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Legal Certainty of Sharia-Compliant Embedded Finance in Indonesia's Marketplace Ecosystem

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ABSTRACT

The integration of financial services into Indonesia's marketplace ecosystem has expanded access to payments, financing, investments, and related products, including Sharia-compliant services. However, the absence of a dedicated regulatory framework for Sharia-compliant embedded finance has raised questions concerning legal relationships, supervisory responsibilities, and compliance with Islamic economic law. This study examines legal certainty in marketplace-based Sharia-compliant embedded finance, assesses its consistency with Islamic economic law, and proposes an adaptive regulatory model. Using normative juridical research with statutory, conceptual, and comparative approaches, the study qualitatively analyzes Indonesian legislation, relevant fatwas of the National Sharia Council–Indonesian Ulema Council (DSN-MUI), and scholarly literature. The analysis finds that existing rules operate primarily through separate sectoral regimes and do not comprehensively address the legal relationships arising from the integration of Sharia-compliant financial services into marketplaces. Rather than an absence of all applicable law, this fragmentation creates specific regulatory gaps and a risk of overlapping supervisory responsibilities. The study proposes a five-pillar model encompassing a statutory definition, standardized Sharia-compliant digital contracts, coordinated supervision, personal data protection, and consumer safeguards consistent with Sharia principles. This framework is intended to improve legal certainty, support Sharia compliance, and facilitate the sustainable development of digital marketplace ecosystems in Indonesia.

Keywords: *Digital Islamic Finance, Embedded Finance, Legal Certainty, Marketplace, Regulation.*

1. INTRODUCTION

Digital transformation has reshaped Indonesia's financial industry through the integration of information technology into the provision of increasingly efficient, inclusive, and user-oriented financial services. Digitalization has encouraged financial institutions to develop innovative platform-based services that facilitate fast, secure transactions across geographical boundaries. These developments have not only enhanced operational efficiency but have also expanded public access to formal financial services through digital technologies.

Ramadhan and Ahmar [1] explain that digital transformation is a major driver of banking modernization through improvements in service quality, product innovation, and the strengthening of technology-based financial ecosystems. This observation is consistent with Khoir [2], who argues that banking digitalization has shifted interactions between financial service providers and the public toward more integrated, adaptive, and user-centered services.

Financial digitalization has progressed alongside the growth of marketplaces as centers of digital economic activity that no longer serve merely as venues for electronic commerce. Marketplaces have evolved into digital ecosystems that integrate commercial transactions, payments, financing, logistics, and after-sales services within a single platform.

The integration of these services enables businesses and consumers to meet their commercial and consumption needs more conveniently. Ramadhani et al. [3] contend that the use of digital marketplaces contributes to business performance by providing increasingly effective channels for communication, promotion, and transactions. Similarly, Manurung and Putri [4] find that

marketplaces can broaden marketing access and enhance business competitiveness through the development of more comprehensive digital ecosystems.

The expanding role of marketplaces has given rise to embedded finance, which refers to the direct integration of financial services into non-financial platforms. This arrangement enables users to access payments, financing, investment products, and insurance without switching to a financial institution's application. By facilitating collaboration among service providers within a single ecosystem, the model increasingly blurs the operational boundaries between financial services and digital commerce. Galib and Rijal [5] observe that embedded finance improves the user experience and strengthens customer loyalty by making transactions simpler and more efficient. Wahyuningsih et al. [6] likewise identify its contribution to digital business transformation, particularly through the strengthening of entrepreneurial ecosystems and improved access to finance for business operators.

The development of embedded finance also creates opportunities to incorporate Sharia-compliant financial services into marketplace ecosystems through Islamic financing, Sharia-compliant payment services, and investment products grounded in Islamic legal principles. Such integration is expected to promote Islamic financial inclusion while offering digital financial alternatives that uphold fairness, transparency, and the prohibition of riba (interest or usury).

