

Initial Stages and Evolution of FinTech: A Literature Study on Payment Innovations, Capital Structures, and Governance Dynamics

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Abstract

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This research aims to examine the evolution of financial technology (FinTech) from traditional payment systems to modern digital innovations through a systematic literature review approach. The main focus lies on the transformation of the payment system, the dynamics of capital structure and regulation, and the role of corporate governance in strengthening the FinTech ecosystem. The study analyzed 16 scientific articles that were selected based on their thematic relevance and contribution to the comprehensive understanding of FinTech. The results of the study show that innovations such as blockchain, mobile payments, and artificial intelligence play a significant role in improving transaction efficiency and encouraging financial inclusion, especially in developing countries. FinTech capital structures tend to be equity-based and are influenced by regulations and macroeconomic conditions. Meanwhile, transparent and sustainability-oriented corporate governance has been proven to support investor performance and confidence. The study also identified gaps in cross-border research related to capital structure and corporate governance. These findings are important for

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policymakers and industry players to design innovative, adaptive and sustainable digital finance strategies.

1. Introduction

The development of financial technology (FinTech) has revolutionized the global financial system since the beginning of the 21st century. This transformation is not just the adoption of new technologies, but a fundamental change in the way society accesses, manages, and transacts value. This evolution began long before the emergence of the term “FinTech”, starting from the barter system in prehistoric times, then expanding to the use of precious metals, paper currency, banking systems, and until now to the digital era with cashless payment systems, electronic money, and blockchain. Modern FinTech is the result of a long history of accumulation of innovation in the financial system (Dubey, 2019; Ratecka, 2020). The emergence of modern FinTech can be traced back to the early 2000s when tech companies began to come into direct contact with financial services. This innovation is driven by the development of information technology, the internet, and the public's need for fast, easy, and cheap financial services.

One of the most noticeable changes is in the payment system. Technologies such as mobile money, contactless payments, digital wallets, and cryptocurrencies have redefined the concept of value and transactions (Ryabov et al., 2021;

Taherdoost, 2023). Technologies such as blockchain, artificial intelligence (AI), and cloud computing also play a role in improving the efficiency, transparency, and security of transactions (Thomas & Hedrick-Wong, 2019; Ryabov, 2020). Not only in terms of technology, FinTech transformation also involves significant changes in capital structure, ecosystem, and corporate governance. The capital structure of FinTech companies is greatly influenced by macroeconomic factors such as GDP growth, inflation, and risk-free interest rates (Yoshino & Kaji, 2020).

In addition, regulation plays an important role as a balance between innovation and protection of the financial system. Countries like China are a clear example of how proactive regulation and state support can accelerate the growth of the FinTech industry (Hua & Huang, 2021). The role of policy has also proven to be important in driving green innovation through the interaction between environmental regulation and financial technology (Liu et al., 2023). Furthermore, studies on corporate governance in FinTech show that the characteristics of the board of directors, such as gender diversity and independence, have an effect on company performance and leverage decisions. Financial information disclosure and the adoption of information technology have also been shown to strengthen the sustainability performance of companies (Wang et al., 2022; Lin & Qamruzzaman, 2023).

Cross-sector innovation in FinTech is giving rise to new ecosystem dynamics, where traditional industry boundaries are blurred and collaboration between industry players is the key to success. However, although the number of studies on FinTech continues to increase, there are still a number of gaps in the literature. One is the

lack of comprehensive empirical data on the capital structure of FinTech companies, especially the comparison between developing and developed countries (Kowalewski & Pisany, 2023). Similarly, research on the role of corporate governance in the FinTech context is still limited, especially related to regional variations and their impact on financial performance (Du et al., 2022).

Based on this background, this study aims to compile a comprehensive literature review on the early stages and evolution of FinTech, focusing on three main aspects: (1) payment system transformation, (2) capital structure and regulatory dynamics, and (3) FinTech ecosystem and corporate governance. This study is important in order to provide a historical and contemporary understanding of how FinTech is reshaping the financial landscape, as well as identify future research challenges and opportunities in this area. In addition, this study also aims to highlight the policy implications and provide recommendations for practice and further studies.

