




“Bank capital management in emerging and frontier markets: Bibliometric analysis”

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BANK CAPITAL MANAGEMENT IN EMERGING AND FRONTIER MARKETS: BIBLIOMETRIC ANALYSIS

Abstract

Bank capital management plays a crucial role in guaranteeing financial stability, particularly in emerging and frontier markets, where economic volatility, regulatory constraints, and financial market underdevelopment present significant challenges. This study aims to conduct a bibliometric analysis to explore investigation trends, emerging themes, and regional disparities in bank capital management. The research methodology includes a systematic review of 1,031 relevant documents from the Scopus database, analyzed using VOSviewer and Biblioshiny to visualize and assess the evolution of academic discourse. The findings reveal that research on bank capital management has grown significantly since the 1980s, with a mean annual growth rate of 26.2%, particularly following financial crises. Most publications originate from the USA, UK, India, China, and Australia, with key contributions from institutions like the IMF and the World Bank. Thematic analysis shows a shift from broad economic and financial studies towards specialized topics like digital banking, fintech, and capital structure adjustments. Co-authorship and citation analysis highlight strong academic collaboration, particularly within Southeast Asia and Anglo-American networks. Despite the growth in literature, significant research gaps persist. There is a lack of comprehensive studies on African and Latin American banking systems, with a predominant focus on Asian emerging markets. While risk management and regulatory compliance remain central themes, empirical research on capital structure adjustment, particularly the speed at which banks adapt to Basel III requirements, remains fragmented. Additionally, climate-related financial risks and sustainable finance are underexplored areas despite their growing importance in global banking stability.

Keywords

bank, capital, management, emerging market, frontier market, bibliometric, VOSviewer, Biblioshiny

JEL Classification

G21, G32, E58, O16

INTRODUCTION

Bank capital management is a critical component of financial stability, influencing a bank's ability to absorb shocks, maintain lending capacity, and comply with regulatory frameworks. In emerging and frontier markets, capital management faces unique challenges, including economic volatility, regulatory fragmentation, and underdeveloped financial markets. The actual reality of capital management in these economies presents a mix of resilience and vulnerability, shaped by both local and global forces. The Basel III framework, introduced after the 2007–2009 financial crisis, was developed by the Basel Committee to strengthen banking regulation, risk management, and oversight. Its standards apply to all internationally active banks, with members required to implement them on schedule, significantly influencing global bank capital management.

While developed economies follow well-established regulatory frameworks of Basel III, many emerging and frontier markets have difficulty implementing it due to limited supervisory capacity due to a lack of the expertise and infrastructure to enforce complex capital regula-

tions, inconsistent adoption of Basel norms or adoption of only partial versions of Basel regulations, creating an uneven playing field for domestic and foreign banks; high sovereign risk of banks caused significant amounts of government securities in the portfolio of actives of the banks, impacting capital adequacy calculations, etc.

Banks in emerging markets often face higher credit risk due to weak enforcement of credit discipline, which leads to higher non-performing loans; many banks focus lending on specific sectors, such as real estate or agriculture, increasing the problems of concentrated lending portfolios and risk exposure and many emerging economies have volatile exchange rates, which affect capital levels for banks with foreign-denominated liabilities.

Raising capital in emerging and frontier markets is often more challenging due to underdeveloped financial markets and limited access to global funding sources. Thus, profits retained for reinvestment remain a primary capital source because stock market underdevelopment in many emerging markets restricts the ability of banks to raise capital via equity issuance. Other sources could be government support when governments provide direct recapitalization or support state-owned banks, and international institutions, such as the International Finance Corporation or regional development banks, provide capital support, but such sources have many limitations.

Emerging and frontier markets are susceptible to global financial conditions, such as capital inflows-outflows, that pressure banks' funding sources. Additionally, many emerging economies rely on commodity exports, so commodity price fluctuations influence banking sector stability. Also, sanctions, trade disputes, and regional conflicts can directly impact capital availability and banking operations.

Fintech and digital banking innovations are transforming bank capital management in these markets. Crowdfunding, peer-to-peer lending, and digital banking models provide new capital-raising opportunities and challenges. Digital banking expands financial access, increasing the deposit base and improving banks' capital positions.

The realities of bank capital management in emerging and frontier markets reflect a combination of progress and persistent challenges. While regulatory improvements and financial innovation provide new opportunities, vulnerabilities remain due to economic volatility, regulatory limitations, and funding constraints. Strengthening capital management through regulatory reforms, diversified funding strategies, and technological advancements is essential for ensuring long-term financial stability in these markets.

1. LITERATURE REVIEW

Bank capital management plays a crucial role in providing financial stability, particularly in emerging and frontier markets where economic volatility, regulatory constraints, and financial inclusion challenges shape the banking sector. Effective capital management enhances banks' resilience against financial shocks, strengthens risk management strategies, and supports economic growth by facilitating efficient credit allocation. Key research themes in bank capital management in emerging and frontier markets are bank risk and capital management, banking perfor-

mance and capital management, financial fraud and banking reputation, Islamic banking and its specific capital management, and last but not least, capital structure and speed of adjustment. These themes are critical because they address the fundamental challenges and opportunities that banks in these markets face, ensuring their resilience, efficiency, and stability.

A significant body of research explores bank risk as an essential capital management component. Qi et al. (2023) map publications on bank risk, covering topics such as risk management adoption, banking crises, and the relationship between corporate

governance and bank risk. Espinosa et al. (2023), Szüle (2023), and Sang (2024) examine various domains of banking risk (including operational, governance, liquidity, commercial, credit, market, and their interactions). Additionally, Vashisht et al. (2022) investigate risk modeling as a foundation for enhanced supervisory mechanisms and internal controls, emphasizing its role in strengthening bank capital frameworks.

Another strand of literature focuses on banking performance as a counterpart to risk management within the broader context of capital management. Ray (2024), Chiad and Gherbi (2024), and Azzaoui et al. (2023) analyze how banking performance is interlinked with capital adequacy. Alam et al. (2021) identify three major themes in bank performance research: efficiency measurement, corporate governance effects, and economic growth impact. Azzabi and Lahrichi (2023) explore key determinants of bank performance, while Buriak et al. (2015), Kozmenko and Belova (2015), and Alzoubi et al. (2022) highlight systemically important banks as the most vulnerable institutions requiring strong capital management frameworks. Fakhar et al. (2023) assess financial turbulence in the banking sector, with Farok (2023) specifically analyzing crises affecting multiple banks.

Several studies examine financial fraud and its implications for bank capital management. Nath and Chowdhury (2021) review the literature on shadow banking, discussing its impact on regulatory frameworks. Steenbergen et al. (2023) explore the link between ethical board leadership, financial sector ethics, and occurrences of unethical workplace behavior. Additionally, banking reputation is an emerging research theme, with Vasylyeva et al. (2014) and Carè et al. (2024) analyzing its impact on financial stability and trust in banking institutions.

