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Legal Reform for Investor Protection in Indonesian Crypto Markets: A Comparative Analysis With The MiCA Framework

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Abstract
This article examines the urgency of legal reform to enhance investor protection in Indonesia's crypto asset market, emphasizing the regulatory uncertainty that obscures legal liability in cases of system failure, unilateral platform closure, or investor losses. This research adopts descriptive research specifications, using normative juridical research, using two methods of statutory and comparative approaches. Data collection is done through literature review and then analyzed through qualitative method. The findings reveal that Indonesia's legal system still relies heavily on individual civil claims based on Article 1365 of the Civil Code, without anticipatory legal instruments. Drawing from MiCA's best practices, this article highlights the need for prescriptive, risk-based, and investor-oriented legal principles to build a fair and legally certain digital ecosystem.

A. INTRODUCTION

The development of digital technology has introduced crypto asse7ts as an6 innova4tion within the global economic syste5m, functioning both as investment instruments and mediums of value exchange. Philosophically, crypto assets emerged from the spirit of decentralization, rejecting the dominance of centralized authorities, in line with libertarian perspectives that emphasize individual freedom in managing assets.[1] In the context of Indonesian law, crypto assets are not

[1] Satya Prakash Yadav *et al.*, "Blockchain-Based Cryptocurrency Regulation: An Overview," *Computational Economics* 59, No. 4 (April 2022): 1659-1675, https://doi.org/10.1007/s10614-020-10050-0, p. 1659.

recognized as legal tender under Law Number 7 of 2011 concerning Currency. However, they are acknowledged as tradable commodities under Ministry of Trade Regulation Number 99 of 2018 and Bappebti Regulation Number 5 of 2019. Sociologically, crypto assets attract significant public interest, particularly among younger generations, due to their potential for high returns. Unfortunately, low digital literacy and the high volatility of crypto assets are not matched by adequate legal protection.[2] This creates a gap between technological advancement and the state's responsibility to safeguard investors. The absence of compensation mechanisms for investors who suffer losses—whether due to system failures or platform fraud—underscores the urgent need for legal reform that ensures justice, legal certainty, and protection within the crypto asset ecosystem.

The urgency of this research lies in the growing number of crypto asset transactions and public participation, which are not matched by adequate legal protection against the risk of financial loss. According to Bappebti, the number of crypto asset customers in Indonesia has exceeded 17 million, with a transaction value of over IDR 300 trillion.[3] This indicates that crypto assets have become an integral part of the digital economy. Unfortunately, current regulations only recognize crypto assets as commodities within futures markets, without addressing investor protection, including compensation schemes in the event of system failures or fraud. This issue has become more urgent following the closure of the Zipmex platform in early 2024, which left thousands of investors unable to access their funds with no guarantee of recovery. There are no specific legal norms assigning liability to platform providers in cases of insolvency. In contrast to the banking and capital markets sectors both of which are supported by guarantee institutions such as the Deposit Insurance Corporation (LPS) and the Financial Services Authority (OJK) the crypto ecosystem lacks equivalent instruments. This has resulted in legal uncertainty and unequal protection between crypto investors and participants in other financial sectors.

[2] Yudi Sudiyatna, "Perlindungan Hukum Bagi Investor Pada Transaksi Aset Kripto (Crypto Asset) Pada Bursa Berjangka Komoditi", *Jatiswara* 37, No. 2 (29 July 2022): 212-219, https://doi.org/10.29303/jtsw.v37i2.410, p. 212.

[3] Hammam Izzuddin, "Transaksi Aset Kripto Tembus Rp393 Triliun, Bappebti Targetkan Bisa Tembus Rp500 Triliun Di Desember | Tempo.Co", https://www.tempo.co/ekonomi/transaksi-aset-kripto-tembus-rp393-triliun-bappebti-targetkan-bisa-tembus-rp500-triliun-di-desember-2661, accessed 4 October 2024.

Table 1
Cases of Failed Crypto Asset Investor Protection in Indonesia and Europe

Country	Case	Year	Key Facts	Legal Implications
Indonesia	Zipmex Indonesia	2022	The platform froze investor withdrawals for more than two weeks without prior notification.[4]	There is no clear compensation mechanism. The legal framework is based solely on Bappebti regulations, with no specific regulations for crypto platform insolvency.
Indonesia	Exchange door (indicative)	2021-2023	Sharp decline in portfolio value and issues of transparency of transaction fees and delays in notification of losses to investors.[5]	There is no obligation to proactively disclose information regarding losses, so there is a risk of violations of the principle of disclosure and duty of care.
Jerman	Nuri GmbH	2022	The first European crypto-bank company to go bankrupt, around 500,000 users affected.[6]	Under German law, investors remain protected through banking security standards. This case was the trigger for the acceleration of the birth of MICA regulations in the European Union.
Global/EU	Celsius Network	2022	Global crypto platform freezes all withdrawals and then files for bankruptcy.[7]	As a lesson that schemes like Celsisu require cross-jurisdictional oversight, in Europe, this case reinforces the urgency of MICA-based regulation.

Source: Data Processed by Author, 2024

[4] Aprianto Cahyo Nugroho, "Waduh! Zipmex Setop Sementara Penarikan Dana, Ada Apa?," 2022, https://market.bisnis.com/read/20220721/94/1557590/waduh-zipmex-setop-sementara-penarikan-dana-ada-apa, accessed 14 July 2024.

[5] Faisal Yunianto, "Analis soroti penurunan nilai uang kripto dan NFT," Antara News, May 14, 2022, https://www.antaranews.com/berita/2880301/analis-soroti-penurunan-nilai-uang-kripto-dan-nft, accessed 16 July 2024.

[6] Andrew Asmakov, "German Crypto Bank Nuri Files for Insolvency, Says 'All Funds Are Safe,'" Decrypt, August 10, 2022, https://decrypt.co/107141/german-crypto-bank-nuri-files-insolvency-says-all-funds-are-safe, accessed 16 July 2024.

[7] Daniel Khun, "Why Did Celsius Go Up in Flames? Alex Mashinsky Built Celsius a House of Cards," 2024, https://www.coindesk.com/opinion/2023/07/13/why-did-celsius-go-up-in-flames-alex-mashinsky-built-celsius-a-house-of-cards, accessed 16 July 2024.

