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Knowing Digital Bond: Legal Certainty of Digital Bonds in Indonesia

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ABSTRACT: The use of Distributed Ledger Technology (DLT) in the capital market is becoming attractive for debt issuance and financing. Indonesia already has a digital bond product, but the IDDB product is still in the sandbox/regulatory testing phase, not fully regulated by market standards. In other words, Digital Bonds in Indonesia still lack a comprehensive regulatory framework, and oversight and law enforcement remain weak, impacting the legal protection for investors. This study aims to analyze and assess the legal certainty and regulations governing digital bonds. This study also aims to address the following research questions: 1) Are digital bond instruments categorized as securities? 2. How do capital market regulations (such as the Capital Markets Law) and digital financial asset regulations regulate them? This research is a normative legal research (doctrinal research). The approaches used in this research include a statutory approach and a conceptual approach. The research results found The IDDB Token is the first bond tokenization product in Indonesia, registered in the OJK sandbox since 2024. This product enables digital bond issuance and ownership through blockchain technology and smart contracts, opening broader investment access for retail and institutional investors. The regulation of bond tokenization products still refers to the Financial Services Authority Regulation Number 13/POJK.02/2018 dated August 15, 2018 (POJK IKD) concerning Digital Financial Innovation in the Financial Services Sector which was updated and replaced by Financial Services Authority Regulation Number 3 of 2024 dated February 16, 2024 concerning the Implementation of Financial Sector Technology Innovation (POJK ITSK) to be able to obtain permission from the OJK to carry out business operational activities, product innovation, activities, and services that use business models that are tested and developed in the Sandbox.

KEYWORDS: Legal Certainty, Digital Bond, Blockchain

I. INTRODUCTION

In the ever-evolving digital era, Distributed Ledger Technology (DLT) has emerged as a revolutionary innovation offering new ways to store, access, and share information. This technology provides a strong foundation for data security and efficiency in various sectors, including the capital markets [1].

DLT is an innovation in data storage that allows databases to be distributed evenly across multiple locations, or nodes. Each node in this network maintains an identical copy of the ledger and updates itself independently. This allows data to be distributed across multiple nodes without relying on a central authority. This is the unique feature of DLT. DLT certainly improves operational efficiency, but also ensures higher security [1].

Unlike blockchain, DLT encompasses various types of distributed databases, making it more general. Blockchain, on the other hand, is a specific form of DLT. Blockchain organizes data into cryptographically linked blocks, creating a secure and immutable chain [1].

In 2024, DLT and Blockchain will become attractive in debt issuance and financing. This is due to: 1. Efficient issuance costs and faster processes, 2. Increased transparency and security, 3. Broader accessibility and investor inclusivity, 4. Product innovation and integration with digital finance/asset tokenization, 5. Potential for instant settlement and reduced settlement risk [2]. Some DLT-based bond transactions in 2024 include the issuance of a $750 million multi-currency bond by Hong Kong SAR, a 200m CHF-denominated bond with a seven-year maturity by the World Bank, Siemens' repeat issuance of a DLT-based security (€300m) under German Law, as well as a $300m digital issuance by the Asian Infrastructure Investment Bank (AIIB) under English law, among others [3].

Several countries already have regulations and legal frameworks governing digital bonds, including Switzerland, Luxembourg, the United Kingdom, Singapore, Hong Kong, and Thailand. In Indonesia, a tokenized product, ID Digital (IDDB), is already available, issued by PT. Sejahtera Bersama Nano (SBN), the token issuer, with the underlying being the INDON 34 bond (US Dollar). This

product has received approval as part of the Financial Services Authority's regulatory sandbox under Number S-514/IK/01/2024, dated October 8, 2024. The minimum purchase for the INDONE 34 bond is much lower than traditional investments, from $200,000 to around $1,000 in IDDB tokens. This product is available through digital platforms such as Nanovest.

The IDDB product is still in the sandbox/regulatory testing phase, not in full market-standard regulation. In other words, Digital Bonds in Indonesia still lack a comprehensive regulatory framework, and oversight and law enforcement remain weak, impacting the already weak legal protection for investors.

