

CONVERGENCE OF CONSUMER PROTECTION, INVESTMENT LAW, AND CYBERSECURITY: An in-Depth Analysis of Three-Way Legal Intersections in Investment Apps

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Abstract

Investment apps have become an important part of the investment culture throughout the world and have helped democratize investment opportunities for many people. The utilization of investment apps in Indonesia has opened many doors for Indonesians to invest their wealth and obtain many different kinds of assets, posing cybersecurity risks that threaten the interests of their users. This study aims to analyze and provide literature for possible future legislation that affects the utilization of investment apps. Using the normative legal research method, this study analyzes the intersection of investment law and consumer protection law in Indonesia in the context of the utilization of investment apps. Through the statutory approach, this study finds that the normative restrictions within the respective laws make it difficult to properly define legal liability for many kinds of problems that can arise from cybersecurity risks in the context of the utilization of investment apps. The findings of this article serve as a contribution to the constantly expanding literature for Indonesian legal development, specifically on the quest to adapt to the changes brought about by the latest technologies.

Aplikasi investasi telah menjadi bagian penting dari budaya investasi di seluruh dunia dan telah membantu mendemokratisasi peluang investasi bagi banyak orang. Penggunaan aplikasi investasi di Indonesia telah membuka banyak pintu bagi masyarakat

Indonesia untuk menginvestasikan kekayaan mereka dan mendapatkan berbagai jenis aset, yang menimbulkan risiko keamanan siber yang mengancam kepentingan penggunanya. Penelitian ini bertujuan untuk menganalisis dan menyediakan literatur untuk kemungkinan legislasi di masa depan yang mempengaruhi pemanfaatan aplikasi investasi. Dengan menggunakan metode penelitian hukum normatif, penelitian ini menganalisis persinggungan antara hukum investasi dan hukum perlindungan konsumen di Indonesia dalam konteks pemanfaatan aplikasi investasi. Melalui pendekatan perundang-undangan, penelitian ini menemukan bahwa pembatasan normatif dalam masing-masing undang-undang menyulitkan untuk mendefinisikan pertanggungjawaban hukum secara tepat untuk berbagai jenis masalah yang dapat timbul dari risiko keamanan siber dalam konteks penggunaan aplikasi investasi. Temuan dari artikel ini berfungsi sebagai kontribusi terhadap literatur yang terus berkembang untuk pengembangan hukum di Indonesia, khususnya dalam upaya untuk beradaptasi dengan perubahan yang dibawa oleh teknologi terbaru.

Keywords: *Consumer Protection Law; Cybersecurity; Investment Law.*

Introduction

Investment apps have become an increasingly popular way for consumers to access investment opportunities and free financial advice. These apps offer a convenient and user-friendly platform for users to buy and sell securities, manage their portfolios, and access financial advice ¹. However, the rise of investment apps has also given rise to significant cybersecurity risks. With sensitive financial and personal information stored on these platforms, consumers are at risk of cyber-attacks and data breaches ². These attacks can result in the theft of personal and financial information, leading to devastating consequences for consumers. Given the potential harm from cyber-attacks, there is a heightened focus on cybersecurity measures for investment apps. Regulators and industry stakeholders are seeking to strengthen protections for consumers and promote greater confidence in the safety and security of investment apps ³. However, the intersection of cybersecurity and investment law raises complex legal questions that require careful consideration. This becomes even more complicated when the users' position as a consumer is taken into consideration. Multidisciplinary legal research is then needed to analyze this problem from the many different

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- 1 Mustafa Raza Rabbani et al., "Fintech and the Art of Disruption," in *FinTech in Islamic Financial Institutions* (Cham: Springer International Publishing, 2022), 29–47, https://doi.org/10.1007/978-3-031-14941-2_2.
 - 2 Dan Awrey and Joshua Macey, "The Promise and Perils of Open Finance," *SSRN Electronic Journal*, 2022, <https://doi.org/10.2139/ssrn.4045640>.
 - 3 Heather S. Knewtson and Zachary A. Rosenbaum, "Toward Understanding FinTech and Its Industry," *Managerial Finance* 46, no. 8 (2020), <https://doi.org/10.1108/MF-01-2020-0024>.

domains of law.

This legal research aims to examine the cybersecurity measures required to protect consumers who use investment apps from both a consumer protection and investment law perspective. The study will evaluate the legal and regulatory frameworks governing the investment app sector and analyze the effectiveness of current cybersecurity measures in safeguarding against cyber-attacks. The research will take a comprehensive approach, examining cybersecurity measures from multiple angles. From a consumer protection perspective, the study will evaluate the adequacy of current legal and regulatory frameworks in protecting consumers from cyber-attacks. The analysis will consider the relevant legal instruments and standards, such as data protection and privacy regulations, consumer protection laws, and financial services regulations. From an investment law perspective, the research will examine the obligations and responsibilities of investment apps and other market participants in safeguarding against cyber threats. This analysis will consider the legal frameworks that govern the securities industry, including securities laws, market regulations, and industry standards.

Through this analysis, the research aims to identify potential areas for regulatory reform and provide practical recommendations for enhancing cybersecurity measures in the investment app sector. The study will consider best practices from other industries and jurisdictions, as well as emerging technologies and cybersecurity trends. The research aims to promote greater confidence in the safety and security of investment apps and ensure that consumers are adequately protected in an increasingly digital investment environment. After the rise of the digital economy, studies on cybersecurity and investment law have grown significantly. Previous study has examined the threats of cyberattacks and breaches and how they affect the fintech industry.⁴ Another study analyzed the legal issues regarding numerous digital threats in the fintech industry from the consumer protection perspective.⁵ However, there is a gap in the literature when it comes to the intersection of investment law and consumer protection, with the case of investment apps. The existence of the gap in legal protection for investment app users is an issue of particular significance, especially given the rapid growth and emergence of the investment app industry as a prominent

4 Moh Riskiyadi, Alexander Anggono, and Tarjo, "Cybercrime Dan Cybersecurity Pada Fintech: Sebuah Tinjauan Pustaka Sistematis," *Jurnal Manajemen Dan Organisasi* 12, no. 3 (December 2021): 239–51, <https://doi.org/10.29244/jmo.v12i3.33528>.

