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Digital Transformation and Regulatory Approaches in Capital Markets: A Comparative Legal Study of Indonesia and Malaysia

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ABSTRACT

This study aims to compare the regulatory frameworks governing fintech innovation, blockchain and digital assets, and investor data protection in the capital markets of Indonesia and Malaysia. It employs normative legal research using statute, comparative, and conceptual approaches. The analysis is based on primary legal materials, including legislation, regulatory guidelines, supervisory instruments, and official policy documents, as well as secondary legal materials, including academic literature and policy reports. The collected materials are examined through descriptive and comparative legal analysis. The findings demonstrate that Indonesia and Malaysia pursue broadly similar regulatory objectives through licensing, governance requirements, supervisory mechanisms, risk management, and investor protection. However, the two jurisdictions differ significantly in their institutional architecture. Indonesia adopts an integrated financial-sector regulatory approach under the Financial Services Authority, whereas Malaysia applies a more specialised capital-market supervisory model through the Securities Commission Malaysia. These institutional differences influence regulatory coherence, supervisory coordination, legal certainty, and regulators' capacity to address technology-specific risks. The findings imply that Indonesia should strengthen inter-institutional coordination and technology-specific supervisory standards, while both jurisdictions should ensure that innovation policies remain closely connected with cybersecurity, operational resilience, and investor protection. The originality of this study lies in integrating fintech regulation, digital asset governance, and investor data protection within a single comparative legal framework focused on regulatory coherence and institutional design.

Keywords: Capital Markets; digital assets; digital transformation; fintech regulation; investor data protection.

ABSTRAK

Penelitian ini bertujuan membandingkan kerangka regulasi yang mengatur inovasi fintech, blockchain, dan aset digital, serta perlindungan data investor di pasar modal Indonesia dan Malaysia. Penelitian ini menggunakan metode penelitian hukum normatif dengan pendekatan perundang-undangan, perbandingan, dan konseptual. Analisis didasarkan pada bahan hukum primer berupa peraturan perundang-undangan, pedoman regulasi, instrumen pengawasan, dan dokumen kebijakan resmi, serta bahan hukum sekunder berupa literatur akademik dan laporan kebijakan. Bahan hukum tersebut dianalisis menggunakan metode deskriptif dan komparatif. Hasil penelitian menunjukkan bahwa Indonesia dan Malaysia memiliki tujuan regulasi yang relatif serupa melalui mekanisme perizinan, kewajiban tata kelola, pengawasan, manajemen risiko, dan perlindungan investor. Namun, kedua negara memiliki perbedaan signifikan dalam arsitektur kelembagaan. Indonesia menerapkan pendekatan regulasi sektor keuangan yang terintegrasi melalui Otoritas Jasa Keuangan, sedangkan Malaysia menggunakan model pengawasan pasar modal yang lebih terspesialisasi melalui Securities Commission Malaysia. Perbedaan kelembagaan tersebut memengaruhi koherensi regulasi, koordinasi pengawasan, kepastian hukum, serta kemampuan regulator dalam menangani risiko yang spesifik pada teknologi. Temuan penelitian mengimplikasikan bahwa Indonesia perlu memperkuat koordinasi antarlembaga dan standar pengawasan yang spesifik terhadap teknologi, sedangkan kedua negara perlu memastikan bahwa kebijakan inovasi tetap terhubung dengan keamanan siber, ketahanan operasional, dan perlindungan investor. Orisinalitas penelitian ini terletak pada pengintegrasian regulasi fintech, tata

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kelola aset digital, dan perlindungan data investor ke dalam satu kerangka hukum komparatif yang berfokus pada koherensi regulasi serta desain kelembagaan.

Kata kunci: aset digital; pasar modal; perlindungan data investor; regulasi fintech; transformasi digital.

INTRODUCTION

The digitalisation of capital market activities has transformed the delivery of financial services, investment management, and market transactions through the growing use of financial technology (fintech), blockchain systems, robo-advisory services, algorithmic trading, and digital investment platforms. These developments have broadened access to investment services, increased operational efficiency, and enabled new forms of fundraising and asset trading, including equity crowdfunding and blockchain-based financial instruments (Begum et al., 2022; Khatib et al., 2025). However, the increasing dependence of capital markets on digital infrastructure has also intensified legal and regulatory risks relating to cybersecurity, personal data processing, automated decision-making, technological reliability, market integrity, and investor protection (Priem, 2020; Teng et al., 2023). The scale of this transformation is evident in both Indonesia and Malaysia. By the end of 2025, Indonesia had recorded 20.2 million capital market Single Investor Identification accounts, with 79% of investors aged below 40, indicating the rapid expansion of digitally facilitated retail participation (OJK, 2025). In Malaysia, trading activity on regulated Digital Asset Exchanges increased by 23% from RM13.93 billion in 2024 to RM17.14 billion in 2025, while the number of digital asset investors grew by approximately 29% (Securities Commission Malaysia, 2025). These developments demonstrate that digital transformation is no longer a peripheral issue but a central feature of capital market development in both jurisdictions. Consequently, Indonesia and Malaysia require regulatory frameworks that facilitate technological innovation while ensuring legal certainty, cybersecurity resilience, responsible data governance, market integrity, and effective investor protection.

Scholarly attention to the legal implications of digital finance has expanded considerably over the past decade. One stream of literature focuses on fintech regulation and the development of supervisory frameworks designed to balance innovation with financial stability and consumer protection. Studies in this area have examined regulatory sandboxes, innovation governance, and adaptive regulatory mechanisms intended to facilitate technological experimentation while maintaining regulatory oversight (Diniyya et al., 2021; Huibers, 2021; Odong, 2026; Truby et al., 2022). These studies demonstrate the growing importance of regulatory flexibility in responding to technological disruption within financial markets. However, the primary focus of this scholarship has generally remained on fintech governance as an independent regulatory domain rather than as part of a broader framework of digital capital market regulation.

A second body of literature examines blockchain technology, cryptocurrencies, and digital asset regulation. Existing studies have explored legal certainty, market supervision, cryptocurrency governance, and the regulatory implications of blockchain-based financial activities (Feinstein & Werbach, 2020; Sobri & Rab, 2024; Sufian et al., 2024; van der Linden & Shirazi, 2023). This scholarship highlights the challenges posed by digital assets to conventional regulatory structures, particularly regarding market integrity, investor confidence, and cross-border regulatory oversight. As blockchain-based technologies become increasingly integrated into financial services, questions concerning the consistency and adaptability of legal frameworks have become more prominent within contemporary debates on digital financial governance.

A third strand of literature addresses investor protection, data governance, cybersecurity, and privacy within digital financial systems. Research in this field emphasises the importance of personal data protection, cybersecurity resilience, and information governance in maintaining trust and accountability in digital financial services (Blumenstock & Kohli, 2023; Patil et al., 2025; Shalihah & Mohd Shariff, 2022). Other studies have examined Islamic fintech and digital financial services from the perspectives of legal compliance, governance, and financial inclusion (Muryanto, 2023). While these studies provide valuable insights into specific dimensions of digital finance, fintech regulation, digital asset governance, and investor protection are frequently examined as separate regulatory subjects. Existing scholarship, therefore, offers a limited explanation of how regulatory coherence can be maintained across these interconnected areas of digital capital market governance.