2. Literature Review

2.1. The Evolution of Payment Systems in Modern FinTech

The development of payment systems is the foundation of the evolution of financial technology. The payment system has evolved from barter, metal coins, banknotes, to digital and contactless. These changes reflect the interaction between technological innovation and the socio-economic need for financial efficiency and inclusion (Ratecka, 2020). In the modern context, FinTech introduces a major transformation in payment infrastructure, where speed, convenience, and security

are top values. Modern FinTech innovations include mobile payment systems, digital wallets, QR code payments, real-time gross settlement systems, to blockchain and crypto technology as a form of decentralized payment system (Dubey, 2019; Ryabov et al., 2021).

This adoption is not only a matter of technology, but also of a redefinition of the user experience, where transactions can be made anytime and anywhere without the involvement of traditional intermediaries such as banks. Blockchain technology has introduced a new paradigm in payment systems with high data transparency and immutability. Smart contracts allow automated transactions to be executed only when certain conditions are met (Taherdoost, 2023). Along with that, artificial intelligence is used to improve the security of payment systems through real-time fraud detection and user behavior analytics (Castro et al., 2020).

The advancement of this payment system also brings challenges, especially in terms of regulation, personal data protection, and cybersecurity. Several countries have established legal frameworks for digital payment systems and central bank digital currencies (CBDCs) in response to the rapid development of FinTech (Setiawan & Maulisa, 2020). In addition, this evolution has also contributed to increased financial inclusion in developing countries, where people who previously did not have access to financial services can now transact only with mobile phones (Thomas & Hedrick-Wong, 2019). In summary, payment systems in the FinTech era have evolved into a complex digital ecosystem, with cross-border capabilities, automation, and significant reduction in transaction costs. These changes are a key catalyst in shaping a more inclusive and efficient future financial landscape.

2.2. Determinants of Capital Structure and Regulation in FinTech

The capital structure in the FinTech industry is greatly influenced by macroeconomic dynamics and regulatory policies. FinTech differs from the conventional financial sector in terms of capital composition because it relies more on venture capital funding, angel investors, and other alternative sources that are innovative and high-risk (Yoshino & Kaji, 2020). Research shows that factors such as Gross Domestic Product (GDP) growth, inflation rates, risk-free interest rates, and investment trends greatly determine the capital structure and funding strategies of FinTech companies (Hua & Huang, 2021). In addition to macroeconomic aspects, the role of regulation is crucial in shaping the dynamics of FinTech's capital structure. Supportive regulatory policies can create an ecosystem that allows for growth and innovation, while overly restrictive policies can hinder the development of this industry.

Countries like China, for example, have managed to lead the adoption of FinTech due to a combination of large markets, government support, and pro-innovation regulatory frameworks (Hua & Huang, 2021). This is in contrast to some developing countries whose regulations have not been able to keep up with the pace of technological innovation. The interaction between financial regulation and the environment also shows a significant influence on the FinTech financing structure. Liu et al.'s (2023) study found that FinTech firms in non-resource-based cities in China tend to be more responsive to environmental policies, creating opportunities to encourage green innovation through financial integration and sustainable policies.

In relation to capital structures, a risk-based policy approach and the principle of prudence are important. Sandboxing-based regulations, for example, allow companies to test new financial innovations in a controlled environment, thereby minimizing systemic risks while still supporting growth (Bowden et al., 2021; Ryabov et al., 2021). Thus, the FinTech capital structure cannot be separated from the macroeconomic conditions and the prevailing regulatory framework. A balance between driving innovation and effective risk management is needed to keep the industry's growth healthy and sustainable.

2.3. FinTech Ecosystem and Corporate Governance

The current FinTech ecosystem is not only supported by technological innovation, but also by good corporate governance. In this context, governance includes the structure of the board of directors, transparency, disclosure of information, and compliance with environmental, social, and governance (ESG) principles. Wang et al. (2022) show that FinTech companies operating in mature ecosystems tend to have better ESG performance, which in turn improves the reputation and attractiveness of investors. Governance aspects such as board size, the existence of independent directors, and gender diversity have also been proven to have a positive effect on the capital structure and financial performance of FinTech companies. Companies that have a sound board structure tend to be able to maintain optimal levels of leverage and provide better protection for the interests of shareholders.

