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Legal Regulatory Readiness in Accommodating Non-Fungible Token as Objects of Fiduciary Collateral

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Abstract: This research aims to analyze the readiness of Indonesia's legal framework to accommodate Non-Fungible Tokens (NFTs) as fiduciary collateral objects and to identify the potential obstacles in their execution process. NFTs are digital assets based on blockchain technology that possess unique characteristics and economic value, theoretically fulfilling the criteria of intangible objects under Law Number 42 of 1999 concerning Fiduciary Collateral. However, the current legal instruments in Indonesia have not yet explicitly recognized NFTs as eligible fiduciary objects. This study employs a normative juridical method with both statutory and case approaches, supported by secondary data derived from an interview with the Direktorat Jenderal Administrasi Hukum Umum (Ditjen AHU) to enrich the legal analysis. The findings indicate that Indonesia's regulatory readiness regarding NFTs as fiduciary collateral remains conceptual rather than operational. The absence of a registration mechanism and valuation system for digital assets creates significant legal uncertainty for both creditors and debtors. Furthermore, the execution of NFTs presents additional challenges, including the dependence on private keys, the incompatibility of automatic *smart contract* transfers with the *due process of law* principle, and the speculative volatility of NFT market values. Therefore, the study suggests the need for new legal norms and an authorized digital asset valuation institution to ensure that NFTs can be effectively and lawfully integrated into Indonesia's fiduciary security system.

Keywords: *Non-Fungible Token, Fiduciary Collateral, Collateral Execution, Intangible Assets*

INTRODUCTION

In an era of rapid technological advancement, digital transformation has become inevitable. This development not only drives efficiency across various industrial sectors but also gives rise to new forms of digital wealth (Febriana, 2023). Along with the growing role of information technology and blockchain, the emergence of Non-Fungible Tokens (hereinafter referred to as NFTs) as digital assets has become increasingly familiar (Dowlimpul, 2022). NFTs are a type of digital token designed to represent proof of ownership over specific assets, such as photographs, videos, paintings, music, or in-game items, stored within blockchain

technology. NFTs are created as unique and irreplaceable digital assets, as each token possesses distinctive characteristics that differentiate it from other digital assets (Dowling, 2022).

Although NFTs differ from conventional physical assets, they nonetheless possess economic value and can be transferred, allowing them to be legally traded on digital platforms (Muhammad, 2022). Several studies have indicated that, in theory, NFTs could serve as objects of fiduciary collateral, since under Law Number 42 of 1999 concerning Fiduciary Collateral, an asset may be pledged if it is transferable and holds economic value. Yulius Manurung, Head of the Legal Services Division of the Medan Regional Office of the Ministry of Law and Human Rights, stated that as long as the ownership of the asset used as fiduciary collateral can be proven, it may be validly used as such (Sembiring, 2023). In a similar vein, Rosnidar Sembiring, Professor at the Faculty of Law, University of North Sumatra, emphasized that intangible digital assets may be used as collateral, both in pawn and fiduciary arrangements.

The current regulatory framework still presents a normative gap that hinders the practical realization of NFT as an object of fiduciary collateral. The Indonesian Fiduciary Law has yet to explicitly recognize or regulate digital assets based on blockchain technology, leaving the legal status of NFT to rely on broad interpretations of intangible movable property. Existing provisions remain rooted in conventional legal constructs such as accounts receivable, lease rights, or intellectual property, none of which fully reflect the technical characteristics and transactional structure of blockchain-based assets (Zakaria, 2023). The absence of explicit classification further creates uncertainty regarding registration, transfer, and execution mechanisms, as the current fiduciary system was not designed to accommodate decentralized digital assets governed by cryptographic authentication.

