, risk, fintech, and systemic stability. The paper additionally presents a graphical overview of the NTBAs research field, visually mapping the intellectual structure of the literature. By integrating insights from financial intermediation theory, modern portfolio theory, and agency theory, the study clarifies how NTBAs can enhance profitability while also increasing risk. The review also finds that NTBA research is heavily concentrated in developed economies, especially the United States and Western Europe, and highlights a lack of focus on emerging markets. This points to the need for more research in regions like the GCC, where distinctive features such as state ownership and Islamic banking create unique dynamics that influence how NTBAs affect bank performance.

Chapter 4 provides the first bibliometric and content-based review of banking research in the GCC region, identifying five distinct research clusters: bank efficiency, corporate governance and disclosure, performance and risk-taking, systemic risk and financial stability, and intellectual capital. This taxonomy enhances theoretical awareness of the dominant and emerging themes in GCC banking research. It also offers critical insight into gaps in the literature—particularly those related to governance, institutional structures, and the dynamics of Islamic banking. The study further identifies underexplored areas such as board heterogeneity, political affiliations of CEOs, and Shariah governance. These findings lay the foundation for deeper interdisciplinary research between banking and political economy in a

region where financial systems are strongly influenced by state control and religious compliance mechanisms.

Chapter 5 presents an empirical analysis of the determinants and effects of NTBAs and income diversification in GCC banks. The findings show that while non-interest income positively affects profitability, greater income diversification, whether between interest and non-interest sources or within non-interest components, reduces both profitability and stability. This challenges modern portfolio theory's (Markowitz 1952) assumptions that diversification inherently reduces risk through revenue smoothing, particularly in emerging markets with underdeveloped financial infrastructure and constrained managerial capacity. This novel finding suggests that in the GCC context, characterised by a dual banking system and concentrated state ownership, excessive complexity and managerial inefficiency in handling diverse income streams may undermine banking performance (Berger et al. 2010).

Chapter 6 conducts the first empirical assessment of how control over corruption and political stability affect banking performance in the GCC region. This study introduces a multi-dimensional framework by examining, both the direct and interaction effects of these governance indicators on profitability, stability, credit risk, and asset quality. The results confirm that control over corruption significantly enhances all performance dimensions, lending strong support to the "sand the wheels" hypothesis of corruption (Cooray and Schneider 2018). Meanwhile, political stability has a context-dependent impact, improving asset quality but reducing stability when corruption control is weak, thus validating Olson's theory of institutional sclerosis (Olson 1982). The interaction analysis demonstrates that political stability becomes beneficial to banking stability only when supported by a strong anti-corruption mechanism, highlighting the complementarity of governance dimensions. This highlights a key contribution to the institutional economics literature: governance components' combined effects may differ from their individual influences. These findings deepen our

understanding of how institutional quality mediates the relationship between governance and financial performance in hybrid political economies characterised by oil wealth, monarchy, and dual financial systems.

In summary, this thesis makes original and multi-layered academic contributions to the fields of banking, finance, and institutional governance, particularly within the context of emerging and hybrid financial systems. It offers the first systematic bibliometric review of the NTBA literature and the GCC banking literature, both of which reveal underexplored areas and fragmented intellectual development. Through two robust empirical studies, the thesis advances theoretical debates by demonstrating that the effects of NTBAs and governance variables are context-dependent and not always consistent with predictions of classical theories such as modern portfolio theory or institutional quality frameworks. These contributions enrich theoretical understanding of banking practices in under-researched, oil-dependent, dual-system economies and lay the groundwork for future comparative and interdisciplinary research.