In addition, strong governance also allows companies to access financing at a lower cost of capital, which is especially important in a dynamic and high-risk

FinTech environment. Lin and Qamruzzaman (2023) highlight the importance of environmental and financial disclosure in building public trust and attracting long-term investors. In the context of a disruptive FinTech ecosystem, transparency is a strategic asset. The adoption of information technology by company management also strengthens their ability to convey relevant information to the market, thereby reducing information asymmetry and improving capital market efficiency.

Furthermore, cross-sectoral FinTech has disrupted traditional business models and created new ecosystem dynamics. Guellec et al. (2020) stated that cross-industry integration between the financial, technology, and public service sectors has resulted in more adaptive and sustainable business model innovations. Therefore, corporate governance that is adaptive to ecosystem changes is the key to success in facing this era of disruption. Thus, strengthening corporate governance and developing a collaborative FinTech ecosystem is a critical factor in driving sustainable and financially and socially resilient industry growth.

3. Method

This study uses a systematic literature review approach to examine the early evolution and development of FinTech from various aspects, namely payment systems, capital structure and regulations, and corporate governance in the FinTech ecosystem. The literature study was chosen because this approach allows the collection, synthesis, and analysis of information from a variety of reliable academic sources to gain a thorough understanding of complex and ever-evolving phenomena such as FinTech. The stages in this study start with the preparation of the main

research question: “How does the evolution of the digital financial system from its inception to modern innovations in FinTech affect the capital structure, regulation, and corporate governance?” To answer this question, the authors collected literature sources from academic databases such as Google Scholar, SpringerLink, ScienceDirect, and ResearchGate, with a time limit of 2019 to 2023 to ensure the relevance and novelty of the data.

The search process was conducted with keywords such as: “FinTech evolution,” “digital payment systems,” “capital structure in FinTech,” “FinTech governance,” “FinTech regulation,” and “FinTech ecosystems.” After the initial screening, 16 scientific articles were selected that met the inclusion criteria, namely: English or Indonesian articles, from indexed journals. Presenting an empirical analysis or theoretical study related to a research topic. The analysis was carried out thematically by mapping the article into three main focuses: (1) the history and transformation of payment systems in FinTech, (2) economic and regulatory factors that affect the capital structure, and (3) the role of corporate governance in driving the sustainability of the FinTech ecosystem. Each article is reviewed based on the objectives, methods, main findings, and relevance to the conceptual framework of this research. Qualitative content analysis techniques are used to identify patterns and gaps in the literature.

In addition, this study also seeks to identify literature gaps that have not been widely discussed in previous studies, such as the lack of empirical data on the comparison of FinTech capital structures in developing and developed countries, as well as the limitations of studies on the influence of governance on the financial

performance of FinTech companies in various geographical areas. With this method, it is hoped that the research can present a comprehensive and evidence-based synthesis of knowledge, as well as provide direction for further research and policy in the field of financial technology.

4. Results

The results of this literature study show that the evolution of FinTech is a multidimensional transformation that is not only related to technological advancements, but also involves complex social, economic, and regulatory dynamics. The findings of the study confirm that the development of payment systems over time has become a key foundation in the formation of today's digital finance architecture. The barter system, which was once the only means of transaction in the past, has now been replaced by digital payment systems based on artificial intelligence, cloud computing, and blockchain that are able to deliver transactions in real-time, across countries, and at a lower cost. Over time, innovations in payment systems have created a more inclusive and efficient financial system, reaching populations previously underserved by traditional financial systems. Various studies analyzed, such as those conducted by Ratecka (2020) and Ryabov et al. (2021), show that this transformation is taking place simultaneously in many regions, especially in Asia and Africa, which are experiencing a surge in financial inclusion thanks to the penetration of mobile money and e-wallet-based technologies.

In addition, digital payment systems such as QR code payments, contactless transactions, and digital wallets have disrupted the functioning of conventional

financial institutions and brought financial access closer to grassroots communities. This is especially true due to the high penetration of smartphones and internet networks which are the main levers in the expansion of the adoption of FinTech technology. Even in developing countries such as Kenya, India, and Indonesia, FinTech-based payment systems have become an important instrument in people's daily economic activities, replacing the previously dominant cash transactions. On the other hand, the use of blockchain technology in payment systems makes a significant contribution to the security and transparency of transactions. This technology creates immutable record of transactions, creating a trustworthy system without intermediaries such as central banks or large financial institutions. Taherdoost (2023) argues that this innovation has the potential to transform the global financial system to be more open, decentralized, and efficient, despite the serious challenges related to data protection and legal supervision.