Furthermore, although conceptually NFTs may serve as fiduciary collateral, ambiguity persists regarding their legal status as representations of creative works. Pursuant to Article 4 of the Copyright Law, exclusive rights consist of moral rights and economic rights. Moral rights are inherent in the author and cannot be transferred, while economic rights grant the holder the ability to commercialize the work and receive royalties (Haryadi, 2022). From the perspective of Intellectual Property Rights, the granting of these exclusive rights serves as a form of appreciation for the work created while simultaneously encouraging creators to continue developing the work they have produced, because legal protection for intellectual works allows innovation to develop through market mechanisms (Taupiqqurrahman, 2021). In practice, the rights acquired by NFT purchasers are generally limited to ownership of the digital token itself, rather than the copyright of the underlying work. Accordingly, the buyer of an NFT does not automatically obtain the right to reproduce, adapt, or distribute the work without accompanying proof of ownership or license.

This issue becomes even more complex in relation to the registration of fiduciary collateral. The Fiduciary Collateral Law stipulates that the object of fiduciary collateral must be registered with the Fiduciary Registration Office under the Directorate General of General Legal Administration (Ditjen AHU) to obtain legal and executorial force. Similarly, to ensure the clarity of copyright status when registered as fiduciary collateral, such registration is necessary to provide legal certainty for the parties involved (Supianto, 2020). This reinforces that, although legal interpretation allows intangible assets to serve as fiduciary collateral, no technical certainty yet exists regarding administrative procedures or execution mechanisms.

Previous studies have explored the possibility of digital assets serving as objects of fiduciary security within the framework of Indonesian positive law. Putri Azura Hana Haryadi and Taupiqqurrahman (2022), in their study *“The Potential and Legality of Non-Fungible Tokens as Objects of Fiduciary Security,”* examined the feasibility of NFTs as fiduciary objects on the basis that they qualify as intangible movable assets possessing economic value, although their legality remains uncertain due to the absence of explicit regulation. Similarly, Deny Akbar Santoso, Ermanto Fahamsyah, and Firman Floranta Adonara (2022), in *“The Use of*

Cryptocurrency as an Object of Fiduciary Security,” concluded that cryptocurrencies may be treated as fiduciary objects provided ownership can be lawfully proven. However, given their high price volatility and lack of technical regulation, such assets should only serve as supplementary collateral. Meanwhile, Lutfi Ulinnuha (2017), through *“The Use of Copyright as an Object of Fiduciary Security,”* found that copyright, classified as an intangible movable asset may be pledged as collateral insofar as its economic rights can be transferred and objectively valued, although execution remains limited to its economic value. Distinct from these studies, the present research focuses on a normative analysis of Indonesia’s regulatory readiness to accommodate NFTs as fiduciary objects and the potential obstacles to their execution, supplemented by secondary data in the form of an interview with the Directorate General of General Legal Administration (Ditjen AHU).

Given these circumstances, this research is essential to address the existing legal vacuum and to provide an empirical overview of regulatory readiness. Despite the rapid development of digital technology, the absence of explicit norms and implementing instruments demonstrates that the current legal system is not yet fully prepared to accommodate such innovations. Therefore, this study employs a normative juridical method supported by statutory and case approaches, with additional secondary data in the form of an interview with the Directorate General of General Legal Administration (Ditjen AHU) to complement the literature review. Through this approach, the research seeks to analyze the extent to which existing regulations can accommodate NFTs as objects of fiduciary collateral and to examine the potential challenges that may arise in their enforcement.

METHOD

The research employs a normative juridical method that focuses on the examination of legal norms, principles, and statutory regulations governing fiduciary collateral and intangible digital assets. The data used in this study consist of primary and secondary data. Primary data are obtained through an interview with the Directorate General of General Legal Administration (Ditjen AHU) as the authority responsible for the regulation and registration system of fiduciary collateral. Secondary data include primary legal materials, such as Law Number 42 of 1999 concerning Fiduciary Collateral and Law Number 28 of 2014 concerning Copyright, alongside secondary legal materials in the form of textbooks, scholarly articles, and journals, as well as tertiary legal materials such as dictionaries and encyclopedias. The study applies statutory and case approaches, and all data are analyzed qualitatively through interpretation of legal norms and their relevance to the regulation and potential enforcement of NFTs as objects of fiduciary collateral.