Against this background, a significant gap remains in the literature on integrated comparative legal analyses examining fintech regulation, digital asset governance, and investor protection as interconnected components of digital capital market regulation. Existing studies tend to analyse these issues within separate regulatory domains, whereas the effectiveness of digital capital market governance depends upon the interaction between legal frameworks, supervisory institutions, innovation policies, and investor protection mechanisms. Moreover, comparative legal scholarship has devoted limited attention to how differences in institutional arrangements and supervisory structures influence regulatory coherence across jurisdictions. This study, therefore, aims to comparatively examine the regulatory frameworks governing fintech innovation, blockchain and digital asset activities, and investor data protection within the capital markets of Indonesia and Malaysia. This article argues that differences in digital capital market regulation between Indonesia and Malaysia are shaped not merely by the formal adoption of regulatory instruments but by the degree of regulatory coherence, institutional integration, and technology-specific supervision embedded within each jurisdiction. By analysing these dimensions within a single comparative framework, this study contributes to the development of comparative capital market law and comparative digital financial regulation while advancing understanding of how regulatory coherence shapes the governance of digital financial markets in emerging economies.

RESEARCH METHOD

This study employs a normative legal research method using statute, comparative, and conceptual approaches. Normative legal research examines legal norms, legal principles, statutory provisions, and institutional legal frameworks governing particular legal issues. As noted by Marzuki (2017), normative legal research is conducted by analysing legal materials to identify legal principles, evaluate the coherence of legal systems, and assess the consistency of legal norms within a regulatory framework. In this study, the statute approach is applied to identify, interpret, and systematise legislation, regulatory guidelines, supervisory instruments, and official policy documents governing digital financial innovation, digital assets, and investor protection in Indonesia and Malaysia. Given that the study examines regulatory responses across two jurisdictions, a comparative approach is employed to identify similarities, differences, and distinctive regulatory characteristics in each legal system. Comparative legal analysis enables researchers to evaluate alternative regulatory models and institutional arrangements and to generate a deeper understanding of how different jurisdictions respond to similar legal challenges (Siems, 2022; Soekanto & Mamudji, 2010). The study also adopts a conceptual approach to examine and apply legal concepts relevant to digital financial regulation, including adaptive regulation, smart regulation, regulatory coherence, legal certainty, investor protection, and risk-based supervision.

The units of analysis in this research are statutory provisions, regulatory guidelines, supervisory instruments, and institutional arrangements governing fintech innovation, digital assets, and investor data protection in Indonesia and Malaysia. These legal objects are examined to assess how each jurisdiction structures its regulatory framework, allocates supervisory authority, manages technological risks, and protects investors in increasingly digitalised capital markets. Consistent with contemporary comparative legal methodology, the analysis focuses not only on formal legal rules but also on the institutional and regulatory structures through which those rules are implemented and enforced.

The legal materials used in this study consist of primary and secondary legal materials. Primary legal materials include legislation, regulatory guidelines, supervisory frameworks, policy instruments, and official documents governing digital financial innovation, digital assets, capital market activities, and personal data protection in Indonesia and Malaysia. Secondary legal materials include academic journal articles, books, research reports, conference proceedings, and other scholarly publications that discuss fintech regulation, blockchain governance, digital asset supervision, comparative capital market law, cybersecurity, and data protection. To ensure transparency and consistency in the comparative assessment, legal and regulatory materials effective up to 30 June 2026 were included in the analysis.

The collection of legal materials was conducted through literature study and document analysis. A literature review was used to identify relevant legal doctrines, theoretical perspectives, and scholarly discussions concerning digital financial regulation and comparative capital market governance. Document analysis was undertaken to examine legislation, regulatory guidelines, supervisory frameworks, policy documents, consultation papers, and official reports issued by competent regulatory authorities in both jurisdictions. The collected materials were subsequently organised according to the principal themes examined in this study, namely fintech innovation, digital asset governance, and investor data protection.

The collected legal materials were analysed using descriptive-analytical and comparative methods. Descriptive analysis was employed to systematically map the regulatory frameworks governing digital capital market activities in Indonesia and Malaysia. Comparative analysis was then conducted using four analytical dimensions derived from contemporary discussions on regulatory governance and comparative financial regulation, namely, regulatory coherence, institutional integration, legal certainty, and supervisory effectiveness (Odong, 2026; Taeihagh et al., 2021). Regulatory coherence was assessed by examining the consistency and alignment of legal instruments, regulatory objectives, and supervisory policies across interconnected regulatory domains. Institutional integration was evaluated through the allocation of supervisory authority, inter-agency coordination mechanisms, and the degree of regulatory consolidation within each jurisdiction. Legal certainty was assessed based on the clarity of legal definitions, licensing requirements, compliance obligations, and regulatory scope applicable to market participants.

Supervisory effectiveness was examined through the availability of supervisory instruments, enforcement mechanisms, technology-specific oversight measures, and the capacity of regulatory institutions to respond to emerging risks associated with digital financial innovation. These dimensions provide an operational framework for evaluating the relative adaptability, consistency, and effectiveness of digital capital market regulation in Indonesia and Malaysia. The findings are subsequently used to formulate normative recommendations to strengthen innovation-oriented regulatory frameworks that promote technological development while maintaining investor protection and market integrity.

RESULTS AND DISCUSSION

Fintech Regulation in Indonesia and Malaysia

The regulation of fintech activities in the Indonesian capital market and financial sector is primarily administered by the Financial Services Authority (Otoritas Jasa Keuangan—OJK) through a series of regulatory instruments that govern digital financial innovation and technology-based financial services. The principal legal instruments include POJK No. 13/POJK.02/2018 concerning Digital Financial Innovation in the Financial Services Sector, POJK No. 37/POJK.04/2018 concerning Equity Crowdfunding Services, and POJK No. 3 of 2024 concerning the Implementation of Financial Sector Technology Innovation (Financial Services Authority of Indonesia, 2018a, 2018b, 2024a). These regulations establish the legal basis for digital financial innovation, equity crowdfunding, technology-based investment services, and other fintech POJK No. 3 of 2024 provides a regulatory framework establishing requirements concerning registration, regulatory assessment, sandbox participation, licensing, governance, operational supervision, risk management, consumer protection, and personal data protection (Financial Services Authority of Indonesia, 2024a). Under this framework, fintech operators are required to undergo regulatory assessment before obtaining authorisation from OJK. The regulatory sandbox functions as a supervised testing mechanism through which technological innovation, business feasibility, governance structures, risk management capability, and compliance readiness are evaluated. Fintech providers are also subject to obligations regarding transparency, reporting, internal control systems, complaint-handling mechanisms, the confidentiality of user information, and compliance with applicable data protection requirements. OJK retains authority over licensing decisions, compliance monitoring, and continuous supervision of technology-based financial service providers operating within its jurisdiction (Hasan, 2024; Napitupulu et al., 2025; Pakpahan et al., 2020).

