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LEGAL VALIDITY OF SMART CONTRACTS FOR INVESTMENT PURPOSES: ANALYSIS OF INDONESIA'S LEGAL POLITICS AND EMERGING CHALLENGES

Agustianto*, Ampuan Situmeang
Faculty of Law, Universitas Internasional Batam, Batam City, Indonesia
*agustianto.lec@uib.ac.id

Abstract

The rapid development of digital technology has significantly transformed various economic sectors, particularly through the emergence of digitized contracts, including electronic contracts and smart contracts. These innovations are especially impactful in the investment sector, providing enhanced speed, security, and efficiency. As the Indonesian economy becomes increasingly integrated with digital technology, the role of electronic and smart contracts becomes crucial, necessitating adaptations in the country's legal framework. Indonesia's legal system has responded with regulatory reforms, such as amendments to the Electronic Information and Transactions Law, aiming to address the needs of the digital economy. However, the pace of legal adaptation has raised concerns, particularly regarding the timely recognition and support for smart contracts, which are poised to revolutionize investment practices by automating transactions and reducing the reliance on intermediaries. Despite efforts to regulate electronic systems, Indonesia's legal politics have struggled to keep up with the demands of these technological advancements, leading to gaps in the legal support for digitized contracts. This paper analyzes the intersection of Indonesia's legal politics and the evolving landscape of investment, focusing on how the legal framework can better accommodate the integration of electronic and smart contracts. The study emphasizes the need for a comprehensive legal structure that fosters the growth of digital investment, providing legal certainty and protecting stakeholders. It ultimately proposes a model to support the future of investments, integrating legal clarity, regulatory adaptation, and industry collaboration to ensure that Indonesia's legal framework can effectively support the evolving digital economy.

Keywords: Digitized Contracts; Smart Contracts; Investment Law; Legal Politics; Digital Economy.

A. Introduction

The advent of digital technology has many kinds of innovations that fundamentally transform various essential economic activities (Tan et al., 2024; Yoo & Yi, 2022). Among these, digitized contract stands out as one of the most important aspects with wide array of implications on many economic activities and has affected economic growth (Frolov, 2023). The digitized form of contract has facilitated many contractual relationships and affected many realms of the economy, particularly investment (Roberts & Schmid, 2022). Electronic contract and its newest form, smart contract, offers many potentials that can enhance the speed and safety of many potential contractual relationships (Abidin, 2023). This allows better flow of investment to support the Indonesian economy, promising an even more integrated world with digital technology as the main component. These developments ultimately displayed the relentless

pursuit of technological development, which might cause a struggle for any legal system to adapt.

In Indonesia, the race between technological progression and the legislation has been met with many regulatory designs and amendments aimed at aligning the country's legal infrastructure with the emerging demands of the digital economy (Sinaga, 2023). There have been a few developments within the Indonesian legal system, as the country has been trying to keep up with technological developments and how they affect many aspects of the Indonesian society. While the developments can showcase the significant effort to adapt to the changes brought by digital technology, the timing of these developments might indicate deeper and often overlooked implications of Indonesian legal politics. Furthermore, the analysis of the legal norms introduced by these developments must be scrutinized to ensure that the developments actually bring about the intended benefits (Teng, 2021), particularly in the face of novel technologies such as the blockchain.

Despite the proactive steps taken, the promptness of legislative measures needs to be scrutinized to ensure that they can actually accommodate the utilization of the relevant novel technologies affecting most people in today's society (Hong et al., 2024). One of the aspects of the Indonesian economy that is affected by these developments is the realm of investment. As new technological developments keep being introduced, many aspects investment are continuously evolving to improve many of its relevant aspects and attract more capitals. Most importantly, contracts remain the core part of current developments, with efforts in the digitization of contracts through electronic contracts and smart contracts. These developments present unique legal challenges to the realm of investments, and raises the urgency to analyze Indonesia's legal politics in shaping the legal system to adapt to the changes in society.

