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Article

FINANCIAL TECHNOLOGY AND FINANCIAL STABILITY: A BIBLIOMETRIC REVIEW OF GLOBAL RESEARCH TRENDS

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Abstract: The rapid evolution of financial technology has transformed the global financial landscape, creating opportunities for innovation, inclusion, and efficiency while introducing systemic risks, regulatory uncertainties, and challenges to financial stability. This study presents a bibliometric review of global research trends at the intersection of financial technology and financial stability from 2000 to 2025, mapping the intellectual structure, identifying emerging themes, and highlighting influential contributions. Using Scopus data, the analysis examines 339 peer-reviewed documents across 242 sources. Bibliometric techniques were applied through VOSviewer, Bibliometrix (R), and Biblioshiny to evaluate publication trends, influential authors, thematic clusters, co-authorship networks, and keyword co-occurrences. The results show an average annual growth rate of 21.46 percent, with a marked increase in publications after 2017 coinciding with the mainstream adoption of digital finance and heightened policy focus on financial resilience. Findings indicate that financial technology promotes financial inclusion, banking efficiency, and economic empowerment, yet also introduces cybersecurity threats, regulatory gaps, and systemic vulnerabilities, particularly in emerging markets. Dominant themes include blockchain, digital payments, financial literacy, and central bank digital currencies, with decentralized finance and artificial intelligence emerging as fast-growing areas of scholarly interest. Geographically, China leads in publication volume, while the United Kingdom and the United States dominate in scholarly influence. This review provides a strategic roadmap for researchers and policymakers to navigate the evolving financial technology landscape and emphasizes the need for future research to integrate ethical governance, artificial intelligence risk management, and inclusive financial innovation frameworks.

Keywords: Financial Technology (Fintech), Bibliometric Analysis, Financial Stability, Visualization Networks

1. Introduction

Financial technology, or FinTech, represents the integration between the finance and technology, which lead to the significant innovations in the financial industry. With this integration, FinTech has transformed the practices of traditional banking, enhancing the customer experiences and new business models of financial institutions are introduced [1][2]. Driven by advancements in technologies such as artificial intelligence, blockchain, and digital

payments, the financial sector has experienced tremendous growth [3][4][5]. By 2030, it is expected the global FinTech market could be reach USD 1.5 trillion in value, which show its significant economic impact. [4]. This transformation has significantly influenced the structural dynamics of the financial industry. This significant integration between the financial system and technological solution, it changed the structural dynamics of existing financial industry, not only in the operational framework but also the delivery mechanism to the stakeholders. While FinTech offers some benefits, not limited to the financial inclusion and efficiency, it comes with some risk. The financial stability can be undermined with the innovation of digital lending, blockchain and peer-to-peer lending which at the same time disrupts the traditional financial system. [6][7][8]. On the other hand, there are concerns emerged around regarding the technological factor into financial system which is cybersecurity threats, data protection, and regulatory compliance. The trust in financial system could erode and lead to major disruptions if the risks stated not addresses efficiently and swiftly. As supported by past research, cybersecurity threats, data breaches, and regulatory challenges are critical concerns that need to be addressed to mitigate these risks [9][10][11]. Fostering innovation while ensuring stability is a central theme in FinTech research and policy discussions [7][8][10]. With this development, bibliometric analysis is carried out to examine the academic literature concerning FinTech and financial stability. Past study using bibliometric analysis proven to be valuable tools for scholars to understand the evolution of research trends and knowledge in various fields, not limited to FinTech. Quantitative methods are employed to analyse the publication records, understanding the citation patterns, and clustering the themes with the subject area, which will give deep understanding into the intellectual structure and impact of research [3][12][13]. Researchers, policymakers and industry professionals can use the insights from bibliometric analysis by identifying key contributors, influentials publications, and emerging themes to navigate the vast body of FinTech literature. [3][13][14].

While there is increasing publications of FinTech-related literature, the understanding and lack of comprehensive synthesis of intersection between the technological innovation and financial system stability still understudy within the body of academic. Studies that already exist typically concentrate on themes or case-based discoveries without methodically outlining the field's larger philosophical framework. By providing data-driven bibliometric analysis, this study fills those gaps and helps researchers and policymakers better understand research trends, pinpoint unexplored study areas, and guide strategic directions for future academic literature. The objective of this study is to conduct a comprehensive bibliometric analysis of FinTech and financial stability research to map the current landscape, identify key trends, and highlight influential factors within the field. This analysis will cover: i) Publication Trends; ii) Influential Authors and Publications; iii) Thematic Clusters; iv) Geographical Influences; and v) Research Gaps and Future Directions. Thus, this study aims to enhance understanding of the FinTech research landscape and offer guidance for future academic and policymaker efforts in this evolving field.

2. Literature Review

2.1. Bibliometric Analysis

Bibliometric analysis is a quantitative technique for assessing and analysing bibliographic information from scientific publications. It assists in recognizing trends, publishing patterns, and the organization of certain fields of expertise [15] [16] [17]. This methodology of bibliometric analysis has gained popularity across academic disciplines because of its ability to give a comprehensive overview of research activities and trends [18] [19]. Bibliometric analysis uses a variety of different components and techniques to examine research publications. Number of publications, citations in writing, h-index and m-index are examples of statistical methods that use quantitative analysis. These methods provide in-depth information on research impact and productivity rates. [17] [20] [21]. VOSviewer and CiteSpace, which employed for the science mapping, on the other hand, visualizes the structure of research fields, helping to identify dominant themes and trends [16] [18] [22] [23] [24]. Furthermore, to examine the relationships between publications, identifying influential works and key authors within a particular field co-citation and bibliography coupling methods are employed for this study. [25] [26]. Bibliometric analysis offered several applications and benefits to understand more in depth of the studied field. Which it will helps identify influential research by stated the most cited articles, key authors and leading institutions within specific fields. [22] [27] [28]. Additionally, the bibliometric analysis, tracking the development of research topics over period and highlighting emerging areas of interest [29] [30] [31]. Also, the method of analysis allows researchers to highlight the gaps in the existing publications and literature, which will guide for future research directions and give valuable insight into unexplored areas. [27] [32].