5 Rinitami Njatrijani, "Perkembangan Regulasi Dan Pengawasan Financial Technology Di Indonesia.," *Diponegoro Private Law Review* 4, no. 1 (2019): 462–74.

sector within the wider fintech domain.⁶ The legal implications of this gap in consumer protection and investment law with respect to investment apps cannot be understated, as it potentially exposes users to a wide range of risks and vulnerabilities in terms of data privacy, cybersecurity, and financial risks. In light of these concerns, it is crucial that regulators and lawmakers take a proactive approach to developing an appropriate normative framework to safeguard the interests and rights of investment app users as consumers while balancing the need to facilitate innovation and growth in the fintech industry.

Therefore, the present study aims to analyze the intersection between investment law and consumer protection law, along with their relationship with the existing cybersecurity legal framework in Indonesia, to properly define the legal liabilities that can arise from the cybersecurity risk of using investment apps. This study aims to contribute to the broader understanding of investment law and consumer protection law in the context of cybersecurity, and how they affect the utilization of investment apps which have become an important part of investment culture throughout the world.

Research Methods

This study utilized the normative legal research method⁷ to analyze the legal problems that can arise from the cybersecurity risk of using investment apps. Using the statutory approach, this study explains the normative restrictions within the existing relevant legal framework of investment law and consumer protection law, along with their relationship with the cybersecurity legal framework in looking at the possible legal liabilities that arise from many kinds of cybersecurity risks. To support these analyses, this study used secondary data in the form of primary law sources, namely Law No. 11 of 2008 on Electronic Information and Transactions Law, Law No. 19 of 2016 on Amendments to Law No. 11 of 2008 on Electronic Information and Transactions, Minister of Communication and Information Technology No. 20 of 2016 on Protection of Personal Data in Electronic Systems, Law No. 27 of 2022 on Personal Data Protection, Law No. 8 of 1999 on Consumer Protection, Law No. 25 of 2007 on Investment, and Law No. 11 of 2020 on Job Creation. The analysis of this research was supported by the legal certainty theory, to analyze the urgency of making sure that the correct legal framework to deal with the topic of this

6 Siqi Wang, "Consumers Beware: How Are Your Favorite 'Free' Investment Apps Regulated?," *Duke Law and Technology Review* 19 (2021): 43–58.

7 Hari Sutra Disemadi, "Lenses of Legal Research: A Descriptive Essay on Legal Research Methodologies," *Journal of Judicial Review* 24, no. 2 (2022): 289–304, <https://doi.org/10.37253/jjr.v24i2.7280>.

research is comprehensive and normatively accurate.

Discussion

Investment Apps and The Digital Economy Storm

Investment apps have emerged as a popular and convenient tool for investors to access financial markets and manage their investment portfolios.⁸ These apps provide a user-friendly interface that simplifies the process of investing, making it accessible even for those who have little to no knowledge of finance.⁹ In Indonesia, the use of investment apps has been on the rise, with more and more people opting to invest through these platforms. The rise of investment apps and the convenience they provide has been fueled by the storm of the digital economy, which has transformed the way businesses operate and interact with their customers.¹⁰ With the growth of digital technologies, consumers have come to expect greater convenience and accessibility in all aspects of their lives, including their investment activities.¹¹ Investment apps have emerged as a response to this demand, providing investors with a quick and easy way to access a range of investment opportunities.¹²

The convenience of using investment apps lies in their accessibility and ease of use. Investors can download these apps on their smartphones and access investment opportunities at any time and from anywhere. With just a few clicks, they can buy or sell shares, track their portfolio performance, and get real-time updates on market trends.¹³ The heightened convenience facilitated by investment apps has had significant implications in making investment activities more accessible and approachable to a broader spectrum of individuals, who may have previously been deterred by the complexity and intricacy of the traditional investment process.

8 Rabbani et al., "Fintech and the Art of Disruption."

9 Alex Martinez Rigual, "The Rise of the Online Investor During COVID-19: A Behavioural Finance Analysis into Retail Investor Sentiment" (Copenhagen Business School, 2020).

10 Jing Wang and Mai Anh Doan, "The Ant Empire: Fintech Media and Corporate Convergence within and beyond Alibaba," *The Political Economy of Communication* 6, no. 2 (2018).

11 Tatiana L. Rovinskaya, "The Role of New Digital Technologies in a Time of Crisis (Pandemic 2019–2021)," *World Economy and International Relations* 65, no. 6 (2021), <https://doi.org/10.20542/0131-2227-2021-65-6-95-106>.

12 Stijin Claessens et al., "Fintech Credit Markets around the World: Size, Drivers and Policy Issues," *BIS Quarterly Review*, no. September (2018).

13 Lu Fan, "Mobile Investment Technology Adoption among Investors," *International Journal of Bank Marketing* 40, no. 1 (2022), <https://doi.org/10.1108/IJBM-11-2020-0551>.

Investment apps have also contributed to the growth of the Indonesian economy by increasing investment activity. The availability of investment apps has opened up new investment opportunities that were previously out of reach for many Indonesian investors. These apps offer a range of investment options, including stocks, mutual funds, and government bonds, which can be accessed easily through the app's interface.¹⁴ This has encouraged more people to invest, leading to an increase in capital flow and liquidity in the financial markets.

Moreover, the storm of the digital economy has also contributed to the growth of the Indonesian economy, with the digital sector becoming an increasingly important contributor to the country's GDP.¹⁵ The rise of digital technologies has facilitated the creation of new business models and the emergence of new players in the investment market, leading to greater competition and innovation, while also creating a level playing field.¹⁶ Investment apps are just one example of this innovation, which has enabled investors to benefit from greater convenience and efficiency.