Ultimately, it is essential to provide adequate legal support for the realm of investment and its future developments, to secure continued development of Indonesia's economy. For this, many aspects of Indonesian legal politics and how they influence legal development must must be juxtaposed with relevant aspects of technological advancement within the realm of investment, particularly the ever-so-prevalent electronic contract and the increasingly popular smart contract. As Indonesia navigates this complex legal challenge, it needs to align its legal politics to ensure that investments are given enough support through adequate normative structure for the existing widespread utilization of electronic contracts and the rising popularity of smart contracts using the blockchain. Indonesia also needs to look forward to the future of investment as it is being heavily influenced by the advent of electronic contracts and smart contracts. This interplay between contract and investment needs to be consolidated into the broader legal framework that can promote investment and economic growth.

The growth of digital technology has often been associated with the growth of many aspects of the economy, as both grow in tandem (Sudirman & Disemadi, 2023). This is echoed in a study highlighting how developments such as e-commerce, Internet of Things, financial technology, and artificial intelligence have fundamentally shifted the landscape of economy (Syamsuri et al., 2022). The study also highlights that the impact of digital technology on the economy is massive, affecting both production and consumption. Another study highlighting the same narrative also notes that there is a trend in digital acceleration, to further integrate digital technology into daily life (Fu & Mishra, 2022). It outlines that this digital acceleration will have long-term impacts on the economy, including the investment landscape as a part of the broader financial technology (fintech) development. These developments have also been underscored as important in helping economies around the world survive through tough times such as pandemic, which indicates the massive potential of continued digital acceleration. The study also crucially implied the need for alignment between these developments and regulators, to ensure that the utilization of latest technological trends is done according to an adequate legal standard.

Contracts have also been highlighted as an important aspect of economy that is affected by the digital transformation. One study suggests that contracting in digital society is novel landscape that unfortunately is not yet fully understood (Stojšić Dabetić, 2023). The study also highlighted that contractual relationship remains the key element to many utilizations of digital technology, which in the end creates an urgency to better understand its implications in contract law. Despite also acknowledging the fact that traditional contract principles are somewhat flexible enough to be applied in the digital environment, the study nonetheless concludes that this flexibility is highly limited, especially when algorithms and other forms of automations are being used. Supporting the same narrative from this conclusion, another study analyzes the rise of digitized version of contracts as an effort aimed at contract automation (Muhammad et al., 2020). Smart contract is highlighted as the concrete manifestation of this effort, which is a technology introduced by the blockchain ecosystem to autonomously execute the performances of a transaction, including the service provision and payment. The study places all of these aspects into a framework called 'click and wrap', which allows relevant parties of electronic systems to create contractual relationships by clicking a button that indicates an agreement.

However, it is important to highlight that none of the literature extensively analyzed the legal implications of digitized contracts such as electronic contract and smart contract, and how legal development should consolidate these changes into a comprehensive framework of normative structure. The interplay between these aspects with the sphere of investment also remains an area of research not frequently explored. These gaps ultimately underscore the main aim of this research, which is to analyze whether or not Indonesia's legal development and legal politics are in line with the evolution of contractual relationship, along with its profound impact on the future of investment. Ultimately, these dynamics can provide a unique perspective and a crucial point of analysis to scrutinize Indonesia's legal politics as a whole.

B. Method

This research employs a normative legal research methodology, focusing on the analysis of relevant norms within existing positive laws (Disemadi, 2022). This approach aligns with the aim of the paper, providing a comprehensive analysis of legal issues and their regulation through pertinent legal norms. The findings of this research will offer solutions to be considered in future legal developments. In its purest form, normative legal research relies on secondary data, primarily sourced from primary legal documents (Tan, 2021), and thus employs the statutory approach for analysis.

The secondary data utilized in this research include key legal sources such as Law No. 25 of 2007 on Investment, Law No. 11 of 2008 on Electronic Information and Transaction, Law No. 19 of 2016 on Amendments to Law No. 11 of 2008 on Electronic Information and Transactions, Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions, Law No. 27 of 2022 on Personal Data Protection, and Law No. 1 of 2024 on the Second Amendment to Law No. 11 of 2008 on Electronic Information and Transactions. These legal texts provide the foundation for the analysis of the evolving legal landscape concerning digital technology and its implications for investment.