7.5. Practical Implications

Beyond its academic contribution, this thesis provides actionable insights for policymakers, regulators, and banking professionals in the GCC, a region where financial systems are structurally shaped by state dominance, oil dependence, and dual banking systems. The findings highlight that non-traditional banking activities (NTBAs), while associated with improved profitability, may simultaneously increase insolvency risk and undermine stability in the absence of appropriate managerial expertise, internal controls, and regulatory supervision. This is especially relevant for regulators in the GCC, where banks have recently accelerated diversification into trading, fee-based services, and advisory income in support of national economic reform agendas such as UAE Vision 2021, Saudi Vision 2030, Qatar National Vision 2030, and Kuwait Vision 2035 (Khan et al. 2020). All these initiatives share a commitment to

comprehensive economic diversification, with the financial sector, particularly banking, serving as a fundamental pillar for fostering growth in non-oil sectors, supporting private businesses, and improving national competitiveness (Callen et al. 2014; Saxena and Al-Hadrami 2017; Mishrif and Al Balushi 2018).

Regulators designing banking sector reforms in line with national economic reform agendas such as Saudi Vision 2030 or UAE Vision 2021 should note that banks with greater NTBA reliance showed lower stability, suggesting the need to strengthen supervisory frameworks, particularly in relation to risk management and reporting standards for non-interest activities. The thesis also reveals that Islamic banks, constrained from earning interest income, are systematically more reliant on NTBAs. This insight calls for tailored policy measures for Islamic banks, such as capacity-building in fee-based services and Shariah-compliant risk mitigation tools, to ensure their NTBA exposure does not compromise institutional resilience.

From a governance perspective, the study shows that corruption control significantly improves profitability, stability, asset quality, and reduces credit risk, while political stability alone does not guarantee positive outcomes unless accompanied by strong anti-corruption mechanisms. This has direct implications for policymakers and supervisory authorities in the GCC, where political environments are stable, but corruption concerns persist.

Anti-corruption bodies and central banks in GCC countries should coordinate efforts to strengthen transparency and enforcement, as the study finds that the interaction between corruption control and political stability is crucial, only when both are strong do banks experience improved stability.

Additionally, state-owned banks were found to be more profitable and stable but also exhibit higher credit risk. This suggests that state ownership may provide implicit stability through government backing but could also lead to moral hazard and politically motivated lending.

Policymakers must therefore balance the benefits of state involvement with mechanisms that ensure credit discipline and accountability, such as enhanced governance frameworks and independent risk oversight.

In dual banking systems, where Islamic and conventional banks operate side by side, the research also warns of institutional strain due to parallel regulatory obligations, especially when banks offer both conventional and Islamic products. Regulatory coordination and clearer supervisory guidelines can reduce inefficiencies and improve overall system resilience. Because Islamic institutions are required to follow both general banking regulations and specific Shariah-compliant regulations, this results in a complex institutional environment. Similarly, traditional banks offering Islamic banking services through dedicated 'Islamic banking windows' are required to conform to Shariah-related rules alongside regular general banking standards. Additionally, when Islamic and conventional banks engage in transactions with each other, such as interbank lending or liquidity management, they must be aware of the varying legal and ethical frameworks to ensure compliance with both conventional standards and Shariah principles. Consequently, both types of banks may necessitate parallel systems for compliance, risk management, and product development. This can result in an interruption in managerial focus and a strain on resources, particularly in banks that lack specialised expertise.

Furthermore, if banks also participate in a variety of non-traditional banking activities, such as fee-based services, trading income, or off-balance-sheet operations, this introduces an additional layer of complexity. These operations frequently need diverse skill sets, technical expertise, risk management strategies, and regulatory compliance systems. The convergence of these needs might result in considerable difficulties in maintaining management efficiency and operational diligence. Regulators and practitioners in the GCC and similar contexts should be acutely aware of these issues when designing or implementing banking policy. The

uncritical adoption of Western regulatory frameworks may prove counterproductive if they fail to reflect local institutional realities.

In summary, the thesis provides a robust, evidence-based platform for GCC policymakers and financial regulators to align banking strategies with national development goals. It underscores the need for region-specific regulatory frameworks that account for unique institutional characteristics, including oil dependence, state influence, and religious compliance. Importantly, it shows that strengthening national-level governance is not just a political necessity but a financial imperative, especially in systems seeking to transition from resource-based to diversified economies.