Investment apps have also played a role in promoting financial inclusion in Indonesia.¹⁷ These apps have made it easier for people who were previously underserved by traditional financial institutions to access investment opportunities. This shift in the investment landscape has not only led to the democratization of investment opportunities but has also paved the way for greater financial inclusivity and empowerment, particularly for marginalized and underrepresented groups who may have limited access to traditional financial services.¹⁸ In this regard, the emergence of investment apps has been a game-changer, breaking down barriers and transforming the investment landscape, particularly in developing countries with emerging markets such as Indonesia. This, in turn, has contributed to the overall growth of the Indonesian economy by increasing

14 Erick Fernando et al., "A Proposed Model to Measure the Influence Factor of Adoption for Online Investment Application," in *Proceedings - 2nd International Conference on Computer Science and Engineering: The Effects of the Digital World After Pandemic (EDWAP), IC2SE 2021* (IEEE, 2021), 1–5, <https://doi.org/10.1109/IC2SE52832.2021.9792113>.

15 Amrin Barata, "Strengthening National Economic Growth and Equitable Income through Sharia Digital Economy in Indonesia," *Journal of Islamic Monetary Economics and Finance* 5, no. 1 (2019): 145–68, <https://doi.org/10.21098/jimf.v5i1.1053>.

16 Bambang Pratama, "Indonesian Legal Framework to Support Innovation Sustainability," in *IOP Conference Series: Earth and Environmental Science*, vol. 126, 2018, <https://doi.org/10.1088/1755-1315/126/1/012072>.

17 Ira Puspitasari, Farida Utami, and Indra Kharisma Raharjana, "Determinants of Continuance Intention to Use Mutual Fund Investment Apps: The Changing of User Behavior During the Pandemic Crisis," in *2022 9th International Conference on Behavioural and Social Computing (BESOC)* (IEEE, 2022), 1–5, <https://doi.org/10.1109/BESOC57393.2022.9995170>.

18 Bradyn Papke, "The Evolution of Investing" (University of Arkansas, 2021).

the pool of available capital and promoting entrepreneurship.

The advent of the digital economy has fundamentally transformed the global financial landscape. In Indonesia, as investment apps and other digital technologies proliferate, the country's financial industry is undergoing a dramatic shift, characterized by an increased reliance on digital tools to provide financial services to consumers.¹⁹ However, as the use of investment apps and other digital technologies grows, so do the challenges and risks associated with cybersecurity, including the increased risk of cyberattacks and data breaches.²⁰ Such risks are especially pronounced given the highly sensitive and confidential nature of financial data.²¹

Given these challenges, it is crucial for the Indonesian government and financial regulators to take a proactive approach to address these risks by implementing robust cybersecurity measures and regulatory frameworks to safeguard consumer protection and investor interests. The government should play a key role in developing and implementing regulations and policies that ensure that investment apps meet the necessary cybersecurity standards to protect consumer data and safeguard financial assets. This includes regulations that mandate the use of advanced encryption technologies and require periodic cybersecurity audits to ensure compliance with established standards. In addition to these technical measures, legal frameworks and regulations should be established to hold investment apps and other financial service providers accountable for any cybersecurity breaches or data leaks that may occur. Such regulations would help to ensure that companies operating in the financial sector prioritize cybersecurity and create the necessary incentives for them to invest in robust cybersecurity measures.

Indonesia's Legal Advancements in Data Protection and Privacy: Empowering the Fintech Industry

Indonesia's legal development on data protection and data privacy has been shaped by a number of factors, including the country's membership in international organizations, technological advancements, and the need to balance

19 Ayatulloh Michael Musyaffi et al., "Resistance of Traditional SMEs in Using Digital Payments: Development of Innovation Resistance Theory," *Human Behavior and Emerging Technologies* 2022 (November 2022): 1–10, <https://doi.org/10.1155/2022/7538042>.

20 Awrey and Macey, "The Promise and Perils of Open Finance."

21 Sauvik Das et al., "Breaking! A Typology of Security and Privacy News and How It's Shared," in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (New York, NY, USA: ACM, 2018), 1–12, <https://doi.org/10.1145/3173574.3173575>.

the interests of different stakeholders.²² At the international level, Indonesia is a member of the Association of Southeast Asian Nations (ASEAN) and has signed onto the ASEAN Framework on Personal Data Protection. The framework, which was adopted in 2016, aims to establish a common approach to data protection across the region, taking into account the different legal systems and cultural norms of each member state.²³ Indonesia has also ratified the Convention on Cybercrime, which includes provisions on the protection of personal data.²⁴ At the domestic level, Indonesia's legal development on data protection and data privacy has been driven by a number of legislative and regulatory measures. In 2008, Indonesia enacted Law No. 11 of 2008 on Electronic Information and Transactions Law (EIT Law), which provides a framework for regulating electronic transactions and includes provisions on data protection and privacy.

The law requires that one must obtain the consent of data subjects before collecting, processing, or disclosing their personal data, through the provision of Article 26 paragraph (1), which states: "Unless otherwise stipulated by Laws and Regulations, the use of any information through electronic media concerning a person's personal data must be carried out with the consent of the person concerned." This Law is later revised with Law No. 19 of 2016 on Amendments to Law No. 11 of 2008 on Electronic Information and Transactions (Revised EIT Law). One of the most important things that came with this revision is the expansion of the definition of "electronic system operator" with the newly added Article 1 number 6a, which states: "An Electronic System Operator is any person, state administrator, business entity, or member of the public who provides, manages, and/or operates electronic systems, either individually or jointly, for the use of electronic system users, whether for their own needs or for the needs of others." The Revised EIT Law also brought changes to the mentioned Article 26, with added provisions in the form of three (3) extra paragraphs, which state: "(3) Every Electronic System Provider must delete irrelevant Electronic Information and/or Electronic Documents under their control upon request from the relevant person, based on a court order; (4) Every

22 Hari Sutra Disemadi, "Urgensi Regulasi Khusus Dan Pemanfaatan Artificial Intelligence Dalam Mewujudkan Perlindungan Data Pribadi Di Indonesia," *Jurnal Wawasan Yuridika* 5, no. 2 (2021): 177–99, <https://doi.org/10.25072/jwy.v5i2.460>.