C. Results and Discussion

1. Legal Implications of Electronic Contract and Smart Contract on Investment Law

As societies continue to evolve alongside technological advancement, the impact and reliance on digital technology becomes increasingly evident (Alejla, 2023). From aspects such as communication and data management to commerce and legal transactions, digital technology continues to redefine the foundational operations of these areas. It streamlines processes, enhances accessibility, and introduces new efficiencies that traditional methods cannot match. As

this evolution unfolds, the integration of technology in everyday business and legal practices becomes not just beneficial, but essential, ensuring that societies remain agile, productive, and competitive in an ever-so-globalized world. This development has also pushed people to be engaged in many contractual relationships within the digital space (Dudás et al., 2023). Consequently, relevant legal frameworks must continue to adapt to provide answers to the challenges and facilitate the potentials of these developments, particularly regarding the legal aspects of possible contractual considerations.

The introduction of digitized contracts in Indonesia's investment sphere represents a significant transformation in the Indonesian society, particularly in its effort to cater to the evolving needs of the global digital economy (Falahiyati, 2020). The digital transition is pivotal for investments as it provides the convenience for all investors, which can improve both productivity and time efficiency in investing practices (Handoko & Mozes, 2021). With the utilization of digitized contracts, the administrative overhead associated with paper-based contract, which is no longer capable in facilitating the needs of many businesses in the current era where technology is rapidly developing in this globalized world (Lijoka, 2022). Ultimately, this can bring help the investment sphere overall, which is crucial for the continuation of Indonesia's economic growth.

Legal recognition of electronic contracts in any legal system is important as it can help ensure that these digital agreements hold the same weight as contracts executed on paper (Hassan et al., 2018). This is essential for maintaining trust in financial transactions. However, the recognition of electronic contracts has its own challenges, particularly in properly addressing all aspects of the contract such as consent, which can be difficult to be assessed within the digital space (Goel, 2022). Ideally, the relevant legal framework should stipulate that all electronic contracts must adhere to the same fundamental principles as conventional contracts, including consent, capacity, and legality, thus providing a solid foundation for their enforceability. Other aspect relevant aspect such as electronic signature also need to be covered by relevant legal framework, to also ensure validity of the electronic contract, which is also an integral part of conventional contracts.

Smart contracts are also revolutionizing the world of investment by introducing an unprecedented level of automation and precision to financial transactions. These contracts are built on blockchain technology and automatically execute agreed-upon terms when certain conditions are met to ultimately minimize the need for intermediaries and reducing the likelihood of fraud and disputes, along with the costs associated with them (Sabrinta, 2023). This automation can not only streamline investment processes by ensuring that transactions are executed swiftly and accurately but also significantly reduces transaction costs, significantly enhancing security, transparency, and efficiency (Rukiah, 2023). In the context of legal development, the adoption of smart contracts is a significant milestone that fundamentally challenges traditional legal frameworks to evolve and accommodate these digital constructs (Sidorenko & Von Arx, 2020). This development needs to be followed by an adaptation of regulatory environments to support and govern the functionalities of smart contracts to ensure legality. The legal recognition of smart contracts also enhances their credibility and enforceability, making them a fundamental component of modern investment strategies. Their integration into legal systems worldwide can signify a transformative shift towards a more dynamic, efficient, and secure investment practices, along with the adaptability of relevant the legal framework.

Investors can significantly benefit from the clear legal framework established around electronic and smart contracts, as it can signal a country's dedication to adapt to the digital economy overall (Dharma, 2023). The recognition of smart contracts must be made under serious scrutiny, as it will most likely face the same thing in the lens of investors, particularly those in the crypto landscape. It has even been identified, particularly in the United States where

smart contracts have gained a lot more popularity, that some would try to diminish state lawmakers' actions to "little more than pro-crypto posturing meant to attract investment and entrepreneurs," arguing that these efforts are unnecessary since existing federal and state laws already provide a solid legal foundation for enforcing smart contracts (Arcari, 2019). Therefore, before continuing the agenda to develop digitized contracts in Indonesia, there must a robust and comprehensive analysis on the existing legal frameworks, to ensure that possible further does not become an act of overregulation which would only complicate legal compliance and deter investments away from the country.