Numerous studies focus on capital management within Islamic banks. Research by Hassanein and Mostafa (2023), Husain and Mustafa (2023), Aspiranti et al. (2023), and Maulida (2024) investigates various aspects of capital adequacy in Islamic banking. Isnurhadi et al. (2021) evaluate the correlation among bank capital, efficiency, and risk in Islamic banks. Fahamsyah and Ainulyaqin (2023) provide a comprehensive overview of prof-

it and loss sharing in Islamic banking, tracking its evolution over five years. Pambuko and Sriyana (2023) map future research paths by analyzing sources on spin-off solutions in such types of banking. Firmansyah (2023) investigates the function of Islamic economic papers in shaping the stability of the financial system. Alshater et al. (2022) highlight four key research streams: legal frameworks, performance and risk management, customer perspectives, and efficiency dynamics in Islamic banking. Evania and Aam (2021) assess the impact of COVID-19 on such types of finance and banking activity globally.

A separate research direction focuses on the speed of capital structure adjustment, where scholars examine how banks adapt their capital structures over time. Investigations by Hegde et al. (2022) and Vasylyeva et al. (2014) provide insights into capital adjustments, regulatory influences, and economic conditions affecting banking decisions.

Prestigious institutions such as the International Monetary Fund, the Bank for International Settlements, and the World Bank contribute significantly to bank capital management research. Allen et al. (2016), München and Kimura (2020, 2023, 2024), and Kovalenko et al. (2022) provide in-depth analyses of capital adequacy, financial stability, and macroprudential regulations, further enriching the discourse on capital management strategies in emerging and frontier markets.

Emerging challenges for bank capital include the impact of digital banking and fintech, which require adaptations to new risk profiles and business models (World Economic Forum, 2024; Hrytsenko et al., 2024; Belhadi et al., 2023; Ponomarenko et al., 2024). Advanced analytics, AI, and big data now support risk assessment and real-time capital management, increasing banks' agility in changing markets (Zubenko, 2023; Okwechime, 2023; Shafranova et al., 2024). Additionally, recent models in quantum economics integrate uncertainty and superposition principles to address complex financial problems (Holtfort & Horsch, 2024).

Sustainable finance is also a growing focus, with climate-related risks posing challenges to financial stability. While Basel III offers limited coverage of these risks, banks are beginning to integrate

climate concerns into capital strategies, promoting sustainable finance (Berenguer et al., 2020; Elderson, 2024; Vasylieva et al., 2014).

The literature on bank capital management in emerging and frontier markets underscores its interdisciplinary nature, encompassing risk management, banking performance, financial fraud, Islamic banking, and capital structure adjustments. The findings highlight key regulatory and technological influences, as well as evolving frameworks to enhance capital efficiency. However, research gaps remain, particularly regarding the long-term effects of regulatory reforms, the role of alternative financing models, and the integration of digital transformation in capital adequacy strategies.

This study aims to conduct a bibliometric analysis to explore investigation trends in bank capital management, identifying emerging themes, regional disparities, and future research directions to inform policy and academic discussions.

2. METHODOLOGY

In academic research, database search tools like Scopus and Web of Science prioritize individual articles over journals, so authors craft engaging

titles to attract readers, aiming for higher citations and visibility (Hyland & Zou, 2022). Headings and keywords are crucial for this visibility, as they help summarize the core concepts of research, making papers easier to locate and connect within specific fields (Sampagnaro, 2023). Author keywords highlight a study's focus and hypothesis, often guiding dataset creation in studies using Scopus (Kwon, 2018; Lu et al., 2020).

For this study, terms from titles, abstracts, and keywords are treated as equivalent, following Bibliometrix's guidance (Bibliometrix, 2024) to use Scopus for bibliometric analysis on sustainable development in the agri-food industry, as it includes diverse content types like conference proceedings in addition to articles.

2.1. Data screening

Given the interdisciplinary nature and wide appeal of the research topic, specific selection criteria were applied for bibliometric analysis. Only articles, books, book chapters, and conference materials were included, with no language or publication timeframe restrictions to accommodate the international scope and social relevance of the subject. This inclusive approach, without limiting the research scope, led to the identification of 1,031

Table 1. Steps of the literature search and selection process

Step	Filters	Result
Step 1: Data collection		
Selection of an acceptable database for data	Scopus Database	–
Detection of the search field in the database	Title, abstract, keywords	–
Choosing search keywords	bank AND capital AND management AND emerging AND market OR bank AND capital AND management AND frontier AND market OR bank AND capital AND management AND developing AND market	1525 publications
Step 2: Data screening		
Detection of the type of the publication	Journal articles, book series, books, chapters of books, and conference papers only	1467 publications
Choosing the limitation of the document's language	No limitations or exclusions of any language	1467 publications
Choice of the field of publication	No limitations and exclusions of subject area	1,467 publications
Setting the publication's time limits	No limitations on time periods for publishing the documents	1,467 publications
Step 3: Bibliometric analysis		
Tools	VOSviewer 1.6.16, Bibliometrics and Biblioshiny App, Microsoft Excel	Visualization maps, charts, tables

relevant documents from the Scopus database for further analysis.

The study used advanced tools like Scopus, VOSviewer 1.6.16, and the Bibliometrix R package Biblioshiny to analyze the bibliometric landscape of inclusive growth literature, each tool offering distinct functions for visualizing and exploring bibliometric networks. The methodology is presented in Table 1.