Bibliometric analysis is a suitable tool for identifying impactful studies, detecting emerging trends, and providing insights into gaps in existing literature. In the context of FinTech and financial stability, bibliometric analysis methods provide researchers with insights into how to quantitatively assess developments in the field, map the structure of academic discussion, and assess the relationships between related citations in prominent publications. Using techniques such as science mapping and citation network analysis, bibliometric analysis methodology offers researchers a comprehensive view of developments in research themes, how various concepts are interconnected, and provides guidance on future research that can be explored. This approach will provide a better understanding of important issues regarding the relationship between technological innovation and financial systemic resilience and stability.

2.2. FinTech and Financial Stability

With the integration of technology and finance, FinTech has emerged as a strong field of study that is transforming the global financial sector. It is invigorating the sector by changing the usage patterns and behaviours of consumers, firms and institutions while managing their financial resources. From digital payments and peer-to-peer lending to automated financial advisory services, FinTech is not just transforming the financial sector, it is also contributing to the effectiveness, accessibility and inclusiveness of the financial sector. However, with these developments, concerns are growing about the impact of FinTech on financial stability. With the increasing interconnectedness of financial institutions through FinTech, policymakers and academic researchers are focusing on these innovations and how they impact systemic risk, markets dynamics, and the resilience of financial institutions. This study aims to assess and to put spotlight on the relationship between FinTech and financial stability, highlighting both the potential benefits and evolving challenges in FinTech.

Positive Impacts of FinTech on Financial Stability

Through several key channels, FinTech has shown considerable promise in supporting financial stability. One of the most prominent contributions is strengthening the resilience of banking institutions. Additionally, it helped improve the soundness of banks in various regions by enhancing operational efficiency, profitability, and liquidity management. For instance, in the Middle East and North Africa (MENA) region, FinTech adoption has been associated with more stable banking performance [33]. Similarly, while study in Indonesia shows that the integration of FinTech into the financial system has supported the stability of smaller, non-listed banks by reducing financial risks and improving capital adequacy ratios [34]. Besides banking sector, FinTech also has contributes to broader financial resilience by fostering innovation and stimulating economic activity. China, among countries that has industrialised bases, the development of FinTech is linked to the increasing of consumption and the survival of industrial sector which reinforcing overall economic and financial stability [35][36]. FinTech has also played a crucial role in promoting financial inclusion. FinTech promotes expanding access to credit and digital financial services, especially for micro, small and medium enterprises (MSMEs), it helps by enhancing the credit performance and the integration of underserved groups into the formal financial system [37]. With increasing in Big Tech firms which offering financial services, it has further extended these benefits, with the potential to support financial stability when accompanied by effective regulatory oversight [38].

Negative Impacts of FinTech on Financial Stability

However, with these advantages, FinTech also brings several risks that could threaten financial stability that need to be addressed. Among these risks is the increasingly complex level of interconnectedness between financial institutions. With the rapid development of FinTech, especially start-ups, it will contribute to financial bubbles, over-lending, and reduced transparency in pricing, all of which will put the credibility of the financial sector at risk [39][40]. The disruptive effects of FinTech can be even more pronounced in emerging economies, where financial systems tend to be more fragile and banks are often state-owned [41]. Additionally, the competition fragility hypothesis suggests that increasing in competition caused by FinTech may allow excessive risk-taking in traditional financial institutions, eventually elevating systemic vulnerabilities [42]. Regulation will face additional challenges in addressing these risks, and existing frameworks will struggle to keep up with the rapid development in FinTech sector. Therefore, regulatory solutions such as sandboxes and international prudential standards are proposed to enable innovation to occur to maintain financial oversight and stability [39][43][44]. In addition to the existing framework, moderating factors can help mitigate some of the risks associated with FinTech. Among the suggestions is that stronger market discipline, particularly in banks with significant foreign ownership, can promote accountability and reduce exposure risks. [41]. Organizational resilience also plays a critical role. By having robust internal structures and adaptive governance, financial institutions will be better positioned to effectively manage FinTech integration while minimizing potential

disruption. [45]. With these moderating elements highlight the vitality of a balanced approach that gives support innovation while safeguarding the integrity of the financial system.

Ultimately, there is growing influence of FinTech presents a dual impact on financial stability based on the discussion above. On the one hand, it gives significant benefits in terms of banking resilience, innovation, and financial inclusion. On the other hand, it introduces new systemic risks, regulatory challenges, and institutional vulnerabilities. The current and literature highlights both the promise and complexity of FinTech's role in reshaping the financial system, with outcomes often shaped by contextual and institutional factors. However, despite the expansion of the body of research field, a comprehensive understanding of how FinTech and financial stability have been explored remains limited. The following chapter outlines the methodology employed in this study, which adopts a bibliometric analysis to map research trends, identify influential contributions, and uncover gaps within the academic discourse on FinTech and financial stability.

3. Methodology

To achieve the objectives of this bibliometric review, a quantitative content analysis approach was employed using bibliometric techniques. This method enables the systematic evaluation of large volumes of academic literature by examining publication patterns, Influential Authors and Publications, thematic developments, geographical influences and research gaps and future direction. The following subsections detail the data sources, search strategies, analytical tools, and bibliometric indicators used in the study.

3.1. Data Source

The primary data source for this study is Scopus, a comprehensive and multidisciplinary database managed by Elsevier. The Scopus database was chosen in this study because it provides coverage of peer-reviewed literature across fields such as economics, finance, technology and social sciences. Compared to other databases such as Web of Science (WoS), Scopus provides a wider journal entry and more advanced export features for bibliometric mapping [46]. In addition, Scopus also provides and integrates citation data, abstracts, author affiliations and publication metadata, all of which are essential for conducting robust bibliometric analysis.

3.2. Search Terms and Inclusion Criteria

To give a comprehensive analysis, in Scopus database, a search query was developed to capture publications relevant to both financial technology and financial stability. The following Boolean search was deployed: ("financial resilience" OR "financial stability") AND ("financial technology" OR "fintech" OR "technological innovation" OR "digital finance").

The period chosen to gather all the relevance data, the searches was conducted on 1 July 2025, and included only journal articles, conference papers, and reviews published in English. To ensure and maintain quality, the search was limited to peer-reviewed documents published between 2000 and 2025, reflecting the period when FinTech gained significant traction globally.

To maintain the comprehensive data for this FinTech and financial stability, the exclusion criteria applied were: i) Documents published in non-English languages; ii) Grey literature such as working papers, theses, or news articles; and iii) Publications not indexed with keywords related to finance, technology, or economics.