In Malaysia, fintech activities associated with capital market services are primarily regulated by the Securities Commission Malaysia (SC). The Digital Investment Management Framework, introduced in 2017, constitutes the principal regulatory instrument governing digital investment management services and robo-advisory activities within the Malaysian capital market. The framework establishes regulatory requirements concerning licensing, governance standards, technological capability, risk disclosure, suitability assessment, operational compliance, and investor protection (Maume, 2018).

Digital investment managers operating under this framework must obtain authorisation from the Securities Commission Malaysia before providing services to investors. The regulatory framework further requires providers to maintain adequate technological infrastructure, internal

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control mechanisms, operational procedures, and risk-management systems. Innovation testing may also be facilitated through the regulatory sandbox mechanism supervised by the Securities Commission Malaysia. Investor protection obligations include suitability assessments, disclosure of investment risks, complaint-resolution procedures, and governance requirements applicable to digital investment service providers (Khalid & Kunhibava, 2020; Maume, 2018)**.** The Securities Commission Malaysia exercises supervisory authority through licensing approval, compliance monitoring, operational oversight, and enforcement mechanisms applicable to fintech operators within the capital market sector (Chen & Taeihagh, 2026; Truby et al., 2022)**.**

Table 1. Comparative Mapping of Fintech Regulation in the Capital Markets of Indonesia and Malaysia

Regulatory Domain	Indonesia	Malaysia
Main Legal Instruments	POJK No. 13/POJK.02/2018; POJK No. 37/POJK.04/2018; POJK No. 3/2024	Digital Investment Management Framework (2017); Capital Markets and Services Act 2007 and related SC requirements
Competent Authority	Financial Services Authority (OJK)	Securities Commission Malaysia (SC)
Regulatory Scope	Digital financial innovation, equity crowdfunding, and technology-based financial services	Digital investment management, robo-advisory services, and technology-enabled investment activities
Licensing Requirements	Registration, sandbox assessment, and operational authorisation by OJK	Licensing approval and authorisation by SC
Regulatory Sandbox	Governed under POJK No. 3/2024	Administered by Securities Commission Malaysia
Governance Obligations	Risk management, transparency, reporting obligations, internal controls, and operational governance	Governance standards, internal controls, operational compliance, disclosure obligations, and technological reliability requirements
Investor Protection Measures	Consumer protection obligations, transparency requirements, data protection, and risk disclosure	Suitability assessments, risk disclosure, investor information obligations, and governance safeguards
Complaint and Redress Mechanisms	Complaint-handling procedures supervised by OJK	Complaint-resolution procedures supervised by SC
Supervisory Mechanisms	Licensing review, compliance monitoring, reporting obligations, and ongoing supervision	Licensing oversight, compliance monitoring, operational supervision, and enforcement mechanisms

Source: Compiled by the author from Financial Services Authority of Indonesia (2018a, 2018b, 2024a), Malaysia (2007), and Securities Commission Malaysia (2017).

The comparative mapping indicates that Indonesia and Malaysia adopt broadly similar regulatory objectives in governing fintech activities within capital markets, particularly through licensing requirements, supervisory oversight, regulatory sandbox mechanisms, governance obligations, and investor protection measures. However, the institutional design and regulatory architecture of each jurisdiction reflect different approaches to organising fintech governance.

Indonesia adopts a broader financial sector technology and innovation framework administered by OJK, which integrates various forms of fintech activity under a single supervisory institution. The issuance of POJK No. 3 of 2024 reflects an attempt to consolidate governance of technological innovation by linking registration, sandbox assessment, licensing, operational supervision, and consumer protection into a single regulatory framework. This approach provides a comprehensive supervisory model, although the broad scope of fintech regulation requires continuous institutional coordination to ensure consistency across different financial activities.

Malaysia, in contrast, applies a more capital-market-specific regulatory approach through the Securities Commission Malaysia. The Digital Investment Management Framework primarily focuses on investment-related fintech services, particularly robo-advisory and digital investment management. This sector-oriented approach reflects SC's role as a specialised capital market regulator, enabling regulatory requirements to be closely aligned with investment conduct, suitability obligations, and market integrity objectives.

From an adaptive regulation perspective, both jurisdictions employ regulatory sandbox mechanisms to manage technological uncertainty while allowing innovation to develop under supervisory control. The sandbox model represents a shift from traditional rule-based regulation toward a risk-based supervisory approach, in which regulators evaluate emerging technologies based on potential risks, operational readiness, and consumer protection implications rather than applying uniform restrictions at the early stages of innovation.

The difference between Indonesia and Malaysia is therefore not primarily reflected in the presence or absence of fintech regulation, but in the institutional configuration through which regulatory objectives are pursued. Indonesia emphasises an integrated financial technology governance framework under a broad financial authority, while Malaysia emphasises specialised capital market supervision through a dedicated securities regulator. These different approaches influence regulatory coherence, supervisory coordination, and each jurisdiction's ability to adapt regulatory responses to rapidly evolving fintech models.

Blockchain and Digital Asset Regulation

Blockchain technology and digital assets have increasingly become part of the regulatory landscape of digital capital markets. In both Indonesia and Malaysia, regulatory developments have moved beyond treating cryptocurrencies as isolated digital instruments and have incorporated digital assets into broader financial market governance frameworks. The regulatory approaches adopted by both jurisdictions address the legal classification of digital assets, institutional authority, licensing requirements, governance obligations, operational compliance, investor protection mechanisms, and supervisory arrangements applicable to digital asset market participants (Carvalho et al., 2021; Feinstein & Werbach, 2020; Ferreira & Sandner, 2021; van der Linden & Shirazi, 2023).

In Indonesia, the legal framework governing digital financial assets was significantly restructured through Law No. 4 of 2023 concerning Financial Sector Development and Strengthening (P2SK Law). The law establishes the institutional basis for transferring supervisory authority over digital financial assets, including crypto assets, from the Commodity Futures Trading Regulatory Agency (Bappebti) to the Financial Services Authority (OJK). The transfer took effect on 10 January 2025, positioning OJK as the competent authority responsible for licensing, supervision, and regulatory oversight of digital financial asset activities in the financial sector.

Following this institutional transition, POJK No. 27 of 2024 on the Implementation of Digital Financial Asset Trading, Including Crypto Assets provides the operational framework for digital

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asset service providers (Financial Services Authority of Indonesia, 2024b). The regulation establishes licensing requirements, governance obligations, reporting duties, operational standards, risk management requirements, and supervisory mechanisms. Regulated entities are required to maintain internal control systems, compliance functions, operational governance structures, record-keeping mechanisms, and reporting procedures under OJK supervision. The framework also incorporates consumer protection obligations, transparency requirements, complaint-handling procedures, and supervisory coordination mechanisms.

