

Legal Analysis of Trading in the Digital Age: Weaknesses and Enforcement Efforts in Indonesia

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Abstract: *The development of digital technology has driven significant transformation in the trade and investment sector in Indonesia, especially in online-based trading practices. The integration of high-speed internet, big data, and automated trading algorithms makes it easier to access global markets, improve transaction efficiency, and expand public participation. However, these advances also pose legal risks, such as market manipulation, insider trading, investment fraud, and personal data protection breaches. Normatively, the regulation has been accommodated through Law No. 8 of 1995 concerning the Capital Market, Law No. 11 of 2008 jo. Law No. 19 of 2016 concerning ITE, as well as OJK and Bappebti regulations. However, the regulation has not fully anticipated the complexity of the digital ecosystem which is real-time and cross-jurisdictional. Challenges include limited surveillance technology, weak intergovernmental coordination, and low legal and financial literacy of the community. This study uses normative juridical methods with legal and conceptual approaches to assess the suitability, weaknesses, and needs of legal reform. The results of the study emphasized the urgency of regulatory harmonization, strengthening RegTech and SupTech, establishing an integrated law enforcement model, and international cooperation. This effort is expected to be able to build a digital trading ecosystem that is safe, transparent, adaptive to innovation, and globally competitive.*

Keywords: *Capital Market Law, Digital Technology, Trading*

INTRODUCTION

The development of digital technology has revolutionized the trading and investment sector in Indonesia, including trading activities in various financial instruments. Through the integration of high-speed internet, big data, and automated trading algorithms, people can now access global markets without geographical barriers. This phenomenon has a positive impact in the form of accelerating transactions, cost efficiency, and expanding public participation in the capital market and derivatives instruments. However, these advances also pose significant legal risks, especially related to consumer protection and market integrity. The speed and anonymity of digital transactions are often used by irresponsible parties to commit violations



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of the law, so this development requires an adaptive legal framework to be in line with the principles of certainty, justice, and legal usefulness.¹

Digital trading activities include various forms, ranging from securities trading, commodity futures contracts, to decentralized crypto assets, all of which have the characteristics of online-based transactions so that there is minimal face-to-face interaction between business actors and consumers.² Mechanisms for verifying the identity and validity of transactions often become weak, creating space for fraudulent investment practices, ponzi schemes, price manipulation, and insider trading that are difficult to detect. Legally, these acts violate the principle of openness and the prohibition of fraudulent acts as regulated in capital market regulations and futures trading. The problem is, regulatory adaptation often lags behind technological innovations that develop very quickly.³ This causes law enforcement to tend to be reactive rather than preventive, so that losses can often only be minimized after a violation occurs.

Indonesia already has legal instruments such as Law Number 8 of 1995 concerning the Capital Market, Law Number 10 of 2011 concerning Commodity Futures Trading, as well as regulations issued by the Financial Services Authority and Bappebti. However, these legal instruments are basically designed to regulate conventional transactions that have not fully taken into account the complexity of digital-based trading. The issue of cross-border jurisdiction becomes a serious obstacle when actors or platforms operate from abroad without official permits in Indonesia, making it difficult for authorities to take action. The absence of comprehensive regulation related to digital assets such as cryptocurrencies before the issuance of special regulations by Bappebti also shows a delay in legal response. This legal loophole is used by perpetrators to avoid the supervision of the authorities, so that regulatory reform becomes an urgent necessity.⁴

In addition to regulatory factors, the weakness of law enforcement also stems from the limitations of the supervisory mechanism owned by the authorized institutions. OJK, Bappebti, and related authorities still face great challenges in monitoring millions of digital transactions that occur every second with highly complex technology. The limited infrastructure of surveillance technology makes legal action often only carried out after massive violations have occurred. Weak cross-agency coordination, both at the national and international levels, has also worsened the situation. In fact, the cross-border nature of digital trading requires rapid supervision cooperation and exchange of information between authorities. Without

¹ Siswanto, H., Putri, R. W., Dewi, E., & Tamza, F. B. (2025). Kejahatan Penipuan Investasi Fiktif Sebagai Refleksi Lemahnya Kedaulatan Penegakan Hukum di Tengah Intervensi Global. *Al-Zayn: Jurnal Ilmu Sosial & Hukum*, 3(3), 1789-1799.