3. RESULTS

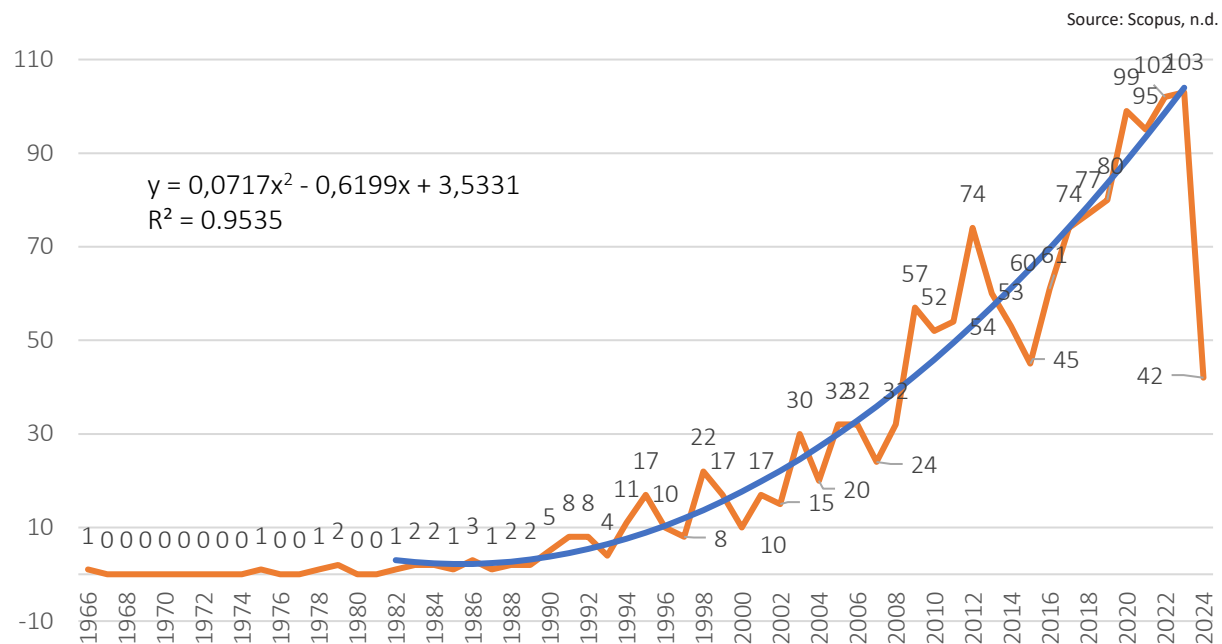
The study period was not limited, expecting sustained scientific interest in bank capital management in emerging and frontier markets. This expectation aligns with the first indexed publication on this topic in Scopus, dating to 1966 (Kurihara, 1966), which discusses how net investment relates to the marginal efficiency of capital influenced by tax rates and depreciation.

Publication trends show minimal activity until 1982, with only five articles from 1966 to 1981. Between 1982 and 2023, publication activity increased gradually, with an average annual growth of 26.2% and spikes following financial crises. This

trend, shown by the polynomial of the second-degree type, with $R^2 = 0.9535$, reflects a 10,200% rise in publications by 2023 compared to 1982 (see Figure 1).

The findings show that bank capital management issues in emerging and frontier markets are mainly covered in Scopus under Economics, Econometrics, and Finance (40.45% of publications), with Business, Management and Accounting, and Social Sciences following closely. Together, the top three fields comprise 83.46% of publications, emphasizing that solutions to these issues largely emerge from economic, financial, and social science perspectives (Figure 2).

The analysis by country showed that researchers with United States, United Kingdom, India, China, and Australia affiliations mostly explored the problems of bank capital management in emerging and frontier markets. The top 10 countries' / territories' affiliation of the researchers who examined the analysis of bank capital management in emerging and frontier markets published 50.57% of all documents. The top 20 countries' / territories' affiliation of the investigators who studied the topic of bank capital management in emerging and frontier markets according to Scopus and af-



Note: Orange – the annual number of publications, blue – trend 1982–2023.

Figure 1. Dynamic range of documents on the topic of bank capital management in emerging and frontier markets

Source: Scopus, n.d.

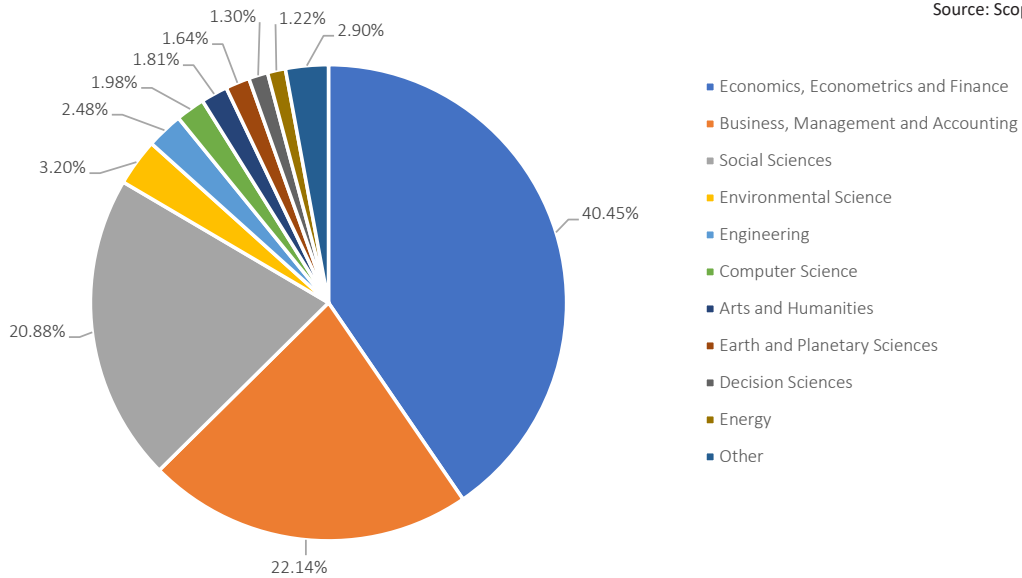


Figure 2. Published documents on the topic of bank capital management in emerging and frontier markets

filiated with more than 22 documents linked with 65.6% of all publications on this topic. They and undefined countries/territories, as well as other (grouped countries/territories affiliation of the scientists published in less than 22 documents), are shown in Figure 3. The authors from other countries/territories (85) and countries/territories that were not identified published almost 34.4% of all documents (Figure 3).

VOSviewer tools enable in-depth analysis of author relationships across countries. In co-authorship, the largest cluster incorporates adjacent Australia, New Zealand, and Southeast Asian countries, with the USA and UK acting as connectors across clusters. The USA has longstanding collaborations, often with Argentina and Chile, while the UK collaborates more broadly, including with Belgium and Greece.