23 Trisa Tampubolon and Rizki Ramadhan, "ASEAN Personal Data Protection (PDP): Mewujudkan Keamanan Data Personal Digital Pada Asia Tenggara," *Padjadjaran Journal of International Relations* 1, no. 3 (February 2020): 270, <https://doi.org/10.24198/padjir.v1i3.26197>.

24 Dewi Bunga, "Legal Response to Cybercrime in Global and National Dimensions," *Padjadjaran Jurnal Ilmu Hukum* 6, no. 1 (April 2019): 69–89, <https://doi.org/10.22304/pjih.v6n1.a4>.

Electronic System Provider must provide a mechanism for deleting Electronic Information and/or Electronic Documents that are no longer relevant in accordance with the provisions of the legislation; (5) Provisions regarding the procedures for deleting Electronic Information and/or Electronic Documents as referred to in paragraphs (3) and (4) shall be regulated by government regulation". These revisions of the EIT Law brought the much-needed change to give more control over personal data, but still lacking in many ways, especially when it comes to cybersecurity, cyberattacks legal liability, transparency, and consent.

In addition, the Ministry of Communication and Information Technology issued Regulation of the Minister of Communication and Information Technology No. 20 of 2016 on Protection of Personal Data in Electronic Systems (Ministerial Regulation on Protection of Personal Data), which provides more detailed guidance on the implementation of data protection measures. The regulation requires data controllers to adopt appropriate security measures to protect personal data and establishes procedures for handling data breaches. One of the biggest and most important developments in data protection and privacy brought by this regulation is the more complex framework of consent regarding the collection and usage of data. Article 1 number 4 of Ministerial Regulation on Protection of Personal Data states "The Personal Data Owner's Consent, hereinafter referred to as the Consent, is a written statement provided by the Personal Data Owner, either manually or electronically, after receiving a complete explanation regarding the actions of acquisition, collection, processing, analysis, storage, display, disclosure, transmission, and dissemination, as well as the confidentiality or non-confidentiality of Personal Data". This provision is then followed by a more complex normative structure regarding consent, starting from Article 6, which states: "Electronic System Providers who carry out the processes referred to in Article 3 are required to provide a consent form in the Indonesian language to request Consent from the relevant Personal Data Owner." Another important legal development that came with this regulation is the provision of Article 32, which states "(1) In the effort to settle disputes through deliberation or other alternative dispute resolution methods has not been able to resolve disputes regarding the failure to protect the confidentiality of Personal Data, any Owner of Personal Data and Electronic System Providers may file a lawsuit for the failure to protect the confidentiality of Personal Data; (2) The lawsuit referred to in paragraph (1) is only a civil lawsuit and is submitted in accordance with the provisions of laws and regulations". This provision is

important as it gives room for personal data owners to demand accountability from electronic system providers, which implies heightened alertness of the Indonesian government on the threat of cyberattacks and data breaches.

Despite the fact that this regulation has brought a much more complex protection of personal data through a more technical-oriented normative structure, Indonesia's legal framework of personal data protection and privacy is still lacking in many ways. The combined legal framework still does not provide anything specific regarding the importance of data security which consists of many different technical risks, and how those risks should be minimized.

To further develop the legal framework needed to face many digital challenges in the digital economy era, the Indonesian government enacted another regulation that relates to cybersecurity to provide a stronger and more robust legal framework in the efforts to protect data privacy. One such regulation is the Government Regulation No. 71 of 2019 on Implementation of Electronic Systems and Transactions (Regulation on Implementation of Electronic Systems and Transactions), which further strengthens the legal framework built by EIT Law (Law No. 11 of 2008 and Law 19 of 2016) that regulates the use of electronic information and transactions in Indonesia. The regulation expanded the normative structures that regulated cybersecurity from previous laws and regulations, with Article 7 and Article 8 stating: (1) Hardware used by Electronic System Providers must: meet security, interconnectivity, and compatibility aspects with the system used; have technical support, maintenance, and/or after-sales service from the seller or provider; and have a guarantee of service continuity; (2) Fulfillment of the requirements as referred to in paragraph (1) must be carried out through certification or similar evidence; (1) The Software used by Electronic System Providers must ensure security and reliability of its operation as it should be and ensure service sustainability.”

These provisions are a massive development to the Indonesian legal framework on cybersecurity as it provides a more technical normative structure, by mentioning hardware and software. Unfortunately, this regulation alone has its limitations in dealing with cyberattacks and data breaches, which predominantly attacks the software of an electronic system. It is important for the Indonesian government to pursue an even more technical normative challenge in legislating future regulations regarding cybersecurity.²⁵ This is to give a better set of legal compliances when it comes to software engineering, as

25 Azza Bimantara, “The Normative Enactment of International Cybersecurity Capacity Building Assistance: A Comparative Analysis on Japanese and South Korean Practices,” *Global: Jurnal Politik Internasional* 24, no. 1 (July 2022): 109–42, <https://doi.org/10.7454/global.v24i1.684>.

the existence of cloud computing offers more flexibility to software engineers in building their platforms, which requires an even more technical and highly normative set of provisions.²⁶

More recently, Indonesia enacted Law No. 27 of 2022 on Personal Data Protection (PDP Law), which provides a comprehensive framework for data protection and privacy in the country. The law establishes principles for the collection, processing, and transfer of personal data, and creates a new data protection authority, the Personal Data Protection Commission. The PDP Law also provides for the rights of data subjects, including the right to access and correct their personal data, and establishes penalties for non-compliance. One of the key objectives of the PDP Law is to safeguard the rights and interests of data subjects, including the right to privacy and the right to control their personal data. The law also establishes a comprehensive set of data protection principles that organizations must follow when collecting and processing personal data. These principles include transparency, purpose limitation, data minimization, accuracy, security, and accountability.

