

Legal Analysis of Digital Economic Regulation in Financial Technology in Indonesia

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DOI : <https://doi.org/10.61796/jlhss.v3i8.1893>



Sections Info

Article history:

Submitted: June 03, 2026

Final Revised: June 20, 2026

Accepted: July 16, 2026

Published: August 13, 2026

Keywords:

Financial technology
(Fintech)

Digital economy

Legal certainty

Legal effectiveness

Legal protection

ABSTRACT

Objective: This study aims to analyze the legal regulation of the digital economy in financial technology in Indonesia, the effectiveness of existing regulations, consumer legal protection, as well as challenges and the ideal concept for strengthening fintech regulations in the future. **Method:** This research employs a normative legal research method using statutory and conceptual approaches. The legal materials consist of primary, secondary, and tertiary legal sources analyzed qualitatively. **Results:** The results indicate that fintech regulation in Indonesia has been supported by various legal instruments, including Law Number 1 of 2024 concerning Electronic Information and Transactions, Law Number 27 of 2022 concerning Personal Data Protection, Law Number 4 of 2023 concerning Financial Sector Development and Strengthening, as well as regulations issued by the Financial Services Authority and Bank Indonesia. Based on the Theory of Legal Certainty, these regulations have provided legal certainty for both providers and consumers, although there remain issues related to regulatory overlap and legal gaps concerning emerging technologies. Based on the Theory of Legal Effectiveness, the effectiveness of fintech regulation is still challenged by illegal online lending activities, personal data breaches, cybercrime, and low levels of digital financial literacy. Based on the Theory of Legal Protection, consumer protection has been implemented through preventive and repressive mechanisms; however, stronger measures are still needed in personal data protection and supervision of fintech providers. **Novelty:** This study concludes that strengthening fintech regulation requires regulatory harmonization, enhancement of the regulatory sandbox mechanism, stronger personal data protection, regulation of Artificial Intelligence in digital financial services, and the improvement of digital financial literacy through collaboration among the government, the Financial Services Authority, Bank Indonesia, and higher education institutions.

INTRODUCTION

According to the e-Conomy SEA 2025 report compiled by Google, Temasek, and Bain & Company, Indonesia remains the country with the largest digital economy in Southeast Asia. The Gross Merchandise Value (GMV) of Indonesia's digital economy in 2025 is projected to approach US\$100 billion, an increase of approximately 14% compared to the previous year. This growth is driven by the rapid development of e-commerce, digital financial services (financial technology), digital payments, and the use of artificial intelligence in various economic activities [1], [2], [3].

The existence of fintech has made a significant contribution to national economic development. The use of digital technology can increase transaction efficiency, expand public access to financial services, and support increased financial inclusion, especially for communities previously excluded from formal financial institutions [2], [3], [4]. Furthermore, innovations such as QRIS, BI-FAST, and electronic money have

strengthened the national payment system, making it faster, safer, and more efficient, thus encouraging the growth of digital economic activity [1], [5].

The rapid development of the digital economy brings with it various legal consequences that require serious attention. The increasing diversity of digital business models, the rise in electronic transactions, and the use of personal data in financial technology (fintech) services have given rise to various legal challenges, including misuse of personal data, cybercrime, illegal fintech operations, and the need for strengthened inter-agency coordination in overseeing the financial services sector [6]-[9]. These conditions demonstrate the urgent need for adaptive regulations to ensure legal certainty, provide consumer protection, and support the creation of healthy and sustainable financial sector innovation [10]-[13].

In addition to legislation, financial technology regulation is also implemented by the Financial Services Authority (OJK) and Bank Indonesia (BI) in accordance with their respective authorities [13], [7], [14]. The OJK's authority is based on Law Number 21 of 2011 concerning the Financial Services Authority, Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector, and Financial Services Authority Regulation Number 3 of 2024 concerning the Implementation of Technology Innovation in the Financial Sector. Based on these provisions, the OJK has the authority to regulate, grant licenses, supervise, and implement a regulatory sandbox for providers of technology innovation in the financial sector [13], [14].