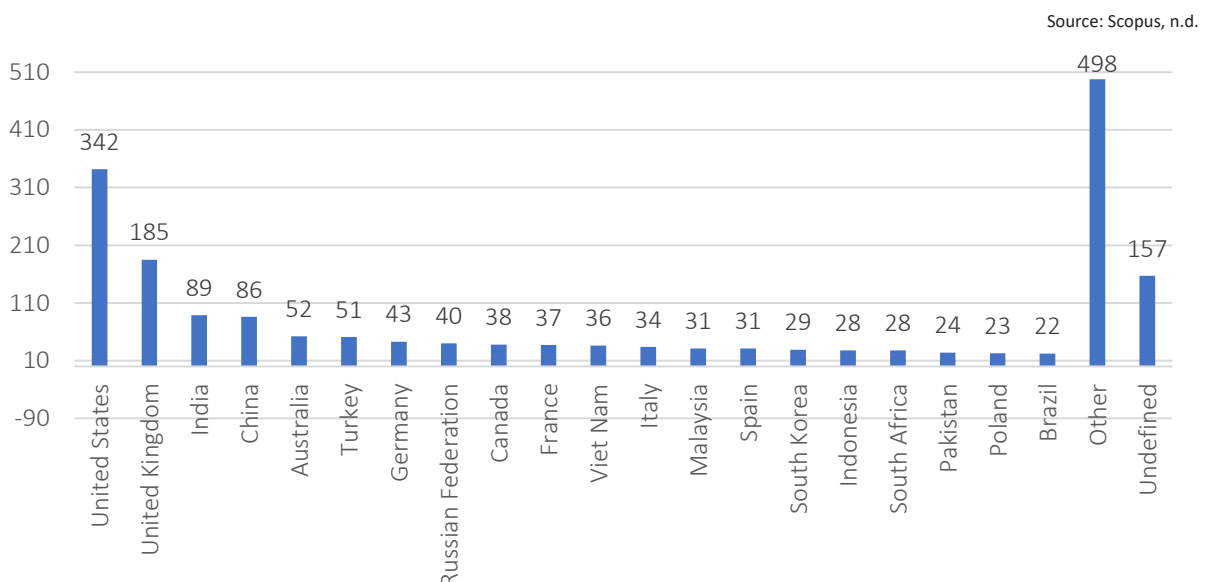


Figure 3. Top 20 countries/territories, undefined and others ones (grouped countries/territories by affiliation of scientists who published less than 22 documents), affiliated with more than 22 documents on the topic of bank capital management in emerging and frontier markets, based on the Scopus sample

Table 2. Number of published documents on the topic of bank capital management in emerging and frontier markets according to the Scopus database by institution of author affiliation

Source: Scopus, n.d.

No.	Institutions	Documents
1	International Monetary Fund	49
2	The World Bank, USA	41
3	National Bureau of Economic Research	14
4	Asian Development Bank Philippines	13
5	Stanford University	11
6	University of Ghana Business School	11
7	London School of Economics and Political Science	10
8	Bank for International Settlements	10
9	Peking University	10
10	University of California, Berkeley	10
11	University of Economics Ho Chi Minh City	10

Note: Top 11 affiliated institutions with more than 10 publications.

Citation analysis shows that authors from the USA and UK are most frequently cited, with unique patterns, such as Portugal being cited primarily by specific countries. Bibliographic coupling reveals that major clusters include the USA, UK, Argentina, and Greece, with another large group consisting of Asian and African nations, plus Romania. This reflects both regional partnerships and global citation patterns in bank capital management research.

Considering the topic's importance, institutions like the Bank for International Settlements, IMF, World Bank, and various central banks are top-affiliated entities, each contributing over ten publications on bank capital management, especially within emerging markets (Table 2).

The most cited documents on the topic of bank capital management in emerging and frontier markets, according to the Scopus database, are the book by Dani Rodrik (2008), which explores how successful economic development in poor countries depends on locally tailored strategies rather than universally prescribed globalisation policies, challenging both pro- and anti-globalization extremes and the article by Demircuc-Kunt and Huizinga (1999), which demonstrates that variations in interest margins of the banks and their profitability, which are influenced by several factors: features of the banking, state of the economic environments, direct and indirect bank taxation, type of the system and features of deposit insurance, general financial architecture, and indica-

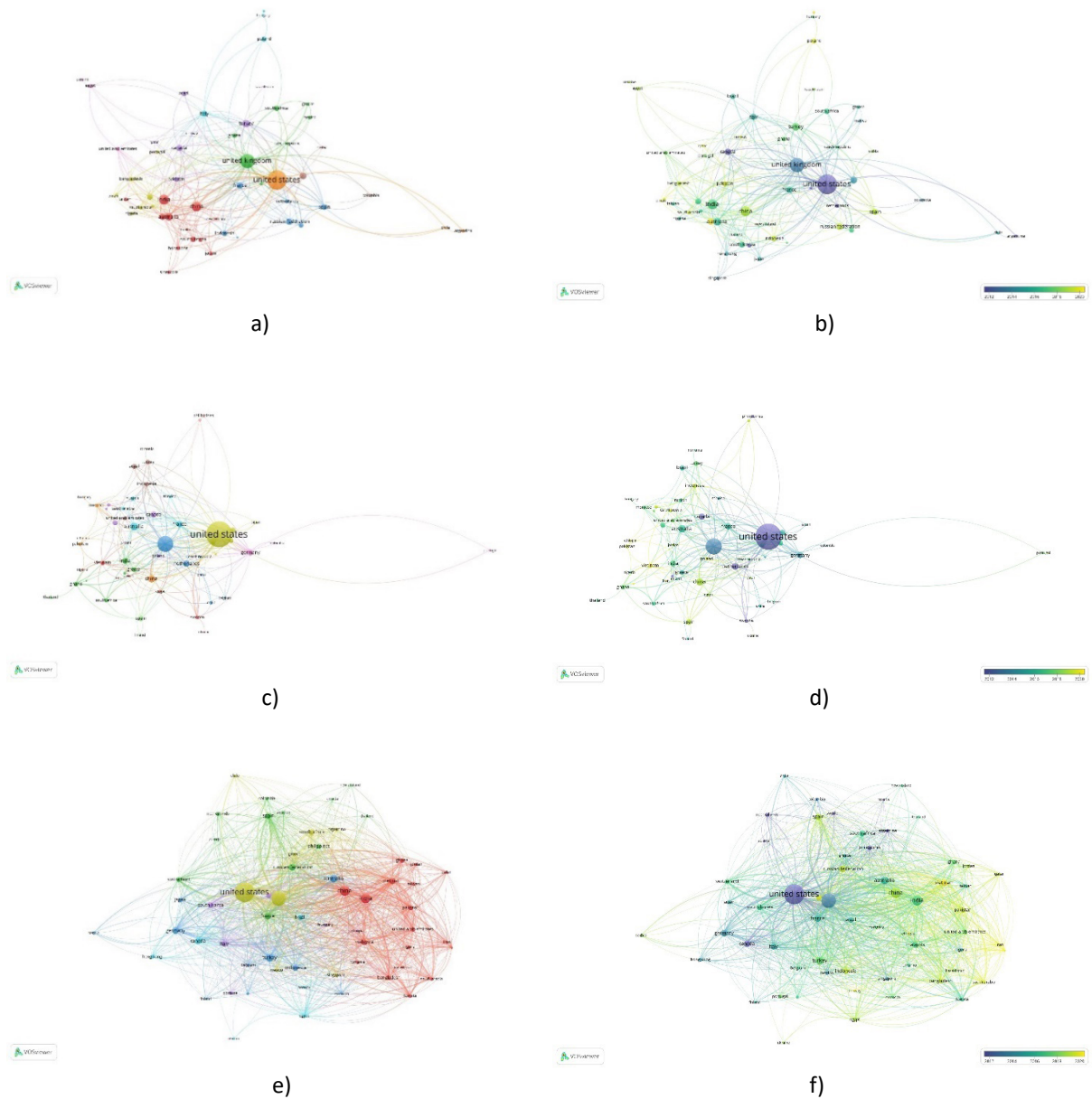
tors of the force of law and the quality of governance and regulation. Table 3 displays the top 10 most cited documents on the topic of bank capital management in emerging and frontier markets in the period 1966–2024, according to the Scopus database.