3.3. Tools Used

The bibliometric data retrieved from Scopus was exported in both CSV and BibTex formats and subsequently analysed using a combination of specialized tools. VOSviewer (version 1.6.x) was utilized to construct and visualize bibliometric networks such as co-authorship patterns, keyword co-occurrence, and citation linkages [47]. Additionally, the R-based Bibliometrix package, along with its web interface Biblioshiny, facilitated comprehensive statistical analysis, including descriptive metrics, trend evaluation, and thematic mapping [48]. Microsoft Excel was also employed in the initial phase of analysis to perform basic data cleaning, sorting, and aggregation tasks to ensure accuracy and consistency in the dataset.

These tools were selected for their open-access availability, visual mapping capabilities, and wide adoption in academic bibliometric research.

3.4. Bibliometric Indicators Analyzed

The analysis focused on several key bibliometric indicators, categorized into descriptive, performance, and network-based measures:

i. Publication Trends: Examining the growth of FinTech research over time and identifying peak periods of scholarly activity [14] [49];

ii. Influential Authors and Publications: Identifying key contributors and seminal works that have shaped the field [1] [13] [50];

iii. Thematic Clusters: Exploring major research themes such as blockchain technology, digital payments, and regulatory frameworks [1] [13] [51];

iv. Geographical Influences: Analyzing the contributions of different countries and regions to FinTech research [14] [50];

v. Research Gaps and Future Directions: Highlighting areas that require further investigation and proposing directions for future research [13] [50] [52].

These indicators provide a comprehensive overview of the structure, dynamics, and evolution of the research landscape at the intersection of financial technology and financial stability.

METRIC	VALUE
Timespan	2000–2025
Sources (Journals, Books, etc.)	242
Total Documents	339
Annual Growth Rate	21.46%
Average Document Age	2.38 years

4. Analysis and Finding

The integration of Financial Technology (FinTech) and financial stability has gained increasing academic attention due to its dual role in driving innovation and inclusion while raising concerns over systemic risk and regulatory gaps. Using bibliometric data from Scopus (2000–2025), this analysis maps key trends, scholarly contributions, and thematic developments (Table 1).

The annual growth rate of 21.46% reflects rapid expansion, aligning with post-2008 financial reforms and the acceleration of digital financial services after 2015, particularly blockchain, mobile payments, and digital lending. This growth highlights the increasing recognition of FinTech's impact on financial stability, especially in emerging markets with evolving regulatory frameworks.

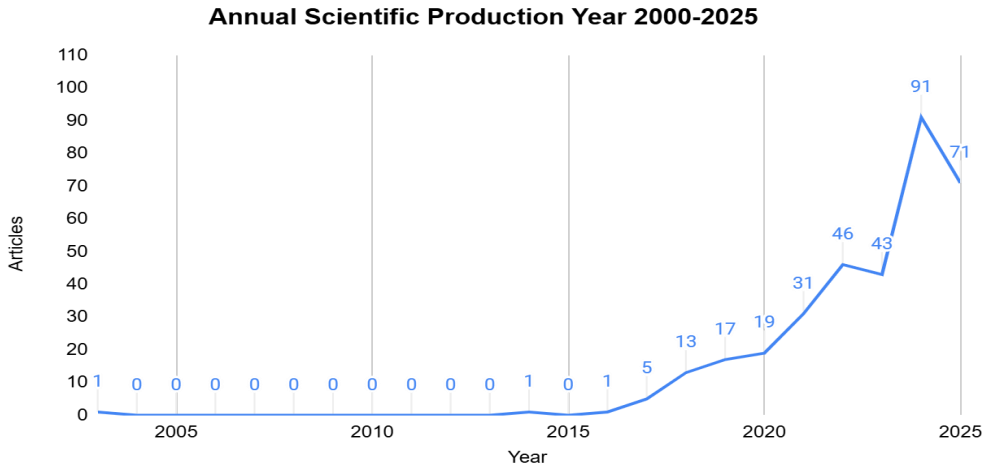
Document Type	Count	Percentage (%)
Article	220	64.9%
Book Chapter	65	19.2%
Conference Paper	25	7.4%
Book	14	4.1%
Review	14	4.1%
Editorial	1	0.3%
Total	**339**	**100%**

The 242 contributing sources indicate strong interdisciplinary engagement across economics, finance, information systems, legal studies, and public policy. The average document age of 2.38 years underscores the field's recency, while the average of 19.05 citations per paper reflects its high academic and policy relevance.

Table 2 shows that journal articles dominate the literature (64.9%), followed by book chapters (19.2%) and conference papers (7.4%). The high share of peer-reviewed articles indicates strong empirical and theoretical development, while book chapters signal conceptual integration into broader academic and policy frameworks. Books (4.1%) and review articles (4.1%) consolidate existing knowledge, and conference papers provide applied perspectives, though their limited number suggests room for growth in real-time academic dialogue.

Overall, the composition of document types demonstrates a theoretically rich yet empirically grounded field. The dominance of journal articles underscores its maturity, while the variety of formats indicates a sustained interest in consolidating and expanding understanding of FinTech's evolving relationship with financial stability.

4.1. Publication Trends



The publication trend for FinTech and financial stability (2000–2025) shows a marked increase in scholarly attention (Figure 1). Early activity was minimal, with only one article in 2003 and sporadic publications in 2014 and 2016. A consistent upward trajectory began in 2017, rising from 5 publications to 13 in 2018 and 17 in 2019. Growth continued with 19 in 2020, 31 in 2021, 46 in 2022, and 43 in 2023, peaking at 91 in 2024. As of July 2025, the publication records a slight drop to 71 articles, the overall trend demonstrates a sustained and accelerating research interest over the past five years.