Nevertheless, the provision of these services requires Sharia-compliance mechanisms capable of ensuring that transactions adhere to the applicable contractual arrangements (akad), prudential principles, and Sharia requirements. Fitrawansah et al. [7] emphasize that digital technologies, including smart contracts, can play a strategic role in establishing system-embedded compliance, strengthening oversight of Sharia-compliant financial technology (fintech) services, and maintaining conformity with Sharia principles in digital ecosystems.

The development of Sharia-compliant embedded finance has not been accompanied by a dedicated, integrated regulatory framework defining its scope and the legal relationships among participants in Indonesia's marketplace ecosystem. Existing legislation continues to regulate banking, payment systems, consumer protection, and digital financial services through separate sectoral regimes, leaving uncertainties concerning the application of those rules to Sharia-compliant embedded finance.

This situation raises several legal questions: the absence of an explicit statutory definition of embedded finance; the lack of specific rules governing Sharia-compliant embedded financial services; uncertainty regarding the relationships among marketplace operators, Islamic banks, Sharia-compliant fintech providers, and consumers; and the potential for violations of Sharia principles where regulatory standards are not sufficiently comprehensive. These issues demonstrate the need to examine legal certainty from the perspectives of Islamic economic law and Indonesia's positive law as a basis for developing an appropriate regulatory model for digital marketplace ecosystems.

Unlike studies that primarily address user experience or technology-enabled compliance in digital financial services [5], [7], the present study focuses on the legal architecture of cross-regulatory coordination and proposes an integrated, five-pillar regulatory model. Its contribution is a normative framework designed to clarify the legal status of service providers, standardize Sharia-compliant digital contracts, coordinate supervisory responsibilities, protect personal data, and safeguard consumers of Sharia-compliant financial services.

2. LITERATURE REVIEW

2.1 Embedded Finance and the Legal Relationships Among Stakeholders

Conceptually, embedded finance refers to the incorporation of financial services into the transaction flows of non-financial platforms. In a marketplace setting, such integration connects platform operators, financial institutions, payment service providers, and users. Studies of user experience and digital business transformation highlight the integrative function of this model [5], [6]. However, its technical advantages must be distinguished from the legal status and respective responsibilities of the participating entities.

2.2 Legal Certainty and Sharia Compliance

In this study, legal certainty is assessed in terms of the clarity of applicable legal rules, the legal status of the parties, the validity of digital contracts, the allocation of supervisory powers, and user protection. Sharia compliance is examined through the principles of contractual clarity, justice, transparency, and the prohibitions of riba, gharar (excessive uncertainty), and maysir (gambling or speculative transactions). Research on technology-based supervision supports the need for compliance controls in digital transactions [7].

2.3 Regulatory Analytical Framework

The analytical framework connects four forms of embedded financial services—payments, financing, insurance, and investment—with the relevant sectoral regulations. The normative findings are then used to assess the need for a legal definition, contractual standardization, integrated supervision, personal data protection, and Sharia-oriented consumer protection. This framework guides the legal analysis; it does not represent the outcome of empirical hypothesis testing.

3. METHODS

This study adopts a normative juridical research method focusing on legal norms to assess the legal certainty of Sharia-compliant embedded finance within Indonesia's marketplace ecosystem. This method is appropriate because the research questions concern normative gaps, regulatory disharmony, and the alignment of positive law with principles of Islamic economic law. The analysis examines legislation and legal principles governing digital financial services in order to formulate a regulatory model that can enhance legal certainty for Sharia-compliant embedded finance.

The research employs statutory, conceptual, and comparative approaches. The statutory approach examines legal provisions relating to digital financial services, payment systems, consumer protection, and personal data protection in Indonesia. The conceptual approach addresses embedded finance, digital Islamic finance, legal certainty, and principles of Islamic economic law. The comparative approach assesses the alignment and differences between Indonesian positive law and principles of Islamic economic law in order to identify normative gaps requiring regulatory improvement.