RESULTS AND DISCUSSION

Indonesia’s Regulatory Readiness in Accommodating Non-Fungible Tokens as Objects of Fiduciary Collateral

Non-Fungible Tokens (NFTs) are digital certificates based on blockchain technology that have unique characteristics, as indicated by their name, which means they are non-fungible, meaning they cannot be exchanged on an equal basis and only represent ownership of a specific digital asset. Unlike digital assets such as cryptocurrency, where one Bitcoin can be exchanged for another Bitcoin because they have the same value, each NFT has a different economic value according to the uniqueness of the asset it represents (Muhammd, 2021). In its transaction system, the technology used by NFTs is through smart contracts, which are automatic program codes embedded in the blockchain network that serve to regulate, verify, and execute transactions digitally without the need for intermediaries (Widiawardana, 2021). In this system, NFTs do not automatically represent copyright, as copyright legally remains with the creator or registered copyright license holder. NFT buyers generally have rights that

include personal use, public display or exhibition, and storage or copying for non-commercial purposes. However, buyers do not have the right to commercially exploit the work, unless explicitly transferred through a separate license agreement or contract (Sukmawan, 2023).

Book II of the Civil Code defines “objects” in Indonesian law as anything that can be the subject of property rights, whether tangible or intangible. This concept is very important for determining the subject of collateral in property law, including fiduciary collateral as stipulated by Law No. 42 of 1999. A fiduciary collateral is an agreement that functions as an accessory or supplement to the main agreement, such as a debt agreement. Thus, a fiduciary collateral only becomes effective after the establishment of an important legal relationship between the fiduciary grantor and the fiduciary recipient (Ukus, 2023). A fiduciary collateral as a property right gives the creditor direct power over the guaranteed object and protection against other parties. However, the nature of property only arises after the collateral is registered at the Fiduciary Registration Office (Perdana, 2023). This registration has important legal consequences, because if it is not done, the fiduciary agreement remains valid contractually, but only gives rise to individual rights (obligatory), so that the creditor does not have absolute rights over the object of the collateral and can only collect based on default. Conversely, if registered, the property rights give the creditor preferential status and enable parate execution without the need for a court decision (Fauziyyah, 2023).

This raises the question of whether NFTs can be classified as objects that meet the criteria for fiduciary collateral. Normatively, Indonesian positive law has not yet explicitly regulated the position of NFTs as objects of property rights. This is in line with the results of the author's interview with Ms. Dwi Ayu Rarasmitha, Representative of the Civil Directorate at the Directorate General of General Legal Administration (Ditjen AHU), who stated that the position of NFTs as objects of fiduciary collateral still raises debate in terms of the certainty of the economic rights transferred. Although NFTs can be transferred technologically through transactions on the marketplace, this does not automatically indicate a transfer of economic rights as required in the concept of intangible objects that are commonly used as fiduciary objects. She also added that in cases where intellectual property rights such as copyrights, trademarks, or patents are used as objects of fiduciary collateral, it is because what is being secured is not merely the digital or physical form, but rather the economic rights such as royalties or commercial licenses that are attached and can be transferred to the fiduciary recipient.

Based on this explanation, there are at least two possible scenarios that can be used as a starting point in assessing the feasibility of NFTs as objects of fiduciary collateral. First, if NFTs are understood as digital assets that have economic value because they can be sold or transferred on the marketplace, then the rights attached to NFTs are limited to the rights to token ownership and the potential profits from their sale. This often raises questions about the adequacy of the economic value obtained by the fiduciary recipient if the value of the work on the marketplace is still uncertain. Second, by following the practice of binding intellectual property rights as fiduciary objects, it is conceivable that NFTs can also be used as collateral as long as there is an additional agreement governing the transfer of some of the economic rights to the work represented by the NFT. This arrangement can be automatically incorporated through a smart contract containing clauses for the transfer of specific economic rights to the fiduciary beneficiary (Sulistianingsih, 2022). Thus, NFTs are not only positioned as mere digital token representations but also as legal instruments containing concrete economic value as required in the concept of fiduciary collateral for intangible assets.