The core legal issue examined in this study is the lack of regulatory provisions that assign liability and provide compensation mechanisms for crypto asset investors facing losses. Existing regulations—such as Ministry of Trade Regulation No. 99/2018 and Bappebti Regulation No. 5/2019—primarily govern licensing and trading procedures but remain silent on investor protection in cases of system failure, fraud, or sudden platform closure. This gap is evident in the *Zipmex Indonesia* case, where investors were unable to access their assets without any legal recourse, and in *Pintu Exchange*, where users raised concerns over transparency and transaction delays. Unlike the European response—where the *MiCA* framework emerged following similar cases like *Nuri GmbH* and *Celsius*.[8] Indonesia still relies on corporate-centric remedies like PKPU, which prioritize business continuity over retail investor restitution. As a result, legal protection for crypto investors remains fragmented and insufficient.

This issue becomes even more complex due to the absence of operational civil liability principles or compensation schemes within the crypto asset trading ecosystem. Even in the case before the South Jakarta District Court, Number 54/Pdt.G/2022/PN JKT.SEL.,[9] the judge did not explicitly establish the platform provider as a party legally liable for the investor's losses, given the lack of explicit legal norms in Indonesia's positive law that could serve as a direct basis for either criminal or civil liability in digital system-based violations. In fact, within the context of electronic contracts, principles such as strict liability or breach of contract should provide a basis for holding negligent or misleading service providers accountable.[10] However, because contracts within crypto platforms are often standardized, asymmetrical, and lack transparency, the legal bargaining position of investors is severely weakened.

Previous studies on legal protection for crypto asset investors in Indonesia have generally focused on the recognition of legality and basic regulations for digital transactions. For example, Mariske Myeke Tampi in *"Legal Protection for Bitcoin Investors in Indonesia:*

[8] Florianus Yudhi Priyo Amboro, "Restrukturisasi Utang Terhadap Perusahaan Go Public Dalam Kepailitan dan PKPU", *Masalah-Masalah Hukum* 49, No. 1 (January 2020): 103-111, https://doi.org/10.14710/mmh.49.1.2020.103-111, p. 103.

[9] Pengadilan Negeri Jakarta Selatan, "Informasi Detail Perkara-Sistem Informasi Penelusuran Perkara Pengadilan Negeri Jakarta Selatan", 2022, https://sipp.pn-jakartaselatan.go.id/index.php/detil_perkara, accessed 15 July 2024.

[10] Fiona Wiananda Adhyaksanti and Kadek Wiwik Indrayanti, "Ratio Decidendi Penafsiran Klausula Eksonerasi Dalam Perjanjian Baku Di Indonesia," *KRTHA BHAYANGKARA* 17, No. 1 (2023): 175-190, https://doi.org/10.31599/krtha.v17i1.828, p. 175.

To Move Beyond the Current Exchange System", highlights that while Bitcoin transactions meet civil law contract validity requirements, Indonesia's legal framework lacks adequate safeguards for investors, especially in cases of platform failure or insolvency.[11] As a comparison, Christoph Wronka in *"Crypto-asset activities and markets in the European Union: issues, challenges and considerations for regulation, supervision and oversight"*, analyzes how the European Union's MiCA framework addresses investor protection through measures such as mandatory reserve funds and compensation schemes. Wronka identifies regulatory gaps and emphasizes the EU's proactive approach to bridging legal uncertainties and improving investor safeguards.[12] Despite these insights, literature on Indonesia's crypto regulatory framework remains limited, particularly concerning investor protection in real-world loss scenarios, such as the closure of the Zipmex platform. This underscores the urgency for comprehensive legal reform that integrates substantive justice and legal certainty in the country's crypto ecosystem.

The central issue in this study is the absence of clear regulations governing liability and compensation mechanisms for crypto asset investors who suffer losses. Regulations such as Ministry of Trade Regulation No. 99 of 2018 and Bappebti Regulation No. 5 of 2019 focus only on licensing and trading procedures, without specifying who is legally accountable in cases of system failure, digital fraud, or platform closure. In practice, disputes are often resolved through private mechanisms such as the Suspension of Debt Payment Obligations (PKPU), which tend to favor corporate interests rather than protecting individual investors. This problem is exacerbated by the lack of civil liability principles or compensation schemes in the crypto ecosystem. For example, in the South Jakarta District Court Decision No. 54/Pdt.G/2022/PN JKT.SEL., the judge did not assign legal responsibility to the platform provider for investor losses due to the absence of a clear legal basis in existing regulations. Yet, principles such as strict liability or breach of contract should be applicable to hold negligent platforms accountable. Unfortunately, crypto platform contracts are often standardized and lack transparency,

[11] Taufan Bangun Samudra and Inda Rahadiyan, "Legal Protection for Crypto Asset Customers in Indonesia Against Investment Losses in Botxcoin," *Journal of Private and Commercial Law*, June 30, 2025, 1-25, https://doi.org/10.20885/JPCOL.vol2.iss1.art1, p. 6.

[12] Christoph Wronka, "Crypto-Asset Activities and Markets in the European Union: Issues, Challenges and Considerations for Regulation, Supervision and Oversight", *Journal of Banking Regulation* 25, No. 1 (March 2024): 84-93, https://doi.org/10.1057/s41261-023-00217-8, p. 85.

rendering investors' legal positions extremely weak and vulnerable. Therefore, the objective of this study is to critically analyze the legal gaps in Indonesia's regulatory framework for crypto asset investor protection and propose a normative regulatory model based on substantive justice and legal certainty, drawing lessons from the European Union's MiCA framework.