Author	h_index	g_index	m_index	TC	NP	PY_start
OZILI PK	5	6	0.625	1462	6	2018
ARNER DW	4	5	0.444	394	5	2017
BUCKLEY RP	4	5	0.444	394	5	2017
KHUTORNA M	3	3	0.375	68	3	2018
LUBURIĆ R	3	3	0.75	45	3	2022
VUČINIĆ M	3	4	0.5	140	4	2020
ABDULLAH S	2	2	0.5	14	2	2022
BANNA H	2	2	0.4	222	2	2021
BLAIR J	2	2	0.5	14	2	2022
BOUAZIZ M	2	2	1	9	2	2024
BROZENA J	2	2	0.5	14	2	2022
DU X	2	2	0.667	7	2	2023
HORNUF L	2	2	0.222	172	2	2017
KHAN S	2	2	0.667	35	2	2023
KNAACK P	2	2	0.286	69	2	2019
LI J	2	2	0.333	324	2	2020
LIU F	2	2	0.5	208	2	2022
MATTHEWS M	2	2	0.5	14	2	2022
MINTO A	2	2	0.222	36	2	2017
OMAROVA ST	2	2	0.286	117	2	2019

4.2. Influential Authors and Publications

Paper	Publication Title	Total Citations	TC per Year	Normalized TC
OZILI PK, 2018, Borsa Istanb. Rev.	Impact of digital finance on financial inclusion and stability	1037	129.63	8.98
ARNER DW, 2017, Northwest. J. Int. LAW Bus.	FinTech, RegTech, and the Reconceptualization of Financial Regulation	301	33.44	2.76
OZILI PK, 2021, Forum Soc. Econ.	Financial inclusion research around the world: A review	254	50.8	7.83
DEMIRGÜÇ-KUNT A, 2020, World BANK Econ. Rev.	The Global Findex Database 2017: Measuring Financial Inclusion and Opportunities to Expand Access to and Use of Financial Services	190	31.67	4.9
LI J, 2020, Int. Rev. Financ. Anal.	Risk spillovers between FinTech and traditional financial institutions: Evidence from the U.S.	162	27	4.18
LUI A, 2018, Inf. Commun. Technol. LAW	Artificial intelligence and augmented intelligence collaboration: regaining trust and confidence in the financial sector	150	18.75	1.3
KASS-HANNA J, 2022, Emerg. Mark. Rev.	Building financial resilience through financial and digital literacy in South Asia and Sub-Saharan Africa	147	36.75	6.55
VIVES X, 2019, Annu. Rev. Financ. Econ.	Digital Disruption in Banking	138	19.71	3.23
DORFLEITNER G, 2017, FINTECH Ger.	FinTech in Germany	137	15.22	1.26
BANNA H, 2021, J. Int. Financ. Mark. INSTITUTIONS Money	Fintech-based financial inclusion and bank risk-taking: Evidence from OIC countries	132	26.4	4.07
BERNARDS N, 2019, Rev. Int. POLITICAL Econ.	Understanding technological change in global finance through infrastructures	129	18.43	3.02
JAGTIANI J, 2018, J. Econ. Bus.	Fintech: The Impact on Consumers and Regulatory Responses	111	13.88	0.96
RABBANI MR, 2021, J. OPEN Innov. Technol. Mark. Complex.	Exploring the Role of Islamic Fintech in Combating the Aftershocks of COVID-19: The Open Social Innovation of the Islamic Financial System	110	22	3.39
HUA X, 2021, Eur. J. Financ.	Understanding China's fintech sector: development, impacts and risks	105	21	3.24
HUSSAIN M, 2022, Int. J. Prod. Econ.	Organizational readiness for digital financial innovation and financial resilience	102	25.5	4.54
ALLEN HJ, 2019, Georg. Wash. LAW Rev.	Regulatory Sandboxes	102	14.57	2.39
FUNG DWH, 2020, Emerg. Mark. Rev.	Friend or foe: The divergent effects of FinTech on financial stability	101	16.83	2.61
DAUD SNM, 2022, Financ. Res. Lett.	FinTech and financial stability: Threat or opportunity?	98	24.5	4.36
VUČINIĆ M, 2020, J. Cent. Bank. Theory Pract.	Fintech and Financial Stability Potential Influence of FinTech on Financial Stability, Risks and Benefits	95	15.83	2.45
BANNA H, 2021, Stud. Econ. Financ.	Impact of digital financial inclusion on ASEAN banking stability: implications for the post-Covid-19 era	90	18	2.77
OZILI PK, 2023, J. Money Laund. Control.	Central bank digital currency research around the world: a review of literature	89	29.67	7.94
WAHAB S, 2022, Environ. Sci. Pollut. Res.	Role of financial stability, technological innovation, and renewable energy in achieving sustainable development goals in BRICS countries	82	20.5	3.65
VIVES X, 2019, Int. J. Ind. Organ.	Competition and stability in modern banking: A post-crisis perspective	79	11.29	1.85
DEL GAUDIO BL, 2021, Eur. Manag. J.	How do mobile, internet and ICT diffusion affect the banking industry? An empirical analysis	75	15	2.31
VAN LOO R, 2018, UCLA LAW Rev.	Making Innovation More Competitive: The Case of Fintech	75	9.38	0.65

Table 4: Top 25 Most Cited Publications

The bibliometric analysis of authorship patterns (Table 3) highlights key contributors, influence, and emerging voices in FinTech and financial stability research. Ozili, P.K. is the most prolific author, with an h-index of 5, g-index of 6, and 1,462 citations from six publications since 2018. His m-index of 0.625 reflects consistent scholarly output and impact. Several authors demonstrate high citation impact despite limited publications. Li, J. (2020) has 324 citations from two papers, while Liu, F. (2022) and Banna, H. (2021) have 208 and 222 citations respectively from two publications each. Similarly, Hornuf, L. and Omarova, S.T. show strong citation-to-publication ratios, indicating influential but focused contributions. Early contributors such as Arner, D.W., Buckley, R.P., Minto, A., and Hornuf, L. have shaped foundational discourse since 2017. More recent entrants, including Bouaziz, M. (2024), Du, X., Khan, S., Pinglu, C., and Qian, N. (2023), show strong early impact, with m-index values ranging from 0.667 to 1.000. The relationship between h-index and g-index suggests steady citation distribution for most authors. For example, Vučinić, M. maintains balanced performance (h-index 3, g-index 4). Newer authors like Luburić, R. (m-index 0.75) and Brozena, J. (m-index 0.5) also show accelerating influence.

Table 4 presents the 25 most cited articles in FinTech and financial stability, demonstrating both the maturity and evolving nature of the field. Ozili, P.K. (2018) leads with Impact of digital finance on financial inclusion and stability (1,037 citations, 129.63 citations per year, normalized TC 8.98), marking a cornerstone in digital finance research. Arner, D.W. (2017) follows with FinTech, RegTech, and the reconceptualization of financial regulation (301 citations), shaping the regulatory discourse. Other highly influential works include Ozili (2021) on global financial inclusion (254 citations), Demirgüç-Kunt et al. (2020) on the Global Findex Database (190 citations), and Li, J. (2020) examining risk spillovers between FinTech and traditional institutions (162 citations). Contributions by Vives, X. (2019) and Lui, A. (2018) expand the thematic scope to digital disruption and AI trust in finance. Emerging impactful works include Kass-Hanna, J. (2022) on building financial resilience (147 citations) and Ozili (2023) on Central Bank Digital Currency (CBDC) research (89 citations), reflecting current interest in inclusion, resilience, and digital currency innovation.