On the other hand, Bank Indonesia's authority is based on Law Number 23 of 1999 concerning Bank Indonesia, as amended several times, most recently by Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector. In exercising its authority in the payment system sector, Bank Indonesia stipulates Bank Indonesia Regulation Number 19/12/PBI/2017 concerning the Implementation of Financial Technology and Bank Indonesia Regulation Number 23/6/PBI/2021 concerning Payment Service Providers as the regulatory basis for the implementation of financial technology in the payment system sector, including electronic money, QRIS, BI-FAST, and various other digital payment innovations [1], [5]. The division of authority between the Financial Services Authority (OJK) and Bank Indonesia is intended to maintain financial system stability, ensure the security and efficiency of the payment system, and support the development of digital innovation in the financial sector [1], [13], [14]. Although Indonesia already has various regulations governing the implementation of financial technology, the rapid technological development often outpaces legal development (regulatory lag). This situation has given rise to various legal issues, such as those concerning the use of Artificial Intelligence (AI), personal data protection, new fintech business models, and the potential for overlapping authority between regulators [15], [16], [6], [8]. Therefore, further study is needed to determine the extent to which existing regulations are able to provide legal certainty and accommodate the development of financial technology in Indonesia [10], [13], [7].

The first problem relates to the continued prevalence of illegal online lending providers operating without a license from the Financial Services Authority (OJK). This practice not only harms the public economically but also leads to various legal violations, such as non-transparent interest rates, misuse of personal data, and collection methods that violate legal provisions [9], [21], [22]. This situation demonstrates that oversight and law enforcement against illegal fintech providers still face various challenges [17], [18], [19]. Furthermore, personal data protection is also an increasingly important issue because fintech providers handle a variety of sensitive user data [8], [20]. Therefore, the implementation of Law Number 27 of 2022 concerning Personal Data Protection is a crucial factor in ensuring data security and increasing public trust in digital financial services [8], [20].

The next issue relates to the use of Artificial Intelligence (AI) in financial technology services. While the use of AI in credit analysis, transaction detection, and consumer services does increase efficiency, it also raises legal issues regarding algorithm transparency, accountability for automated decision-making, and protection of user rights [15]. Furthermore, the development of fintech business models also presents challenges to inter-institutional coordination, as regulation and supervision involve the Financial Services Authority (OJK), Bank Indonesia, and other ministries and institutions with authority in their respective fields [13], [6], [7]. This situation has the potential to create overlapping authority if not supported by regulatory harmonization and effective coordination [13], [16], [6].

These various issues demonstrate that the development of financial technology not only benefits the growth of the digital economy but also creates legal challenges that require adaptive and comprehensive regulation [10], [16], [7]. Therefore, research is needed to assess the extent to which existing regulations are able to provide legal certainty, protect the public, and support the sustainable development of financial technology in Indonesia [11], [12], [13].

Based on these various issues, several studies have examined financial technology from various legal perspectives. However, most previous research has focused on specific issues, such as consumer protection, illegal online lending, or e-commerce [23], [24], [25]. These studies have made important contributions to the development of digital economic law, but have not yet examined the legal regulations of financial technology comprehensively from a digital economic law perspective.

RESEARCH METHOD

The type of research used in this study is normative legal research. This study examines legal norms through legislation, doctrine, and legal principles related to the problem under study [26], [27]. This approach is used to analyze the legal regulation of financial technology in Indonesia.

In this study, a normative approach is used to analyze the legal regulation of Financial Technology (Fintech) in Indonesia, specifically regarding the rule of law, legal

protection, legal certainty, and legal effectiveness [28], [29]. The research was conducted through library research using primary, secondary, and tertiary legal materials.