Malaysia regulates digital asset activities primarily through the Capital Markets and Services Act 2007 and the *Guidelines on Digital Assets* issued by the Securities Commission Malaysia (Malaysia, 2007; Securities Commission Malaysia, 2024a). These instruments establish the regulatory basis for Digital Asset Exchanges (DAX), Initial Exchange Offerings (IEO), and other approved digital asset activities conducted within the Malaysian capital market. The framework establishes licensing requirements, governance standards, disclosure obligations, operational compliance requirements, supervisory reporting duties, and market conduct obligations applicable to licensed operators.

Digital Asset Exchanges and Initial Exchange Offering operators are required to obtain authorisation from the Securities Commission Malaysia before conducting regulated activities (Securities Commission Malaysia, 2024a, 2024b). Licensed entities must comply with obligations concerning governance structures, operational controls, internal monitoring systems, risk management procedures, disclosure requirements, record maintenance, and regulatory reporting. The Malaysian framework further incorporates technology governance requirements, cybersecurity preparedness, operational resilience measures, incident reporting obligations, and investor complaint-resolution mechanisms applicable to digital asset market operators (Kunhibava et al., 2021; Sukumaran et al., 2022).

Table 2. Comparative Mapping of Blockchain and Digital Asset Regulation in Capital Market Infrastructure

Regulatory Domain	Indonesia	Malaysia
Main Legal Instruments	Law No. 4 of 2023 on Financial Sector Development and Strengthening (P2SK Law); POJK No. 27 of 2024 concerning Digital Financial Asset Trading, Including Crypto Assets	Capital Markets and Services Act 2007; Guidelines on Digital Assets (2024 Revision)
Competent Authority	Financial Services Authority (OJK)	Securities Commission Malaysia (SC)
Regulatory Scope	Digital financial assets, crypto assets, digital asset trading, and related digital financial activities	Digital assets, Digital Asset Exchanges (DAX), Initial Exchange Offerings (IEO), and related capital market activities
Institutional Arrangement	Supervisory authority transferred from Bappebti to OJK effective 10 January 2025	Supervision administered directly by the Securities Commission Malaysia
Licensing Requirements	Registration and authorisation requirements are administered by OJK	Licensing and approval requirements administered by the Securities Commission Malaysia

Regulated Market Operators	Digital asset service providers and related digital financial entities	Digital Asset Exchanges (DAX), IEO operators, and approved market operators
Governance Obligations	Internal controls, operational governance, compliance functions, reporting obligations, and supervisory cooperation	Governance standards, disclosure obligations, operational controls, compliance requirements, and regulatory reporting
Investor Protection Measures	Transparency obligations, consumer protection provisions, complaint-handling procedures, and disclosure requirements	Investor disclosures, complaint-resolution mechanisms, risk disclosures, and operational accountability requirements
Technology and Security Requirements	Risk management systems, operational safeguards, technological reliability, and supervisory reporting	Technology governance, cybersecurity controls, operational resilience, incident reporting, and compliance monitoring
Supervisory Mechanisms	Licensing review, ongoing supervision, compliance monitoring, and reporting obligations are administered by OJK	Licensing oversight, supervisory review, compliance monitoring, and enforcement are administered by the Securities Commission Malaysia

Source: Compiled by the author from Republic of Indonesia (2023), Financial Services Authority of Indonesia (2024b), Malaysia (2007), and Securities Commission Malaysia (2024a, 2024b).

The comparative analysis reveals that Indonesia and Malaysia adopt similar regulatory objectives in governing blockchain-based financial activities, particularly through authorisation mechanisms, governance requirements, operational controls, investor protection obligations, and supervisory oversight. However, the institutional architecture underlying these regulatory frameworks reflects different approaches to digital asset governance. These approaches correspond with the broader shift toward risk-based financial regulation, in which blockchain-based instruments are assessed according to their economic functions, market implications, and associated risks rather than solely their technological characteristics (Collomb et al., 2019).

Indonesia’s transition of supervisory authority from Bappebti to OJK represents a significant institutional restructuring in digital asset regulation. By placing digital financial assets under a financial services regulator, Indonesia integrates digital asset supervision into a broader financial sector governance framework. This approach may strengthen regulatory alignment between digital asset activities and existing financial market supervision, particularly concerning consumer protection, risk management, and institutional accountability.

Malaysia, in contrast, has maintained a securities-market-oriented approach by positioning digital assets within the regulatory jurisdiction of the Securities Commission Malaysia. The Malaysian framework treats digital assets primarily as components of capital market infrastructure, where licensing, disclosure, market conduct, and investor protection obligations are integrated into securities regulation. This institutional model provides a specialised supervisory structure focused on market integrity and investor safeguards.

From a regulatory coherence perspective, the distinction between the two jurisdictions lies in institutional integration rather than in regulatory objectives. Indonesia emphasises consolidating digital asset oversight within a broader financial sector authority, while Malaysia

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relies on specialised capital market supervision through the SC. Both approaches reflect adaptive regulatory strategies that seek to accommodate blockchain innovation while maintaining supervisory control over emerging financial risks.

The comparison further indicates that blockchain governance in capital markets increasingly depends on regulators' capacity to integrate technological oversight with traditional financial regulation. Licensing frameworks, operational resilience requirements, cybersecurity obligations, and investor protection mechanisms are regulatory instruments through which both jurisdictions seek to balance facilitating innovation with maintaining market stability. The different institutional arrangements adopted by Indonesia and Malaysia consequently shape how regulatory certainty, supervisory coordination, and investor confidence are constructed within digital capital market ecosystems.

Investor Data Protection

The expansion of digital capital market activities has increased the volume and complexity of personal and financial data processed by fintech providers, digital investment platforms, robo-advisory services, and digital asset operators. Digital onboarding procedures, electronic know-your-customer (e-KYC) systems, online portfolio management, and technology-based trading activities require continuous collection, storage, processing, and transfer of investor information. Consequently, investor data protection has become an essential component of digital capital market governance, involving legal obligations concerning personal data processing, cybersecurity governance, operational security, supervisory oversight, and investor complaint mechanisms (Blumenstock & Kohli, 2023; Patil et al., 2025; Wylde et al., 2022).

In Indonesia, the principal legal framework governing personal data protection is Law No. 27 of 2022 concerning Personal Data Protection (Undang-Undang Perlindungan Data Pribadi). The law establishes general principles governing personal data processing and recognises rights afforded to data subjects, including the right to obtain information regarding data processing activities, access to and correction of personal data, withdrawal of consent under certain circumstances, and the right to request deletion or restriction of processing in accordance with statutory provisions. The law requires that personal data processing be conducted on lawful grounds and establishes obligations regarding consent, transparency, confidentiality, accountability, and data security. These provisions apply to entities operating within digital financial services and capital market activities that process investor information.

Within the financial sector, these obligations are complemented by OJK regulations governing digital financial innovation, financial sector technology innovation, and digital financial assets (Financial Services Authority of Indonesia, 2018a, 2024a, 2024b). Financial service providers and fintech operators are required to maintain the confidentiality, integrity, and availability of customer information through governance mechanisms relating to information security, access management, risk mitigation, and operational monitoring. Regulated entities must also implement procedures concerning data management, cybersecurity protection, compliance monitoring, and operational risk control as part of their governance obligations. These requirements apply to digital investment platforms, technology-based financial service providers, and digital asset operators under OJK supervision (Darem et al., 2023; Triyanti et al., 2025).