One of the biggest developments brought by PDP Law is the introduction of a technical-oriented normative structure that regulates the types of data. This provision regarding the types of data is introduced by Article 4 of the PDP Law, which states: “(1) Personal Data consists of Specific Personal Data and General Personal Data; (2) Specific Personal Data as referred to in paragraph (1) letter a includes health data and information; biometric data; genetic data; criminal records; children’s data; private room data and/or other data in accordance with applicable laws and regulations; (3) General Personal Data as referred to in paragraph (1) letter b includes full name; gender; nationality; religion; marital status; Personal Data that is combined to identify an individual”.

Despite the complex structure and the technical nature of the provision provided by this Article, in the context of data-driven technologies that dominate the use of many e-commerce platforms, this provision regarding the types of data is not yet considered up-to-date. Currently, there’s still no provision in the PDP Law that deals with data in the form of *cookies* and *cache* that are mainly used in data analytics, to provide targeted and accurate advertising to influence consumer behavior. In the case of investment apps, this is significant as the combination of interests generated by data analytics can affect investment

26 Stefano Allegrezza, “The Impact of a Legal Framework for Cloud Computing on Electronic Recordkeeping and Digital Preservation,” in *Trust and Records in an Open Digital Environment*, 2020, 32–42, <https://doi.org/10.4324/9781003005117-6>.

strategies and portfolios overall.²⁷

While the establishment of the PDP Law represents a significant milestone in Indonesia's legal development on data protection and privacy, the risk of cyberattacks and data breaches remains a major concern for investment apps and other digital platforms that collect and process large amounts of sensitive data. Companies may face civil liability for damages suffered by data subjects, as well as administrative sanctions and penalties under the relevant laws and regulations. In addition, the PDP Law provides for significant penalties for non-compliance, including fines of up to 2% of a company's annual revenue and imprisonment of up to six years for individuals who violate the law.

Despite these developments, there are still challenges to be addressed in Indonesia's legal framework for data protection and privacy. For example, there is still a need for greater awareness and understanding of data protection issues among businesses and the public. To minimize the risk of cyberattacks and data breaches, investment apps and other digital platforms must take a proactive approach to cybersecurity. This includes implementing appropriate security measures, such as encryption, access controls, and regular system audits and updates. Companies must also ensure that their employees are properly trained and educated on cybersecurity best practices and that they have a clear incident response plan in place in the event of a breach.

Therefore, it is in the best interest of all stakeholders in the digital economy to prioritize cybersecurity and to work together to ensure the security and integrity of Indonesia's digital infrastructure. This requires a coordinated effort from government, industry, and civil society to establish and enforce effective cybersecurity policies and practices. In doing so, Indonesia can continue to reap the economic benefits of the digital economy while protecting the privacy and security of its citizens' personal data.

Intersection Between Investment and Consumer Protection Law

Investment apps have become a popular means for consumers to access capital markets and invest their money.²⁸ However, the use of investment apps has raised a number of legal issues, particularly in the context of consumer protection and investment law. Consumer protection law seeks to protect

27 Anna Omarini, "FinTech: A New Hedge for a Financial Re-Intermediation. Strategy and Risk Perspectives," *Frontiers in Artificial Intelligence* 3 (2020): 1–11, <https://doi.org/10.3389/frai.2020.00063>.

28 Thiruma Valavan A, "FinTech Is Enabler or Disruptive to the Banking Industry: An Analytical Study," *World Journal of Advanced Research and Reviews* 17, no. 1 (January 2023): 067–072, <https://doi.org/10.30574/wjarr.2023.17.1.1472>.

consumers from fraudulent or deceptive practices in the marketplace. In the context of investment apps, this means ensuring that consumers have access to accurate and reliable information about the risks and benefits of different investment opportunities. Investment law, on the other hand, regulates the conduct of investment professionals and seeks to ensure that investors are treated fairly in the capital markets.

In general, investment app users are considered consumers of the fintech companies that provide the app. This is supported by the definition of consumers provided by Law No. 8 of 1999 on Consumer Protection (Consumer Protection Law) through the provision of Article 1 number 2, which states: “Consumers are individuals who use goods and/or services available in society, for their own benefit, their families, others, or other living creatures and not for trade purposes.” As customers, they are entitled to certain legal protections, including the right to accurate and complete information about the securities they are investing in, the right to fair treatment, and the right to privacy and security of their personal and financial information.²⁹ This is also supported by the basic definition of the legal protection of consumer’s interest, provided by Article 1 number 1 of the Consumer Protection Law, which states: “Consumer protection refers to all efforts aimed at ensuring legal certainty to provide protection to consumers.” However, the legal position of investment app users as customers is not always clear-cut. For example, the relationship between investment app users and the financial institutions that provide the app may be complicated by the use of third-party providers for various services, such as payment processing or data storage. In such cases, it may be unclear which party is responsible for providing legal protections to the user.

Another issue is the liability of misleading financial advice, which can come in the form of advertising. Advertising remains a strong driver of intentions even in the use of applications as it impacts the decisions made in many investment apps available today.³⁰ The liability behind this use of data analytics is difficult to be explained. On one hand, the financial advice provided in the advertising may not represent the companies behind many available investment apps, but on the other hand, the use of data analytics to provide the advertising is in the control of those companies.

29 Wang, “Consumers Beware: How Are Your Favorite ‘Free’ Investment Apps Regulated?”

30 Yuli Eni et al., “The Influence of Advertising, Perceived Ease of Use and Perceived Usefulness on Purchase Intention and Its Impact on Purchase Decision on Investment Apps,” *Journal Business, Management and Economics Engineering* 21, no. 1 (February 2023): 577–86.