To avoid plagiarism, the author conducted observations through search engines on previous research, and found several articles related to Digital Bonds, including an article written by I Aldasoro et al in 2025 entitled Tokenization of Government Bonds, the purpose of this writing is to analyze and examine the case of tokenized government bonds, by comparing tokenized bonds with conventional bonds with the same issuer, currency, and coupon type. Suggestive evidence was found in the form of a lower bid-ask difference and comparable issuance costs and returns [4]. Then, an article was also found written by Suk Hyun entitled Digitalization in Green Bond Market, which discusses the potential of blockchain technology to optimize the operation of the green bond market efficiently, transparently, and offer security and accessibility in the bond market to prevent greenwashing, as well as the challenges faced [5]. In addition, the author also found an explanation related to Digital Bonds According to the concepts and practices presented by Krzysztof Piech in The 1st International Onchain Economy Conference, SGH, 24 May 2025, in his presentation the national legal framework for blockchain-based securities in Europe is very crucial in facilitating blockchain-based securities. Several innovations related to European regulation in blockchain-based finance, where the implementation of the European Union pilot regime in Italian law and expanding it, authorizing DLT market infrastructure by empowering Conso and central banks, allowing DLT issuance outside the pilot regime, testing blockchain-based bond platforms on a case-by-case basis, creating a comprehensive framework [6]. Then, a research memorandum was found regarding the Assessment of the Benefits of Bond Tokenization written by Victor Leung, Joe Wong Alexander, and Wilson Wan. Where the research results found two policy implications, namely the wider use of tokenization in bond issuance can increase the efficiency and liquidity of the bond market, and the policy is to expand the tokenization investor base, the capital market will pave the way for the potential benefits of tokenization [7].

This research aims to analyze and examine the legal certainty and regulations governing digital bonds. This research also aims to answer the following research questions: 1) Are digital bond instruments categorized as securities? 2) How do capital market regulations (such as the Capital Market Law) and digital financial asset regulations regulate them? In Indonesia, specific regulations for tokenization and digital financial assets are still in progress. The urgency of this research is to address the issue of legal certainty regarding digital bonds. It is hoped that this research will contribute to the world of education and the world of capital markets.

II. RESEARCH METHOD

This research is a normative legal research (doctrinal research), focusing on examining written legal norms related to digital bonds and the legal principles of digital bonds applicable in Indonesia. This method is used to analyze legal issues related to digital bonds through a review of normative legal materials, as this research views law as a rule or norm that regulates human behavior in social life.

The approaches used in this research include a statutory approach and a conceptual approach. The statutory approach is conducted by reviewing laws and regulations related to digital bonds, obligations, and blockchain, including laws, implementing regulations, and technical regulations issued by competent authorities. This analysis aims to determine the appropriateness, consistency, and gaps in norms governing the legal issues studied.

The conceptual approach is conducted by examining the doctrines of legal experts, legal theories, academic literature, and conceptual perspectives developed within legal science to provide an argumentative basis for analyzing and interpreting existing legal provisions. Through this approach, research is expected to identify appropriate legal concepts and constructions to address the legal issues being studied.

This research uses a qualitative analysis method, which systematically processes legal materials to produce logical and accountable legal descriptions, arguments, and interpretations. The collected legal materials are analyzed in depth through legal reasoning, both deductive and inductive, to formulate conclusions regarding the research problem.

III. RESULT AND DISCUSSION

1. The difference between ordinary (traditional) bonds and digital bonds

Technology or digital bonds are innovative financial instruments that leverage blockchain or distributed ledger technology (DLT) to simplify the issuance, trading, and settlement processes traditionally associated with bonds. These debt instruments have

ownership registers stored using DLT, which aims to reduce intermediation costs and increase efficiency compared to traditional bonds [8].

Digital bonds work by leveraging smart contracts and distributed ledgers to automate various aspects of bond issuance, trading, and settlement. This includes features such as 1) instant settlement, where transactions can be completed within minutes or seconds of issuance, 2) programmable payments, 3) more efficient corporate actions, and 4) automated processes for updating bond documents and recording trades [8].

There are two main models of digital technology/bonds:

1. Natively issued digital bonds (Native digital assets), These bonds are issued directly onto a distributed ledger or blockchain, existing entirely within the DLT environment.

2. Tokenized traditional bonds: These are conventional bonds that are immobilized from an operational perspective and represented through tokens on a blockchain or DLT network [8].

Both of these models can be referred to as tokenized assets, with important bond information embedded in their code-based representation.

The difference between traditional bonds and digital bonds is that traditional bonds are debt instruments in which the issuer (e.g., a government or corporation) borrows funds from investors and promises to pay interest ("coupons") and return the principal at maturity. Digital bonds are bonds issued, recorded, and/or traded through digital technology such as blockchain/distributed ledger technology (DLT). With digital bonds, issuance can be done with smart contracts, recording using blockchain, and transfers can be done quickly. A study also shows that digital bonds have lower bid-ask spreads and lower yield spreads than conventional bonds, indicating greater efficiency and potential liquidity.