The Indonesian framework further regulates the management of personal data breaches and institutional accountability. Data controllers are required to undertake notification procedures for certain personal data breaches in accordance with statutory requirements. The framework also provides administrative sanctions and legal consequences for violations of personal data protection obligations. In digital capital market activities, investor complaints concerning personal data processing and information security may be addressed through complaint-handling mechanisms established by regulated entities and supervisory authorities.

In Malaysia, investor data protection is primarily governed by the Personal Data Protection Act 2010 (PDPA). The Act establishes a comprehensive framework governing the processing of personal data in commercial transactions, including activities conducted within financial and capital market sectors. The PDPA incorporates several fundamental principles, including notice and choice, disclosure limitation, security, retention, data integrity, and access principles. These principles regulate the collection, use, disclosure, storage, retention, and management of personal information by organisations operating within digital financial environments (Shalihah & Mohd Shariff, 2022; Wong et al., 2023).

Beyond the PDPA framework, investor data protection within Malaysian digital capital markets is supported by sector-specific requirements administered by the Securities Commission Malaysia (Securities Commission Malaysia, 2023, 2024a, 2024b). Licensed entities engaged in digital investment management, fintech services, Digital Asset Exchanges (DAX), and other technology-enabled capital market activities are required to maintain governance arrangements, technology risk management systems, operational resilience measures, and cybersecurity controls. These obligations include information security safeguards, internal controls, incident management procedures, compliance monitoring, and regulatory reporting requirements designed to support secure digital financial operations (AlBenJasim et al., 2024; Virani, 2024).

The Malaysian framework also incorporates requirements concerning investor complaints, operational accountability, and supervisory oversight. Licensed market operators must establish complaint-resolution mechanisms and maintain procedures for responding to operational incidents affecting investors and market participants. Compliance with cybersecurity, governance, and operational requirements is monitored through supervisory mechanisms administered by the Securities Commission Malaysia.

Table 3. Comparative Mapping of Investor Data Protection in Digital Capital Markets

Regulatory Domain	Indonesia	Malaysia
Main Legal Instruments	Law No. 27 of 2022 concerning Personal Data Protection; OJK regulations on digital financial innovation and digital financial assets	Personal Data Protection Act 2010 (PDPA); Securities Commission Malaysia regulatory requirements
Competent Authority	OJK and relevant personal data protection authorities	Personal Data Protection Commissioner and Securities Commission Malaysia
Regulatory Scope	Personal data processing in financial services, fintech activities, digital investment services, and digital asset operations	Personal data processing in commercial and financial activities, including capital market services

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Data Subject Rights	Access, correction, withdrawal of consent, restriction of processing, and deletion rights	Access and correction rights supported by notice and choice requirements
Lawful Processing Requirements	Consent, transparency, accountability, confidentiality, and lawful processing obligations	Notice and choice, disclosure limitation, retention, data integrity, and security principles
Cybersecurity Obligations	Information security measures, risk mitigation, access controls, incident management, and operational safeguards	Technology-risk management, cybersecurity controls, operational resilience, and incident-response procedures
Breach Notification Requirements	Notification obligations for certain personal data breaches	Security-related compliance and reporting obligations under applicable regulatory requirements
Investor Complaint Mechanisms	Complaint-handling procedures through regulated entities and supervisory authorities	Complaint-resolution mechanisms maintained by licensed entities under SC supervision
Supervisory Mechanisms	Compliance monitoring, reporting obligations, operational oversight, and OJK supervision	Licensing supervision, compliance monitoring, reporting obligations, and SC enforcement

Source: Compiled by the author from Republic of Indonesia (2022), Financial Services Authority of Indonesia (2018a, 2024a, 2024b), Malaysia (2010, 2024), and Securities Commission Malaysia (2023, 2024a, 2024b).

The comparative analysis indicates that Indonesia and Malaysia adopt comparable objectives for protecting investor information in digital capital markets, particularly through requirements regarding lawful data processing, cybersecurity safeguards, governance obligations, and supervisory controls. However, the regulatory architecture of each jurisdiction reflects different approaches to integrating personal data protection with financial market supervision.

Indonesia adopts a dual-layer governance model in which general personal data protection obligations under Law No. 27 of 2022 operate alongside sector-specific requirements imposed by OJK. This structure separates general data governance principles from financial sector supervision mechanisms, allowing OJK to incorporate cybersecurity, operational risk management, and information security requirements into the regulation of digital financial service providers.

Malaysia applies a similarly layered approach through the interaction between the PDPA and Securities Commission Malaysia's technology-risk governance requirements. However, the Malaysian framework places stronger emphasis on integrating cybersecurity and operational resilience within capital market supervision. Through SC requirements applicable to digital investment managers, digital asset operators, and technology-enabled market participants, data protection is closely connected with broader objectives of market integrity and operational continuity.

From a regulatory governance perspective, the distinction between the two jurisdictions lies in the degree of institutional integration between data protection and financial supervision. Indonesia emphasises harmonisation between a general personal data protection regime and financial sector regulation, while Malaysia integrates data security considerations more directly into securities-market governance. These approaches illustrate different models of adaptive regulation in addressing digital capital market risks.

The comparison further suggests that investor trust in digital capital markets depends not only on the legal recognition of data protection rights but also on the capacity of regulatory institutions to ensure cybersecurity, operational resilience, and accountability. As digital financial activities become increasingly dependent on data-intensive systems, effective investor protection requires coordination between personal data regulation, technology governance, and financial market supervision.

DISCUSSION

The comparative findings demonstrate that Indonesia and Malaysia pursue broadly similar regulatory objectives in governing digital capital markets. Across fintech innovation, blockchain and digital assets, and investor data protection, both jurisdictions employ licensing and authorisation requirements, governance obligations, risk-management standards, supervisory mechanisms, cybersecurity safeguards, and investor-protection measures. The principal difference, therefore, lies not in the existence of regulation but in the institutional architecture through which these common objectives are implemented.

Indonesia has moved towards integrating fintech innovation and digital financial asset supervision within the broader financial-sector regulatory framework administered by the Financial Services Authority (Otoritas Jasa Keuangan—OJK). By contrast, Malaysia applies a more specialised capital-market-oriented model through the Securities Commission Malaysia, which directly supervises digital investment management, robo-advisory services, Digital Asset Exchanges, and other technology-enabled capital market activities. Accordingly, Indonesia represents a broader approach to institutional integration, whereas Malaysia reflects a more specialised securities market supervisory structure.