Furthermore, investment app users may face unique risks that are not present in traditional investment relationships. For example, cyber threats and security breaches may compromise the personal and financial information of users, leaving them vulnerable to identity theft or financial fraud³¹. In these cases, the legal position of investment app users as customers may be complicated by questions of liability and responsibility for losses incurred by the user. Cyberattacks might also come in the form of phishing, which on the surface, trick investment apps' users into thinking that it represents the official interface usually provided by the apps. The liability for this problem might also be complicated when the two URLs are highly identical, as the liability when it comes to the secrecy of website source code could fall into the platform provider.³² These issues present serious legal implications and show an urgency to connect investment law and consumer protection law as two important domains of law in the era of the digital economy.³³

The use of investment apps raises a number of questions about the intersection of these two areas of law. For example, to what extent are investment apps subject to the same regulatory requirements as traditional investment professionals? How can regulators ensure that consumers are receiving accurate and reliable information about investment opportunities through these apps? And what steps can be taken to ensure that investors are being treated fairly in the capital markets when using investment apps? Indonesia mainly uses Law No. 25 of 2007 on Investment (Investment Law) as its main legal source for investment legal framework, with a few changes later introduced by Law No. 11 of 2020 on Job Creation (Job Creation Law). Investment Law provides a definition of investment with Article 1 number 1 which states: "Investment refers to all forms of capital investment, whether by domestic or foreign investors, to engage in business activities within the territory of the Republic of Indonesia."

Unfortunately, the Investment Law doesn't have any provision regarding the use of any electronic system as defined by EIT Law, to do the economic act of investing. The only provision that can be used as a legal basis to legally support the act of investing is the provision on Article 1 number 7 which states: "Capital is an asset in the form of money or other non-monetary assets that

31 Awrey and Macey, "The Promise and Perils of Open Finance."

32 Ali F. AlQahtani and Stefano Cresci, "The COVID19 Scamdemic: A Survey of Phishing Attacks and Their Countermeasures during COVID19," *IET Information Security* 16, no. 5 (September 2022): 324–45, <https://doi.org/10.1049/ise2.12073>.

33 Thomas Streinz, "Digital Megaregulation Uncontested? TPP's Model for the Global Digital Economy," in *Megaregulation Contested*, 2019, 312–42, <https://doi.org/10.1093/oso/9780198825296.003.0014>.

is owned by an investor and has economic value.” Even worse, even this very general provision doesn’t really specify the platform in which the act of investing is being done, despite providing a decent legal basis for the many forms of capital that are being traded every day in all kinds of investment apps.

The normative element needed to regulate investment apps is not necessarily one which requires a very specific mention of technical details such as the use of the internet or even a clear relation with the Consumer Protection Law. The missing normative point much needed in the Indonesian Investment legal framework can be in the form as simple as “investment platform provider” or “operator/organizer”, which cannot be found in the Investment Law. Even the term “operator” throughout the Investment Law is only used to refer to the government and does not have any direct correlation to how investment is actually being done, including all of its mechanisms. The same can be said when it comes to Investment Law and EIT Law, as EIT Law often uses the word “operator” as the party responsible for the running of an electronic system and its legal liability for many legal problems.³⁴

The biggest challenge in connecting investment law with consumer protection in the context of investment apps, which happens to also be perhaps the most efficient normative path, is by acknowledging the role of investment app providers as e-brokers.³⁵ This challenge lies in the Investment Law itself which does not have any definition for the party acting as the intermediary in an investment deal. The significance of this normative emptiness can affect the legislative bodies in Indonesia in not only constructing a solid normative basis for investment apps but also harmonizing it with other regulations.

One of the key challenges in regulating investment apps is the rapidly evolving nature of technology. Investment apps are constantly updating their features and services, which can make it difficult for regulators to keep up with changes and ensure that consumers are being protected. This is exactly the case with the many new trends in the fintech industry where the investment app providers, acting as e-brokers, introduce many features which in a lot of ways gamify the traditional notion of the act of investing.³⁶ This has led some commentators to call for a more flexible regulatory approach that can adapt

34 Andreyana Nata Giantama and Munawar Kholil, “Pertanggungjawaban Hukum Penyedia Platform Terhadap Barang Yang Melanggar Merek Dalam Marketplace,” *Jurnal Privat Law* 8, no. 1 (February 2020): 21, <https://doi.org/10.20961/privat.v8i1.40358>.

35 Arjen van der Heide and Dominik Želinský, “‘Level up Your Money Game’: An Analysis of Gamification Discourse in Financial Services,” *Journal of Cultural Economy* 14, no. 6 (2021): 711–31, <https://doi.org/10.1080/17530350.2021.1882537>.

36 van der Heide and Želinský.

to changing technological developments. With the limited legal framework that Indonesia has, it's very likely that Indonesia will struggle to construct a normative structure capable of protecting both the interests of investors and investees, while also protecting data privacy from the consumer standpoint. This is to provide better legal certainty which is pivotal for any investors looking to invest in the Indonesian economy.³⁷

Another issue is the potential for conflicts of interest when investment apps are owned or operated by investment professionals. For example, if an investment app is owned by a brokerage firm, there may be a risk that the app will prioritize investment opportunities offered by that firm over other opportunities that may be more suitable for the consumer and give too much room for speculations, which could lead to further problems and bigger risk.³⁸ Regulators must therefore ensure that investment apps are transparent about any potential conflicts of interest and that they are taking steps to mitigate these risks. This issue is even more complicated when taking into account the new features that are also gaining popularity in the fintech industry, which are available in the form of robo-advisers.³⁹

Overall, the intersection of consumer protection and investment law in the context of investment apps presents a number of complex legal issues. Regulators must strike a balance between protecting consumers from fraudulent or deceptive practices while also ensuring that investors are able to access the capital markets in a fair and efficient manner. As investment apps continue to gain popularity, it is likely that these legal issues will become increasingly important and require ongoing attention from regulators and legal professionals alike. The need for a normative construction that connects investment law and consumer protection law is now urgent as ever. This is because investment apps operate at the intersection of these two areas of law, and their use has raised a number of legal issues that require a coordinated regulatory response.

Investment law is designed to protect investors and promote the efficient functioning of the capital markets.⁴⁰ It sets out a framework for the regulation

37 Fitriani Jamaluddin, "Investasi Asing Dan Alih Teknologi," *Al-Amwal: Journal of Islamic Economic Law* 4, no. 1 (March 2019): 88–98, <https://doi.org/10.24256/alw.v4i1.2564>.

38 Rolien Hoyng, "The Price of Speculation: Fintech Risk Regimes in Hong Kong," *Cultural Studies*, June 2022, 1–26, <https://doi.org/10.1080/09502386.2022.2090017>.