The characteristics of traditional bonds are as follows:

a. Based on the recording and settlement medium: Recording occurs through a custodian system, clearing, and intermediaries (banks, custodians, clearing houses), and settlement typically takes several days.
b. Based on the role of intermediaries: There are many intermediaries: underwriters, paying banks, custodians, paying agents, and clearing houses.
c. Based on cost and efficiency: Issuance and distribution costs can be quite high due to manual processes, multiple parties, and lengthy timeframes.
d. Based on liquidity and market access: Access to investors can be limited (possibly large minimum orders, limited territories).
e. Based on transparency and monitoring: Monitoring ownership and transaction history can be more difficult or require reporting from multiple parties.
f. Based on regulation and legal certainty: Regulatory frameworks are well established in many jurisdictions for traditional bonds.
g. Based on minimum investment and fractionalization: Often large minimums and intact ownership (not always easily divisible).

Meanwhile, Digital Bonds have the following characteristics:

a) Based on the recording and settlement medium: Digital bonds are recorded on a blockchain or DLT, enabling faster issuance, transfer, and settlement processes, and automation through smart contracts.
b) Based on the role of intermediaries: Potential reduction in intermediaries because recording and execution can be done directly on a digital ledger.
c) Based on costs and efficiency: Costs can be lower due to automation, the use of technology, and process simplification.
d) Based on liquidity and market access: Can enable broader access (including retail investors) and the potential for better liquidity due to digital processes and fractional ownership.
e) Based on transparency and monitoring: Because digital ledgers are open or distributed, transactions can be more transparent and track records can be more easily traced.
f) Based on regulation and legal certainty: Because digital ledgers are open or distributed, transactions can be more transparent and track records can be more easily traced.
g) Based on minimum investment and fractionalization: Tokenization allows for smaller fractional ownership, allowing retail investors to participate.

Digital bonds offer several potential benefits, including cost savings of 35-65% compared to traditional issuance, increased liquidity, and faster settlement times. Digital bonds can also reduce the need for manual work by back- and middle-office staff, simplify operations, and potentially reduce human error. Implementation has been growing, with leading issuers including the

European Investment Bank (EIB), the World Bank, the Hong Kong Special Administrative Region (SAR) Government, and banks such as UBS AG and Germany's KfW.

Despite these advantages, digital bond volumes remain small compared to the traditional bond market. As of September 2023, only $500 million worth of digital bonds had been issued, a fraction of the $6.3 trillion in US bonds issued during the same period. Widespread adoption faces challenges including regulatory uncertainty, the need for standardization, interoperability issues, and building the necessary technological infrastructure while fostering investor confidence in these new instruments.

2. Legal Certainty of Digital Bonds in Indonesia

Regulations related to digital bonds have been established in several countries. The International Capital Market Association (ICMA) has created a digital bond reference guide. This is intended to promote the well-functioning and resilient cross-border capital markets and to encourage the development of DLT-based bond markets. This guide serves to educate and raise awareness among market stakeholders, provide incentives, and encourage collaboration and order with regulatory authorities [3]. Furthermore, the guide represents a collaborative effort between investors, SSA issuers, private sector issuers, custodians, banks, market infrastructure, and law firms involved in the issuance, trading, and provision of services related to DLT-based debt securities [3].

Regulations related to digital bonds require the role of stakeholders, including: 1) The government, as a regulator to establish legal and regulatory frameworks for digital bonds, with countries like Switzerland, Germany, and Luxembourg leading the way. 2) Multilateral Organizations and Development Banks, which are a Bank that issues digital bonds to promote adoption and test the technology. 3) Private Sector Investors, such as Institutional investors, pension funds, asset managers, banks and other financial institutions that provide capital and may act as arrangers, dealers, or custodians. 4) Corporations and Business Partners, that are Companies raising capital through digital bond issuance and technology providers developing DLT platforms. 5) Implementing Agencies, which manage the technical implementation of digital bond platforms and systems. 6) Technology Providers, that are Companies developing and maintaining the DLT platforms and blockchain infrastructure for digital bonds. 7) Coordinating Organizations, which are Central banks and financial market authorities that facilitate the development of digital bond ecosystems [8].