The institutional differences between Indonesia and Malaysia primarily reflect the allocation of supervisory authority within their respective financial systems. In Indonesia, OJK serves as an integrated financial services regulator with a mandate that covers banking, capital markets, non-bank financial services, financial technology innovation, and digital financial assets. Following the transfer of crypto-asset supervision from Bappebti to OJK under Law No. 4 of 2023, digital assets have increasingly been incorporated into a broader financial-sector regulatory framework involving licensing, governance, risk management, consumer protection, and continuing supervision. In Malaysia, the fintech activities examined in this study fall primarily under the jurisdiction of the Securities Commission Malaysia, a specialised capital market regulator. Digital investment management, robo-advisory services, Digital Asset Exchanges, and Initial Exchange Offerings are therefore regulated more directly through securities-market legislation and related SC guidelines.

These different institutional arrangements also shape the legal classification and supervision of digital assets. Indonesia places digital financial assets within an integrated financial services structure, whereas Malaysia treats them more specifically as regulated capital market activities. Nevertheless, both models require coordination with institutions responsible for personal data protection, cybersecurity, payment systems, and digital infrastructure. Indonesia additionally requires coordination during and after the transfer of authority from Bappebti to OJK, while Malaysia must coordinate between SC and other authorities whose mandates intersect with digital finance. The available legal materials demonstrate different supervisory configurations, but they do not establish that one model is inherently more effective; such an assessment would require empirical evidence on enforcement, institutional capacity, regulatory outcomes, and stakeholder experience.

The findings on fintech regulation support previous studies that identify regulatory sandboxes, licensing mechanisms, and adaptive supervision as important instruments for balancing technological

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innovation with financial stability and investor protection (Diniyya et al., 2021; Huibers, 2021; Khalid & Kunhibava, 2020; Truby et al., 2022). Consistent with these studies, the present research finds that both Indonesia and Malaysia use supervised testing, governance requirements, risk assessment, and continuing oversight to manage emerging fintech activities. However, earlier studies generally examine regulatory sandboxes or fintech governance as separate regulatory subjects. The present study extends this literature by demonstrating that the operation of these instruments is also shaped by the institutional location of supervisory authority: Indonesia places fintech innovation within OJK's broader financial-sector mandate, whereas Malaysia connects investment-related fintech more directly with specialised capital market supervision through SC. This institutional comparison provides a clearer explanation of how licensing, sandbox assessment, and investor protection are integrated within different supervisory structures.

The findings concerning blockchain and digital assets are also consistent with previous studies emphasising legal certainty, risk-based regulation, market integrity, and investor protection in the governance of crypto-assets and blockchain-based financial activities (Collomb et al., 2019; Feinstein & Werbach, 2020; Sobri & Rab, 2024; van der Linden & Shirazi, 2023). Similar to those studies, this research shows that both jurisdictions rely on authorisation, governance obligations, operational controls, disclosure requirements, and supervisory monitoring to address digital-asset risks. The principal difference is that earlier research has commonly focused on the substantive regulation of cryptocurrencies or blockchain-based instruments, whereas the present study examines how their legal classification interacts with institutional design. Its contribution lies in showing that Indonesia's transfer of digital-asset supervision from Bappebti to OJK represents integration into a broader financial-sector framework, whereas Malaysia regulates Digital Asset Exchanges and Initial Exchange Offerings more directly within securities-market governance under SC. The comparison, therefore, connects digital-asset regulation with the allocation and consolidation of supervisory authority.

The findings on investor data protection support previous research highlighting the importance of privacy, cybersecurity resilience, information governance, and accountability in maintaining trust in digital financial services (Blumenstock & Kohli, 2023; Patil et al., 2025; Shalihah & Mohd Shariff, 2022; Wylde et al., 2022). In line with this literature, the study finds that recognition of data-subject rights must be accompanied by information-security controls, incident management, complaint mechanisms, and regulatory supervision. However, previous studies frequently examine data protection and cybersecurity separately from fintech and digital-asset regulation. The present study contributes a more integrated perspective by comparing how general personal data protection legislation interacts with sector-specific financial supervision in Indonesia and Malaysia. By analysing fintech regulation, digital-asset governance, and investor data protection within the same comparative framework, the study demonstrates that digital capital market governance depends on the alignment of legal rules, supervisory institutions, technology-risk requirements, and investor-protection mechanisms.

Indonesia's integrated model may offer several regulatory advantages because the OJK supervises fintech innovation and digital financial assets within the broader financial services framework. The consolidation of licensing, governance, risk management, consumer protection, and digital-asset supervision under OJK may facilitate greater alignment between emerging digital activities and existing financial-sector oversight. The transfer of digital-asset supervision from Bappebti to OJK may also support the harmonisation of supervisory requirements and reduce institutional fragmentation. Nevertheless, these advantages should be treated as normative potential rather than proven regulatory outcomes. OJK's broad mandate may increase the complexity of supervision, require strong coordination among its internal supervisory functions, and demand continuing cooperation with authorities responsible for personal data protection, cybersecurity, payment systems, and other related domains. The article also indicates a possible risk of inconsistent technical standards where fintech, digital assets, blockchain infrastructure, and cybersecurity obligations develop across different regulatory instruments.

Malaysia's specialised model may provide a more focused connection between digital financial activities and capital market objectives. Through the Securities Commission Malaysia, requirements concerning licensing, disclosure, suitability assessment, market conduct, technological governance, operational resilience, and investor protection can be tailored to digital investment managers, Digital Asset Exchanges, Initial Exchange Offering operators, and other regulated market participants. This sector-specific orientation may support clearer operational and technology-risk standards within the capital market. However, the model may also encounter jurisdictional boundaries where digital activities intersect with banking, payment systems, general cybersecurity regulation, or personal data protection. Coordination is therefore still required between SC and other competent authorities, particularly because investor data protection operates through both the general PDPA regime and sector-specific capital market requirements. In addition, the advantages of specialised supervision may be less directly applicable to digital financial activities falling outside the statutory scope of capital market regulation. These strengths and limitations represent interpretations of the regulatory structure; determining their actual effects would require empirical evidence concerning enforcement practices, institutional coordination, and market outcomes.

The novelty of this article lies in its integrated comparative approach. Rather than comparing individual fintech or crypto-asset regulations in isolation, the study integrates fintech innovation, digital asset governance, and investor data protection into a single analytical framework. These three regulatory domains are assessed through the same four dimensions, thereby enabling the study to explain not only differences in legal instruments but also how institutional design shapes the consistency, adaptability, and implementation of digital capital market regulation in Indonesia and Malaysia.

The findings indicate that digital capital market regulation in Indonesia and Malaysia should be strengthened through clearer institutional coordination, closer alignment between personal data protection and capital market regulation, and more technology-specific supervisory standards. In Indonesia, coordination is particularly important following the consolidation of fintech and digital asset supervision under OJK, while in Malaysia, cooperation remains necessary between the Securities Commission Malaysia and authorities responsible for personal data protection and cybersecurity. Both jurisdictions should also strengthen incident-reporting requirements, ensure accessible and effective investor complaint mechanisms, and periodically evaluate regulatory sandbox outcomes to determine whether tested innovations satisfy governance, operational resilience, cybersecurity, and investor-protection requirements before receiving broader regulatory authorisation. These measures follow directly from the identified need for regulatory coherence, institutional integration, legal certainty, and effective supervision across fintech innovation, digital assets, and investor data protection.