39 Wang, "Consumers Beware: How Are Your Favorite 'Free' Investment Apps Regulated?"

40 E Latifah, M N Imanullah, and I R Angelia, "When the International Investment Law and Environmental Law Are in Crossroads: How to Protect Investors and Environment in Tobacco Control Case," *IOP Conference Series: Earth and Environmental Science* 423, no. 1 (January 2020): 1–5, <https://doi.org/10.1088/1755-1315/423/1/012026>.

of investment professionals and requires them to adhere to certain standards of conduct.⁴¹ Consumer protection law, on the other hand, seeks to protect consumers from unfair or deceptive practices in the marketplace.⁴² It establishes standards for the marketing and sale of goods and services to consumers and provides consumers with legal remedies when those standards are not met, with the end goal of establishing a culture of honesty and trust among companies and their relationship with consumers.⁴³

When it comes to investment apps, there are a number of potential conflicts between these two areas of law. For example, investment apps may provide consumers with access to investment opportunities that are not regulated by investment law.⁴⁴ This can create risks for consumers, who may be investing in securities that are not subject to the same regulatory protections as traditional investments.⁴⁵ At the same time, investment apps may also present opportunities for consumers to invest in the capital markets in a more accessible and user-friendly way.⁴⁶ This can help to democratize access to investment opportunities and promote financial inclusion.⁴⁷

A normative construction that connects investment law and consumer protection law in the context of investment apps would help to address these conflicts and ensure that consumers are protected while also promoting the efficient functioning of the capital markets. Such a construction could establish

41 Morana Derenčinović Ruk, Mihaela Braut Filipović, and Suzana Audić Vuletić, “Investment Funds with Legal Personality – A True Rival to Mutual Funds?” *InterEULawEast: Journal for the International and European Law, Economics and Market Integrations* 7, no. 2 (December 2020): 167–75, <https://doi.org/10.22598/iele.2020.7.2.7>.

42 Abdul Rahmat, - Yuhelson, and Ramlani Lina Sinaulan, “Community Empowerment In Consumer Law Protection,” in *Proceedings of the 1st Non Formal Education International Conference (NFEIC 2018)* (Paris, France: Atlantis Press, 2019), 9–13, <https://doi.org/10.2991/nfeic-18.2019.2>.

43 Talya Ucaryilmaz, “Morality in Competition Law: The Culture of Honesty and Trust in Consumer Protection,” *ATHENS JOURNAL OF LAW* 7, no. 2 (2021): 189–210, <https://doi.org/10.30958/ajl.7-2-4>.

44 Rain Xie, “Why China Had to Ban Cryptocurrency but the U.S. Did Not: A Comparative Analysis of Regulations on Crypto-Markets between the U.S. and China,” *18 Wash. U.GLOBAL Stud. L. REV. 457* (2019). *Washington University Global Studies Law Review*, 18(2), 457-492 *Washington University Global Studies Law Review*, 18(2), 457-492 18, no. 2 (2019): 457–92.

45 Recca Ayu Hapsari and Adheliana Shafira Riska, “Juridical Study of Legal Protection at the Digital-Based Crowdfunding Service Agency,” *Interdisciplinary Social Studies* 1, no. 3 (December 2021): 291–98, <https://doi.org/10.55324/iss.v1i3.38>.

46 Karthika M., Neethu K., and Lakshmi P., “Impact of Fintech on the Banking Sector,” *Integrated Journal for Research in Arts and Humanities* 2, no. 4 (July 2022): 109–12, <https://doi.org/10.55544/ijrah.2.4.66>.

47 Maximilian Janusseck, “Blessing or Curse? The Influence of Neobrokers on the Investment Behavior of Young Investors,” *Junior Management Science* 7, no. 5 SE-Artikel (December 2022): 1375–99, <https://doi.org/10.5282/jums/v7i5pp1375-1399>.

clear guidelines for the marketing and sale of investment opportunities through apps, require investment apps to adhere to certain standards of conduct, and provide consumers with legal remedies when those standards are not met. A normative construction that connects investment law and consumer protection law in the context of investment apps is necessary to ensure that consumers are protected and that the capital markets operate in a fair and efficient manner. It can provide regulators with the tools they need to address the complex legal issues raised by investment apps and promote a regulatory environment that balances the needs of investors and consumers alike.

Strategic Legislative Approaches and Normative Principles for Constructing Norms

The legal system serves as the foundation for maintaining order and justice within a society. It provides a framework of rules and regulations that govern the conduct of individuals and institutions. However, legal systems can often be complex, with laws that are open to interpretation, and subject to change. In such circumstances, the need for legal certainty becomes evident. Legal certainty is the cornerstone of a well-functioning legal system. It is the assurance that individuals and entities can rely on the law to guide their actions, make informed decisions, and protect their rights and interests.⁴⁸ Without legal certainty, there would be confusion, unpredictability, and a lack of trust in the legal order. In the absence of legal certainty, individuals may hesitate to engage in business transactions, fearing unforeseen legal consequences. Investors may be reluctant to invest in a jurisdiction where the laws are ambiguous or inconsistently applied. Similarly, individuals may find it challenging to plan their personal and professional lives without clear guidelines.

Sudikno Mertokusumo posits that the assurance of legal certainty is imperative for the effective operation of the legal system. This implies that through legal certainty, individuals who hold rights can attain judgments derived from the very fabric of the legal framework. Sudikno further explains that despite the interconnectedness between legal certainty and justice, they encompass disparate realms.⁴⁹ The nature of law encompasses universality, obligatory applicability to all individuals, and standardization, while justice, in

48 Kania Dewi Andhika Putri and Ridwan Arifin, "Tinjauan Teoritis Keadilan dan Kepastian dalam Hukum di Indonesia (The Theoretical Review of Justice and Legal Certainty in Indonesia)," *MIMBAR YUSTITIA* 2, no. 2 (2019): 142–58, <https://doi.org/10.52166/mimbar.v2i2.1344>.