B. RESEARCH METHODS

This study adopts a descriptive research specification, using a normative juridical research for type of research that focusing on the interpretation and analysis of legal norms, statutory regulations, and constitutional principles without the use of empirical data. It employs doctrinal legal research, aiming to assess the coherence, adequacy, and consistency of Indonesia's legal framework in ensuring protection for crypto asset investors. The research method centers on legal interpretation and systematic normative analysis, drawing upon two approach methods. First, the statutory approach is used to examine primary legal sources including Law Number 7 of 2011 on Currency, Ministry of Trade Regulation Number 99 of 2018, Bappebti Regulation Number 5 of 2019, and Government Regulation Number 5 of 2023. Second, the comparative approach evaluates Indonesia's regulatory architecture alongside the European Union's Markets in Crypto-assets (MiCA) Regulation of 2023 to identify legal convergence and divergence. Data collection is conducted through a document-based literature review encompassing primary legal materials (laws, government regulations, international instruments), secondary legal sources (doctrinal commentaries, journal articles), and tertiary sources (legal encyclopedias and dictionaries). The collected materials are then analyzed through a qualitative normative approach to identify legal uncertainties, structural gaps, and opportunities for harmonization. Special consideration is given to internationally accepted standards, particularly those articulated by the Financial Action Task Force (FATF), as a normative benchmark to support the development of a more robust and protective legal framework for crypto asset investors in Indonesia.

C. RESULTS AND DISCUSSIONS

1. Legal Vacuum in Investor Protection for Crypto Assets in Indonesia

The growth of crypto asset transactions in Indonesia has begun to generate tangible legal consequences, as reflected in Civil Case Number 54/Pdt.G/2022/PN JKT.SEL. heard by the South Jakarta District Court. In this case, an investor filed a lawsuit against a crypto asset service provider after suffering financial losses due to a system failure during a digital trading process. The investor claimed that the platform experienced technical disruptions that caused delays in transaction execution, resulting in substantial losses. Although

the lawsuit was filed on the grounds of breach of contract and material damages, the panel of judges found it difficult to identify an explicit legal basis, as there is no specific provision in Indonesia's positive law that governs the legal liability of crypto asset platform providers.

In conventional civil law systems, the principles of breach of contract and negligence can be applied to assess whether a party has failed to fulfill its obligations.[13] However, in crypto asset transactions, the legal relationship between investors and platforms is largely based on unilaterally drafted electronic contracts, often without regulatory oversight. This imbalance significantly weakens the investor's position in seeking justice through litigation. Moreover, there is currently no standardized mechanism for evaluating the fairness of digital contract terms used by crypto asset providers, which further complicates the burden of proof regarding breach or negligence. In cross-border digital transactions, national courts also face jurisdictional challenges, as many service providers are registered abroad and subject to different legal systems.[14]

When courts lack strong normative references to decide a case, the potential for inconsistent rulings increases. This creates legal uncertainty not only for investors but also for business actors who are unaware of the legal boundaries of their responsibilities. Such a situation contradicts the principle of access to justice and the principle of proportional legal protection. In technology-based transactions, the burden of risk should not fall solely on investors but should be distributed proportionally through a clear regulatory framework and transparent contractual arrangements. When the contract becomes the sole binding instrument, and the law fails to provide a safety net, the legal position of investors is at risk of falling into a void of protection.

The current legal framework governing crypto asset trading in Indonesia still exhibits fundamental weaknesses in investor protection, particularly regarding compensation mechanisms and the attribution of legal responsibility. Although crypto assets are recognized as tradable commodities under the supervision of Bappebti, existing regulations do not clearly establish legal instruments that protect investors from

[13] Zoltan J. Acs *et al*., 'The Evolution of the Global Digital Platform Economy: 1971-2021', *Small Business Economics* 57, No. 4 (December 2021): 1629-1659, https://doi.org/10.1007/s11187-021-00561-x, p. 1630.

[14] Vinay Kandpal *et al.*, "Regulation of the Fintech Industry," in *Digital Finance and Metaverse in Banking: Decoding a Virtual Reality towards Financial Inclusion and Sustainable Development* (United Kingdom: Emerald Publishing Limited, 2025), https://doi.org/https://doi.org/10.1108/978-1-83662-088-420251009, p. 181.

systemic risks such as technical failures, digital fraud, or platform insolvency. The prevailing regulations tend to focus on administrative and technical aspects of trading, rather than addressing the substantive legal relationship between investors and service providers. This regulatory gap creates ambiguity about who is legally accountable when investors incur losses in such digital interactions.

In digital transaction systems, the legal relationship between investors and platforms is typically based solely on standardized electronic contracts unilaterally drafted without any negotiation process. This structure creates an imbalance in the legal relationship and has the potential to undermine the principle of protecting the weaker party in a transaction, especially in the absence of regulatory intervention to ensure the substantive fairness of the contract's content.[15] Furthermore, when digital contracts serve as the sole legal reference and there are no normative provisions regulating the obligations of platforms toward investors, investors are left in a legally unprotected position. This contradicts the principle of distributive justice, which requires an equitable distribution of risk burdens within digital transaction systems, particularly in the context of high-technology-based economies.

In this context, regulation should not merely establish minimum operational standards, but must also provide rules that ensure proportional civil liability between service providers and investors. In several countries, legal frameworks have begun to adopt a shared risk allocation approach by requiring reserve funds or specialized insurance schemes to protect digital asset investors.[16] Such an approach is yet to be found in Indonesia's positive law. The absence of regulations on compensation schemes or clear burdens of proof regarding platform liability reinforces a condition in which investors remain vulnerable to exploitative practices and unpredictable system failures. Under such circumstances, the legal system fails to fulfill its role in upholding corrective justice, a fundamental principle in protecting against financial loss.

The closure of the Zipmex Indonesia trading platform serves as concrete evidence of the weakness of the national legal framework in providing protection for crypto asset investors. In early 2024,

[15] Martijn Van Den Brink, Mark Dawson, and Jan Zglinski, "Revisiting the Asymmetry Thesis: Negative and Positive Integration in the EU," *Journal of European Public Policy* 32, No. 1 (January 2025): 209-234, https://doi.org/10.1080/13501763.2023.2296940, p. 211.

[16] Agata Ferreira and Philipp Sandner, "Eu Search for Regulatory Answers to Crypto Assets and Their Place in the Financial Markets' Infrastructure," *Computer Law & Security Review* 43 (November 2021): 1-15, https://doi.org/10.1016/j.clsr.2021.105632, p. 3.