Research also shows that the evolution of FinTech cannot be separated from macroeconomic factors and applicable regulatory policies. The capital structure of a FinTech company, for example, is heavily influenced by variables such as GDP growth, inflation rates, systemic risk, and the availability of alternative funding sources. Yoshino and Kaji (2020) explain that due to the innovative nature and high volatility of the market, FinTech companies tend to avoid capital structures that are overly dependent on debt. Instead, they make more use of equity-based funding, such as venture capital, angel investment, and even asset tokenization in the form of Initial Coin Offerings (ICOs). This approach not only provides financial flexibility,

but also strengthens the company's bargaining position in developing technology and expanding into new markets.

However, the ideal capital structure is highly dependent on the regulatory climate. Countries that have pro-innovation regulations, such as regulatory sandboxes, special licenses for financial startups, and tax incentives for R&D, have proven to be able to attract more FinTech investment. A study by Hua and Huang (2021) in China shows that integrated regulations and supporting technology adoption have allowed the FinTech industry to grow rapidly in a short period of time. On the other hand, countries with rigid regulations and lengthy bureaucracies hinder the growth of domestic FinTech and force companies to shift their operations to more competitive neighboring countries. Liu et al. (2023) even highlight the importance of environmental regulation in the development of green FinTech, where cities with strict environmental regulations spur the creation of financing innovations for sustainable projects.

Another crucial finding is the importance of corporate governance in shaping financial performance and the sustainability of FinTech businesses. FinTech companies with diverse boards of directors, made up of independent and female members, tend to have more controlled leverage and better financial performance. Good governance not only maintains the integrity of the company, but also increases investor confidence and reduces information asymmetry between management and stakeholders. Lin and Qamruzzaman (2023) also emphasize that financial and environmental disclosure is crucial in attracting long-term investment and strengthening a company's reputation.

The modern FinTech ecosystem demands transparency, integrity, and adaptability to market changes. Therefore, many FinTech companies are starting to integrate sustainability (ESG) practices in their business models. Wang et al. (2022) revealed that the integration of ESG into FinTech companies' strategies not only strengthens competitiveness, but also opens up funding opportunities from institutions that apply sustainable investment principles. In fact, some peer-to-peer lending and digital banking platforms have begun to prioritize financing for environmentally and socially responsible projects, making FinTech a catalyst in the sustainable development agenda.

Cross-sector innovation is also a major theme in the literature. Guellec et al. (2020) show how collaboration between the technology, banking, and government sectors produces an innovative and adaptive FinTech ecosystem. New concepts such as Banking-as-a-Service (BaaS), open banking, and embedded finance have paved the way for more integrated, efficient, and user experience-oriented business models. In this kind of ecosystem, FinTech companies not only play the role of financial service providers, but also as platforms that connect various stakeholders in a single digital value chain. This synergy strengthens the company's ability to respond to market dynamics, reduce operational costs, and increase market penetration.

On the other hand, the challenges faced by FinTech companies remain significant. Regulatory uncertainty, cybersecurity risks, digital literacy gaps, and data limitations are the main obstacles in creating a stable and inclusive FinTech ecosystem. Several studies such as those conducted by Kowalewski and Pisany (2023) note that there is still a gap in empirical data regarding FinTech capital

structures, especially comparisons between developing and developed countries. Research on the role of governance in FinTech company performance is also still focused on specific regions and has not accommodated the diversity of social, cultural, and political contexts that influence governance practices. Therefore, the need for cross-border studies and comparative approaches is urgent to understand FinTech financial behavior and strategies more comprehensively.

The results of this study as a whole illustrate that FinTech is a very dynamic sector, where innovation, regulation, capital structure, and governance interact with each other in shaping the future of digital finance. Despite the challenges, the opportunities to expand financial inclusion, accelerate economic growth, and drive sustainability through technology remain enormous. The study also confirms that the success of FinTech depends heavily on the ability to balance technological innovation with effective risk management, as well as build trust through good governance and an adaptive regulatory framework.