² Kennedy, A., Al Hikmah, S., & Antara, I. B. G. S. W. (2024). Analisis Hukum Terhadap Praktik Insider Trading di Pasar Modal Indonesia: Tantangan dan Solusi. *Jurnal Interpretasi Hukum*, 5(3), 1257-1267.

³ Laita, R. H. (2025). Kritik Terhadap Lemahnya Penegakan Hukum Dalam Kasus Cybercrime Peretasan Platform Kripto Indodax 2024. *Iuris Studia: Jurnal Kajian Hukum*, 6(2), 218-228.

⁴ Sinaga, B. B., & Azzura, R. P. N. (2024). Peran Teknologi Blockchain Sebagai Instrumen Pembangunan Penegakan Hukum Berbasis Digital & Mewujudkan Masyarakat Berkeadilan di Era Society 5.0. *Padjadjaran Law Review*, 12(1), 71-82.

strengthening coordination and the use of digital forensic technology, the effectiveness of law enforcement will remain low and prone to manipulation.

Low legal literacy and financial literacy of the community are also factors that cannot be ignored in this analysis. Many retail market players are trapped in fraudulent investment offers that are packaged with technical terms and promises of high profits without risk, so they tend to ignore the legality aspects of platform operators. A lack of understanding of legal procedures, licensing mechanisms, and investor rights makes people vulnerable to becoming victims of digital financial crimes. Effective legal protection therefore cannot only rely on regulatory and sanction tools, but also requires systematic, sustainable, and adaptive legal and financial education efforts to technological developments.⁵ Increasing public literacy will be an initial layer of defense that can reduce the chances of violations.

Effective law enforcement efforts in the digital age must integrate three key elements, namely responsive regulation, cutting-edge surveillance technology, and inter-agency collaboration. Responsive regulation means that regulations are able to anticipate the development of new technologies and business models, while surveillance technology is needed to detect suspicious transaction patterns early through the use of artificial intelligence and big data analysis.⁶ Inter-agency collaboration must involve not only the OJK and Bappebti, but also the police, prosecutor's office, and even international institutions to facilitate cross-jurisdictional action. An integrated law enforcement model will narrow the space for digital criminals to move, thereby increasing public trust in the digital financial market in Indonesia.

In the context of globalization, harmonization of regulations with international standards is a crucial strategy. A borderless digital financial market demands the application of principles such as anti-money laundering (AML) and know your customer (KYC) in accordance with international best practices. Indonesia can adopt the framework of the Financial Action Task Force (FATF) or leverage bilateral and multilateral agreements to strengthen legal jurisdiction.⁷ This harmonization can minimize regulatory arbitration, where perpetrators move activities to countries with looser regulations, thereby weakening domestic legal protections. With a transnational perspective, efforts to strengthen the national legal framework will have a wider and more effective reach.⁸

Taking all these factors into account, it is clear that the regulation and enforcement of digital trading in Indonesia still faces complex challenges. Weak regulations, limited supervision technology, low public legal literacy, and weak inter-agency coordination are the main obstacles that hinder the creation of a secure and transparent digital trade ecosystem. To overcome this, legal reform is needed that is comprehensive,

⁵ Imanuel, T., & Fauzan, I. (2023). Analysis of Freedom of Expression in the Digital Age in the Issue of Electronic Information and Transaction Law in Indonesia. *PERSPEKTIF*, 12(4), 1117-1126.

⁶ Santoso, E. (2022). Opportunities and challenges: e-commerce in Indonesia from a legal perspective. *Jurnal Penelitian Hukum De Jure*, 22(3), 395-410.

⁷ Maulidia, G. (2023). ANALISIS PERBANDINGAN KEBIJAKAN KRIMINALISASI PENCUCIAN UANG BERBASIS CRYPTOCURRENCY DI INDONESIA DAN SINGAPURA. *Jurnal Riset Ilmu Keadilan dan Hukum*, 2(1).

⁸ Manullang, H., Habeahan, B., & Nduru, I. (2023). The Politics of Criminal Law in Tackling Crimes Under the Guise of Electronic Investment in Indonesia. *UNES Law Review*, 6(2), 4484-4492.

adaptive, and integrated with technological developments. These efforts must be based on strong political will and active support from all stakeholders. Only with such a multidimensional approach can the integrity and sustainability of the digital trading market be guaranteed, so that investor protection and the stability of the national financial system can be optimally achieved.