Furthermore, it is important to note that the shift towards a digitized legal environment also raises significant concerns about data protection and cybersecurity. Investments inherently involve sensitive information, and the digital handling of such data necessitates stringent security measures. Therefore, the Indonesian legal framework must provide clear regulations on data protection to prevent breaches that could undermine the integrity of electronic and smart contracts. Ensuring high standards of cybersecurity is fundamental to maintaining investor confidence and safeguarding against financial crimes. Although within the context of contract laws this cannot be fully facilitated, the relevant provisions must still be able to provide assurance in the form of legal compliance for security of data related to the contracts, which then can refer to the standards provided by existing data protection laws. This problem is more relevant on the side of electronic contracts, as it does not have the security mechanism comparable to that of smart contracts (Jaswant & Kale, 2022). Unlike electronic contracts, smart contracts are protected by a layer of security made up of complex mathematical computations that are difficult to decrypt (Jaswant & Kale, 2022). Therefore, the legal framework regarding the legality of electronic contracts must be able to consolidate these concerns to provide an enforceable legal compliance.

Legal politics play an important part on how digitized contracts can be fully consolidated within a legal system. Legal politics not only indicates the adaptability of a legal system, but also sets the direction of future legal development. Understanding the interplay between legal politics and digital technology can provide a robust understanding on the pace of legal development in the face of constantly evolving digital landscape. While it can be argued that legal development regarding a certain matter can still happen without long and documented set of indications from the legislative sphere, understanding legal politics is still important in shaping how these developments are integrated and accepted within the broader legal framework. Within the context of digital contracts, it can also ensure that the evolution of digital contracts and other technological advancements aligns with existing legal standards and societal expectations, ultimately facilitating smoother transitions and more effective implementations in the legal system.

2. History and Direction of Indonesian Legal Politics for Digitized Contracts

Indonesian started its commitment to support the utilization of digital technology through the enactment of Law No. 11 of 2008 on Electronic Information and Transaction (EIT Law). As the first law enacted to regulate activities within the digital environment or cyberspace (Safiranita et al., 2021), this law provided crucial general provisions regarding many aspects of digital environment, such as digital transactions, data processing, and even digital conducts. By establishing legal definitions and frameworks under Articles 1, 2, and 3, the EIT Law offers comprehensive coverage of electronic information and transactions. It crucially asserts the validity of electronic documents and signatures, as delineated in Articles 5 and 11, forming the foundational legal framework that supports digital and automated transactions in Indonesia's digital marketplace. Another provision in support of the validity of electronic documents is governed in Article 6, which is elucidated as an enabler of validity in the case of exceptions as set by Article 5 paragraph (4), such as documents that have be written as governed by relevant

laws and other documents are governed by law to be made by the notary. The elucidation of Article 6 ensures that "written" covers electronic formats, as long as the relevant document can be accessed in a suitable manner. Electronic contracts are specifically governed by Article 18, ensuring the legality of electronic contracts and briefly touching on the issue of jurisdiction for possible dispute of international electronic contracts.

The EIT Law was amended by Law No. 19 of 2016 on Amendments to Law No. 11 of 2008 on Electronic Information and Transactions (First Amendment to EIT Law). Building upon the foundations set by the original EIT Law, this amendment was aimed at addressing emerging legal necessities and technological advancements within Indonesia's digital landscape. It modified several provisions to better align with current practices and to ensure greater security and efficiency in digital transactions. One of the amendments made is the addition of paragraph (3), (4), and (5) to Article 26, which mandates the deletion of irrelevant or outdated electronic data by electronic system operators, to improve commitment to data privacy and protection. Another crucial amendment is the addition of the elucidation of Article 5, which strengthens the legal validity of electronic documents as binding and legally admissible evidence in relation to any legal action. Other amendments made were mainly focused on criminal provision regarding conducts within the digital space, particularly freedom of expression, which the EIT Law was heavily criticized for (Larasaty & Subakti, 2022). Overall, the First Amendment to EIT Law does not bring any noteworthy amendments that could enhance the legality and application of electronic contracts or digitized contracts in general.