In the context of economic value, it is important to distinguish between the economic value derived from copyright over a work and the economic value inherent in the ownership of the NFT token itself. If an NFT that used as collateral solely on the basis of ownership rights to the digital token, then its economic value depends entirely on the market price of the NFT

in the marketplace, which is volatile and speculative. From a civil law perspective, the economic value referred to as a condition for fiduciary collateral refers to the ability of an object to cover or replace the value of a debt if the debtor fails to fulfill their obligations. This value must be at least equal to the amount of debt owed to the creditor. Thus, the object being collateralized must have an objectively measurable and stable value in order to be used as the basis for calculating the value of the collateral. In this case, NFTs, whose value depends on fluctuations in the crypto market, tend to be unstable, creating uncertainty regarding the value of the collateral when used as a fiduciary object. In addition, because NFT transactions take place entirely in the digital realm and across jurisdictions, the aspects of ownership verification and economic value assessment do not yet have a formal legal mechanism in Indonesia.

Conversely, if NFTs are linked to the economic rights attached to the digital works they represent, then theoretically, the position of NFTs can be likened to fiduciary collateral in the form of intellectual property rights, such as copyright. Based on Article 16 paragraph (3) of Law Number 28 of 2014 concerning Copyright, copyright is recognized as an intangible object that can be used as a fiduciary collateral object because it has economic value and its ownership can be transferred through an agreement. Thus, if NFTs are accompanied by clear provisions regarding the transfer of some economic rights over the work through a smart contract, for example, then the provisions in copyright law can be adapted in the application of NFTs as fiduciary collateral. However, Mr. Leonardo Sihombing, representative of the Directorate of Civil Affairs of the Directorate General of AHU, explained in an interview with the author that, in practice, there has been no registration of copyright as collateral to date. The forms of intellectual property most often used as collateral are trademarks and patents, which are generally only used as secondary collateral alongside primary collateral in the form of land or buildings. This situation shows that even though there is a clear legal basis, administrative challenges, economic value assessment, and financial institution acceptance remain the main obstacles in making intangible assets into effective fiduciary collateral, including NFTs.

Although Indonesian law has conceptually recognized intangible objects such as copyrights as collateral, to date there are no technical regulations that explicitly accommodate digital assets such as NFTs. Existing regulations are still oriented towards conventional objects, while the fiduciary registration system under the Ministry of Law and Human Rights through AHU Online does not yet have a recording format suitable for blockchain-based assets. In the interviews also confirmed that the agency has never received an NFT registration as a fiduciary collateral object and is still in the process of reviewing the possibility of expanding the category of intangible objects that can be used as collateral. This situation illustrates that Indonesia's regulatory readiness for NFTs is still conceptual and not yet operational, in terms of registration mechanisms, verification, and economic certainty. Therefore, synchronizing fiduciary collateral regulations, intellectual property regimes, and digital asset regulations is a crucial step to ensure legal certainty regarding the status of NFTs within the national collateral system in the future.

Potential Obstacles in the Enforcement of Fiduciary Collateral on Non-Fungible Tokens as Intangible Digital Assets

One of the important functions of fiduciary collateral enforcement is to provide creditors with protection when debtors fail to fulfill their obligations. Articles 29 to 34 of Law Number 42 of 1999 concerning Fiduciary Collateral regulate three forms of enforcement, namely parate enforcement, executory title, and private sale. Parate execution gives the fiduciary recipient the right to sell the collateral object directly in the event of default, while an executory title allows execution to be carried out in accordance with a court decision that has permanent legal force. In the case of private sale, both parties can agree to obtain the best value from the collateral object. By maintaining the principles of efficiency and fairness as the main

basis for enforcement, these three mechanisms demonstrate legal efforts to harmonize the interests of both creditors and debtors (Azzahra, 2020).