The most prolific author in this field is Justin Yifu Lin, Dean at Peking University's Institute of New Structural Economics, with seven publications. Lin previously served as Senior Vice President and Chief Economist of the World Bank (Lin, n.d.). The next three top authors, each with six publications, include:

- Stijn Claessens is a Dutch economist and former Deputy Head of the Bank for International Settlements' Monetary and Economic Department (Claessens, n.d.);
- Barry Eichengreen is a Professor of Economics and Political Science at UC Berkeley (Eichengreen, n.d.);
- Martin Weiss is a specialist in International Trade and Finance at the Congressional Research Service, affiliated with Columbia University (Weiss, n.d.).

Using VOSviewer, a co-citation network was built to reveal clusters of frequently cited authors, such as Eichengreen, Claessens, Reinhart, and Rogoff, indicating their central influence in this field (van Eck & Waltman, 2023).

Source: Developed by the authors (based on the Scopus database using VOSviewer software).



Note: (a) co-authorships of researchers from various countries/territories; (b) co-authorships of researchers from various countries overlay visualization at the time of publishing; (c) citation of authors from different countries; (d) citation of authors from different countries overlay visualization at the time of publishing; (e) bibliographic coupling of authors from different countries; (f) bibliographic coupling of authors from different countries overlay visualization at time of publishing.

Figure 4. Clustering published papers focusing on bank capital management in emerging and frontier markets by country or territory

Table 3. Top 10 most cited documents on bank capital management in emerging and frontier markets

Source: Scopus, n.d.

No.	Document title	Authors	Source	Year	C-ns
1	One economics, many recipes: Globalization, institutions, and economic growth	Rodrik, D.	One Economics, Many Recipes: Globalization, Institutions, and Economic Growth	2008	1,109
2	Determinants of commercial bank interest margins and profitability: Some international evidence	Demirgüç-Kunt, A., Huizinga, H.	World Bank Economic Review, 13(2), 379-408	1999	867

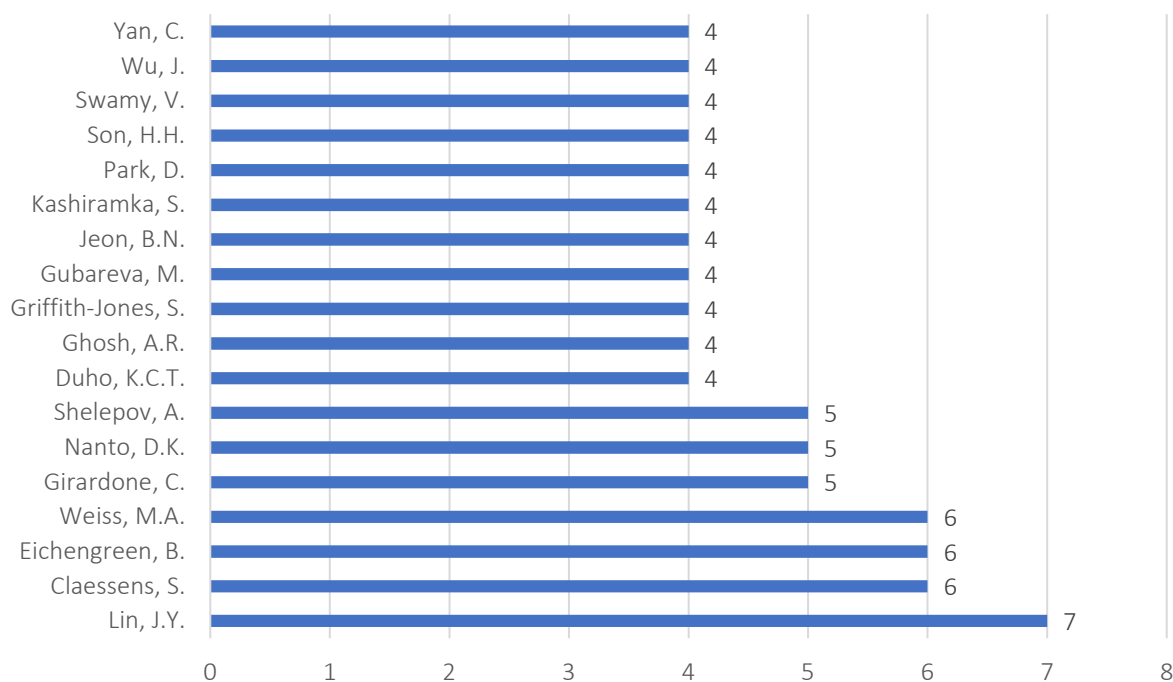
Table 3 (cont.). Top 10 most cited documents on bank capital management in emerging and frontier markets

No.	Document title	Authors	Source	Year	C-ns
3	Venture capital and the structure of capital markets: Banks versus stock markets	Black, B.S., Gilson, R.J.	Journal of Financial Economics, 47(3), 243-277	1998	814
4	Relational embeddedness and learning: The case of bank loan managers and their clients	Uzzi, B., Lancaster, R.	Management Science, 49(4), 383-399	2003	760
5	China's manufacturing locus in 2025: With a comparison of "Made-in-China 2025" and "Industry 4.0."	Li, L.	Technological Forecasting and Social Change, 135, 66-74	2018	652
6	The unofficial economy and economic development	Porta, R. L., Shleifer, A.	Brookings Papers on Economic Activity, (2), 275-352	2008	329
7	The great retrenchment: International capital flows during the global financial crisis	Milesi-Ferretti, G.-M., Tille, C.	Economic Policy, 26(66), 289-346	2011	289
8	New structural economics: A framework for rethinking development	Lin, J.Y.	World Bank Research Observer, 26(2), 193-221, lkr007	2011	267
9	International and domestic collateral constraints in a model of emerging market crises	Caballero, R.J., Krishnamurthy, A.	Journal of Monetary Economics, 48(3), 513-548	2001	250
10	Understanding and Contributing to the Enigma of Corporate Social Responsibility (CSR) Assurance in the United States	Casey, R. J., Grenier, J. H.	Auditing: A Journal of Practice & Theory, 34(1), 97-130	2014	242