Zipmex ceased its operations due to liquidity pressures, leaving thousands of investors unable to withdraw their funds and digital assets. Throughout the process, there were no legal provisions requiring the platform provider to guarantee fund recovery or to clarify applicable liability schemes. Although the company pursued the Suspension of Debt Payment Obligations (PKPU) mechanism, this legal instrument prioritizes business continuity over the direct recovery of investors' losses. When investor losses occur due to system failures or the platform suspends transactions without prior notice or adequate compensation, no legal instrument currently exists that can be effectively utilized to claim those rights through a prompt and proportionate legal process.

This situation highlights the absence of a principle separating investor funds from the platform's operational funds a condition that poses high risks in the event of operational dysfunction. In traditional financial systems, such fund segregation is a fundamental principle designed to prevent asset commingling, mitigate moral hazard, and clarify legal accountability.[17] Furthermore, the contracts used by crypto platforms tend to be standardized and lack transparency. Investors are typically presented with a take-it-or-leave-it option, without any opportunity to negotiate or modify contractual terms. When unilateral service suspension occurs, the legal position of investors is severely constrained, as the entire legal relationship is governed by contracts not subject to public oversight mechanisms.

This vulnerability is further compounded by the absence of a dedicated dispute resolution body in the digital asset space that can efficiently mediate conflicts between platforms and investors. Existing mechanisms for dispute resolution tend to rely on litigation or PKPU (Suspension of Debt Payment Obligations), which are costly, time-consuming, and primarily oriented toward corporate restructuring rather than distributive justice. In the digital context—where transactions occur instantaneously and asset values can fluctuate dramatically within seconds—the lack of a swift and balanced dispute resolution forum creates a structural imbalance between business actors and investors. This situation underscores the urgent need for a new legal architecture specifically designed to address the dynamic and volatile risks inherent in the rapidly evolving crypto market.

The civil case registered at the South Jakarta District Court under Case Number 54/Pdt.G/2022/PN JKT.SEL.

[17] Randy Priem, "Distributed Ledger Technology for Securities Clearing and Settlement: Benefits, Risks, and Regulatory Implications", *Financial Innovation* 6, No. 11 (December 2020): 1-25, https://doi.org/10.1186/s40854-019-0169-6, p. 11.

illustrates how Indonesia's positive law has yet to provide an adequate framework for resolving disputes between investors and crypto asset service providers. The case involved losses suffered by an investor due to technical disruptions in the transaction system, which caused delays in buy-sell execution. Although the lawsuit was filed on the grounds of breach of contract and included a demand for financial compensation, the panel of judges encountered difficulties in identifying a relevant legal basis, as no specific norms currently regulate the obligations and legal responsibilities of digital asset platforms. In its decision, the court did not explicitly assign liability to the service provider, reflecting the juridical limitations in addressing complex digital economic transactions.

In digital contract systems, the application of legal principles such as good faith, strict liability, and breach of contract becomes obscured in the absence of regulations that clarify the legal relationship structure between users and technology-based service providers. When electronic contracts are drafted solely in standardized formats without negotiation, the investor's position in a dispute tends to be weak, particularly during the evidentiary process. Furthermore, a legal vacuum remains regarding jurisdictional authority when service providers operate across borders, posing significant extraterritorial challenges to domestic law enforcement.[18]

The absence of regulations that classify the types of legal relationships in crypto transactions has left courts without a sufficiently solid foundation to develop legal precedents. This contrasts with the functional equivalence approach adopted in several jurisdictions, which treats digital contracts as extensions of written legal documents subject to the fundamental principles of civil law.[19] However, in the Indonesian context, the legal system has yet to formally adopt this model, thereby limiting the judiciary's role in establishing legal protection standards for investors. In the absence of clear normative instruments, judges tend to exercise caution and limit their authority, resulting in a lack of legal certainty and consistency in the resolution of increasingly frequent digital disputes.

The series of issues outlined from the weakness of regulatory structures and the absence of compensation mechanisms to

[18] Yannick Gabuthy, "Blockchain-Based Dispute Resolution: Insights and Challenges," *Games* 14, No. 3 (April 2023): 1-9, https://doi.org/10.3390/g14030034, p. 1.

[19] Sadam Mohammad Awaisheh, "From Paper to Pixels: The Legal Status and Challenges of Electronic Writing in Administrative Contracts. A Comparative Study of Current Legal Systems", *Electronic Government, an International Journal* 21, No. 2 (2025): 210-226, https://doi.org/10.1504/EG.2025.144726, p. 211.

judicial challenges in upholding justice for crypto asset investors demonstrates that Indonesia's legal system is not yet fully equipped to address the complexities of blockchain-based digital transactions. This situation places investors in a highly vulnerable position, as there are no normative guarantees regarding their legal rights and protections, both in terms of the substantive content of contracts and the procedural mechanisms for dispute resolution. When crypto service providers are able to operate across borders without being subject to explicit standards of accountability, a gap in responsibility emerges that is difficult to bridge within the territorially bound approach of national law. Meanwhile, domestic investors generally lack both contractual bargaining power and access to effective remedies when they suffer losses due to platform shutdowns or technical system failures.

In the context of digital economic development, a legal protection structure that fails to inclusively address digital asset-based transactions contradicts the principle of legal justice, which should guarantee equality between business actors and end users. Access to justice becomes uneven when victims of crypto asset losses are forced to navigate legal processes that are not only complex but also lack outcome certainty. When existing contract law does not accommodate the unique characteristics of technology-based digital contracts, and civil law fails to provide liability models aligned with the systemic risks of blockchain transactions, the prevailing legal framework tends to fall short in delivering proportional protection for investor losses.[20]

Moreover, the limited contribution of civil procedural law in addressing smart contract-based transactions and automated algorithms poses an additional challenge for courts. In several jurisdictions, the integration of consumer protection principles into digital asset law has begun to serve as a bridge to fill the accountability gap.[21] This reflects the reality that digital transformation requires a legal approach that is not only reactive to violations but also proactive in defining liability boundaries and protection schemes. Accordingly, recognizing the importance of legal responsibility in crypto asset transactions is a fundamental prerequisite for constructing a fair, balanced, and adaptive legal framework in the context of the digital economy. The following subchapter will discuss

[20] Olga I. Lyutova and Irina D. Fialkovskaya, "Blockchain Technology in Tax Law Theory and Tax Administration," *RUDN Journal of Law* 25, No. 3 (August 2021): 693-710, https://doi.org/10.22363/2313-2337-2021-25-3-693-710, p. 693.