Before a fiduciary collateral can be enforced, it must first be established through the creation of a fiduciary collateral deed by a notary and registration with the Fiduciary Registration Office under the Ministry of Law and Human Rights (AHU). These two stages are fundamental because without a notarial deed and registration certificate, fiduciary collateral does not have executory power. This is in line with the statement from the Directorate General of AHU in an interview, which emphasized that fiduciary collateral is only considered to have come into existence after it has been officially registered through the AHU Online system. If it is not registered, the relationship between the creditor and the debtor is only subject to the provisions of general collateral in Articles 1131 and 1132 of the Civil Code, which require the creditor to file a civil lawsuit to execute the object of the collateral. According to Article 6 of Law Number 42 of 1999 concerning Fiduciary Collateral, the value of the collateral and the value of the object must be clear and measurable in the fiduciary collateral deed drawn up by a notary. This deed must also include the identities of the parties and a description of the object of the collateral. This provision poses a particular challenge when the collateral is an NFT, as notaries are required to describe and ensure the validity of collateral that is digital, unique, and has no physical representation. In practice, the principle of notarial prudence requires that every deed drawn up has a legal basis and sufficient supporting evidence. As long as the Fiduciary Registration Office accepts deeds drawn up by notaries, the notary is not considered to have committed any violation, even though the legal regulations regarding NFTs have not yet been explicitly stipulated (Perdana, 2023).

One of the main characteristics that poses obstacles in the execution of NFTs when used as fiduciary collateral lies in the smart contract mechanism that forms the basis of the transaction. Smart contracts are essentially digital codes that automatically execute agreements without the need for third-party intervention, including state legal institutions. In this context, the legal relationship between the parties is not carried out through positive legal mechanisms, but through a series of programming instructions within the blockchain. This condition presents a new problem, because the legal execution of fiduciary collateral must go through concrete actions carried out by the fiduciary recipient or authorized officials based on the collateral certificate. However, smart contracts operate privately within the blockchain system and can only be accessed through private key authorization. This means that without access to the key, creditors have neither the technical nor legal ability to take over the NFT used as collateral, even if the debtor has clearly defaulted. In practice, this renders enforcement ineffective because there is no legal instrument that can force the transfer of ownership of these digital assets. This situation is further complicated by the lack of clarity regarding the legal position of NFTs in the Indonesian legal system, whether they are categorized as copyrights, financial instruments, or other forms of digital assets, which means that financial institutions do not yet have a clear basis for developing mechanisms for control and enforcement.

The value of NFTs is highly dependent on speculative digital market demand, so there are no objective standards that can be used to consistently assess these assets. In the context of fiduciary collaterals, this instability in value poses a particular problem for the certainty of debt repayment, as it is difficult for creditors to ensure that the value of the collateral remains proportional to the size of the loan. On the other hand, to date, there is no official mechanism in Indonesia that can legally appraise digital assets such as NFTs, whether by financial institutions, notaries, or state institutions. The Directorate General of AHU even explained that to assess collateral assets such as NFTs, a double appraisal mechanism is required, both through internal and external appraisers, so that the value of the collateral can be determined objectively. In such circumstances, there is a need for a special institution capable of managing and validating the value of digital assets, including NFTs, as objects of fiduciary collateral.

One idea that can be developed is the establishment of an Intellectual Property Rights appraisal institution authorized to conduct valuations of intangible assets. This institution can be formed independently or under the coordination of the Directorate General of Intellectual Property (DJKI) with the support of human resources who have expertise in the field of digital asset valuation. Cooperation with existing professional appraisal institutions in Indonesia, such as the Indonesian Appraisal Professionals Association (MAPPI) or the Public Appraisal Services Office (KJPP), can also be carried out because they have experience in appraising non-physical assets. The effort to establish this appraisal institution is important to provide legal certainty for creditors and debtors, while ensuring that NFTs have a valid and measurable material value in the fiduciary collateral system (Inayah, 2025).

In examining the limitations of NFTs as objects of fiduciary collateral, it is essential to first review the regulation of other forms of intangible intellectual property, such as copyright. Pursuant to Law Number 28 of 2014 concerning Copyright, copyright consists of two dimensions of rights: *moral rights*, which are permanently attached to the creator, and *economic rights*, which may be transferred or pledged. Since moral rights are inherent, copyright as a whole cannot be seized or transferred through fiduciary execution. Therefore, the enforcement of fiduciary collateral over copyright can only apply to the economic value generated by the work, such as royalties or commercialization proceeds, through public auction or private sale mutually agreed upon by the parties (Ulinuha, 2017). In practice, however, particularly in the music industry, there is a tendency for creditors to execute the economic rights of a work when the debtor defaults. Banks or financial institutions, for instance, may reassess the collateral's value, offer it to prospective buyers, or even take over the management and distribution of the work to recover the debtor's obligations (Perdana, 2023). This practice indicates that although, juridically, copyright cannot be directly executed, empirically its economic value may still be utilized as an object of debt repayment. Hence, the execution of copyright in fiduciary collateral is essentially limited to its economic aspect, not the creator's moral ownership of the work.