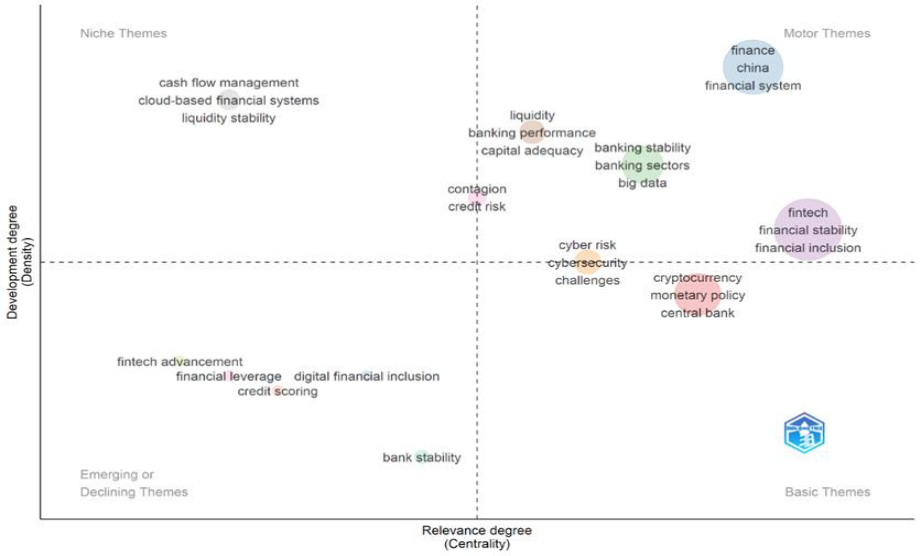
The bibliometric data reveal three dominant thematic areas: financial inclusion and stability, regulatory and risk frameworks, and technological transformation through AI, central bank digital currencies, and mobile banking. These themes, shaped by influential works from Ozili, Arner, Vives, and others, underscore a field that is theoretically diverse, policy-relevant, and driven by emerging research frontiers.

4.3. Thematic Clusters and Evolving Research Trends in FinTech and Financial Stability

The thematic map in Figure 2 positions research clusters based on centrality (relevance to the field) and density (internal development), providing insight into the intellectual structure and evolution of FinTech–financial stability research. Each quadrant reflects distinct thematic maturity and influence

Upper Right Quadrant – Motor Themes (Finance, China, Financial System)

Motor themes are both highly relevant and well-developed, forming the conceptual and empirical core of the field [53][54]. The “finance” cluster serves as a structural anchor, connecting macro-financial stability with emerging FinTech applications. The inclusion of “China” highlights its pivotal role in global FinTech innovation, especially in digital payments and central bank digital currency (CBDC) pilots [55]. The “financial system” theme links macroprudential considerations with technological change, illustrating a mature trajectory that integrates monetary policy, banking performance, and regulatory reform. These themes act as the driving forces of the discipline.



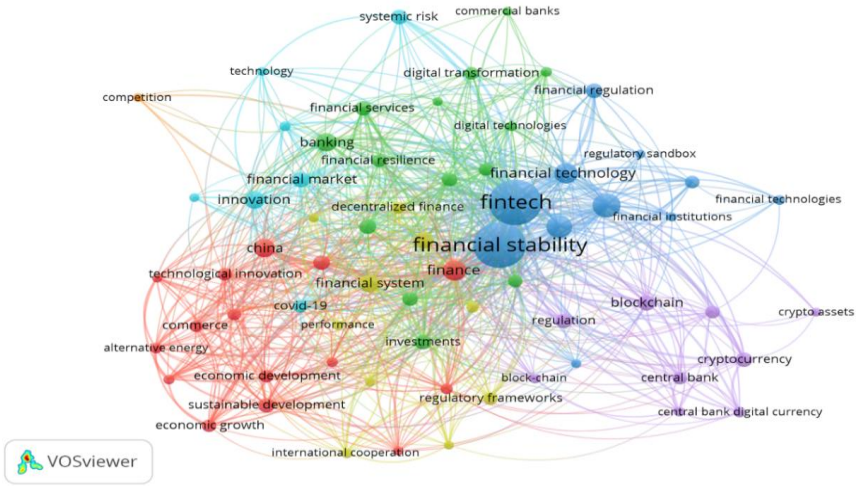
Lower Right Quadrant – Basic Themes (FinTech, Financial Stability, Financial Inclusion, Cryptocurrency)

Basic themes are central but underdeveloped, showing strong relevance but limited conceptual consolidation [56]. "FinTech", "financial inclusion", and "financial stability" form a tightly linked cluster central to policy discussions on balancing innovation with risk [57][58]. The presence of "cryptocurrency", "monetary policy", and "central bank" signals active debate, particularly on the dual role of cryptocurrencies as innovation and disruption [59]. These themes present high potential for theoretical development, especially in integrating monetary regulation, resilience, and inclusion within cohesive frameworks.

Upper Left Quadrant – Niche Themes (Cash Flow Management, Cloud-Based Financial Systems, Liquidity Stability)

Niche themes are well-developed but marginal, with strong internal coherence yet weaker connection to mainstream discourse [54]. "Cash flow management" and "liquidity stability" are operationally significant but remain on the periphery of FinTech–stability literature. "Cloud-based financial systems", while critical in technological finance, is often addressed in isolated technical studies rather than integrated into systemic stability frameworks. These themes offer deep technical insights and may link to central themes in the future if aligned with broader issues such as cybersecurity or systemic risk.

Lower Left Quadrant – Emerging or Declining Themes (FinTech Advancement, Credit Scoring, Bank Stability)



Emerging or declining themes have low centrality and weak development, indicating either nascent areas or topics in decline [60]. “FinTech advancement” and “digital financial inclusion” appear as emerging frontiers, reflecting growing attention to micro-level innovations in service delivery. Conversely, “credit scoring” and “bank stability” show weaker integration with the mainstream literature, suggesting either declining interest or limited theoretical linkages. However, developments in AI-driven credit analytics could reintroduce these as relevant future research areas. These themes should be monitored closely as indicators of potential innovation shifts.