7.6. Limitations and Future Research Directions

While this thesis makes important contributions to the understanding of NTBAs and governance in the context of banking performance, several limitations must be acknowledged. These limitations also point toward valuable opportunities for future research.

The first paper provides a comprehensive bibliometric and content-based review of the global NTBA literature, but it is limited by its reliance on citation data from the WoS and on English-language publications. As a result, recent influential studies or those published in regional or non-English journals may be underrepresented. Furthermore, the clustering techniques used to prioritise the most cited articles may exclude emerging but relevant themes. Future research could address these gaps by including additional databases such as Scopus or Google Scholar, expanding the language scope, or adopting structured literature reviews and meta-analysis techniques. Further work could also explore how NTBAs interact with evolving technologies like digital banking and fintech, and whether their effects differ across institutional environments.

The second paper focuses on the GCC region but similarly limits its review to articles indexed in WoS and published in English. As a result, potentially important insights from local journals or Arabic-language sources may be excluded. The bibliometric method also gives more weight to highly cited studies, which may not fully reflect the diversity or quality of contributions in less-explored topics. Future research could include additional databases, integrate qualitative methods such as expert interviews, and investigate underexplored themes identified in the study, such as board diversity, CEO political connections, and the operational effectiveness of Shariah supervisory boards. The inclusion of Islamic social finance, fintech, and ESG (Environmental, Social, and Governance) factors could also enrich the understanding of banking in the GCC.

The third paper provides valuable insights into how GCC banks engage in NTBAs and income diversification. However, some limitations remain. The analysis also does not account for differences in internal risk governance, such as the role of audit committees or risk oversight, which may influence how banks manage diversification. This is particularly relevant in the GCC, where such structures may vary across state-owned and Islamic banks. Additionally, the study does not examine how external factors, such as oil price shocks, interest rate changes, or regional instability, may alter the impact of diversification. Future work could apply models that account for these changing conditions. Finally, while Islamic banks are included, the study does not explore variations within them, such as differences in Shariah governance, which could shape their approach to NTBAs. Moreover, comparative studies involving other dual banking systems in Southeast Asia, South Asia, or North Africa could test the applicability of the findings beyond the GCC. A more detailed classification of NTBAs by product line or business model, along with bank-level data on risk governance, would further refine the understanding of how diversification impacts performance.

The fourth paper uses two key national governance indicators, control over corruption and political stability, from the WGI. These are perception-based measures and may not fully reflect institutional practices or informal governance mechanisms in the GCC. Future research may use other indicators of control over corruption and political stability. Moreover, the focus on only two governance dimensions may omit other important factors such as the rule of law, regulatory quality, and judicial independence. Future studies could use alternative governance indicators or country-specific indices and adopt dynamic models to assess long-term effects. There is also scope to explore threshold or non-linear effects and to examine how governance interacts with state ownership or Islamic banking in shaping performance outcomes.

The thesis is unified in its focus on the GCC region. While this provides deep contextual insight, it limits the global applicability of the results. Future work could benefit from comparative cross-regional designs to assess whether the patterns observed in the GCC hold in other emerging or hybrid financial systems. Furthermore, qualitative approaches—such as interviews with bank executives, regulators, or Shariah scholars—could complement the quantitative findings and provide a richer, more grounded understanding of institutional dynamics, risk behaviour, and governance practices.

Overall, future research should continue to explore how institutional quality, market structure, and bank ownership interact to shape the evolving role of NTBAs and governance in emerging financial systems. A more granular focus on income stream composition, governance architecture, and organisational capabilities will further enhance the relevance of findings for both academic and policy audiences.

7.7. Chapter Summary

This concluding chapter provides a concise summary of the research methods employed and the key findings of this PhD thesis. It also presents the thesis's academic contributions and practical implications, acknowledges its limitations, and suggests directions for future research.

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