[21] Kevin Werbach, *The Blockchain and the New Architecture of Trust* (Cambridge: MIT Press, 2018), p. 32.

theoretical approaches to legal liability models as the foundation for investor protection in the digital sphere.

2. Analysis of Legal Liability Principles in Digital Transactions

In the context of blockchain-based digital asset transactions, a comprehensive understanding of legal liability principles is crucial for assessing the extent to which a legal system can ensure justice and certainty for the parties involved. Crypto transactions involve not only automated computational processes but also legal relationships that must be interpreted within the framework of applicable positive law. It is essential to articulate a theoretical framework that bridges the unique characteristics of technology with fundamental principles of civil law—particularly the principle of legal liability in contractual obligations. In modern civil law, legal liability serves as a normative mechanism that governs the consequences of breaches of obligations, whether arising from contracts or from tortious acts. This legal construct provides the foundation for determining when and how a particular party should bear the legal consequences of a loss or wrongdoing.[22]

The emergence of blockchain technology—characterized by its trustless, immutable, and decentralized nature—has shifted many foundational assumptions in traditional legal relationships. For example, the absence of a central institution as an intermediary in transactions creates a vacuum of actors who can be clearly held accountable under conventional legal systems. This condition renders the development of legal liability models increasingly complex and demands a more adaptive and functional approach. Under such circumstances, legal liability theory can no longer rely solely on principles of control or intent (*mens rea*); instead, it must consider the structure of the system and the autonomous role of algorithms. In civil law systems, the principle of legal liability must go beyond individual fault analysis to accommodate the possibility of liability arising from systemic failure—even in the absence of direct human agency.

Furthermore, the legal framework must consider an expanded scope of liability in the digital context, including the potential application of *risk-based liability* principles, which emphasize responsibility based on exposure to risk rather than fault. This is particularly relevant in the context of crypto platforms, where service providers derive economic benefit from user participation but are not yet subject to proportional legal obligations in relation

[22] Karen Yeung, "Algorithmic Regulation: A Critical Interrogation", *Regulation & Governance* 12, No. 4 (December 2018): 505-523, https://doi.org/10.1111/rego.12158, p. 505.

to the risks involved. Thus, liability principles in the digital era must be re-evaluated to strike a balance between legal protection and the rapidly evolving nature of technological innovation.

In civil law systems, the principle of *breach of contract* (*wanprestasi*) serves as a fundamental basis for determining legal liability when one party fails to fulfill the terms of an agreement. Breach is not limited to explicit non-performance but also includes delays, improper performance, and violations of the principle of trust embedded in contractual agreements. In the context of crypto asset transactions, the relationship between investors and service providers is typically governed by electronic contracts, often in the form of *standard form contracts*. Such contracts are usually unilaterally drafted by service providers, with terms that are non-negotiable for users. In modern contract law theory, this creates an asymmetrical legal relationship, where one party holds full power in defining the structure of rights and obligations, while the other is left only to accept or reject the terms without any opportunity for revision.[23]

The consequence of such unilateral contractual relationships is a reduction in the level of protection afforded to investors, especially when system failures occur or when the platform unilaterally alters its terms. In many cases, limitation of liability clauses are embedded in contracts to restrict or even eliminate the service provider's responsibility for user-incurred losses. The presence of such clauses raises significant legal concerns, particularly in relation to the principles of contractual fairness and substantive unconscionability. Without regulatory oversight that sets clear limits on the content of these unilateral contracts, existing legal mechanisms may struggle to provide legal certainty and protection for aggrieved parties.

In traditional contracts, courts can assess elements of breach (*wanprestasi*) based on the existence of a balanced agreement grounded in mutual and voluntary consent between the parties. However, in crypto asset digital contracts, this logic does not fully apply due to the nature of contracts being presented in a finalized, non-negotiable form from the outset.[24] In an ecosystem dominated by algorithmically driven *terms of use*, conventional legal approaches struggle to adapt particularly when contractual execution is carried out via *smart contracts* that are automated and irreversible. This situation underscores the need to

[23] Margaret Jane Radin, *Boilerplate: The Fine Print, Vanishing Rights, and the Rule of Law* (Princeton: Princeton University Press, 2012), p. 31.

[24] Alexander Savelyev, "Contract Law 2.0: Smart Contracts as the Beginning of the End of Classic Contract Law", *Information & Communications Technology Law* 26, No. 2 (4 May 2017): 116-134, https://doi.org/10.1080/13600834.2017.1301036, p. 116.

reinterpret the doctrine of breach of contract so that it remains relevant and applicable to resolving digital disputes involving contracts that cannot be individually negotiated.

In increasingly automated digital environments such as crypto asset transactions executed through smart contracts the application of the *strict liability* principle becomes increasingly relevant. Unlike *fault-based liability*, strict liability places the burden of responsibility on the actor or service provider without requiring proof of fault or negligence. In blockchain-based transactions, this logic stems from the fact that the system operates autonomously, with no direct human intervention in the execution of transactions, making it difficult to trace intent or conscious action as the basis for accountability. Smart contracts are executed according to code instructions that are difficult to alter once deployed on the blockchain, rendering technical failures a matter of system responsibility rather than individual fault.[25]

The *strict liability* approach provides a conceptual framework that positions system or platform providers as entities responsible for bearing the inherent risks of the technologies they operate. This aligns with the principle of risk allocation in civil law, wherein the party that benefits from an activity or technology should also be held accountable for the risks associated with it, even in the absence of direct fault. In this context, it becomes irrelevant whether investor losses are caused by coding bugs, security vulnerabilities, or network synchronization failures all such disruptions fall within the scope of the service provider's responsibility under a *strict liability* structure.[26]

The application of this principle is also reflected in international legal discourse, which advocates for the protection of weaker parties within the digital ecosystem. In the legal relationship between investors and crypto asset service providers, the *strict liability* principle can serve as a corrective instrument to balance the structural asymmetries arising from technological complexity and investors' limited understanding of technical risks. Accordingly, even in the absence of active fault, service providers remain responsible for the consequences arising from systems they have exclusively created and controlled. This principle not only establishes legal protection but also creates incentives for market actors to develop systems that are secure, transparent, and normatively accountable.