The co-occurrence network map (Figure 3) extracted from bibliometric data offers a rich tapestry of thematic connections in the evolving field of financial technology (FinTech) and financial stability. Anchored in a multi-cluster structure, the dataset reflects the multifaceted and interdisciplinary nature of scholarly engagement with digital finance. Through this lens, it becomes possible to identify not only the most central concepts but also their structural relationships and emergent trajectories, especially as financial systems face both the promise and the peril of digital transformation.

This thematic map offers a strategic overview of how the FinTech-financial stability nexus is evolving. While Motor Themes (e.g., finance and financial systems) anchor the field, Basic Themes (FinTech, inclusion, and stability) remain essential yet underdeveloped. Niche and Emerging themes offer opportunities for cross-disciplinary innovation and conceptual integration. This map serves as a valuable guide for researchers seeking to position their work within the field’s evolving structure.

Keyword	Cluster	Occurrences	Total Link Strength	Avg. Pub. Year	Avg. Citations	Avg. Normalized Citations
fintech	3	118	319	2023	27.36	1.41
financial stability	3	115	324	2023	27.53	1.32
financial inclusion	3	35	106	2022	72.29	2.33
digital finance	3	28	107	2023	58.11	1.7
financial technology	3	24	65	2023	27.33	1.09
finance	1	23	99	2022	20.57	1.02
china	1	20	77	2023	11.6	1.09
banking	2	20	79	2023	26.85	1.37
innovation	6	17	57	2023	17.59	1.43
financial system	4	17	78	2022	16.71	1.29
artificial intelligence	4	16	58	2024	10.63	0.45
blockchain	5	14	54	2023	18.64	2.17
financial market	6	14	53	2023	11.93	1.72
financial services	2	13	55	2022	29.85	1.24
regulation	5	13	31	2023	10.31	0.41
financial markets	2	13	55	2024	3.62	0.86
sustainable development	1	12	70	2023	16.75	0.91
financial risk	1	12	44	2023	105.5	2.01
systemic risk	6	12	29	2022	42.17	1.42

investments	2	12	66	2023	8.83	0.46
cryptocurrency	5	12	42	2023	26	2.63
financial regulation	3	12	36	2022	21.75	0.44
economics	2	11	66	2022	15.45	0.56
financial innovation	2	11	52	2023	18.36	1.67
financial resilience	2	10	32	2024	31.7	1.56
economic growth	1	10	48	2023	17.4	0.98
digital transformation	2	10	23	2024	13	0.98
monetary policy	5	10	26	2024	2.6	1.76
covid-19	6	10	36	2023	29.6	1.66
regulatory frameworks	4	10	39	2024	2.8	0.07
risk management	2	10	44	2023	6.1	0.46
economic development	1	9	43	2023	15.44	0.62
central bank	5	9	33	2022	16.11	1.11
financial service	2	9	45	2022	5.89	0.14
technological innovation	1	9	50	2024	11.67	0.94
financial literacy	3	9	27	2024	19.22	1.01
decentralized finance	4	8	32	2024	0.88	0.4
commerce	1	8	42	2024	21.75	1.68
sustainability	1	8	36	2024	14.5	1.4
alternative energy	1	7	48	2023	31.29	2.55
financial inclusions	1	7	46	2024	2.71	0.28
central bank digital currency	5	7	30	2023	28	3.17
bibliometric analysis	4	7	25	2024	5.14	1.74
digital technologies	2	6	24	2022	40.83	1.53
international cooperation	4	6	28	2024	13.83	0.64
performance	4	6	26	2024	14.5	0.85
renewable energy	1	6	44	2023	36.17	2.9
block-chain	5	6	29	2024	0.33	0.05
bitcoin	5	6	26	2022	10.67	0.28
regtech	2	6	27	2020	39.83	0.62

empirical analysis	6	6	30	2023	18	1.36
financial technologies	3	6	11	2024	8.33	1.67
financial development	1	6	27	2022	23.33	2.15
commercial banks	2	5	9	2024	1.6	1.16
banking stability	6	5	10	2023	26	1.24
regulatory sandbox	3	5	17	2020	27.2	0.88
financial sectors	4	5	32	2024	2.8	0.12
peer-to-peer lending	3	5	19	2023	6.2	0.69
competition	7	5	11	2023	22.2	2.73
policy makers	4	5	25	2023	0	0
financial performance	4	5	20	2024	2.4	0.58
panel data	1	5	35	2023	21.2	1.66
crypto assets	5	5	7	2024	3	1.13
digital economy	2	5	23	2021	8.6	0.6
economic and social effects	1	5	30	2023	4.4	0.06
financial institutions	3	5	20	2021	269.8	4.23
technology	6	5	19	2023	41.4	1.95

Core Themes and Intellectual Clusters

The dataset underscores the centrality of FinTech-related concepts within the intellectual structure of the field. Keywords such as “fintech” (total link strength = 319; avg. citations = 27.36), “financial technology” (65; 27.33), and “digital finance” (107; 58.11) occupy prominent network positions. These terms serve as core hubs connecting subfields including financial inclusion, digital innovation, and regulatory technology. This prominence aligns with broad literature, positioning FinTech as both a technological enabler and a policy disruptor [57][61]. Within thematic clusters, Cluster 3 is strongly represented by “financial inclusion” (35 occurrences; avg. citations = 72.29), reflecting its critical role in leveraging digital finance to improve access to financial services for underserved populations [62]. In Cluster 5, the grouping of “blockchain”, “bitcoin”, and “central bank digital currency” (CBDC) highlights growing interest in decentralized finance and monetary innovation. The CBDC keyword is particularly notable for its recent emergence (avg. publication year = 2023) and high normalized citation (3.17), marking it as a strategically relevant topic in both academic and policy domains [63].

Intersections with Regulation, Risk, and Systemic Stability

The dataset also reveals strong intersections between technological innovation and regulatory or risk-focused research. Keywords such as “financial regulation”, “regulatory frameworks”, “financial resilience”, and “systemic risk” point to a maturing field increasingly concerned with safeguarding financial system robustness. “Financial stability” emerges as a pivotal term with the highest link strength (324) and a strong citation average (27.53), acting as a conceptual bridge across multiple clusters. This aligns with its role as a key policy objective in debates over FinTech integration [64]. Within Cluster 6, “systemic risk” (normalized citation = 1.41) is closely linked with “risk management” and “banking stability”. These relationships reinforce the understanding that while FinTech can enhance efficiency and inclusion, it can also create vulnerabilities, particularly via interconnected platforms and non-bank actors [65]. The proximity of “risk management” to “AI” in the map reflects an emerging trend in applying artificial intelligence to digital financial risk oversight, a promising area for empirical investigation.