The latest news in Indonesia: The first government bond tokenization project in Indonesia (IDDB) was issued by PT. Sejahtera Bersama Nano (SBN) in collaboration with Nanovest, an investment manager, and a custodian bank. IDDB has entered the Financial Services Authority (OJK) regulatory sandbox to trial digital financial innovation. The OJK Regulatory Sandbox is an Innovation Trial/Development Space. The sandbox is a tool and mechanism to facilitate the trial and development of innovations provided by the OJK to assess the feasibility and reliability of Financial Sector Technology Innovation (ITSK). The sandbox aims to ensure that innovation and technological development in the financial sector are carried out responsibly with sound risk management.

The OJK's authority to organize the Sandbox is regulated in Financial Services Authority Regulation Number 13/POJK.02/2018 dated August 15, 2018 (POJK IKD) concerning Digital Financial Innovation in the Financial Services Sector, which was updated and replaced by Financial Services Authority Regulation Number 3 of 2024 dated February 16, 2024 concerning the Implementation of Financial Sector Technology Innovation (POJK ITSK). In addition, as a follow-up to POJK ITSK, the OJK issued Financial Services Authority Circular Letter Number 5 of 2024 concerning the Innovation Trial and Development Space Mechanism (SEOJK Sandbox).

Based on the Regulatory Sandbox Results for Sandbox Participants, based on OJK Regulation 13/POJK.02/2018, Digital Financial Innovation Providers currently in the registration application process and sandbox participants still in the sandbox implementation process as stipulated in OJK Regulation IKD are given the following status:

1. Recommended with the obligation to register or obtain a business license with the OJK;
2. Recommended without the obligation to register or obtain a business license with the OJK; or
3. Not recommended.

Sandbox participants who are awarded recommended status and are required to register or obtain a business license with the Financial Services Authority (OJK) are required to submit documents covering at least the following aspects:

1. institutional and governance;
2. business model;
3. information technology; and
4. partnerships.

Currently, the implementation of the sandbox is based on POJK Number 3 of 2024 with the results of the sandbox, if the Participant is declared to have passed, he must apply for a business permit to the OJK within the validity period of the passing

letter, which is 6 (six) months and can be extended based on the OJK's consideration. If the validity period of the passing letter has expired, and the Participant has not applied for a business permit to the OJK, the Participant is required[9]:

a. cease business operations, product innovation, activities, and services that utilize the business model tested and developed in the Sandbox;
b. fulfill all obligations to consumers and other parties; and
c. implement the exit policy outlined in the Testing Plan. No later than 3 (three) months after the expiration of the approval letter.

If a Participant is declared unsuccessful, they are required to:

a. cease business operations, product innovation, activities, and services that utilize the business model tested and developed in the Sandbox;
b. fulfill all obligations to Consumers and other parties; and
c. implement the exit policy outlined in the Testing Plan.

The IDDB Token is Indonesia's first bond tokenization product, registered in the Financial Services Authority (OJK) sandbox in 2024. This product enables digital bond issuance and ownership through blockchain technology and smart contracts, opening broader investment access for retail and institutional investors.

IDDB's graduation from the OJK sandbox marks a significant milestone for the development of national digital assets, proving that blockchain-based innovation can coexist harmoniously with robust regulations. This success opens up opportunities for the tokenization of real-world assets in Indonesia's financial sector and marks a concrete step towards integrating blockchain technology with the formal financial system. Furthermore, IDDB will enter the commercialization phase through the Nanovest platform as an official partner for buying, selling, and distributing tokens, providing easy, transparent, and secure digital bond investments.[10] Furthermore, Bank Indonesia plans to launch digital securities based on Government Securities and integrated with a digital rupiah CBDC, which can technically be categorized as a digital bond variant.

V. CONCLUSIONS

The IDDB Token is the first bond tokenization product in Indonesia, registered in the OJK sandbox since 2024. This product enables digital bond issuance and ownership through blockchain technology and smart contracts, opening broader investment access for retail and institutional investors.

The regulation of bond tokenization products still refers to the Financial Services Authority Regulation Number 13/POJK.02/2018 dated August 15, 2018 (POJK IKD) concerning Digital Financial Innovation in the Financial Services Sector which was updated and replaced by Financial Services Authority Regulation Number 3 of 2024 dated February 16, 2024 concerning the Implementation of Financial Sector Technology Innovation (POJK ITSK) to be able to obtain permission from the OJK to carry out business operational activities, product innovation, activities, and services that use business models that are tested and developed in the Sandbox.

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