METHOD

This research uses a normative juridical method that focuses on the study of legal principles, norms, and laws and regulations relevant to trading practices in the digital era. This approach is carried out by analyzing written regulations (statute approaches), both national and international, to identify suitability, weaknesses, and needs for legal reform. In this context, the research will focus on the study of Law Number 8 of 1995 concerning the Capital Market as the basis for regulating the mechanism for trading securities and investment instruments in Indonesia, as well as Law Number 11 of 2008 concerning Information and Electronic Transactions and its amendments as the basis for regulating digital aspects, information security, and consumer protection in cyberspace.

Normative research aims to examine and understand how the law should apply (das sollen), not how the law is practiced in empirical reality (das sein), so that the entire analysis process relies on primary and secondary legal materials that are textual and conceptual.⁹

As explained by Peter Mahmud Marzuki, normative legal research is a method that focuses on the study of legal materials as the main object of study, by interpreting and constructing applicable laws to answer certain legal issues.¹⁰ According to Marzuki, this approach is prescriptive because it aims not only to describe the law, but also to provide normative arguments for the validity of a legal action or act in the legal system adopted.¹¹ Meanwhile, Soerjono Soekanto and Sri Mamudji stated that normative legal research includes research on legal principles, legal systematics, legal synchronization, legal history, and comparative law.¹²

The statute approach is used to analyze the linkages and harmonizations between the Capital Market Law and the ITE Law, especially in regulating digital-based trade, including registration mechanisms, information transparency, and the prevention of fraudulent practices. Furthermore, a conceptual approach is applied to understand legal concepts related to the validity of electronic contracts, the responsibilities of platform operators, and legal protection for investors. The analysis is carried out by examining the applicable norms, identifying gaps or overlapping regulations, and evaluating the effectiveness of the application of legal sanctions.

⁹ Novea Elysa Wardhani, Sepriano, and Reni Sintia Yani, *Metodologi Penelitian Bidang Hukum* (Jambi: PT. Sonpedia Publishing Indonesia., 2025).

¹⁰ Peter Mahmud Marzuki, *Penelitian Hukum* (Jakarta: Kencana Prenada Media Group, 2011).

¹¹ Mahlil Adriaman et al., *Pengantar Metode Penelitian Ilmu Hukum* (Padang: Yayasan Tri Edukasi Ilmiah, 2024).

¹² Rangga Suganda, "Metode Pendekatan Yuridis Dalam Memahami Sistem Penyelesaian Sengketa Ekonomi Syariah," *Jurnal Ilmiah Ekonomi Islam* 8, no. 3 (2022): 2859, <https://doi.org/10.29040/jiei.v8i3.6485>.

The data sources of this research consist of primary, secondary, and tertiary legal materials. Primary legal materials include laws and regulations such as Law No. 8 of 1995, Law No. 11 of 2008 and its amendments, implementing regulations from the OJK and Bappebti, as well as relevant international provisions such as *the principles of Anti-Money Laundering* (AML) and *Know Your Customer* (KYC). Secondary legal materials include literature, legal journals, previous research results, and opinions of legal experts. Meanwhile, tertiary legal materials are in the form of legal dictionaries and legal encyclopedias which are used to strengthen the understanding of terms.

The data analysis process is carried out by a descriptive-analytical method, which is to describe the applicable legal provisions and analyze them to find gaps between legal norms and digital trading practices in the field. This analysis is directed to find normative solutions in the form of recommendations for strengthening regulations and law enforcement that are in line with the principles of certainty, justice, and legal utility. With this normative juridical method, it is hoped that the research will be able to provide a clear legal construction in the regulation and enforcement of digital trading in Indonesia, especially in the framework of the integration of the Capital Market Law and the ITE Law.