[25] *Ibid.*

[26] Max Raskin, "The Law and Legality of Smart Contracts", *Georgetown Law Technology Review* 1, No. 2 (2017): 305-340, p. 305.

Legal certainty is a fundamental principle in modern legal systems, ensuring that laws are knowable, understandable, and consistently applicable to all legal subjects. This principle becomes particularly crucial in the realm of crypto asset transactions, which occur within decentralized and transnational technological systems. In classical legal theory, legal certainty presupposes the existence of stable, transparent, and enforceable rules upheld by state institutions. However, in the blockchain ecosystem—operated through peer-to-peer networks without a central authority these foundations come under significant strain. The absence of a single entity with authoritative control over transaction validation and oversight creates ambiguity as to who bears legal responsibility in the event of a breach or system failure.[27]

A major challenge arises when the state, as a legal institution, attempts to apply the principle of legal certainty within a digital space that is inherently global and devoid of geographical boundaries. When domestic regulations are unable to reach the dispersed jurisdictional nature of technology, the enforcement of law becomes ineffective—ultimately weakening users' trust in the state's ability to provide protection. In this context, the contradiction between the principle of decentralization and the demand for legal certainty remains an unresolved issue. Even when the state issues regulations such as classifying crypto assets as commodities or registering service providers as legal entities substantive legal mechanisms, such as dispute resolution and loss protection, are still not fully available.

Crypto technology also introduces epistemological challenges to the principle of legal certainty. *Smart contracts*, for instance, are executed by code that is not always legally interpretable by judges or regulators, thereby creating a gap between technological logic and legal reasoning. In this context, efforts to ensure legal certainty cannot rely solely on the creation of new regulations; they must also involve the integration of legal and technical systems that are capable of mutually understanding and translating each other's frameworks.[28] When the state fails to respond to these dynamics, the gap between regulation and real-world practice continues to widen, generating uncertainty that directly contradicts the very core principles of the law itself.

The intersection of legal responsibility, breach of contract, strict liability, and legal certainty in blockchain-based transactions underscores the need

[27] Joshua A. T. Fairfield, "Smart Contracts, Bitcoin Bots, and Consumer Protection", *Washington and Lee Law Review Online* 71, No. 2 (2014): 35-49, p. 35.

[28] Aaron Wright and Primavera De Filippi, "Decentralized Blockchain Technology and the Rise of Lex Cryptographia", *SSRN Electronic Journal*, 2015: 1-58, https://doi.org/10.2139/ssrn.2580664, p. 12.

for a conceptual renewal in constructing an adequate legal protection framework for crypto asset investors. These four principles do not operate in isolation; rather, they are interlinked in forming a legal structure that is responsive to the dynamics of digital transactions. When investors engage through automated digital contracts executed by *smart contracts*, legal liability can no longer be reduced to personal fault alone it must be understood within a structural framework that assigns primary risk-bearing responsibility to system providers. The relationship between parties in crypto transactions increasingly resembles that of consumers and business actors in a platform-based economy, where information asymmetry and limited user bargaining power pose significant challenges to achieving legal justice.[29]

On the other hand, the breach of contract approach in standard-form agreements must be expanded to evaluate not only the technical fulfillment of obligations, but also the fairness of contractual substance in situations where users lack the opportunity to negotiate terms. When system failures lead to investor losses, the principle of *strict liability* offers a compelling normative argument for assigning responsibility to those who control and profit from the system without the need to reconstruct debates over fault. However, in the absence of support from the principle of legal certainty that guides dispute resolution toward mechanisms that are clear, expedient, and accessible, investor protection risks becoming a mere normative illusion. The law must address the gap between the disruptive nature of technology and a normative framework that remains rooted in analog-era structures.

Strengthening the legal protection system for crypto investors requires an integrative approach—one that not only aligns law with technology but also prioritizes the values of justice, transparency, and accountability at every stage of the transaction. A comprehensive understanding of the four principles discussed demonstrates that, without a reconstruction of the state's role in regulating, supervising, and ensuring digital justice, the law will inevitably lag behind the pace of technological innovation. Accordingly, the following discussion will focus on formulating a normative regulatory model capable of addressing the challenges of crypto in the context of investor protection grounded in substantive justice.

[29] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs, 2019), p. 3.

3. The Urgency of Reformulating National Regulation Based on the Principles of Justice and Legal Certainty

The Decision of the South Jakarta District Court Number 54/Pdt.G/2022/PN JKT.SEL involved seven plaintiffs filing a lawsuit against three entities—one cooperative and two limited liability companies—that operated a blockchain-based investment platform known as SPLASHCOIN and its associated application, SPLASHMINER. The plaintiffs claimed to have suffered billions of rupiah in losses from investment activities that promised profits through the purchase of digital coins, which were later revealed to have no legal basis and were not supervised by any official financial authority. In its ruling, the panel of judges declared that the defendants had committed an unlawful act (*perbuatan melawan hukum*) and held them jointly and severally liable for damages exceeding IDR 19 billion. The court also declared all transactions conducted on the platform to be null and void. However, what is most notable about this decision is not merely its favorability toward investors, but rather the absence of any reference to a sector-specific legal framework that explicitly governs liability for digital asset products and services. The court's reasoning relied primarily on the general principle of Article 1365 of the Indonesian Civil Code concerning unlawful acts, without invoking more specific regulations such as those issued by Bappebti or existing principles of digital consumer protection. This indicates that while classical civil law may still offer a path to restitution, the legal system lacks normative instruments that proactively map the risks embedded in crypto technologies and establish clear lines of legal responsibility from the outset. From the perspective of regulatory design theory, this situation illustrates that Indonesia's legal architecture has not yet entered the phase of *anticipatory regulation*—that is, the capacity of law to identify and respond to potential failures before they cause harm to legal subjects. In other words, the protection of crypto asset investors remains largely retrospective and reliant on individual initiative, rather than secured by a structured and anticipatory legal system.