Temporal Trends and Emerging Frontiers

Temporal analysis of the dataset highlights several emerging research frontiers. Keywords such as "decentralized finance (DeFi)", "peer-to-peer lending", "regtech", and "CBDC" have high average publication years (2023 and beyond), signaling their status as future-defining topics. Although DeFi currently has moderate citation counts, its disruptive potential—particularly its challenge to traditional intermediaries and regulatory frameworks—is well-documented [66]. "Digital transformation" is another rising theme. While its citation level is moderate, it is increasingly central to both academic discourse and policy agendas. For example, Malaysia's MyDigital initiative promotes payment system modernization and open banking integration, while similar strategies are advancing in ASEAN and Sub-Saharan Africa through mobile money platforms and embedded finance. Artificial intelligence also emerges as a topically fresh keyword (avg. publication year = 2023.94), indicating a gap between technological potential and applied practice. AI applications in fraud detection, credit scoring, and customer service are expanding in financial institutions, but ethical and regulatory implications remain under-explored. Future research should examine AI's role in advancing or constraining financial inclusion, transparency, and risk mitigation.

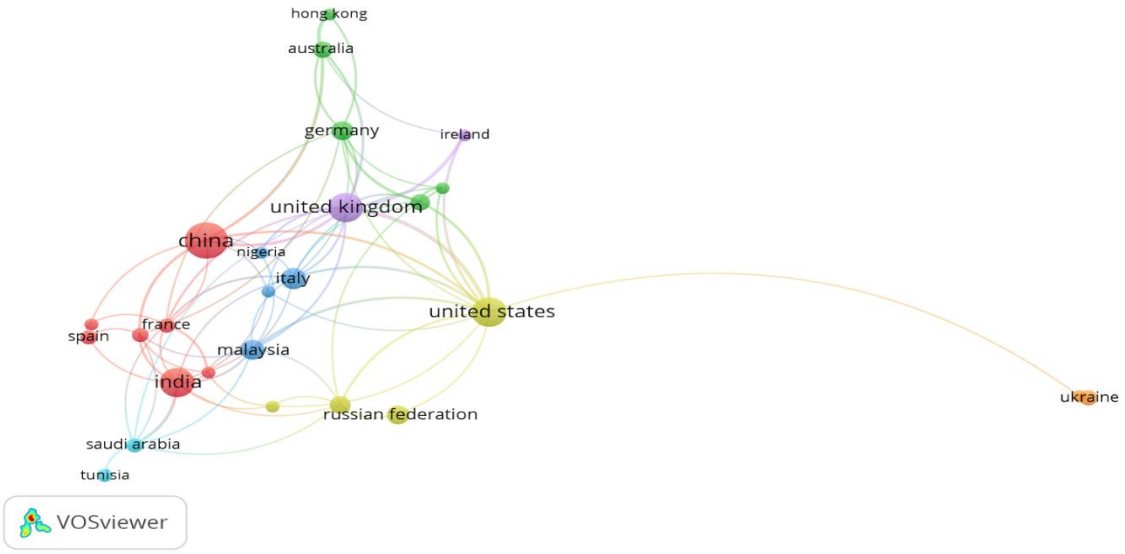
Country	No. of Documents	Citations	Avg. Citations	Total Link Strength	Cluster	Norm. Citations	Avg. Pub. Year
China	55	795	14.45	18	1	1.1	2023
United Kingdom	38	1994	52.47	35	5	1.62	2022
India	37	299	8.08	15	1	0.57	2024
United States	36	974	27.06	31	4	1.34	2023
Italy	20	239	11.95	15	3	0.67	2022
Malaysia	17	483	28.41	13	3	1.41	2023
Germany	16	488	30.5	15	2	1.32	2020
Russian Federation	15	91	6.07	2	4	0.4	2022
Indonesia	13	95	7.31	8	4	0.62	2023
Nigeria	6	424	70.67	5	3	4.62	2023

4.4. Geographical Influences

The global research landscape on FinTech and financial stability demonstrates clear regional patterns shaped by policy priorities, research capacity, and collaboration networks (Table 3). As digital transformation accelerates, bibliometric and co-authorship analyses reveal which regions lead, collaborate, and shape emerging discourse.

Asia dominates in publication volume, led by China with 55 publications and India with 37. China's strong domestic FinTech ecosystem, supported by initiatives such as the Digital Currency Electronic Payment (DCEP) project [67], drives high output, though its global citation impact remains moderate at 14.45 citations per paper with a normalized score of 1.10 due to regional publication focus. India matches China's output but records lower citation impact at 8.08 citations with a normalized score of 0.57, reflecting its concentration on region-specific financial inclusion challenges [58]. Malaysia is a standout performer, producing 17 publications with a high average citation rate of 28.41 and a normalized score of 1.41. This demonstrates that strategic policy alignment through Bank Negara and MyFintech Week can translate into strong global influence. Indonesia with 13 publications and 7.31 citations is steadily emerging through government-backed digital literacy and FinTech sandbox initiatives.

Europe combines strong scholarly impact with dense collaboration networks. The United Kingdom leads with 38 publications, the highest average citations at 52.47 and a normalized score of 1.62. It also ranks first in total link strength at 35, reflecting extensive partnerships with the United States, Germany, and Ireland, consistent with its leadership in RegTech, governance, and ethical FinTech innovation [57]. Germany with 16 publications and 30.5 citations has played a foundational role in digital banking security and regulatory harmonization, while Italy with 20 publications and 11.95 citations benefits from close collaboration within the European research circuit [64].



Africa shows high-impact contributions despite lower output. Nigeria stands out with six publications but the highest average citations at 70.67 and a normalized score of 4.62. These results are driven by influential research on financial inclusion, mobile banking, and regulatory reform in sub-Saharan Africa.

North America continues to be a major hub of theoretical and applied research. The United States ranks among the most influential contributors, with 36 publications, 974 citations averaging 27.06 per paper, and a total link strength of 31, second only to the United Kingdom. Its central position in the network underscores its bridging role between regions, covering themes from systemic risk to blockchain regulation.