The legal materials comprise primary and secondary sources. Primary legal materials include the 1945 Constitution of the Republic of Indonesia; Law No. 8 of 1999 on Consumer Protection [8]; Law No. 4 of 2023 on Financial Sector Development and Strengthening [9]; Law No. 11 of 2008 on Electronic Information and Transactions, as most recently amended by Law No. 1 of 2024 [10], [11]; Law No. 27 of 2022 on Personal Data Protection [12]; relevant regulations issued by the Financial Services Authority (OJK) and Bank Indonesia; and pertinent fatwas issued by the National Sharia Council of the Indonesian Ulema Council (DSN-MUI). Secondary legal materials

consist of books, scholarly publications, national and international journal articles, and other literature relevant to the research topic.

The legal materials are analyzed qualitatively by interpreting, examining, and relating legislative provisions to Islamic economic law and the evolving practice of embedded finance within marketplace ecosystems. The analytical stages include identifying and cataloguing legal sources, classifying them by regulatory subject matter, interpreting relevant norms, identifying legal gaps, regulatory lacunae, and potential regulatory overlaps, and constructing a systematic legal argument. The findings provide the basis for a regulatory model that integrates legal certainty, consumer protection, Sharia compliance, and the evolving needs of Indonesia's digital economy.

4. RESULTS AND DISCUSSION

4.1 Dynamics of Embedded Finance in Indonesia's Marketplace Ecosystem

Embedded finance is a model that integrates financial services into non-financial platforms, allowing users to access financial products without leaving the applications of the service platforms. This integration transforms digital platforms from simple trading venues into ecosystems that offer a more comprehensive transaction experience.

The defining feature of embedded finance is the incorporation of payments, financing, investments, and insurance into users' existing activities, making financial transactions more straightforward, efficient, and responsive to their needs. Galib and Rijal [5] explain that embedded finance can improve the user experience and strengthen customer loyalty by integrating financial services into everyday digital activities.

Globally, the growth of embedded finance has been driven by accelerated digital transformation, greater collaboration between financial institutions and technology companies, and shifts in consumer preferences toward platform-based digital services. The model has expanded across e-commerce, transportation, healthcare, and the creative industries, as it can improve access to financial services for groups that have previously been underserved.

Ramandini et al. [13] identify digital financial service innovation as an important factor supporting e-commerce growth through more flexible payment and financing arrangements. This development suggests that embedded finance has become part of a broader transformation in which economic activities and financial services are connected more closely within digital ecosystems.

In Indonesia, embedded finance has grown alongside increased commercial activity on digital marketplace platforms. Partnerships among marketplace operators, banks, fintech companies, and payment service providers have enabled users to access financial services during commercial transactions. These arrangements simplify payment processes, expand financing opportunities for businesses, and improve transaction efficiency throughout digital commerce ecosystems.

Andaru et al. [14] report that embedded finance contributes to the trading performance of small and medium-sized enterprises participating in Indonesia's digital commerce ecosystem by enabling more adaptive financial service integration. This finding illustrates the evolution of marketplaces into central platforms linking economic transactions with digital financial services.

Embedded finance in marketplace ecosystems can be classified into several interconnected services. Embedded payments facilitate immediate settlement through digital wallets, bank transfers, and other payment instruments. Embedded lending offers financing to consumers and businesses within the transaction process. Embedded insurance provides coverage for goods, deliveries, and business activities conducted through digital platforms. Embedded investment allows investment products to be accessed without leaving the marketplace application. According to Tahu et al. [15], cross-sector partnerships are central to banking strategies for responding to the disruptive effects of embedded finance and developing sustainable digital financial ecosystems.

The development of embedded finance has also encouraged Sharia-based service models that incorporate Islamic legal principles into marketplace ecosystems. Sharia-compliant embedded

finance may involve payment services, financing based on Islamic contractual arrangements, Sharia-compliant investments, and related services that uphold fairness, transparency, and the prohibition of riba. Nurhayati and Julina [16] emphasize that digital transformation can strengthen halal financial ecosystems through technological innovation that remains aligned with Sharia requirements.