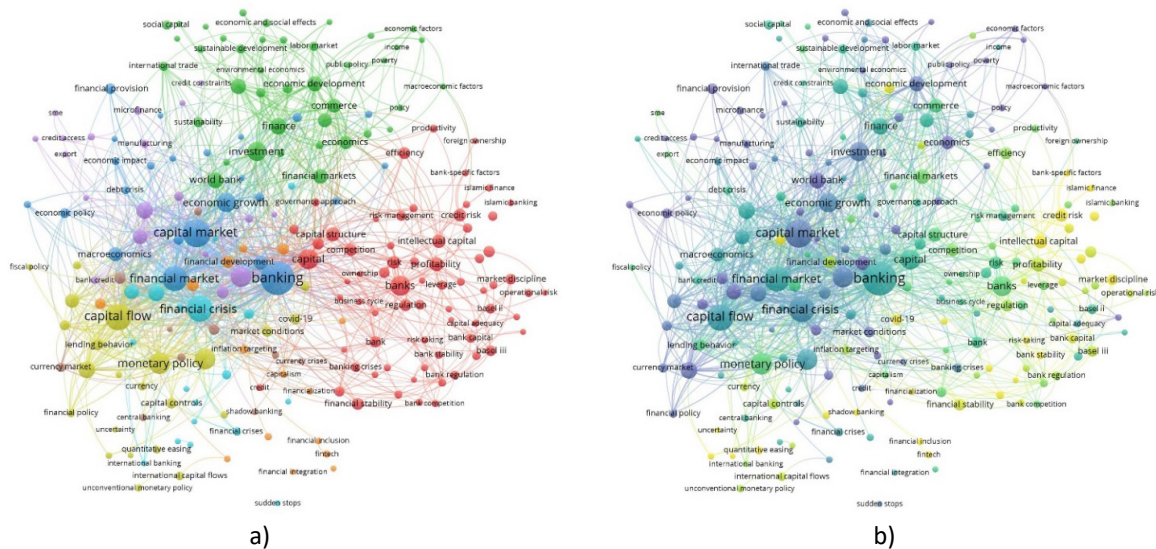
Based on findings from Scopus, one can consider that high-ranking journals such as the Journal of International Money and Finance, World Bank Economic Review, Journal of Banking and Finance, and the Journal of International Financial Markets Institutions and Money are actively publishing papers on bank capital management in emerging and frontier markets. It is noteworthy that the World Bank Economic

Review is an official journal of the World Bank aimed at promoting and supporting research in development economics (Oxford University Press, n.d.). Throughout the examined period, most papers were published in high and intermediate-ranking journals. However, one exception, the ADB Economics Working Paper Series, was excluded from indexing by Scopus in 2013 (see Table 4).

Source: Scopus, n.d.

**Figure 5.** Top researchers who have four or more published investigations focusing on bank capital management in emerging and frontier markets

Source: Developed by the authors (based on the Scopus database using VOSviewer software).



Note: a) Map of the keywords' occurrences; b) Map of the overlay visualization at the time of publishing.

Figure 7. Map of keyword occurrence in research on bank capital management in emerging and frontier markets

VOSviewer allows the analysis of keywords to be provided using the “Occurrences” function (van Eck & Waltman, 2023), which shows the number of documents in which a keyword appears. Figure 7 illustrates the clusters of keywords under the full counting method, representing the total number of occurrences of each term across all documents (8 clusters).

The keywords of the first biggest cluster (red ones in Figure 7a) are all interconnected through their relevance to the field of banking and finance, focusing on the performance, regulation, risk management, and structural aspects of banks and financial institutions. These keywords emphasize the interconnected nature of banking operations, competition, governance, and the broader economic environment in which banks operate.

Figure 7a is a second (green) cluster, representing keywords (40 items) that collectively interconnect the multidimensional nature of economics and development, emphasizing the interconnectedness between economic activities, societal welfare, environmental considerations, and policy interventions. They highlight the need for holistic approaches to address economic challenges and promote sustainable development. The third cluster (blue) interconnected terms related to the study of

economics, particularly focusing on financial systems, economic growth, and policymaking. They collectively address various aspects of how financial institutions, markets, and policies influence economic development and performance.

The keywords of the next yellow cluster are interconnected through their relevance to the study of international finance, monetary policy, and economic conditions, especially in the context of global financial consequences and crises. They collectively address the following aspects of capital movements, policy responses, and market dynamics (Figure 7a):

- 1) capital flows and controls (keywords like “capital flow,” “capital flows,” and “capital controls”);
- 2) COVID-19 and uncertainty;
- 3) terms such as “currency,” “exchange rate,” and “spillover effect” focus on the dynamics of currency values and the potential transmission of shocks across economies;
- 4) keywords, including “financial policy,” “fiscal policy,” “monetary policy,” “macroprudential policy,” and “unconventional monetary poli-

cy,” relate to the strategies and measures adopted by governments and central banks to manage economic conditions and stabilize financial markets;

- 5) global economic context (“global economy,” “global financial crisis,” and “global financial cycle”);
- 6) terms such as “interest rate,” “market conditions,” “volatility,” and “uncertainty” address the factors influencing financial market behavior and the challenges posed by fluctuations in interest rates and market conditions;
- 7) investment vehicles.

The keywords of the sixth (marine) cluster collectively represent various facets of financial markets, economic interactions, and global finance, highlighting the complex interplay between financial institutions, market dynamics, economic policies, and external factors such as globalization and political economy. They underscore the importance of understanding the interconnectedness and vulnerabilities of financial systems in the context of global economic integration (Figure 7a).

Cluster 7 included the following keywords: capital markets, capitalism, corporate finance, financial development, financial inclusion, financial integration, financial regulation, financialization, fintech, IMF, inflation, inflation targeting, international reserves, neoliberalism, and portfolio investment. These keywords underscore the importance of un-

derstanding the roles of financial markets, institutions, and policies in shaping economic outcomes and promoting financial stability and inclusion.

The keywords of the last cluster No. 8 are interconnected through their relevance to the study of monetary policy, financial markets, and economic transitions, particularly focusing on the evolution of financial systems and the dynamics of currency markets.

It is worth mentioning that the keywords across different clusters and investigation sub-topics are intricately linked, pointing to a trend of convergence in research inquiry. By analyzing the growth in relevance and the degree of subject development, the Biblioshiny App enables us to detect the most pertinent and advanced investigation areas, along with the tendencies in their evolution over the period.

Thematic progression in the scholarly literature on bank capital management in emerging and frontier markets is examined by employing the Sankey plot, as shown in Figure 8. This plot successfully demonstrates the evolution of topics within a research area (Aria & Cuccurullo, 2020). Examining the thematic evolution of bank capital management in emerging and frontier markets ensures a complex outline of the field’s evolution. Longitudinal analyses of documents (Aria & Cuccurullo, 2020) focus on combining or separating themes over analysis periods.