Primary legal materials include laws and regulations from the Financial Services Authority (OJK) and Bank Indonesia (BI). Secondary legal materials consist of books, scientific journals, and previous research results, while tertiary legal materials include legal dictionaries and legal encyclopedias. This study aims to analyze the extent to which fintech regulations in Indonesia have provided legal certainty and effective legal protection for the public.

Within the framework of this normative legal research, various approaches are used to unravel the complex legal issues that respond to the regulation of financial technology (fintech) in Indonesia. The analysis focuses on three main pillars: legal certainty, legal effectiveness, and legal protection for consumers.

- a) The Legislative Approach: An in-depth review of all fintech-related regulations, from existing laws to derivative regulations from authorities such as the Financial Services Authority (OJK) and Bank Indonesia, is conducted. The objective of this approach is to identify the level of consistency, conformity, and potential gaps in the legal framework governing the digital financial sector.
- b) The Conceptual Approach: Adopting various relevant legal theories, such as those on the rule of law, legal certainty, legal effectiveness, and legal protection for consumers. This approach serves as a conceptual foundation for understanding the legal challenges arising from the evolution of fintech and assessing the relevance of these theories in practical application [30].
- c) The Analytical Approach: A critical examination of the interaction between existing legal rules and their implementation in the field of fintech service operations is crucial for uncovering the gap between legal ideals (*das sollen*) and legal reality (*das sein*), particularly regarding consumer protection and the supervision of digital financial entities [31].

The case study approach utilizes analysis of several important precedents, such as the rise of illegal online lending, issues of data privacy violations, and various disputes between fintech providers and users. This approach is essential for evaluating how legal provisions are applied in real-world situations and how effectively the legal protections provided are realized in everyday practice.

The legal material analysis technique in this study uses qualitative analysis with a normative legal research approach. The analysis was conducted on primary, secondary, and tertiary legal materials related to the regulation of Financial Technology (Fintech) in Indonesia, specifically regarding legal certainty, regulatory effectiveness, and legal protection for consumers.

The analysis stages include legal material classification, legal interpretation, and legal reasoning to assess the conformity between applicable legal provisions (*das sollen*) and their application in practice (*das sein*). The results of the analysis are then used to assess the effectiveness of fintech regulations based on the principles of legal certainty,

benefit, and legal protection and to formulate recommendations for regulatory development in Indonesia [32]-[35].

RESULTS AND DISCUSSION

Results

Financial Technology Legal Regulations within the Digital Economy Framework

The development of the digital economy, accompanied by the rapid growth of financial technology, has driven a transformation in the financial services sector in Indonesia. On the one hand, this development has increased financial inclusion, transaction efficiency, and public access to various digital financial services. However, on the other hand, it has also been accompanied by a rise in various legal issues. One of the most prominent issues is the rise of illegal financial activities, particularly illegal online loans and illegal investments, which are detrimental to the public.

Data from the Task Force for the Eradication of Illegal Financial Activities (Satgas PASTI), shows that from 2017 to May 31, 2025, 13,228 illegal financial entities were shut down, consisting of 11,166 illegal online lending entities, 1,811 illegal investment entities, and 251 illegal pawnshop entities. Furthermore, since the Indonesia Anti-Scam Center (IASC) began operating in November 2024, 135,397 reports of financial transaction fraud were received, with reported losses reaching approximately IDR 2.6 trillion. These facts demonstrate that the development of financial technology not only brings economic opportunities but also increases the risk of misuse of digital financial services, necessitating a strengthened legal framework and oversight.

In response to the increase in electronic transaction activity, the government refined regulations regarding electronic information and transactions through Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 concerning Electronic Information and Transactions. These changes were made to align regulations with developments in information technology, strengthen legal certainty in the implementation of electronic systems, and enhance protection for digital service users. With these changes, electronic transaction activities, the foundation of various financial technology services, have a clearer legal basis.