Isanov [17] likewise argues that embedded finance practices in marketplaces require a stronger Islamic economic law framework to ensure legal certainty in the relationships among platform operators, Islamic financial institutions, and users. In this context, embedded finance in Indonesia's marketplace ecosystem may be grouped into four principal categories: embedded payments, embedded lending, embedded insurance, and embedded investment, delivered through partnerships among marketplaces, Islamic banks, Sharia-compliant fintech firms, and digital payment providers. Isanov [17] primarily examines riba, gharar, and contractual ambiguity in services such as pay-later financing, and proposes more Sharia-consistent contractual arrangements. By contrast, this article examines the legal status of providers and coordination among supervisory authorities, before developing five pillars of regulatory reform. This distinction constitutes an argument for conceptual novelty; it does not establish that no comparable research has been conducted.

4.2 Legal Certainty of Sharia-Compliant Embedded Finance under Indonesian Positive Law

The legal framework governing Sharia-compliant embedded finance in Indonesia remains sector-specific and has yet to establish an integrated regulatory regime. Law No. 4 of 2023 on Financial Sector Development and Strengthening (the P2SK Law) has strengthened the regulation of financial services through an approach that is more responsive to digital innovation. Law No. 11 of 2008 on Electronic Information and Transactions, together with its amendments, governs the legal validity of electronic transactions. Financial sector technological innovation is also regulated under Financial Services Authority Regulation (POJK) No. 3 of 2024 on the Implementation of Financial Sector Technological Innovation [18].

Users' personal data are protected under Law No. 27 of 2022 on Personal Data Protection, while consumer rights are governed, among other provisions, by Law No. 8 of 1999 on Consumer Protection. These statutes are supplemented by regulations issued by the Financial Services Authority and Bank Indonesia concerning payment systems, digital financial services, and the supervision of financial institutions. However, the combined framework does not yet provide a comprehensive statutory definition or integrated operational regime specifically addressing Sharia-compliant embedded finance within marketplace ecosystems. Consumer protection within the financial services sector has also been reinforced by POJK No. 22 of 2023 on Consumer and Public Protection in the Financial Services Sector [19].

An examination of positive law reveals potential legal gaps and regulatory lacunae in defining the relationships among marketplace operators, Islamic banks, Sharia-compliant fintech companies, payment service providers, and consumers. Marketplace operators are not automatically classified as financial service providers merely because financial services are integrated into their platforms, and the allocation of responsibilities depends on the activities performed and the applicable licensing regime. Uncertainty concerning these arrangements can nonetheless create a risk of overlapping oversight between financial services regulators and payment-system authorities. In this article, a regulatory lacuna refers to the absence of a dedicated regime integrating all legal relationships associated with Sharia-compliant embedded finance, rather than a complete absence of applicable sectoral law.

Madali and Fazri [20] explain that the development of digital financial transactions requires the harmonization of Indonesian positive law and Islamic law to accommodate emerging business models. Muhammad [21] similarly argues that parts of the Islamic banking regulatory framework

have not kept pace with developments in digital banking and Sharia-compliant fintech, creating a need for more responsive regulation of financial innovation.

Fragmented regulation also has consequences for consumer protection and the consistent application of Sharia principles to embedded financial services. Specific supervisory mechanisms capable of integrating technological governance, digital platform management, and real-time transaction monitoring for Sharia compliance remain underdeveloped. Fitrawansah et al. [7] highlight the potential of smart contracts as a form of system-embedded compliance for strengthening the oversight of digital Sharia-compliant fintech. Isanov [17] likewise identifies the need for clearer legal foundations governing relationships among businesses and users of marketplace-based embedded finance.

Aini et al. [22] and Poerwandiantoko and Dewanto [23] further emphasize that harmonizing Sharia principles with the national legal system is important for legal certainty in digital economic transactions. These findings suggest that regulatory improvement should address normative gaps, reduce the risk of regulatory overlap, and establish an oversight framework that supports both legal certainty and Sharia compliance.