It is also important to highlight that at around 2016, Indonesia had already gone deep into the digital trend, with rising popularity of e-commerce and fintech, both of which utilize some forms of digitized contracts. A McKinsey report highlighted that Indonesia, at that time, had just undergone significant rise in the utilization of digital technology, subsequently finalizing the country's transition into the digital revolution era. The report based this off of a data highlighting the rise of mobile internet users, cloud technology revenues, along with the utilization of Internet of Things, Big Data, and other advanced analytics during 2014 and 2015 (Das et al., 2016). However, it is important to note that digitized contracts commonly associated with these developments are mostly about data protection and privacy, typically presented in the form of terms and conditions (T&C).

E-commerce and fintech environment eventually continued to develop and introduced investment schemes for their users, with investment options in many areas, which has contributed to the stabilization of Indonesian economic growth (Sihombing, 2021). Investment itself, to date, is still regulated mainly through Law No. 25 of 2007 on Investment (Investment Law). Through Article 1 number 1, the law defines investment as all forms of capital investment activities, both by domestic investors and foreign investors to conduct business in the territory of the Republic of Indonesia. Unfortunately, the Investment Law does not provide any provision regarding the legal implications of contracts, particularly the digitized form of them. Although Article 8 and Article 33 did mention contract as one of the elements of investment practices, none of the provisions governed anything regarding the legality of such investment practices, especially when done not on paper-based agreements.

Indonesia continued its legal development to govern electronic systems in the country's digital space, with the enactment of Government Regulation No. 82 of 2012 on the Implementation of Electronic Systems and Transactions. However, this regulation was notably problematic as it differentiated the legal implications of electronic systems for public services from the private sector, where the latter was not obligated to register, per Article 5 paragraph (2). This normative gap on corporate oversight eventually led to the revocation of the regulation and the enactment of Government Regulation No. 71 Year 2019 on the Implementation of Electronic Systems and Transactions (GR 71/2019). Despite the focus on implementation, this legislation does not bring much-needed focus on the enhancement of legal certainty and protection for

digitized contracts, despite the increased focused on regulating the private sector. It was not until Law No. 27 of 2022 on Personal Data Protection (PDP Law), that Indonesia had a comprehensive legal framework for data protection and privacy, precisely as how the bill was touted for, prior to the enactment of the law (Dewi et al., 2021), which are all technically related to the elements of legal validity behind digitzed contracts. This law brought many provisions that would increase the level of privacy and data protection, which is very important for the development and application of digital technology. Interestingly, the law does not govern anything regarding digitized contracts, despite its significant relevance in the data protection sphere.

Indonesia finally shifted its focus back to digitized contracts in early 2024, through the enactment of Law No. 1 of 2024 on Second Amendment to Law No. 11 of 2008 on Electronic Information and Transactions (Second Amendment to EIT Law). The law showcases the country's regained commitment to help secure and provide clarity on digitized contracts, which have now become instrumental in many economic activities, including investments. Notably, the provision of Article 18A governs that, international online contracts with pre-written terms by the service provider are subject to Indonesian law under certain conditions. These conditions include: an Indonesian user agreeing to the terms while in Indonesia, the contract concerning something happening within the country, or the service provider operating there. The new provision also mandates clear and simple language for these contracts to ensure fairness and transparency in international online transactions.

Crucially, the Second Amendment to EIT Law also adds a new provision through Article 13A regarding certain kinds of electronic services, including electronic signatures, which is also followed by the service to preserve electronic signatures. Explanation of Article 13A paragraph (1) letter f states that what is meant by "preservation of Electronic Signatures and/or electronic seals" is a service that guarantees the legal force of Electronic Signatures and/or electronic seals in an Electronic Information and/or Electronic Document can still be validated even though the validity period of the Electronic Certificate expires. Instead of adding another layer of protection for the legality of digitized contracts, this provision actually legalizes the commercialization of legal authority.