The development of financial technology also increases the risk of misuse of personal data because digital financial service providers collect and process various user data as part of their business processes. The increasing number of cases of data leaks and misuse demonstrates that the previously scattered regulations do not provide adequate protection. Therefore, the government established Law Number 27 of 2022 concerning Personal Data Protection as a legal basis governing the rights of data subjects, the obligations of data controllers, and responsibilities in the processing of personal data. The existence of this law is crucial in building public trust in the use of financial technology services that rely on digital data processing.

Kornelius Benuf, Siti Mahmudah, and Ery Agus Priyono explained that personal data protection is one form of consumer privacy protection. In providing financial technology, providers are required to maintain the confidentiality, integrity, and

security of users' personal data from the moment it is acquired until it is destroyed. This protection is a crucial factor in building public trust in digital financial services and preventing misuse of personal data.

Analysis of Legal Certainty in Fintech Regulations

The enactment of various regulations governing financial technology demonstrates the government's effort to provide legal certainty regarding the provision of digital financial services in Indonesia. Alongside the growth of the digital economy, the government has not only enacted Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector (P2SK Law) but has also strengthened the regulatory framework through Law Number 1 of 2024 (the Second Amendment to Law Number 11 of 2008 on Electronic Information and Transactions), Law Number 27 of 2022 on Personal Data Protection, Financial Services Authority Regulation Number 3 of 2024 on the Implementation of Financial Sector Technology Innovation, and various Bank Indonesia regulations concerning digital payment systems. The existence of these regulations indicates that the governance of financial technology is not established through a single rule, but rather through an interconnected legal system.

According to Muhammad Bintang Firdaus, legal certainty is one of the three fundamental legal values—as identified by Gustav Radbruch—aimed at providing stability, predictability, and clarity in the application of the law. Legal certainty is essential so that every legal subject understands their rights, obligations, and the legal consequences of their actions. Therefore, the creation of regulations governing various aspects of financial technology operations represents a concrete state effort to ensure legal certainty amidst the rapid evolution of digital technology.

From the perspective of legal certainty, these regulations have established a legal basis for electronic transactions, personal data processing, licensing mechanisms, provider supervision, and digital payment system operations. Through this regulatory division, each aspect of financial technology operations is grounded in a relatively clear legal framework aligned with the respective authorities of the relevant institutions. The Financial Services Authority holds the authority to regulate and supervise financial sector technology innovation, while Bank Indonesia is authorized to regulate digital payment systems. Meanwhile, aspects concerning electronic transactions and personal data protection are governed by the Law on Electronic Information and Transactions and the Law on Personal Data Protection. This division of authority essentially provides certainty regarding which institutions are responsible for the operation and supervision of financial technology. Furthermore, the existence of various regulations issued by different bodies necessitates harmonization to prevent overlapping authority in practice. Although the division of duties between the Financial Services Authority (OJK) and Bank Indonesia is defined by their respective scopes of authority, the increasingly integrated nature of financial technology services often blurs the boundaries between payment systems and financial services. This situation demands

effective inter-agency coordination to ensure consistent legal application, avoiding conflicting interpretations or regulatory gaps.

On the other hand, the strengthening of legal certainty is evident in the issuance of OJK Regulation (POJK) Number 3 of 2024, which replaces previous regulations concerning technological innovation in the financial sector. This regulatory shift demonstrates the OJK's effort to align the legal framework with the evolving financial technology industry. Provisions regarding the regulatory sandbox, governance, risk management, consumer protection, and operator obligations represent significant steps toward enhancing legal certainty for business players while simultaneously protecting the public as service users.

Based on this analysis, the author posits that financial technology regulations in Indonesia have established a more solid foundation for legal certainty compared to earlier periods, as they address various critical aspects of digital financial service operations. However, this legal certainty is not yet optimal, given the rapid pace of technological advancement and the continuous emergence of new business models that require regulatory adjustments. Therefore, future regulatory development must be more adaptive, harmonious, and responsive to maintain a balance among legal certainty, consumer protection, technological innovation, and financial system stability.