5. Discussion

The results of the literature review show that FinTech is a multidimensional phenomenon that not only involves technological transformation, but also touches on complex social, regulatory, and governance aspects. The evolution of the payment system that became the starting point for the development of FinTech provides an important basis for understanding how financial technology is able to reach populations that previously did not have access to financial services. This reinforces the argument that FinTech is not only a financial efficiency tool, but also

an important instrument in achieving global financial inclusion, especially in developing countries. These findings reinforce the position of previous research such as Thomas & Hedrick-Wong (2019) and Ratecka (2020), which stated that the advancement of digital payment systems is able to create a new economic order based on inclusion and efficiency.

Subsequent discussions regarding the capital structure show that FinTech has unique characteristics that distinguish it from traditional financial institutions. Reliance on non-conventional funding sources and high sensitivity to macroeconomic conditions demand FinTech companies to have flexibility in their financial strategies. This is reinforced by the studies of Yoshino and Kaji (2020) and Hua and Huang (2021), which stated that FinTech capital structure is heavily influenced by external factors such as economic growth, government regulations, and technological developments. In this context, an equity-based approach is the dominant choice as it allows growth without dependence on debt, despite the high risk of investor pressure and market uncertainty.

On the other hand, the role of regulation is crucial in determining the direction of FinTech development. Adaptive and risk-based regulation has proven to be more effective in supporting FinTech growth than repressive approaches that stifle innovation. Findings from Liu et al. (2023) and Bowden et al. (2021) confirm that countries that develop sandbox frameworks or specialized licensing systems are able to create a more attractive investment climate and encourage safe technology experimentation. However, this discourse also raises important questions about how to maintain a balance between innovation and consumer protection, as well as how

to formulate policies that are contextual to local needs without hindering FinTech's global integration.

In terms of governance, the results of this study show that FinTech needs a more open, transparent, and sustainability-oriented organizational structure. Studies such as Lin and Qamruzzaman (2023) prove that an inclusive board of directors and good disclosure of information have a significant effect on company performance. In the context of a complex digital ecosystem, strong governance is one of the key determinants of long-term success. This is relevant to the increasing attention of investors to ESG (Environmental, Social, and Governance) aspects, which are now an important benchmark in assessing the sustainability of financial technology companies. This discussion also opened up new thinking space on the importance of cross-sector collaboration in building a resilient FinTech ecosystem.

Models such as Banking-as-a-Service and embedded finance show that the boundaries between the financial and non-financial sectors are increasingly blurred, driving the integration of financial functions into various digital services. This kind of innovation requires a holistic governance and regulatory framework, as well as improving people's digital literacy. In this case, the role of the state as a facilitator, regulator, as well as innovator is becoming increasingly important. Thus, this study confirms the importance of an interdisciplinary approach in understanding FinTech. Technological innovation must be understood in the context of economics, regulation, and governance. FinTech is not an instant solution to global financial challenges, but it is a strategic tool that requires the support of a strong and

sustainable ecosystem. In the future, the challenges that must be faced are not only in terms of technology, but also in terms of ethics, security, and public trust.

6. Conclusion

This study presents a comprehensive literature review on the evolution of FinTech from premodern times to today's digital innovation, focusing on three main pillars: payment systems, capital structures and regulations, and ecosystem and corporate governance. The results of the study show that the transformation of the digital payment system has contributed greatly to improving transaction efficiency and expanding financial inclusion, especially in developing countries. Innovations such as blockchain, e-wallets, and mobile money are proving to revolutionize the way people access and use financial services. In addition, the capital structure of FinTech companies differs significantly from conventional financial institutions, with a high reliance on equity funding and sensitivity to macroeconomic and regulatory conditions.

Adaptive, inclusive, and risk-based regulation plays an important role in driving innovation while protecting the stability of the financial system. The study also highlights that good corporate governance, transparency, and integration of ESG values are key to FinTech sustainability in the midst of a dynamic digital environment. Thus, it can be concluded that the success of FinTech is not only determined by its technological capabilities, but also by the readiness of the ecosystem, the quality of governance, and public policies that support innovation and consumer protection. This study provides a theoretical foundation for further

research and is an important reference for policymakers and industry players in designing sustainable and inclusive digital finance strategies.

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