There are a number of problems regarding this new provision. First, electronic system providers should not be allowed to determine whether or not an electronic signature has any legal validity as it should only be assessed by relevant legal professions such the notary. Second, the preservation of data regarding an electronic signature also should not be a service as it has no base normative support from the PDP Law. Electronic signature, as a digital data, does not fall under any categorization of data as classified by the PDP Law. Therefore, there is no layer of protection that can support this type of digital data commercialization to minimize the risk of privacy breach. In the investment sphere, this could lead to a lack of trust and security in electronically signed investment contracts. Lastly, without clear rules for data preservation and validation by legal professionals, investors might be hesitant to engage in electronic transactions, fearing challenges to the enforceability of those contracts in disputes. Instead, this should have been a mandatory free service provided by relevant electronic system providers, particularly within the investment sphere, to ensure that contracts continue to have legal validity as long as the relevant investment practices are still taking place.

Despite the small number of amendments made to the EIT Law regarding digitized contracts, the legal implications that they brought are particularly complex. Even more important, the negative implication of the provision of Article 13A seems to defeat the purpose of digitized contracts consolidation throughout the EIT Law and Article 18A of the Second Amendment to EIT Law. Another important thing to note is the timing of this amendment, which can be considered very late. As highlighted previously, Indonesia had undergone widespread transition into the digital environment during 2014 and 2015 (Das et al., 2016). This shift was

identified to be even more significant during the height of COVID-19 in 2019, which would later continue to help the surge of Indonesia's digital economy as it is now expected to have about USD 145 billion worth of value in 2025 (Prasidya & Dewi, 2023). Providing support for the further utilization of digitized contracts so late despite the evident impacts of digital economy ultimately highlights the slow adaptability and the lack of willingness to propel Indonesia as one of the legal frontiers for the support of the digital economy.

Although the efforts of the new legal developments in Second Amendment to EIT Law can be considered very late, Indonesia still failed to consolidate the most relevant form of digitized contract going forward, smart contract. Smart contracts will play more roles in the future and will require more legal support. Despite being digital in nature, much like electronic contracts, smart contracts must be clearly distinguished from electronic contracts. Aspects such as automation and consent must be regulated comprehensively to ensure that smart contracts can have the same legal weight as paper-based contracts. Ultimately, these legal developments will be crucial in supporting many investment practices, particularly in the realm of decentralized finance.

3. Smart Contracts and The Future of Investments

From the history of legal development leading up to the enactment of the Second Amendment to EIT Law, it can be picked up that Indonesia does not really have a clear direction for its legal politics, particularly regarding digitized contracts. Digitized contracts, particularly smart contracts, will eventually gain more popularity, and potentially become the future of decentralized investment funds, as it offers many advantages (Schär, 2021). Smart contracts can automate investment processes, triggering trades based on pre-defined terms of contracts, which can also be utilized by relevant algorithms to provide investment suggestions and automated investment acts when given consent by the owner of the funds (Jarvis & Han, 2021). This eliminates the need for intermediaries, which can significantly reduce the costs of transactions. Additionally, blockchain as the base technology for smart contracts can ensure a transparent and immutable record of ownership and transactions, fostering trust and security in the investment process (Multazam, 2021). This opens doors for new investment opportunities, like fractional ownership of assets or automated portfolio management strategies.

Traditionally, an investment might involve lawyers and brokers, which would result in significant amount of paperwork. Smart contracts can replace this complex and often tiring process with a secure and efficient digital platform. Instead of relying on a broker and lengthy legal procedures, a smart contract would securely hold the ownership rights on a blockchain. This allows for a process called tokenization where fractional ownership can be divided and traded seamlessly, and upon confirmation of payment, the smart contract automatically transfers ownership to the relevant party (Kumar & Suryanarayana, 2024). Aside from significantly lowering the cost of committing into an investment, it can also help create an environment of decentralized finance or what is often referred to as decentralized finance (DeFi) (Alamsyah et al., 2024). This can substantially improve financial inclusion, by opening investment opportunities to more people.