The decentralized, pseudonymous, and peer-to-peer nature of crypto assets gives rise to legal relationships that are far more complex than those found in conventional financial transactions. In the case of SPLASHCOIN, for instance, investors are not merely engaging with formal legal entities but also with algorithms, digital wallets, and value distribution systems that are often opaque and difficult to trace comprehensively. When such platforms collapse or shut down unilaterally, investor losses do not stem solely from contractual breaches, but rather from the absence of ex-ante oversight of blockchain-based business models operated by service providers. This illustrates that in the digital asset space, failures in legal protection cannot

be sufficiently addressed by general principles of civil liability alone, but instead require a regulatory approach that internalizes systemic risk from the earliest stages of platform design. In the absence of legal provisions mandating technology audits, compensation reserve funds, or contractual transparency prior to the public launch of crypto products, retail investors are placed in an extremely vulnerable position within a digital architecture defined by asymmetry. Consequently, without regulations that explicitly define the legal responsibilities of crypto asset service providers across various forms of failure—technical, financial, or contractual—the legal system itself risks legitimizing the reproduction of injustice embedded within the technology.

What emerges from the SPLASHCOIN ruling is not merely the inadequacy of legal remedies but also the absence of a regulatory paradigm capable of functioning preventively. In a fast-moving digital ecosystem, the law cannot suffice as a dispute resolution tool deployed only after harm has occurred; it must function as an anticipatory mechanism that maps out risks and establishes legal responsibility from the outset of interactions between investors and service providers. This is the kind of approach embedded in the European Union's Markets in Crypto-Assets (MiCA) framework, which explicitly mandates reserve fund requirements, risk disclosure through whitepapers, and legal classification of business entities. MiCA operates not only as a legal instrument but also as a protection architecture that governs the pre-, during-, and post-transaction stages of digital market activity. In contrast, Indonesia continues to rely on a liability regime grounded in the general principle of unlawful acts under the Civil Code (KUH Perdata), without establishing sector-specific regulations that prescribe responsibilities in a forward-looking manner. As a result, investors remain dependent on individual litigation—a path fraught with legal uncertainty and unequal access to justice.

The absence of prescriptive sectoral norms in Indonesia's legal system has left the protection of crypto asset investors entirely dependent on individual civil lawsuits, a path fraught with uncertainty. This legal uncertainty does not lie solely in the substance of the law—given the lack of explicit provisions that determine who bears responsibility when a platform fails or assets are lost—but also in the procedural and outcome-related dimensions of dispute resolution. Investors seeking redress must rely on Article 1365 of the Indonesian Civil Code, which addresses unlawful acts, a provision whose application depends heavily on judicial discretion and the strength of evidence presented by each party. Moreover, not all investors have equal access to legal assistance or the financial capacity to pursue lengthy and complex litigation. As a result, although investors may theoretically possess legal rights, these rights often

fail to materialize in practice due to the absence of a responsive and supportive legal framework. This situation reflects what legal scholars refer to as a *justice gap*—the disconnect between normative rights and their realization, caused by weak institutional design. When the state fails to provide a regulatory mechanism that is both proactive and protective, investors ultimately bear the burden of risk within an ecosystem largely shaped and controlled by service providers with far greater bargaining power.

A comparative approach in digital economic law is becoming increasingly essential amidst the growing complexity of cross-jurisdictional transactions and the rapid acceleration of financial technology innovation.[30] In the context of crypto asset investor protection, a comparison between Indonesia and the European Union is particularly significant, as each represents two distinct regulatory paradigms: a developing and reactive system on one hand, and a more proactive and structured system on the other. The European Union's *Markets in Crypto-Assets Regulation* (MiCA), adopted in 2023, has established a comprehensive legal framework for crypto assets, emphasizing transparency, accountability, and investor protection throughout the entire cycle of digital asset market activity.[31] MiCA imposes obligations on crypto service providers to implement risk management protocols, provide clear product information, and maintain reserve funds as a compensation mechanism in force majeure scenarios. This regulatory approach is designed to address risks such as market volatility, information asymmetry, and system failures that frequently occur in the crypto sector.[32] Given these normative advancements, the European Union serves as a valuable comparative reference for objectively evaluating Indonesia's legal gaps in crypto investor protection.

The MiCA regulation establishes a far more progressive institutional and substantive foundation for the legal protection of crypto asset investors. Authorities such as the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) are mandated to supervise crypto service providers and ensure compliance

[30] Mustofa Muhammad Haris, "Juridical Analysis of Non-Profit Principles in The Formation of Business Entities by Foundations", *Peradaban Hukum Nusantara* 1, No. 1 (28 December 2024): 129-143, https://doi.org/10.62193/fk17g819, p. 130.

[31] Ioannis Revolidis, "Boosting Digital Finance and the Digital Single Market? An Overview of the Rules on the Offering of Crypto-Assets According to the Markets in Crypto-Assets Regulation," *SSRN Electronic Journal*, ahead of print, 2025, https://doi.org/10.2139/ssrn.5122891, p. 163.

[32] Baiq Salma Widiana Sari, "Implementation of Universal Design to Achieve Equality for Persons with Disabilities in Indonesia", *Peradaban Hukum Nusantara* 1, No. 2 (2024): 102-121, https://doi.org/10.62193/37vn1k27, p. 104.

with principles of transparency, systemic risk mitigation, and the segregation of client assets from company assets. One of the key features of MiCA is the requirement for service providers to maintain accessible reserve funds to be used as compensation in the event of *force majeure*, such as platform insolvency or cyberattacks targeting storage systems.[33] Transparency is also mandated through the issuance of a *white paper* that outlines the product, associated risks, and investor rights, following information standards that are easily accessible and understandable. In the case of Nuri GmbH in Germany, national financial authorities collaborated with European Union regulators to oversee the company's restructuring and to facilitate a resolution that took investor rights into account including proportional fund recovery from remaining asset reserves.[34] This scheme reflects an integration of *ex-ante* oversight and *ex-post* protection mechanisms, which are currently absent in the Indonesian system. MiCA demonstrates how active institutional roles can minimize structural risks and enhance investor trust in the digital financial system.