The co-authorship network (Figure 4) confirms these patterns. Europe represented by the United Kingdom, Germany, and Italy and North America represented by the United States form the most connected nodes, while Asia represented by China, India, and Malaysia drives volume but remains regionally clustered. Africa's contributions, while fewer, demonstrate that targeted research aligned with policy priorities can achieve disproportionate global impact.

In summary the global FinTech–financial stability research landscape reflects Asia's dominance in publication volume, led by China, India, and Malaysia, with Malaysia standing out for high impact relative to size. Europe demonstrates the strongest combination of influence and collaboration, with the United Kingdom, Germany, and Italy at the center of global research networks. North America, driven by the United States, maintains balanced strength in output, impact, and cross-continental partnerships, reinforcing its role as a global bridge. Africa, though producing fewer publications, achieves disproportionate influence, highlighted by Nigeria's exceptional citation performance. Oceania and South America contribute at smaller scales, focusing on regulatory frameworks, financial inclusion, and digital finance adoption, though with limited global reach. Overall, the field is shaped by Asia's scale, Europe's influence, North America's integration, and Africa's targeted high-impact outputs, with emerging participation from other regions.

4.5. Research Gaps and Future Direction

4.5.1. ***Research Gaps***

Despite the rapid growth in scholarly interest in the FinTech–financial stability nexus since 2017, the field remains theoretically fragmented and methodologically uneven. Bibliometric mapping shows that while themes such as finance, financial inclusion, and China's FinTech development have matured into established motor themes, foundational constructs such as financial stability, cryptocurrency, and monetary policy remain underdeveloped despite high centrality. These basic themes lack cohesive theoretical integration, indicating a need to better align FinTech innovation with systemic risk frameworks [68]. Although high-impact studies such as Ozili (2018) and Arner (2017) have advanced understanding of digital finance's implications for inclusion and regulation, empirical work linking technological innovation to systemic risk management remains limited, particularly in emerging economies.

Research is dominated by macro-level perspectives from developed economies such as the UK, US, and Germany, while high impact but underrepresented markets such as Nigeria, Malaysia, and Indonesia are absent from collaborative and theoretical development. This imbalance highlights the need for localized models of FinTech-induced stability or fragility that account for regional regulatory diversity.

Emerging technologies such as decentralized finance, central bank digital currencies, and artificial intelligence are gaining visibility but remain marginal within mainstream financial stability frameworks. While DeFi and CBDCs are increasingly discussed [67], their implications for liquidity risk, regulatory arbitrage, and monetary sovereignty are insufficiently theorized. AI is widely acknowledged for its potential in credit scoring and fraud detection but lacks critical analysis of its ethical, governance, and systemic resilience dimensions, especially in low- and middle-income countries [69]. The thematic analysis also identifies risk management, bank stability, and credit scoring in emerging or declining quadrants, suggesting outdated framing or underexplored potential. Advances in AI-based credit analytics present an opportunity to link FinTech-driven credit innovations to prudential supervision and systemic oversight [70]. Methodological gaps are also evident. Most high-impact studies rely on quantitative or econometric models, with limited use of mixed-method, qualitative, or case-based approaches that capture institutional, behavioral, and governance factors. This is particularly relevant for low- and middle-income countries, where regulatory sandboxes, digital identity infrastructure, and policy experimentation play significant roles in shaping financial system resilience.

4.5.2. ***Future Trends***

Future research should address these gaps by deepening theoretical and empirical exploration. Scholars should focus on clarifying causal pathways linking FinTech innovations, particularly decentralized finance, central bank digital currencies, and artificial intelligence, to systemic risk within and across national boundaries. Complexity theory and network science offer potential for modeling contagion and resilience in digitally interconnected systems. Comparative analysis of regional and institutional diversity in FinTech adoption is needed. Emerging markets remain understudied despite unique institutional conditions that shape outcomes. Cross-country studies and comparative case research could clarify how governance quality, regulatory capacity, and digital infrastructure mediate FinTech impacts. The integration of digital ethics and Environmental, Social, and Governance considerations into FinTech evaluation frameworks is also underdeveloped. As adoption expands, issues of equity, inclusion, and environmental sustainability will grow in importance for regulators, investors, and civil society. Incorporating ESG criteria can support more sustainable and socially responsible FinTech ecosystems [71].

Finally, future research should align more closely with regulatory experimentation. Initiatives such as regulatory sandboxes, central bank digital currency pilots, and open banking frameworks led by institutions including the Bank of England, the Monetary Authority of Singapore, and Bank Negara Malaysia offer valuable opportunities for policy-engaged academic collaboration. Academic research can enhance the design, evaluation, and scalability of these policy innovations. The co-occurrence analysis confirms the increasing complexity, interdisciplinarity, and policy relevance of the FinTech–financial stability field. Established themes such as digital finance, financial inclusion, and regulation provide a strong foundation, while emerging topics such as decentralized finance, central bank digital currencies, artificial intelligence, and ESG integration represent important areas for future research. As technological innovation continues to reshape the financial ecosystem, scholarships must evolve with theoretical rigor and applied relevance to support resilient, inclusive, and equitable financial systems.

5. Conclusion

This bibliometric review offers a comprehensive synthesis of the evolving relationship between financial technology and financial stability. Drawing on data from 2000 to 2025, the analysis reveals a dynamic and interdisciplinary field shaped by advances in digital finance, artificial intelligence, and blockchain technology. The findings highlight expanding scholarly output, diverse geographical participation, and a clear intellectual structure that spans foundational themes such as financial inclusion and digital transformation, as well as emerging areas including decentralized finance and regulatory technology. The results indicate both opportunities and challenges. Financial technology has the potential to enhance financial resilience and expand access, but it also introduces systemic vulnerabilities that require robust regulatory frameworks and effective risk management. Thematic clusters and keyword networks show that concepts such as central bank digital currencies, artificial intelligence governance, and regulatory technology are gaining importance in both academic and policy contexts. Countries including China, the United Kingdom, the United States, and Malaysia are leading in shaping research and policy discussions.

As financial technology continues to transform global financial architecture, this review emphasizes the need for future research that is theoretically grounded, globally comparative, and closely aligned with regulatory developments. Addressing research gaps in areas such as ethical artificial intelligence, decentralized finance risks, and financial literacy, while strengthening interdisciplinary and cross-regional collaboration, will be critical to achieving inclusive and sustainable innovation. Balancing technological advancement with systemic stability remains the defining challenge and promise of the field. Sustaining the momentum of innovation while safeguarding the integrity of the global financial system will define the next chapter in the evolution of financial technology and financial stability.

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