CONCLUSION

This study concludes that Indonesia and Malaysia pursue broadly similar regulatory objectives in governing digital capital markets, particularly through licensing requirements, governance obligations, supervisory mechanisms, risk management, and investor protection. Their principal difference lies in institutional architecture: Indonesia integrates fintech innovation and digital financial asset supervision within the broader financial-sector mandate of OJK, whereas Malaysia applies a more specialised capital-market supervisory model through the Securities

Commission Malaysia. These findings indicate that the effectiveness of digital capital market regulation depends not only on the existence of legal instruments but also on regulatory coherence, institutional integration, and the capacity of supervisory authorities to coordinate responsibilities across interconnected regulatory domains.

The scientific contribution of this study lies in integrating three areas that are frequently examined separately within a single comparative legal framework. By applying the same four analytical dimensions of regulatory coherence, institutional integration, legal certainty, and supervisory effectiveness to both jurisdictions, the study provides a systematic basis for explaining similarities and differences in their regulatory arrangements. It further demonstrates that institutional design is closely related to the development of adaptive governance, as the allocation of supervisory authority shapes how licensing, technology risk oversight, data protection, and investor safeguards are coordinated in digital capital markets.

This study is limited to normative analysis of statutory regulations, regulatory instruments, and institutional frameworks governing digital capital markets in Indonesia and Malaysia. It does not examine empirical implementation, regulatory enforcement practices, stakeholder behaviour, or the operational experiences of fintech providers, investors, and supervisory authorities. Furthermore, the comparative scope is limited to two Southeast Asian jurisdictions and may not fully capture diverse regulatory developments in other digital financial markets. Future research may extend this analysis through empirical and socio-legal approaches to examine regulatory implementation, institutional effectiveness, and stakeholder experiences in governing fintech innovation, blockchain-based financial activities, and investor data protection within digital capital market ecosystems.

REFERENCES

AlBenJasim, S., Dargahi, T., Takruri, H., & Al-Zaidi, R. (2024). FinTech Cybersecurity Challenges and Regulations: Bahrain Case Study. *Journal of Computer Information Systems*, *64*(6), 835–851. https://doi.org/10.1080/08874417.2023.2251455

Begum, A., Munira, M. S. K., & Juthi, S. (2022). Systematic review of blockchain technology in trade finance and banking security. *American Journal of Scholarly Research and Innovation*, *1*(1), 25–52. https://doi.org/10.63125/vs65vx40

Blumenstock, J. E., & Kohli, N. (2023). Big Data Privacy in Emerging Market Fintech and Financial Services: A Research Agenda. In *Working Paper Series: Center for Effective Global Action* (WPS Paper No. 231). https://doi.org/10.26085/C3WK53

Carvalho, C. E., Pires, D. A., Artioli, M., & Oliveira, G. C. de. (2021). Cryptocurrencies: technology, initiatives of banks and central banks, and regulatory challenges. *Economia e Sociedade*, *30*(2), 467–496. https://doi.org/10.1590/1982-3533.2021v30n2art08

Chen, G. K. H., & Taeihagh, A. (2026). Designing regulatory sandboxes: a comprehensive framework for aligning functionalities and objectives. *Policy Design and Practice*, *9*(1), 1–15. https://doi.org/10.1080/25741292.2025.2570954

Collomb, A., De Filippi, P., & Sok, K. (2019). Blockchain Technology and Financial Regulation: A Risk-Based Approach to the Regulation of ICOs. *European Journal of Risk Regulation*, *10*(2), 263–314. https://doi.org/10.1017/err.2019.41

Darem, A. A., Alhashmi, A. A., Alkhaldi, T. M., Alashjaee, A. M., Alanazi, S. M., & Ebad, S. A. (2023). Cyber Threats Classifications and Countermeasures in Banking and Financial Sector. *IEEE Access*, *11*, 125138–125158. https://doi.org/10.1109/ACCESS.2023.3327016

Diniyya, A. A., Aulia, M., & Wahyudi, R. (2021). Financial Technology Regulation in Malaysia and Indonesia: A Comparative Study. *Ihtifaz: Journal of Islamic Economics, Finance, and Banking*, *3*(2), 67. https://doi.org/10.12928/ijiefb.v3i2.2703

Feinstein, B. D., & Werbach, K. (2020). The Impact of Cryptocurrency Regulation on Trading Markets. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3649475

Ferreira, A., & Sandner, P. (2021). Eu search for regulatory answers to crypto assets and their place in the financial markets' infrastructure. *Computer Law & Security Review*, *43*, 105632. https://doi.org/10.1016/j.clsr.2021.105632

Hasan, Z. (2024). Impact of Digital Financial Literacy on Consumer Protection, Investor Security, and Financial Transactions in Indonesia. *International Journal of Islamic Economics and Finance Research*, *7*(2 December), 55–77. https://doi.org/10.53840/ijiefer165

Huibers, F. (2021). Regulatory Response to the Rise of Fintech Credit in The Netherlands. *Journal of Risk and Financial Management*, *14*(8), 368. https://doi.org/10.3390/jrfm14080368

Khalid, M., & Kunhibava, S. (2020). Fintech Regulatory Sandboxes in Australia and Malaysia: A Legal Analysis. *IIUM Law Journal*, *28*(1), 1–35. https://doi.org/10.31436/iiumlj.v28i1.475

Khatib, S. F. A., Mustafa, Z., & Abbas, A. F. (2025). Digital Transformation and Financial Sustainability. In & S. R. H. Raza, A. Riaz, N. Riaz (Ed.), *Algorithmic Training, Future Markets, and Big Data for Finance Digitalization* (pp. 33–74). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6386-7.ch002

Kunhibava, S., Mustapha, Z., Muneeza, A., Sa'ad, A. A., & Karim, M. E. (2021). Ṣukūk on blockchain: a legal, regulatory and Sharī'ah review. *ISRA International Journal of Islamic Finance*, *13*(1), 118–135. https://doi.org/10.1108/IJIF-06-2020-0120

Marzuki, M. (2017). *Penelitian Hukum: Edisi Revisi*. Prenada Media.