DISCUSSION

Analysis of the Suitability and Limitations of Digital Trading Regulations in Law No. 8 of 1995 concerning Capital Markets and ITE Law

The regulation of digital trading practices in Indonesia has basically found a juridical footing in the framework of Law No. 8 of 1995 concerning the Capital Market (UUPM) and Law No. 11 of 2008 jo. Law No. 19 of 2016 concerning Information and Electronic Transactions (ITE Law). Although at the operational level, there are still a number of legal vacancies. The principle of disclosure, which is a fundamental principle of the UUPM, especially in the obligation to convey information or material facts in a timely, complete, and non-misleading manner, has a technology-neutral nature so that it can conceptually reach digital-based delivery channels such as official websites, trading applications, or corporate social media channels. However, the instantaneous and real-time nature of digital information dissemination demands additional technical standards such as time-stamping, hash verification, and electronic trail audits that have not been explicitly validated in the primary norms of the UUPM, so their implementation still depends on derivative regulations of the OJK and IDX.

Furthermore, the UUPM has also established a prohibition against fraudulent practices, market manipulation, and insider trading that are conceptually applicable regardless of the medium or means used. This means that manipulative schemes based on pump-and-dump in social media groups, wash trades through algorithmic bots, or the spread of issuer hoaxes through anonymous accounts can still be reached by existing delinquent constructions. However, problems arise in the enforcement aspect, where digital proofing demands sophisticated market forensic methodologies, including order book tracking, account identification, and trade pattern correlation.¹³ These challenges are further complex when digital footprints

¹³ Hawari, S. M. (2023). *Penegakan Hukum Terhadap Tindak Pidana Insider Trading Pasar Modal di Indonesia* (Doctoral dissertation, Universitas Islam Indonesia).

are spread across jurisdictions or disguised through virtual private networks (VPNs), requiring coordination between authorities and mutual legal aid mechanisms that have not been strongly institutionalized.

From the perspective of the ITE Law, the existence of regulations regarding electronic contracts, electronic signatures, and the recognition of electronic information/documents as legal evidence provides legitimacy to all stages of the online capital market transaction process. Activities such as opening a securities account online, accepting terms and conditions by click-wrap, and confirming transactions through applications have binding power as long as they meet the legal requirements of the agreement in the Civil Code. However, its implementation requires compliance with the principle of non-repudiation through the use of certified electronic signatures, strong customer authentication mechanisms, and forensically verifiable logs in court. Article 2 of the ITE Law also opens up the possibility of extraterritorial application, but its effectiveness in cross-border transactions is greatly influenced by the availability of cross-border cooperation agreements to obtain electronic evidence from foreign service providers.¹⁴

Another dimension that is no less crucial is the protection of personal data in digital securities trading. Initially, the protection only relied on Article 26 of the ITE Law, which was relatively minimalist. However, since the enactment of Law No. 27 of 2022 concerning Personal Data Protection (PDP Law), capital market participants are required to integrate the principle of privacy by design, conduct data mapping, and comply with the provisions for cross-border data transfer as stipulated in Article 56 of the PDP Law.¹⁵ This is relevant considering the number of electronic system operators in the capital market sector who utilize cloud computing, outsourcing back-office services, or also hosting abroad. Non-compliance with the PDP Law not only poses administrative and criminal risks, but can also undermine investors' confidence in the security of the digital trading ecosystem.¹⁶

On the other hand, the existing legal framework has not fully accommodated new phenomena such as crypto assets and algorithmic trading. Crypto assets are still mostly categorized as commodities under Bappebti's supervision, unless they meet the characteristics of securities as regulated in the capital market regime.¹⁷ After the enactment of the 2023 P2SK Law, the authority to regulate digital financial assets was transferred to the OJK, but this transition period gave rise to overlapping jurisdictions and uncertainty in instrument classification. Meanwhile, algorithmic trading that utilizes high-frequency trading or artificial intelligence has not been specifically regulated, so risk mitigation still relies on common market mechanisms such as auto-rejection or trade halt, without specific arrangements regarding kill-switches, pre-trade risk limits, or algo testing as applicable in more advanced jurisdictions.

¹⁴ Bahtiar, B., Lubis, E., & Harahap, H. (2021). Pengaturan Kaidah Manajemen Risiko Atas Penawaran Saham Berbasis Teknologi Informasi (Equity Crowdfunding) untuk Pengembangan UMKM di Indonesia. *Jurnal Hukum Jurisdictie*, 3(2), 65-98.

¹⁵ Maharani, R., & Prakoso, A. L. (2024). Perlindungan Data Pribadi Konsumen Oleh Penyelenggara Sistem Elektronik Dalam Transaksi Digital. *Jurnal USM Law Review*, 7(1), 333-347.