The power of smart contracts is further amplified by the underlying blockchain technology. Transactions conducted through smart contracts are immutably recorded on a distributed ledger, accessible to all participants. This fosters transparency and trust throughout the investment process. The smart contract would be programmed with pre-defined investment parameters that can automatically execute trades based on market conditions. Every transaction within the portfolio is transparently recorded on the blockchain, allowing investors to monitor the fund's performance and investment decisions in real-time. This level of transparency combats information asymmetry, a major concern in traditional investment models, and fosters trust and confidence for investors (Xiong & Wan, 2023). However, challenges remain, such as potential

code vulnerabilities in the smart contracts themselves. Nevertheless, the potential benefits of smart contracts are undeniable and significantly outweigh the risks. These advantages ultimately showcase smart contracts' potential as an important part of the future of investments.

To facilitate the utilization of smart contracts in the investment sphere, Indonesia must be able to consolidate many normative aspects within its legal system, to ensure that investment practices are able to take advantage of the potentials brought by smart contracts as the latest form of digitized contract, while also making sure that investment deals are done under adequate legal protection and clear legal certainty. This research proposes a model that Indonesia can consider for its legal development, by fully focusing its legal politics to support digitized contracts in the face of the future of investment.

Table 1.
Proposed Legal Development Model for Smart Contracts in Investment Practices

Aspect	Description
Legal Clarity	1. Establish a clear legal definition of smart contracts, differentiating them from traditional electronic contracts. 2. Develop standardized legal terms and conditions addressing ownership, liability, and dispute resolution mechanisms.
Regulatory Adaptation	1. Create a regulatory sandbox for testing innovative investment practices using smart contracts in a controlled setting. 2. Implement proportionate regulations based on risk involved in the smart contract application. 3. Provide basic recognition on the utilization on blockchain for smart contracts rather than specific DeFi mechanisms to allow for future innovation.
Industry Collaboration	1. Establish a body to oversee the utilization of blockchain and the creation of smart contracts coding standards. 2. Support industry-wide efforts to standardize smart contract protocols and coding practices to improve security and interoperability.

Source: Authors' analysis

This model offers several advantages that can be utilized to tackle the normative gaps previously identified. It provides clear legal definitions and standardized terms that can enhance investor confidence and encourage wider adoption. Due to the vastly different elements of smart contracts in comparison with electronic contracts, distinguishing the former as a distinct form of digitized contract allows for clear differentiation of legal implications that follow. It also addresses the urgent need in providing clear support for many aspects of smart contracts, such as consent and automation, which are both crucial in the utilization of this blockchain technology. This can significantly attract more investors due to the fact that most of the concerns regarding digitized contracts that are present in electronic contracts (e.g., privacy, preservation of data, and security), are naturally taken care of by the blockchain through the utilization of smart contracts. The legal framework for investment must also be revised to ensure that it can facilitate investment practices involving smart contracts to enhance decentralized finance, particularly in the context of dispute resolution, which can be used to facilitate novel technical aspects such as kill switch. This technical element is important in stopping the execution of a smart contract in the case of bugs being found, error in the contract, or the discovery of fraudulent inducement, illegality of purpose, or to ensure compliance with a binding court order.

This model requires complex regulatory sandbox to ensure that any form of compliance is welcomed by all stakeholders. This is particularly relevant for the investment practices that are based on smart contract agreements, as this novel mode of investing is not yet fully explored. The model also puts an emphasis on the importance of applying risk-based enforcement of future legal frameworks to allow better observance of the compliance level and overall legal

implications, particularly within the regulatory sandbox phase. Lastly, these efforts must be supported by an overseeing body that can constantly analyze key challenges and eventually develop a standard for the utilization of smart contracts for investment under the context of DeFi. This is an essential part of ensuring that this model can work and to ultimately facilitate the regulatory sandbox processes, as there is currently no government body in Indonesia that can oversee blockchain-related transactions. This body could theoretically operate under the country's Financial Services Authority (OJK), as OJK itself is familiar with the integration of innovative digital solutions to financial services, but is still very much limited in its understanding of the blockchain ecosystem (Suryawijaya, 2023). Moreover, this supposed new government body under the OJK can also help standardize the utilization of smart contracts, opening ways for a more comprehensive level of compliance to ensure safety and assurance of contract execution, particularly in the context of investment.