4.3 Sharia-Compliant Embedded Finance from the Perspective of Islamic Economic Law

The analysis indicates that the use of digital financial technology must comply not only with Indonesian positive law but also with Islamic economic law as a source of transactional legitimacy. Relevant principles include contractual clarity (al-'aqd), the prohibitions of riba, gharar, and maysir, honesty and transparency (al-sidq), trustworthiness (amanah), justice (al-'adl), and the pursuit of the objectives of Sharia (maqasid al-sharia).

These principles provide a framework for assessing Sharia compliance in marketplace-based embedded finance, particularly because legal relationships among platform operators, Islamic financial institutions, and users are conducted digitally and may be more complex than conventional transactions. Sulistiawati et al. [24] argue that the integration of Sharia principles into fintech development is essential for sustainable digital innovation that remains consistent with Islamic values. Shalwa and Baidhowi [25] similarly emphasize justice, transparency, and social benefit as defining features of Sharia-compliant financial systems undergoing digital transformation.

Table 1. Comparison of Islamic Economic Law Principles and Indonesian Positive Law in Sharia-Compliant Embedded Finance

Aspect	Principle of Islamic Economic Law	Regulation under Indonesian Positive Law	Application to Embedded Finance	Legal Implications
Legal Basis of Transactions	Contracts must be valid, clear, and agreed upon by the parties	No dedicated, comprehensive framework for Sharia-compliant digital contracts	Contracts are concluded through electronic systems	Standards for Sharia-compliant digital contracts are needed
Riba	All forms of riba are prohibited	Islamic financial services are regulated sectorally; compliance requirements must be assessed for each service model	Financing products must avoid interest-based arrangements	A mechanism is needed to verify Sharia compliance
Gharar	Prohibits excessive uncertainty concerning contractual objects and information	General rules emphasize disclosure and transparency	Product information must be clearly disclosed within the application	Incomplete information may give rise to disputes

Aspect	Principle of Islamic Economic Law	Regulation under Indonesian Positive Law	Application to Embedded Finance	Legal Implications
Maysir	Gambling and prohibited speculative activities are forbidden	There is no dedicated cross-sector framework addressing this issue in embedded digital services	Digital investment products must avoid prohibited speculative features	Product design requires appropriate Sharia compliance oversight
Transparency	Information must be conveyed honestly and openly	Addressed through consumer protection and electronic transaction rules	Fees, risks, and contractual terms are disclosed digitally	Protects consumers' right to information
Amanah (Trustworthiness)	Funds must be managed responsibly	Reflected in corporate governance principles	Islamic banks and Sharia-compliant fintech providers manage user funds	Strengthens provider accountability
Consumer Protection	Promotes public welfare (maslahah)	Addressed by the Consumer Protection Law and the P2SK Law	Rights of digital platform users must be safeguarded	Specific Sharia-oriented safeguards may require further clarification
Data Protection	Confidentiality and information security are expressions of trustworthiness	Governed by the Personal Data Protection Law	User data are processed through digital systems	Requires integration of Sharia compliance and cybersecurity
Supervision	Involves Sharia Supervisory Boards and relevant DSN-MUI standards	OJK and Bank Indonesia exercise authority within their respective statutory mandates	Supervision remains sector-specific	Coordination is needed to minimize overlap of responsibilities
Regulatory Objectives	Justice and public welfare (maqasid al-sharia)	Legal certainty, financial stability, and consumer protection	Financial services are integrated into marketplaces	Harmonization of positive law and Sharia principles is required

Source: Comparative analysis of the legal provisions and Islamic economic law principles discussed in this study.

The comparison indicates that many principles of Islamic economic law have counterparts in Indonesia's positive legal framework, but the existing provisions have not been specifically integrated to address the features of marketplace-based embedded finance. Regulatory shortcomings are particularly apparent in the standardization of Sharia-compliant digital contracts, integrated supervision, and the incorporation of Sharia compliance into electronic systems. Putra [26] emphasizes that developments in the digital economy call for the reinterpretation of Islamic economic law principles in response to technological innovation.