¹⁶ Kalesaran, A. A. (2023). Akibat Hukum Digitalisasi Perdagangan Saham Menurut Undang-Undang Informasi Dan Transaksi Elektronik Di Indonesia. *LEX ADMINISTRATUM*, 11(2).

¹⁷ Tambun, M. A., & Putuhena, M. I. (2022). Tata Kelola Pembentukan Regulasi Terkait Perdagangan Mata Uang Kripto (Cryptocurrency) sebagai Aset Kripto (Crypto Asset). *Mahadi: Indonesia Journal of Law*, 1(1), 33-57.

This condition shows that although the basic norms of the UUPM and the ITE Law are relatively compatible with the development of digital-based securities trading, the main weakness lies in the technical aspects and adaptation of regulations to new instruments and mechanisms. Therefore, it is necessary to harmonize across legal regimes between the capital market, personal data protection, and digital asset regulation, accompanied by the preparation of technical standards for electronic forensic proof that bind all actors and operators of trading systems. Without these steps, the effectiveness of the principles of openness, prohibition of fraudulent practices, the validity of electronic contracts, and investor protection will be difficult to realize optimally in the midst of the complexity of an increasingly integrated digital trading ecosystem.

Law Enforcement Challenges to Digital Trading Violations

Law enforcement in the realm of digital trading in Indonesia is faced with complexities stemming from the dynamic nature of technology, the globalization of the capital market, and the limitations of national regulatory instruments that are not yet fully adaptive. Within the framework of Law No. 8 of 1995 concerning the Capital Market and Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE Law) and its amendments, the law enforcement process not only dwells on proving the elements of *actus reus* and *mens rea*, but also requires the ability to deal with cross-jurisdictional problems, strengthen international cooperation, and integrate digital forensic technology that is able to penetrate structural and technical barriers. This requires regulators and law enforcement officials to be able to adapt to financial innovations that develop faster than the legislative process and regulatory updates.¹⁸

The limitations of surveillance technology are a strategic challenge that affects the effectiveness of controlling the risk of violations. The supervisory system operated by the Financial Services Authority (OJK) and the Commodity Futures Trading Supervisory Agency (Bappebti) is still facing the phenomenon of regulatory lag due to the acceleration of innovation in the digital financial sector. Monitoring infrastructure based on real-time monitoring and artificial intelligence has not been fully integrated, so indications of market manipulation, pump and dump schemes, or illegal digital asset trading are often detected after causing the impact of losses. This condition has implications for the violation of the principle of market integrity, which is normatively the foundation of investor protection and market stability as required by Article 4 of the Capital Market Law.¹⁹

The difficulty of proving in the cyber realm also complicates the law enforcement process. Evidence of transactions in cases of digital trading violations is often stored in data centers located outside the jurisdiction of Indonesian law (offshore data storage), thus complicating efforts to digital seizure and the enforcement of the chain of custody. Although Article 5 of the ITE Law has provided juridical recognition of electronic documents as valid evidence, the issue of authentication and data integrity is still a gap that is often debated in litigation forums. The complexity increases when actors utilize blockchain technology with a decentralized ledger mechanism, which on the one hand guarantees transaction transparency, but on

¹⁸ Kozimov, N. (2024). " Retail Investor Protection in the Age of Digital Trading: Regulatory Challenges and Solutions.

¹⁹ Lazaro, C., & Verges, T. J. (2022). The obligations and regulatory challenges of online broker-dealers and trading platforms. *St. John's Legal Studies Research Paper*, (22-0007).

the other hand makes it difficult to track the identity of actors who use anonymous digital wallets and mixing techniques to disguise the flow of funds.

Low legal and financial literacy among retail investors triggers vulnerability to various modes of infringement under the guise of online trading platforms. The lack of understanding of the norms prohibiting market manipulation in Article 104 of the Capital Market Law and the provisions of Article 28 paragraph (1) of the ITE Law related to the dissemination of misleading information results in investors not being able to carry out appropriate risk assessments. As a result, law enforcement tends to be reactive after significant losses occur, not preventive as embraced in the prudential regulation paradigm. This situation in turn hinders the main objective of capital market regulation, which is to provide effective protection for the interests of investors while maintaining public confidence in the digital financial system.²⁰

Cross-agency and cross-jurisdictional coordination is another aspect that faces serious obstacles. At the national level, the overlap of authority between the OJK, Bappebti, Bank Indonesia, and the Police often causes insynchronization in the steps to handle cases. Differing interpretations of the legal character of a hybrid financial instrument, such as crypto-derivatives or asset-based tokens, trigger uncertainty in law enforcement jurisdiction. At the international level, legal cooperation mechanisms such as mutual legal assistance (MLA) are often slow, providing opportunities for perpetrators to take advantage of jurisdiction shopping or move to countries with looser supervisory regimes to avoid sanctions.