Discussion

The Effectiveness of Fintech Regulations in Consumer Protection

The establishment of various regulations in the financial technology sector is essentially aimed at providing legal protection to consumers when using digital financial services. This protection is expected to create a sense of security for the public through oversight of providers, prevention of illegal financial activities, resolution of consumer complaints, and enforcement of violations occurring in the provision of financial technology services. Therefore, regulatory effectiveness is measured not only by the existence of laws and regulations, but also by the extent to which they reduce violations and provide real protection to consumers.

In practice, consumer protection still faces various challenges. According to the Financial Services Authority (OJK) Monthly Board of Commissioners Meeting Report for April 2025, from January 1 to April 17, 2025, the OJK received 144,559 service requests through the Consumer Protection Portal Application (APPK), including 12,759 complaints. Of these, 4,895 complaints came from the financial technology sector, making it one of the sectors with the highest number of complaints after banking. In addition, the Financial Services Authority (OJK) also received 2,323 complaints regarding illegal financial entities, consisting of 1,899 complaints regarding illegal online loans and 424 complaints regarding illegal investments. This data indicates that disputes and violations in financial technology services remain common despite a strengthened regulatory framework.

This high number of complaints indicates that consumer protection is not yet fully effective in preventing violations. Most complaints still relate to illegal online

lenders, misuse of personal data, inappropriate collection practices, and alleged fraud in digital transactions. This situation indicates that while regulations provide protection and dispute resolution mechanisms, their implementation still faces challenges, both in terms of business compliance and public literacy in choosing legal digital financial services.

The effectiveness of regulations can also be seen in law enforcement efforts against illegal financial activities. According to data from the Task Force for the Eradication of Illegal Financial Activities (Satgas PASTI), from 2017 to May 31, 2025, 13,228 illegal financial entities were shut down, consisting of 11,166 illegal online lending entities, 1,811 illegal investment entities, and 251 illegal pawnbroking entities. Furthermore, the PASTI Task Force also blocked 427 illegal online lending entities, 6 personal loan offerings, and 74 illegal investment offerings in just one enforcement period in 2025. This data demonstrates that the government is actively cracking down on illegal financial activities, but also that illegal businesses continue to emerge, necessitating ongoing oversight.

Based on this data, it can be analyzed that financial technology regulations have had a positive impact through the provision of oversight mechanisms, complaint handling, and enforcement against illegal financial activities. However, the effectiveness of these regulations cannot be said to be optimal due to the continuing high number of consumer complaints, the prevalence of illegal online lending, and the high number of digital financial transaction fraud cases. Thus, consumer protection depends not only on the existence of regulations, but also on effective implementation, consistent oversight, and increased digital and financial literacy. These conditions will be analyzed using Soerjono Soekanto's five factors of legal effectiveness in the next subsection. Effectiveness Analysis Based on Soerjono Soekanto's Theory

The effectiveness of financial technology legal regulations is not only determined by the existence of laws and regulations, but also by their implementation in practice. As explained in Chapter II, Soerjono Soekanto argues that legal effectiveness is influenced by five factors: legal factors, law enforcement factors, facilities, societal factors, and legal culture. Therefore, the effectiveness of financial technology regulations in providing consumer protection is analyzed based on these five factors to determine the extent to which the applicable regulations have achieved their objectives.

Legal factors relate to the quality of the legal substance that serves as the basis for regulating public behavior. The effectiveness of a regulation is determined not only by the existence of the rules but also by the clarity of norms, the consistency of the regulations, and the law's ability to keep pace with societal and technological developments. If the legal substance is unable to accommodate these developments, effective law enforcement will be difficult to achieve.

In the context of financial technology, Indonesia already has a relatively comprehensive regulatory framework, ranging from regulations regarding electronic transactions, personal data protection, the financial services sector, to digital payment systems. However, based on the discussion in Subchapter 4.1, a high number of

consumer complaints, a rise in illegal online loans, and an increase in digital financial transaction fraud cases are still found. These conditions indicate that existing regulations have not fully kept pace with the rapid development of technological innovation.