The periods of separation were not chosen randomly. They were associated with the occurrence

Source: Developed by the authors (based on the Scopus database using the Biblioshiny App).

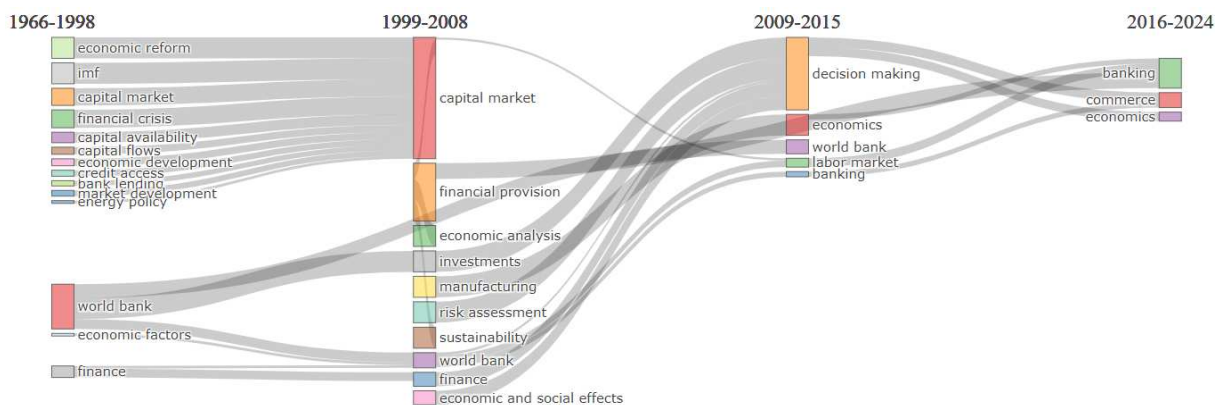


Figure 8. Advancement of the sub-topics in research focusing on bank capital management in emerging and frontier markets

of major financial crises (1998 – Asian financial crisis and Russian flu, 2008 – the US mortgage crisis and the worldwide economic crisis, 2015 – Chinese stock market turbulence, the financial crisis in Russia, as a consequence of international sanctions, following Russian aggression in Ukraine, particularly occupation of Autonomous Republic Crimea and part of Donetsk and Lugansk regions and the broader Russian-Ukrainian War.

The trend of reducing research subtopics during the entire period of publications focused on bank capital management in emerging and frontier markets was interesting. Thus, a large group of subtopics of the period 1966–1998, such as bank lending, capital availability, capital flows, capital market, credit access, economic development, economic reform, energy policy, financial crisis, IMF, market development, were transformed in the period 1999–2008 into one large capital market research group. In part, the publications of 1966–1998 in the finance sub-theme stood out and joined the group of researchers of 1999–2008 related to the World Bank; also joined here were studies on economic factors. The 1999–2008 financial provision and investments topics also stood out from the research of the World Bank sub-theme.

At the same time, in the period 1966–1998, the topic of IMF, economic reform, capital availability, and debt is growing (see Figure 9a). The topics of financial reform, housing finance, credit access, and financial services are niche topics. The topics of the financial system, banking, and financial crisis are the basic research topics. And the issues of energy policy, population, environmental economics, solar energy, etc., refer to the motor theme (see Figure 9a).

The topics of decision-making and economics stood out from the studies of the World Bank in the period 1999–2008, and the issues of finance, economic and social effects, investments, and risk assessment economics were transformed into the latter (Figure 8). In part, the research on the capital market moved to the topic of the World Bank, and together with the research on economic analysis and sustainability, they were combined into the subtopic of 2009–2015 “banking”. The topic of manufacturing was transformed into the topic of the labor market (Figure 8).

At the same time, there were no niche topics in 1999–2008; the emerging topics include manufacturing, financial provision, and the topic of “eco-

Source: Developed by the authors (based on the Scopus database using the Biblioshiny App).

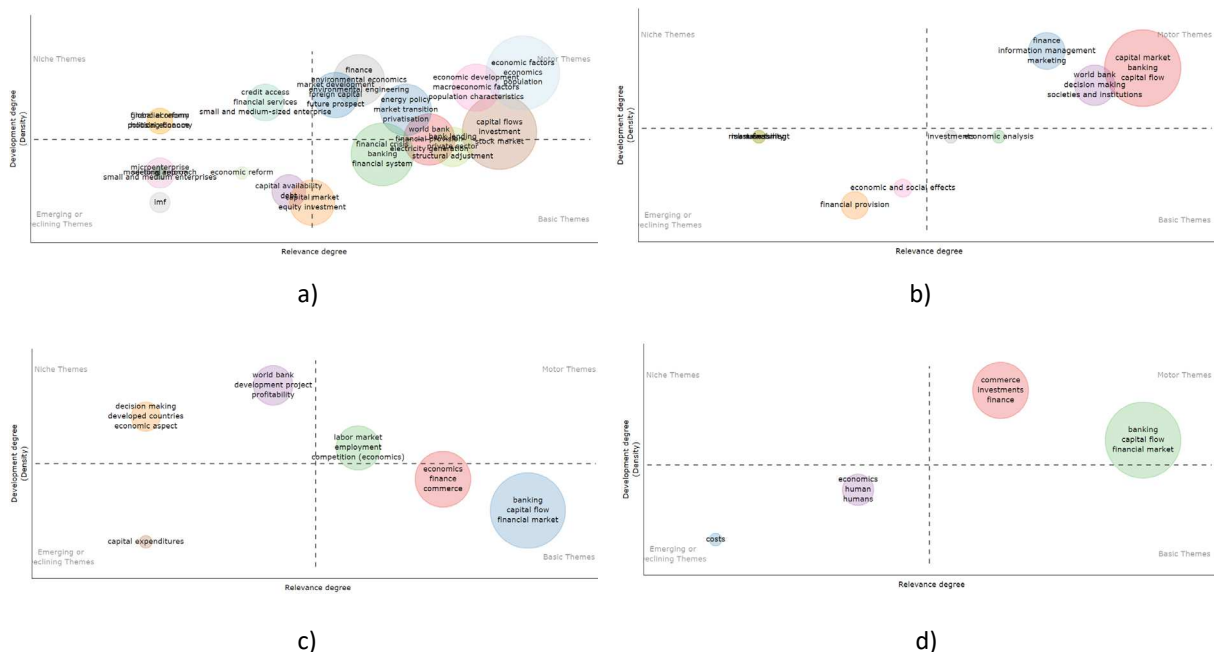


Figure 9. Mapping of subtopics in investigations focusing on bank capital management in emerging and frontier markets in coordinates of relevance degree and development degree

conomic and social effects". The issues of investment and economic analysis are basic; all others are motor topics (Figure 9b).