Most importantly, it is imperative to note that this model requires a significant legislative, financial, and collaborative commitment from all relevant stakeholders. This concern is what truly limits the number of normative elements in the first stage of improving legal clarity in this model. The acknowledgment of this potential challenge is also what dictates the gradual nature of legal development in this model. In the industry collaboration phase, the model specifically puts a strong emphasis on the creation of a specific government body to oversee smart contracts, which as previously identified, could also play a role in helping OJK or even the legislative branch in creating a comprehensive set of compliances with adequate risk assessments and collaboration with the relevant government branches to ensure legality, which can help improve the flexibility and legal certainty of investment deals that are facilitated using smart contracts. Therefore, the successful implementation of this model is not merely a matter of normative design but is fundamentally dependent on the readiness of the Indonesian government and private sector to invest the necessary political and monetary capital to build a truly supportive ecosystem for the future of digital investment.

D. Conclusion

Based on the normative analysis, it is clear that Indonesia's legal politics currently lack focus and a clear direction, even though the relevance of the digital economy in Indonesian society underscores the urgency of addressing this issue. Despite recent efforts in legal development, the country struggles to fully facilitate the use of digitized contracts, which are critical in the context of modernizing business transactions and supporting digital investment. One of the key challenges Indonesia faces is the difficulty in consolidating digitized contracts into the broader legal framework, particularly when it comes to aligning these contracts with data protection standards. The legal system's inability to adequately address the legal status and enforcement of electronic contracts, such as e-contracts and smart contracts, creates significant barriers for businesses and investors looking to leverage the benefits of digital transformation.

Furthermore, the current legal framework in Indonesia does not have the necessary mechanisms to support the implementation and utilization of smart contracts, which have the potential to revolutionize the investment landscape. Smart contracts, powered by blockchain technology, offer unprecedented benefits in terms of security, automation, and efficiency, making them an ideal tool for streamlining investment processes. However, the lack of comprehensive legal recognition and regulatory support for smart contracts means that their full potential cannot be realized. The legal system, as it stands, is insufficient to provide the clarity and security needed for smart contracts to be widely adopted, particularly in the realm of investment, where trust and legal certainty are paramount.

To address these challenges, this paper proposes a model for legal development that can be integrated into Indonesia's legal politics, focusing on facilitating the digital economy and improving the regulatory environment for digital contracts. This proposed model aims to create a

more cohesive and forward-thinking legal framework that can support the rapid adoption of digitized contracts, including smart contracts, to enhance investment opportunities. The model suggests several key components, such as providing clear definitions for digital contracts, establishing legal mechanisms for their enforcement, and ensuring robust data protection regulations that align with international standards. By integrating these elements, the model seeks to ensure that Indonesia's legal system is better equipped to support the evolving demands of the digital economy, particularly in relation to digital contracts.

However, it is important to note that this proposed model is not without its limitations. It is primarily based on the identified issues and gaps in the current legal system, and its effectiveness remains uncertain without further testing and refinement. One crucial aspect of this development is the need for regulatory sandboxes, which would allow for the practical testing and evaluation of smart contracts in real-world scenarios. Regulatory sandboxes provide a controlled environment where digital contracts and smart contracts can be implemented and observed, enabling policymakers to assess their impact and make necessary adjustments before broad implementation. This process is vital for ensuring that the legal framework can adapt to the rapid pace of technological advancement while safeguarding the interests of all stakeholders involved.

Moreover, future research should explore the qualitative aspects of implementing this model, focusing on the reactions and feedback of key stakeholders, including businesses, investors, and legal professionals. Understanding how these stakeholders interact with the proposed legal changes will be crucial for refining the model and ensuring that it meets the practical needs of those who will rely on it. By conducting this research, Indonesia can gain valuable insights into the real-world implications of its legal reforms and create a more effective and adaptive legal framework for the future.

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