Unlike tangible assets, which can be executed through *parate executie* or private sale mechanisms, NFTs as digital assets pose distinctive challenges due to their decentralized nature and reliance on digital authentication. Execution under fiduciary law requires verification of the debtor's default and implementation by an authorized official. Indonesian positive law does not recognize any concept of "automatic execution" without due process of law, since the transfer of proprietary rights must occur through a lawful process of proof and determination. If the transfer of NFT ownership were to occur automatically through a smart contract when the debtor fails to fulfill obligations, such an act would potentially contravene the principle of due process, as it bypasses default verification, removes the role of authorized officials (such as notaries or bailiffs), and eliminates the debtor's legal protection. This issue can be illustrated through a hypothetical case in which an NFT is used as fiduciary collateral. Suppose a debtor pledges an NFT containing a digital artwork recorded on a blockchain as collateral for a creditor. During the term of the agreement, the NFT remains in the debtor's wallet, as only the debtor possesses the private key that authenticates ownership. When default occurs, the creditor is legally entitled to execute the collateral but technically cannot access the NFT without the private key. Even if the smart contract is designed to transfer the NFT automatically, such a mechanism can only operate if predetermined and is not necessarily valid under Indonesian positive law. Thus, there exists a gap between the creditor's legal right to execute the collateral and their factual control over the digital asset within the blockchain system. This condition highlights the fundamental difference between the fiduciary law system based on trust and registration, and blockchain technology, which prioritizes individual control and decentralized ownership.

Accordingly, the potential obstacles to executing NFTs as fiduciary collateral lie not only in technological limitations but also in the lack of synchronization between the formal legal system and the autonomous blockchain ecosystem. The fiduciary mechanism is built upon a trust-based system and formal legality through registration, whereas NFT execution operates under a technical logic grounded in private-key ownership. This incongruity creates significant implementation challenges, as the creditor's executorial rights cannot be realized without the intervention of the original owner or specific arrangements within the smart contract. As long as no legal instruments exist to bridge these two systems, the enforcement of fiduciary collateral over NFTs risks losing both legal certainty and executorial effectiveness. Therefore, the development of regulatory and technical standards is necessary to enable fiduciary mechanisms to adapt to the characteristics of digital assets without compromising fundamental principles of legal protection for the parties involved.

CONCLUSION

Normatively, Indonesia's legal system is not yet fully prepared to accommodate Non-Fungible Tokens (NFTs) as objects of fiduciary collaterals. Although NFTs are characterized as intangible objects that can be transferred and have economic value, Law No. 42 of 1999 concerning Fiduciary Collateral does not explicitly include blockchain-based digital assets in the category of objects that can be guaranteed. The absence of an NFT registration format on AHU Online, the uncertainty of their legal status as either intellectual property or digital assets, and the lack of a valid economic valuation mechanism indicate that Indonesia's regulatory readiness is still conceptual and not yet operational. Thus, although there is legal potential to expand the category of intangible objects in the fiduciary collateral regime, its realization requires synchronization between property collateral law, intellectual property law, and digital asset regulations.

In the context of enforcement, NFTs face various structural and technical obstacles that make their implementation unfeasible in Indonesia's positive legal system. These obstacles include the inability of creditors to access NFTs without a private key, the potential for violations of the principle of due process of law if the transfer is carried out automatically through a smart contract, and the speculative and difficult-to-assess fluctuations in the market value of NFTs. In addition, the absence of a specialized appraisal agency authorized to validate the value of digital assets further weakens legal certainty for creditors. Therefore, it is necessary to establish new norms and implementing instruments that enable the integration of the national legal system and blockchain technology so that the implementation of fiduciary collateral on NFTs can be carried out legally, effectively, and provide legal protection for all parties.

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