49 Fais Yonas Bo'a, "Pancasila Sebagai Sumber Hukum Dalam Sistem Hukum Nasional," *Jurnal Konstitusi* 15, no. 1 (March 29, 2018): 21–49, <https://doi.org/10.31078/jk1512>.

itself, encompasses subjectivity, individualism, and non-standardization. From the inherent characteristics of law and justice, it becomes apparent that justice and law are divergent entities. Furthermore, legal certainty is also important in the development of an economy, as it is also often considered a principle of economic efficiency.⁵⁰

In legislating a law or regulation that connects investment law, consumer protection law, and cybersecurity in the context of investment apps, the Indonesian government should take into account the following principles and important points. First, in terms of a solid legal framework supported by a clear and comprehensive definition, the government should clearly define the scope and definition of investment apps, consumer protection, and cybersecurity in the proposed law. This will ensure that there is no ambiguity in the interpretation of the law and all relevant parties can comply with the provisions. A clear and comprehensive definition of legal terms is important because it affects fundamental principles and coherent model rules of law which draw on the existing *acquis* and best solutions found in the legal sources within a legal system.⁵¹ This is even more important considering the highly technical nature of current relevant technologies and how the companies behind those technologies keep innovating through many updates. This is the most important aspect of legal certainty, as the fundamental recognition of this intersection matters, and when the intersection of these concepts is not properly supported by an adequate legal framework, the Indonesian legal system might risk disharmony and other possible legal problems.

Second, in terms of the emphasis on consumer protection, the government should ensure that the proposed law has robust consumer protection measures, including mandatory disclosures, privacy protection, and redress mechanisms for consumers who suffer losses due to fraudulent investment schemes or cyber-attacks. The existing Consumer Protection Law in Indonesia, despite having provided enough general legal basis to justify the position of users of investment apps as “consumers”, is still a relatively old regulation. The law itself does not even have any mention of the word “electronic” and is not among many regulations that are affected by the newly enacted Job Creation Law. The importance of consumer protection cannot be overstated as it is one of the

50 Aurelien Portuense, Orla Gough, and Joseph Tanega, “The Principle of Legal Certainty as a Principle of Economic Efficiency,” *European Journal of Law and Economics* 44, no. 1 (2017): 131–56, <https://doi.org/10.1007/s10657-014-9435-2>.

51 Barbara Pozzo, “Looking for a Consistent Terminology in European Contract Law,” *Languages Cultures Mediation* 7, no. 1 (2020): 103–26, <https://doi.org/10.7358/LCM-2020-001-POZZ>.

key elements and drivers of investment opportunities.⁵²

Third, in terms of investor education, the proposed law should include provisions that mandate investment app providers to educate their users about investment risks and provide clear information about the fees and charges associated with their services. This can be in the form of warning and consent, to make sure that users understand that they are putting their hard-earned money at risk by investing, especially in failing companies.

Fourth, in terms of the interconnectivity of the legal framework with cybersecurity, the government should ensure that the proposed law mandates strict cybersecurity protocols for investment app providers, including regular vulnerability assessments and audits, data encryption, and other measures to safeguard user data. This can help raise the standard higher for the fintech industry and push more companies to compete by providing better security to protect their users' interests.⁵³ The legal framework regarding investment and consumer protection must be bridged with cybersecurity to better define the legal liabilities within the confine of law.

Fifth, in the scope of clear enforcement mechanisms, the proposed law should have effective enforcement mechanisms to ensure that investment app providers comply with the law. The government can support this through the establishment of a regulatory body with the authority to investigate and prosecute violations of the law and impose appropriate penalties for non-compliance. Taking into consideration the volatility of the stock market, the government through a regulatory body can act as a safe keeper of individual investors against insiders' efforts to gain a competitive advantage, in the face of many possible legal problems within the investment world.⁵⁴

Sixth, in terms of constant legal development by analyzing the international best practices, The government should study and adopt international best practices in regulating investment apps, consumer protection, and cybersecurity to ensure that the proposed law is effective and up-to-date with the latest industry trends. A good example of this is following the standard of GDPR, which to

52 I. Ramsay and T. Williams, "Peering Forward, 10 Years After: International Policy and Consumer Credit Regulation," *Journal of Consumer Policy* 43, no. 1 (March 2020): 209–26, <https://doi.org/10.1007/s10603-019-09436-x>.

53 Irina Kuzmina-Merlino and Svetlana Saksonova, "The Knowledge and Competencies Required for the Fintech Sector," in *NEW CHALLENGES OF ECONOMIC AND BUSINESS DEVELOPMENT - 2018: PRODUCTIVITY AND ECONOMIC GROWTH*, 2018, 387–95.

54 Arman Nikman, "Stock Volatility Reactions to Violations Subject to Investigation by the SEC," *International Journal of Economics and Business Research* 25, no. 1 (November 2023): 1–28, <https://doi.org/10.1504/IJEER.2023.127354>.

date remains the highest standard of data protection and privacy.⁵⁵

Conclusion

The analysis of this study found that the urgency for all of the issues that connect investment law and consumer protection law does exist and that the government should seriously consider updating the existing laws and regulations to better protect the interests of Indonesians who are looking to invest their money or convert it into many kinds of assets that are available on the investment apps. The normative analysis also found that the correlation between the investment law and consumer protection law cannot be separated by the importance of cybersecurity as one of the most important factors in today's usage of many forms of data-driven technologies, which pose numerous risks that threaten the interest of their users. While an investment app in itself is a step forward in the democratization of investment opportunities and also a step forward in Indonesia's ambition to be a regional and global economic power, it is important for the government to consider the risks of its utilization and make sure that Indonesia has a solid legal framework in protecting the interests of Indonesians. In the possible future effort of legislating a regulation to strengthen the existing problematic legal framework, the government needs to make sure that there is harmony between the investment law and the consumer protection law to then connect it with the framework of cybersecurity. The findings of these connections, along with the support of the theory of legal certainty, raise the urgency to properly establish a solid normative construction on legal liability and privacy compliance to better protect the interests of users of the ever-popular investment apps, both as customers and investors.

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