Jaelani [27] and Winarsa [28] similarly regard the harmonization of regulation and Sharia principles as essential for maintaining legal certainty and the integrity of Islamic financial systems. These considerations indicate that a regulatory framework for Sharia-compliant embedded finance must extend beyond formal legality by incorporating relevant DSN-MUI fatwas, the objectives of Sharia (maqasid al-sharia), and the principles of Islamic commercial jurisprudence (fiqh al-muamalat) into legal rules that can adapt to the digital economy.

4.4 A Regulatory Model for Sharia-Compliant Embedded Finance in Indonesia

The findings indicate that the regulation of Sharia-compliant embedded finance should adopt an integrated approach that harmonizes Indonesian positive law with principles of Islamic economic law. The proposed model comprises five principal pillars. The first is a statutory definition of Sharia-compliant embedded finance and the scope of its activities, intended to clarify the legal status of service providers and the relationships among participants in marketplace ecosystems.

The second pillar is the standardization of Sharia-compliant digital contracts that accommodate the characteristics of electronic transactions while observing DSN-MUI fatwas and principles of Islamic commercial jurisprudence. The third is an integrated supervisory mechanism involving the Financial Services Authority, Bank Indonesia, and relevant Sharia governance institutions, with each body acting within its existing mandate to address prudential requirements, consumer protection, and Sharia compliance. The fourth pillar is the strengthening of governance and personal data protection in line with evolving digital technologies.

The fifth pillar entails developing Sharia-oriented consumer protection mechanisms that ensure information transparency, effective dispute resolution, and clarity regarding the rights and obligations of parties to digital transactions. Widiantari [29] emphasizes that technology-based governance of Sharia-compliant fintech should incorporate Islamic economic law principles to reinforce legal certainty and institutional accountability.

This regulatory model is the study's conceptual contribution to addressing the absence of a comprehensive, dedicated framework for Sharia-compliant embedded finance in Indonesia's national legal system. The integrated approach seeks to advance not only formal legal certainty but also consumer protection, data security, technological innovation, and Sharia compliance. Jatnika and Mutiara [30] argue that the effectiveness of Sharia-compliant fintech regulation depends on regulators' capacity to adapt policy to technological innovation.

Sya'baniah et al. [31] and Siddiq et al. [32] underscore the importance of harmonizing rules for Islamic finance companies and Sharia-compliant fintech to support an adaptive and sustainable digital financial ecosystem. Sodiq [33] further notes that the integration of Islamic financial institutions into the digital economy requires a regulatory strategy that balances technological innovation with Sharia values. The proposed five-pillar model could inform national policy development and strengthen legal certainty for embedded financial services in Indonesia's marketplace ecosystem.

CONCLUSION

This study concludes that Sharia-compliant embedded finance has developed within Indonesia's marketplace ecosystem more rapidly than the regulatory arrangements specifically addressing its integrated business model. Indonesian positive law already provides general legal foundations through legislation on financial services, electronic transactions, consumer protection, and personal data protection. However, these provisions have yet to establish a dedicated, comprehensive framework defining the concept, scope, and operational responsibilities associated with Sharia-compliant embedded finance.

This situation gives rise to legal gaps, regulatory lacunae, and risks of overlapping regulation that can weaken legal certainty for both providers and users. The comparative analysis also demonstrates the relevance of Islamic economic law principles—including contractual clarity, the prohibitions of riba and gharar, transparency, trustworthiness, and the objectives of Sharia—as a basis for developing rules that can respond to digital economic change.

The study therefore recommends a dedicated regulatory framework for Sharia-compliant embedded finance, encompassing a statutory definition, standardized Sharia-compliant digital contracts, coordinated supervision involving the Financial Services Authority, Bank Indonesia, and

relevant Sharia governance institutions within their respective mandates, enhanced personal data protection, and appropriate consumer safeguards.

Such regulatory development is expected to improve the coherence between positive law and Islamic economic law, strengthen legal certainty and public confidence, and support an innovative, secure, and sustainable marketplace ecosystem. Future studies should examine the implementation of the proposed regulatory model through empirical methods to evaluate its effectiveness in the actual provision of Sharia-compliant embedded financial services.

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