Another obstacle that is no less significant is the difficulty in implementing criminal and administrative sanctions.²¹ The provisions in Articles 104 to 110 of the Capital Market Law regulate criminal threats for violations such as insider trading and market manipulation, but proving the element of intent (*mens rea*) is often problematic, especially in the context of algorithmic trading that is operated autonomously by the system. On the other hand, administrative sanctions such as the revocation of permits or the imposition of fines often do not provide an adequate deterrent effect because the perpetrator can quickly establish a new entity in a foreign jurisdiction. This condition weakens the principle of deterrence which is one of the main goals of law enforcement in the financial sector.

Based on these overall obstacles, law enforcement against digital trading violations requires a multidimensional approach that combines surveillance technology updates, harmonization of inter-agency regulations, optimization of public legal literacy, and strengthening cross-border cooperation. Without comprehensive reform measures, the national legal system will continue to face regulatory gaps exploited by offenders, making it difficult to achieve the goals of maintaining the integrity of the digital capital market and protecting investors.

Recommendations for Strengthening Regulations and an Integrated Law Enforcement Model
Strengthening digital trading regulations needs to begin with an update of the legal framework that

²⁰ Yanto, S. E., & Santiago, F. (2024). The Legal Vacuum in Law Enforcement of Digital Currency Crimes by the Police. *Journal of World Science*, 3(12), 1576-1586.

²¹ Harahap, A. P., Triseptina, A., Ghafur, M. L., & Vientiany, D. (2025). Efektivitas Sanksi Administratif terhadap Ketidakpatuhan Pemetong PPh Pasal 21 dalam Perspektif Undang-Undang Ketentuan Umum dan Tata Cara Perpajakan (UU KUP). *Jurnal Penelitian Ilmiah Multidisipliner*, 2(01), 1698-1709.

addresses the regulatory fragmentation between Law No. 8 of 1995 concerning the Capital Market and the Electronic Information and Transaction Law. Both currently have different definitions, regulatory scopes, and sanction schemes, creating jurisdictional gaps. The ideal legal architecture is to build a layered system that emphasizes the division of authority and key definitions at the legislative level, formulate technical standards in implementing regulations, and develop operational guidelines at the Self-Regulatory Organization (SRO) level. The principle of *lex specialis derogat legi generali* needs to be applied with the Capital Market Law as a special reference for digital securities instruments, while the ITE Law functions as a legal umbrella for electronic proof, data protection, and regulation of unlawful acts in cyberspace.²²

Harmonization of norms should include alignment of definitions and perimeters of supervision. Categories of new players such as digital securities trading platform operators, algorithm-based investment advisors, digital asset custodians representing securities, and alternative market data providers need to be accommodated in derivative regulations of the Capital Market Law. On the other hand, the ITE Law must contain an explicit reference that securities transactions through electronic means are subject to capital market standards, while non-securities services are subject to a separate regime with a rapid determination mechanism when the character of the asset changes.

Know Your Customer (KYC) and Anti-Money Laundering (AML) compliance obligations should apply a risk-based approach according to international standards. The customer identification process can use e-KYC that is integrated with authentic sources such as national population data, equipped with in-depth checks for high-risk parties and disclosure of the ultimate beneficial owner. Continuous monitoring, reporting of suspicious transactions to PPATK, implementation of travel rules for digital asset transfers, and provisions for data retention and temporary freezing should be part of clear operational rules.

Supervision can be strengthened through the application of Regulatory Technology (RegTech) for actors and Supervisory Technology (SupTech) for authorities. Real-time market manipulation detection systems, integration of transaction data through international standards, and timing synchronization are important instruments on the actor's side. Meanwhile, the authority needs an integrated surveillance data center with forensic analytics capabilities, registration and testing of trading algorithms, immutable logs, and an automatic termination mechanism in the event of deviant market behavior.