Maume, P. (2018). Regulating Robo-Advisory. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3167137

Muryanto, Y. T. (2023). The urgency of sharia compliance regulations for Islamic Fintechs: a comparative study of Indonesia, Malaysia and the United Kingdom. *Journal of Financial Crime*, *30*(5), 1264–1278. https://doi.org/10.1108/JFC-05-2022-0099

Napitupulu, J. H., Panggabean, M. L., Panjaitan, H., & Widiarty, W. S. (2025). An Integrated Legal Framework for Digital Investment Fraud Prevention in Indonesia. *Journal of Sustainable Development and Regulatory Issues (JSDERI)*, *3*(3), 540–567. https://doi.org/10.53955/jsderi.v3i3.154

Odong, U. (2026). Regulator coherence, capacity, and collaboration: applying lessons from Canada and the UK for fintech regulatory sandboxes. *International Journal of Law And Information Technology*, *34*. https://doi.org/10.1093/ijlit/eaaf018

OJK. (2025). *Indonesia Capital Market Strengthens with Integrity Throughout 2025, The Closing of Trade of Indonesia Stock Exchange of 2025*. Otoritas Jasa Keuangan. https://ojk.go.id/en/berita-dan-kegiatan/siaran-pers/Pages/Indonesia-Capital-Market-Strengthens-with-Integrity-Throughout-2025-The-Closing-of-Trade-of-Indonesia-Stock-Exchange.aspx

Pakpahan, E. F., Jessica, J., Winar, C., & Andriaman, A. (2020). Peran Otoritas Jasa Keuangan (OJK) dalam Mengawasi Maraknya Pelayanan Financial Technology (Fintech) di Indonesia. *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)*, *9*(3), 559. https://doi.org/10.24843/JMHU.2020.v09.i03.p08

Patil, A., Mishra, B., Chockalingam, S., Misra, S., & Kvalvik, P. (2025). Securing financial systems through data sovereignty: a systematic review of approaches and regulations. *International Journal of Information Security*, *24*(4), 159. https://doi.org/10.1007/s10207-025-01074-4

Priem, R. (2020). Distributed ledger technology for securities clearing and settlement: benefits, risks, and regulatory implications. *Financial Innovation*, *6*(1), 11. https://doi.org/10.1186/s40854-019-0169-6

Securities Commission Malaysia. (2025). *Advancing a Vibrant, Inclusive and Sustainable Capital Market with Regional and Islamic Leadership*. https://www.sc.com.my/api/documentms/download.ashx?id=d3de7d82-0afc-45c3-ba7b-901774219c86

Shalihah, F., & Mohd Shariff, R. N. (2022). Identifying Barriers to Data Protection and Investor Privacy in Equity Crowdfunding. *UUM Journal of Legal Studies*, *13*. https://doi.org/10.32890/uumjls2022.13.2.9

Siems, M. (2022). *Comparative Law*. Cambridge University Press. https://doi.org/10.1017/9781108892766

Sobri, M. A. M., & Rab, M. A. A. (2024). Regulatory Frameworks for Crypto Assets: Comparative Fiqh Study Between Malaysia and Indonesia. *SALAM Digest: Syariah and Law Undergraduate Symposium*, *2*(1), 66–77.

Soekanto, S., & Mamudji, S. (2010). *Penelitian hukum normatif : suatu tinjauan singkat*. RajaGrafindo Persada.

Sufian, M. H., Sutan Syahril, N. A., & Ghapa, N. (2024). Regulatory Framework for Cryptocurrency: A Comparative Analysis of Malaysia, Indonesia and Singapore. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, *9*(11), e003113. https://doi.org/10.47405/mjssh.v9i11.3113

Sukumaran, S., Bee, T. S., & Wasiuzzaman, S. (2022). Cryptocurrency as an Investment: The Malaysian Context. *Risks*, *10*(4), 86. https://doi.org/10.3390/risks10040086

Taeihagh, A., Ramesh, M., & Howlett, M. (2021). Assessing the regulatory challenges of emerging disruptive technologies. *Regulation & Governance*, *15*(4), 1009–1019. https://doi.org/10.1111/rego.12392

Teng, H.-W., Härdle, W. K., Osterrieder, J., Baals, L. J., Papavassiliou, V. G., Bolesta, K., Kabasinskas, A., Filipovska, O., Thomaidis, N. S., Moukas, A. I., Goundar, S., Nasir, J. A., Weinberg, A. I., Arakelian, V., Anon, C.-O., Akar, M., Kabaklarli, E., Apostol, E.-S., Iannario, M., … Pele, D. T. (2023). Mitigating Digital Asset Risks. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4594467

Triyanti, N., Handayani, I. G. A. K. R., & Karjoko, L. (2025). Legal Gaps in Personal Data Protection: Reforming Indonesia's Population Administration Law. *Hasanuddin Law Review*, *11*(1), 132. https://doi.org/10.20956/halrev.v11i1.6177

Truby, J., Brown, R. D., Ibrahim, I. A., & Parellada, O. C. (2022). A Sandbox Approach to Regulating High-Risk Artificial Intelligence Applications. *European Journal of Risk Regulation*, *13*(2), 270–294. https://doi.org/10.1017/err.2021.52

van der Linden, T., & Shirazi, T. (2023). Markets in crypto-assets regulation: Does it provide legal certainty and increase adoption of crypto-assets? *Financial Innovation*, *9*(1), 22. https://doi.org/10.1186/s40854-022-00432-8

Virani, S. S. (2024). Blockchain end user adoption and societal challenges: Exploring privacy, rights, and security dimensions. *IET Blockchain*, *4*(S1), 691–705. https://doi.org/10.1049/blc2.12077

Wong, R. Y., Chong, A., & Aspegren, R. C. (2023). Privacy Legislation as Business Risks: How GDPR and CCPA are Represented in Technology Companies' Investment Risk Disclosures. *Proceedings of the ACM on Human-Computer Interaction*, *7*(CSCW1), 1–26. https://doi.org/10.1145/3579515

Wylde, V., Rawindaran, N., Lawrence, J., Balasubramanian, R., Prakash, E., Jayal, A., Khan, I., Hewage, C., & Platts, J. (2022). Cybersecurity, Data Privacy and Blockchain: A Review. *SN Computer Science*, *3*(2), 127. https://doi.org/10.1007/s42979-022-01020-4

Legal Materials

Financial Services Authority of Indonesia. (2018a). *Financial Services Authority Regulation No. 13/POJK.02/2018 concerning digital financial innovation in the financial services sector*.
Financial Services Authority of Indonesia. (2018b). *Financial Services Authority Regulation No. 37/POJK.04/2018 concerning equity crowdfunding services*.
Financial Services Authority of Indonesia. (2024a). *Financial Services Authority Regulation No. 3 of 2024 concerning the implementation of financial sector technology innovation*.
Financial Services Authority of Indonesia. (2024b). *Financial Services Authority Regulation No. 27 of 2024 concerning the implementation of digital financial asset trading, including crypto assets*.
Malaysia. (2007). *Capital Markets and Services Act 2007*.
Malaysia. (2010). *Personal Data Protection Act 2010*.
Malaysia. (2024). *Personal Data Protection (Amendment) Act 2024*.
Republic of Indonesia. (2022). *Law No. 27 of 2022 concerning personal data protection*.
Republic of Indonesia. (2023). *Law No. 4 of 2023 concerning financial sector development and strengthening*.
Republic of Indonesia. (2024). *Government Regulation No. 49 of 2024 concerning the implementation of financial sector development and strengthening provisions*.
Securities Commission Malaysia. (2017). *Digital investment management framework*.
Securities Commission Malaysia. (2023). *Guidelines on technology risk management*.
Securities Commission Malaysia. (2024a). *Guidelines on digital assets*.
Securities Commission Malaysia. (2024b). *Guidelines on recognized markets*.

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