From a legal perspective, financial technology regulation in Indonesia has shown positive progress through the establishment of various complementary regulations. However, regulatory effectiveness is not yet optimal because the dynamics of digital innovation are evolving faster than the process of establishing and refining laws and regulations. Therefore, regular regulatory updates are necessary to ensure the law remains adaptive, provides legal certainty, and is able to address the challenges of technological developments in the financial services sector.

In the implementation of financial technology, law enforcement is not solely the responsibility of a single institution but is carried out through a division of authority according to each sector. The Financial Services Authority plays a role in regulating and supervising the financial services sector, Bank Indonesia is responsible for payment systems, and the Ministry of Communication and Digital is authorized to supervise the implementation of electronic systems. In addition, the Indonesian National Police plays a role in law enforcement against criminal acts related to fraud, misuse of personal data, and cybercrime, while the PASTI Task Force was formed as an inter-agency coordination forum to eradicate illegal financial activities.

In addition to taking action against illegal entities, the Financial Services Authority (OJK) is also strengthening consumer protection through complaint and dispute resolution mechanisms. According to the April 2025 Monthly Board of Commissioners Meeting Report, the OJK received 12,759 public complaints, including 4,895 complaints from the financial technology sector. This high number of complaints indicates that the public has utilized the consumer protection mechanisms provided by the OJK. However, the large number of complaints also indicates that violations of consumer rights continue to occur frequently, necessitating increased oversight effectiveness.

Furthermore, the establishment of the Indonesia Anti-Scam Center (IASC) is a strategic step in strengthening coordination between law enforcement agencies to address digital financial transaction fraud. As of May 31, 2025, the IASC had received 135,397 fraud reports, with 219,168 accounts reported and 49,316 accounts successfully blocked as part of efforts to rescue public funds. The successful blocking demonstrates that coordination between the Financial Services Authority (OJK), Bank Indonesia, the Police, banks, and payment service providers is beginning to yield positive results in accelerating the handling of fraud in the digital financial sector.

In the financial technology sector, the existence of supporting facilities plays a crucial role, given that all financial services activities are conducted electronically. Therefore, the effectiveness of consumer protection is determined not only by the quality of regulations and the performance of supervisory institutions, but also by the

availability of a complaints system, monitoring technology, and coordination mechanisms capable of responding to violations quickly and appropriately.

One such facility provided by the Financial Services Authority (OJK) is the Consumer Protection Portal Application (APPK) as a medium for submitting public complaints in the financial services sector. Through this application, the public can submit complaints online, making the process of receiving, verifying, and following up complaints easier, faster, and more documented. According to the OJK Monthly Board of Commissioners Meeting Report for April 2025, from January 1 to April 17, 2025, the OJK received 144,559 service requests, including 12,759 complaints, with 4,895 complaints originating from the financial technology sector. The high utilization of APPK shows that this digital facility has provided easy access for the public to obtain legal protection.

CONCLUSION

Fundamental Finding : Indonesia's digital economy in financial technology (fintech) has an adequate legal foundation through the Electronic Information and Transactions Law, the Personal Data Protection Law, the Financial Sector Development and Strengthening Law, and various regulations issued by the Financial Services Authority (OJK) and Bank Indonesia. **Implication :** The existing regulatory framework provides legal certainty for fintech providers and consumers; however, strengthened supervision, improved inter-agency coordination, and enhanced legal and digital financial literacy are necessary to establish a safe, innovative, and sustainable fintech ecosystem. **Limitation :** The effectiveness of fintech regulations remains suboptimal due to technological developments that outpace regulatory development, potential overlapping authority among relevant institutions, illegal online lending, personal data misuse, cybercrime, low digital financial literacy, and inadequate regulation of emerging technologies such as Artificial Intelligence. **Future Research :** Future research should examine regulatory strategies for emerging fintech technologies, particularly Artificial Intelligence, while exploring more effective mechanisms for inter-agency coordination, supervision, and the protection of personal data and consumers.

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