In the period 2016–2024, further unification of topics took place:

- decision-making and part of the studies in the subject of economics moved to the subject of commerce studies;
- labor market and World Bank subjects have joined the research group in banking subjects.

Moreover, the mapping of topics in the section of the matrix of development degrees and relevance degrees in the periods 2009–2015 and 2016–2024 are presented in Figures 9c and 9d.

4. DISCUSSION AND LIMITATIONS

By analyzing publication trends, thematic evolution, and institutional contributions, this study assesses how the academic discourse on bank capital management in emerging and frontier markets has evolved and whether it aligns with previous theoretical and empirical frameworks.

The literature review emphasized that risk management and banking performance are fundamental capital management components in emerging and frontier markets. Previous studies (e.g., Qi et al., 2023; Sang, 2024) outlined how credit risk, operational risks, and liquidity risks affect capital adequacy. The empirical results confirm this, showing that risk management remains one of the most researched topics in bank capital management; publications heavily focus on Basel III implementation, credit risk, and economic stability; studies on banking performance link capital adequacy with profitability, efficiency, and economic growth. This alignment suggests that theoretical discussions on risk management are well-integrated into empirical research, with increasing sophistication in methodology (e.g., stress testing, scenario analysis).

The literature review highlighted the significant role of global financial institutions (IMF, World

Bank, Bank for International Settlements, etc.) in shaping capital management strategies. Studies such as Allen et al. (2016) and München and Kimura (2024) emphasized the importance of regulatory frameworks and macroprudential policies. The bibliometric findings validate this, showing that the IMF and World Bank are among the top institutions contributing research in this area, many publications originate from policy-driven organizations rather than purely academic sources, the influence of central banks and regulatory bodies is reflected in a growing body of literature on financial stability, stress testing, and regulatory adaptation. This confirms that policy-oriented research is a dominant force in shaping bank capital management practices, reinforcing previous conclusions from the literature.

Despite strong alignment in key areas, there are some notable discrepancies between the theoretical conclusions of the literature review and the trends observed in the empirical findings. The literature review touched on the impact of digital banking, fintech, and big data on bank capital management, but this was presented as an emerging rather than a dominant theme (e.g., World Economic Forum, 2024; Hrytsenko et al., 2024). However, the bibliometric results indicate a more significant focus on fintech and alternative capital management strategies, such as digital finance, AI-driven risk assessment, and blockchain-based banking solutions are becoming key topics, research on alternative funding mechanisms (peer-to-peer lending, crowdfunding, decentralized finance) has grown in recent years, and regulatory challenges in fintech-driven capital management are becoming more widely discussed. This suggests that digital finance is a more prominent research area than initially suggested by the literature review, indicating a potential research gap in traditional theoretical discussions on capital adequacy frameworks.

The literature review discussed regional variations in capital management, particularly the challenges faced by African, Latin American, and Islamic banking sectors (e.g., Hassanein & Mostafa, 2023; Pambuko & Sriyana, 2023). However, the bibliometric findings reveal an overwhelming focus on emerging markets in Asia, particularly India and China, with less research emphasis on Africa and

Latin America. Islamic banking research is well-documented in the literature review but is not as dominant in empirical findings, suggesting that it remains a niche research area rather than a mainstream banking topic. This highlights a discrepancy: while the literature review identifies broad regional challenges, the actual research focus remains skewed towards Asia and developed emerging markets. More attention may be needed to ensure balanced representation across different regions.

The literature review explored the speed of capital structure adjustment and how banks adapt to Basel III requirements (e.g., Hegde et al., 2022; Vasylyeva et al., 2014). The empirical results, however, show that research on capital structure adjustment remains fragmented, with limited studies on how quickly banks adjust their capital buffers, a lack of empirical data on Basel III compliance rates in smaller frontier markets, and a greater emphasis on crisis-driven regulatory responses rather than gradual capital structure changes. This suggests that while the literature identifies capital structure adjustments as a key research area, empirical research has not yet fully explored the nuances of how banks dynamically manage capital in response to regulatory shifts.

Based on the comparative analysis, several gaps remain unexplored in both the literature and empir-

ical findings. The literature review mentioned sustainable finance and climate-related capital risks, but these themes were not prominent in the bibliometric results. While the literature review and findings both emphasize regulatory adaptation and crisis response, there is a lack of long-term studies on capital adequacy trends. Addressing these gaps will allow a more comprehensive recognition of capital management across diverse economic and regulatory environments.

This discussion highlights significant alignments, discrepancies, and research gaps between the literature review and the empirical findings. While the theoretical conclusions emphasize risk management, regulatory compliance, and financial crises, emerging trends such as fintech-driven capital strategies, climate-related financial risks, and regional disparities require further exploration.

Although this study provides significant academic discoveries, it has some limitations. Using Scopus as the sole database for this review may have excluded some relevant studies. The review also focused exclusively on journal articles, books, chapters, and conference papers, omitting other valuable bases of information. Moreover, the outcomes were received from a specific set of keywords chosen by the authors, which necessitates confirmation via such techniques as interviews and surveys of the professionals.

CONCLUSION

The aim of this research is to conduct a bibliometric analysis to explore investigation trends in bank capital management, identifying emerging themes, regional disparities, and future research directions to inform policy and academic discussions. The literature review on bank capital management reveals a broad, global focus but lacks an in-depth examination of emerging and frontier markets. Most studies address aspects like risk management, profitability, or specific banking types, such as Islamic banks, without a targeted exploration of developing economies. To address this, 1,031 documents from the Scopus database were analyzed, covering papers from 1966 to 2023. Early publications in this area were minimal, with substantial growth beginning in the 1980s. Publication trends indicate a 26.2% annual growth rate in studies, with increased attention after financial crises.

Bank capital management in emerging markets is primarily researched within fields like Economics, Finance, Business, and Social Sciences, with most publications from the USA, UK, India, China, and Australia. These top ten countries contribute to over half of all research. Using VOSviewer software, the study identified co-authorship clusters, with prominent collaboration among Southeast Asian countries, Australia, and New Zealand. Key contributors in the field include authors like Justin Yifu Lin, Eichengreen, Claessens, and Reinhart.

High-impact journals publishing in this area include the Journal of International Money and Finance, World Bank Economic Review, and Journal of Banking and Finance. VOSviewer also facilitated keyword clustering, revealing themes around bank regulation, risk management, and economic growth. The analysis demonstrates the evolution and thematic shifts in the field, emphasizing that research increasingly narrows to specific subtopics, with clustering illustrating the interconnected focus on monetary policy, financial markets, and economic transitions. This bibliometric analysis enhances the understanding of bank capital management in emerging markets, guiding future research directions and policy development.

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