Operational resilience and cybersecurity must also be the main pillars of the regulation. Minimum standards of information technology risk management, periodic penetration testing, disaster recovery plans, tiered cyber incident reporting, and asset segregation obligations and operational insurance are essential components to ensure system stability. Administrative sanctions can be associated with cybersecurity compliance scores to motivate perpetrators to continue to improve the quality of their system protection.

²² Hutabarat, S. A., Praja, S. J., Suhariyanto, D., Paminto, S. R., Kusumastuti, D., Fajrina, R. M., ... & Abas, M. (2023). *CYBER-LAW: Quo Vadis Regulasi UU ITE dalam Revolusi Industri 4.0 Menuju Era Society 5.0*. PT. Sonpedia Publishing Indonesia.

The integrated law enforcement model requires the establishment of a permanent cross-agency task force involving the OJK, Bappebti, BI, PPATK, Kominfo, the Police, the Prosecutor's Office, and SRO.²³ Joint investigation protocols, data request standards, electronic evidence chain governance, and a single reporting mechanism will speed up the investigation process. An integrated law enforcement system that monitors the status of cases, asset freezes, and recovery of victims' losses can strengthen accountability and transparency.

Investor protection should be extended through fair and transparent contractual obligations, online dispute resolution schemes under the supervision of the authorities, the establishment of a limited compensation fund in cases of misales or operational failures, and strict insolvency arrangements. The prohibition of misleading marketing practices needs to be accompanied by proportional fines and the obligation to correct information.

International cooperation is a key element in handling cross-border violations. Active participation in global forums such as IOSCO, the ASEAN Capital Markets Forum, and the Egmont Group allows for the exchange of financial intelligence data as well as the acceleration of asset freezing. Mutual legal aid and extradition treaties covering digital capital market crimes and money laundering crimes will narrow regulatory arbitration space.

Strengthening evidence in the realm of procedural law can be done through explicit recognition of the validity of electronic evidence such as system logs, order-book records, and on-chain data. The provisions of integrity, authentication, and system feasibility must be outlined in the technical guidelines for investigators, prosecutors, and judges. This standard will prevent evidentiary inconsistencies and reduce reliance on expert subjective interpretation. The effectiveness of regulatory and enforcement updates requires measurable performance indicators, such as case resolution rates, asset freeze duration, return on losses rate, number of automated surveillance findings processed, and KYC/AML compliance scores. Regular transparency reports and risk literacy programs will increase public confidence and encourage market discipline

CONCLUSIONS

The conclusion of the above description shows that the regulation and enforcement of digital trading practices in Indonesia has a juridical basis through Law No. 8 of 1995 concerning the Capital Market and Law No. 11 of 2008 jo. Law No. 19 of 2016 concerning Information and Electronic Transactions, but still faces substantive and technical challenges. The principles of openness, prohibition of market manipulation, the validity of electronic contracts, and the normative protection of personal data are adequate, but they are not fully accompanied by adequate technical standards for a real-time digital ecosystem. The complexity of digital proof, the limitations of surveillance technology, and obstacles to coordination across institutions and jurisdictions are factors that hinder the effectiveness of law enforcement. New phenomena such as crypto assets and algorithmic trading also give rise to classification uncertainty and overlapping interreferential arrangements. Investor protection still faces obstacles due to low legal and financial literacy,

²³ Purwogandi, B. (2023). *Rekonstruksi regulasi penegakan hukum dalam upaya penanggulangan tindak pidana perbankan yang berkeadilan* (Doctoral dissertation, UNIVERSITAS ISLAM SULTAN AGUNG).

so the risk of loss and manipulation remains high. Efforts to harmonize norms between laws are urgent to close jurisdictional gaps and strengthen the integrity of the digital capital market. Strengthening RegTech, SupTech, and cybersecurity needs to be prioritized so that breach detection can be carried out quickly and accurately. An integrated law enforcement model with a joint investigation protocol can speed up the process of investigating and freezing cross-border assets. International cooperation in the exchange of intelligence data and mutual legal assistance is crucial to tackling global violations. Uniform standards of electronic evidence at all stages of the trial will reduce inconsistencies in judgments. Finally, regulatory updates must be accompanied by measurable performance indicators and risk literacy programs, creating a safe, transparent, and globally competitive digital trading ecosystem.

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