The growth of crypto asset technology in Indonesia has progressed at a pace far exceeding the capacity of regulation to keep up. This imbalance has created a normative vacuum that jeopardizes the legal protection of investors. While transaction volumes and the number of participants in the crypto ecosystem continue to rise, the domestic legal framework remains focused on classifying assets as commodities and regulating market mechanics—without addressing issues of liability and restitution in the event of loss. This has resulted in a disparity between the risks borne by investors and the legal guarantees that ought to protect their interests as economically weaker parties in contractual relationships. When the legal system fails to ensure justice in digital transactions, the state's role as a protector of citizens' rights is called into question.[35] A legal system that is responsive to innovation should not only regulate formal legality but also strike a balance between the freedom to innovate and the need to protect against disproportionate harm. The absence of explicit legal accountability mechanisms in the domestic crypto market reflects

[33] Dirk A Zetzsche *et al*., "The Markets in Crypto-Assets Regulation (MiCA) and the EU Digital Finance Strategy", *Capital Markets Law Journal* 16, No. 2 (20 July 2021): 203-225, https://doi.org/10.1093/cmlj/kmab005, p. 203

[34] Soca Daru Indraswari, "Legal Implications of Insurance Supervisor's Liability in Policy Failure", *Peradaban Hukum Nusantara* 1, No. 2 (2024): 122-142, https://doi.org/10.62193/gzcvc287, p. 123.

[35] Jane Andrew and Max Baker, "The General Data Protection Regulation in the Age of Surveillance Capitalism", *Journal of Business Ethics* 168, No. 3 (January 2021): 565-578, https://doi.org/10.1007/s10551-019-04239-z, p. 565.

a state of normative stagnation that hinders the legal system's transformation toward a more adaptive and protective framework.[36]

The principle of justice plays a fundamental role in the reformulation of regulatory frameworks for crypto asset investor protection. In this context, *corrective justice* serves as the normative foundation for determining liability in cases of loss whether due to breach of contract, system failure, or manipulation by service providers. Corrective justice not only emphasizes the restoration of losses but also ensures that the party who benefits from a transaction is held accountable for the risks it generates.[37] Meanwhile, *distributive justice* plays a crucial role in designing regulatory systems that ensure equal access to legal protection for all investors, including small-scale investors who occupy a weaker position in contractual relationships. A regulatory framework grounded in the principle of distributive justice compels the state to move beyond neutrality and actively promote the proportional redistribution of risks and responsibilities within a digital ecosystem prone to information asymmetry. In the crypto sector, such justice can only be realized if the law is conceived not merely as a tool for market control, but as an effective corrective mechanism against structural imbalances. Accordingly, the formulation of new legal policies must reflect these principles in order to build a system that is more equitable, transparent, and participatory.

The principle of legal certainty is a foundational element in building public trust in financial systems, including within the crypto asset ecosystem. Legal certainty ensures that the rules of engagement are comprehensible, consistently applied, and provide concrete protection for the rights of legal subjects. In the context of crypto, legal uncertainty creates a grey area that allows service providers to evade responsibility in the event of system failures or asset loss. Compensation mechanisms become a critical component that must be institutionalized within national regulation either in the form of mandatory reserve funds maintained by platforms or liability insurance schemes for end-user protection.[38] By adopting a risk-based regulatory approach, such mechanisms function not only as passive

[36] Dian Hadiati, "Legal Protection for Online Transportation Service Drivers as Platform Workers in Indonesia", *Peradaban Hukum Nusantara* 1, No. 1 (2 August 2024): 37-58, https://doi.org/10.62193/245kqc30, p. 38.

[37] Arthur Ripstein, "Corrective Justice" in *Research Handbook on Private Law Theory*, Editors: Hanoch Dagan and Benjamin C. Zipursky, (United Kingdom: Edward Elgar Publishing, 2020), https://doi.org/10.4337/9781788971621.00022, p. 115.

[38] John Armour *et al.*, *Principles of Financial Regulation* (United Kingdom: Oxford University Press, 2016), p. 22.

protection but also as market discipline instruments that incentivize service providers to maintain the integrity of their systems. In countries where compensation schemes for investors are absent, the resulting investment climate tends to be fragile allowing dominant actors to behave opportunistically without facing clear legal consequences. Therefore, legal certainty must be articulated through concrete norms that clearly define who bears responsibility and how investors can obtain redress in the event of system failure.

The reformulation of national regulation can be guided by adopting the structural approach implemented in MiCA, particularly its principles of risk-based supervision and *ex-ante* investor protection. An ideal regulatory framework should establish a legal classification for types of crypto assets, clarify the legal status of service provider entities, and mandate transparency protocols as well as periodic risk assessments by independent supervisory authorities. Indonesia could consider implementing investor protection schemes such as a *reserve fund*, which requires platforms to allocate a portion of their assets as a guarantee for investor compensation in extraordinary circumstances, as stipulated in Article 67 of MiCA. Additionally, the concept of *technology auditability* should be integrated into the domestic legal framework to ensure real-time oversight of crypto trading systems without undermining the principle of decentralization.[39] In the long term, strengthening such a legal structure will contribute to the creation of a more stable and accountable crypto investment ecosystem. The effort to harmonize selected principles from MiCA is not intended to replicate the entire system, but rather to serve as an adaptive step toward developing legal protections that align with the evolving characteristics of Indonesia's crypto asset market.

D. CONCLUSIONS

This study confirms that the Indonesian legal system lacks an adequate normative structure to provide legal protection for crypto asset investors, particularly in cases of platform failure, unilateral shutdowns, or the loss of funds due to service provider negligence. The SPLASHCOIN case illustrates that while civil lawsuits can be pursued, the legal approach remains heavily reliant on general principles of tort law and is not supported by sector-specific, prescriptive regulations. This legal uncertainty directly affects the realization of substantive justice, especially for retail investors who occupy a weaker position

[39] Debasish Kundu, "Blockchain and Trust in a Smart City", *Environment and Urbanization ASIA* 10, No. 1 (March 2019): 31-43, https://doi.org/10.1177/0975425319832392, p. 32.

in contractual relationships. In contrast, the regulatory approach developed under the European Union's MiCA framework demonstrates how the principles of corrective justice and legal certainty can be institutionalized through reserve fund requirements, risk disclosures, and risk-based compensation mechanisms. Therefore, reformulating Indonesia's national regulations is not only necessary to respond to the complexity of digital assets, but also represents a form of state accountability in guaranteeing justice, legal certainty, and preventive legal protection for all actors in the country's digital economy.

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