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Regulatory Optimization of Bitcoin as Collateral: Property Classification and Secured Lending Framework in Indonesia

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Abstract: The development of financial technology has driven the emergence of digital assets such as Bitcoin, which challenge the conventional legal framework of property law. Although not recognized as legal tender, Bitcoin has been acknowledged as a legal asset by Indonesia's Commodity Futures Trading Regulatory Agency (Bappebti). This study aims to examine the legal status of Bitcoin as collateral in Indonesia's property law framework, as well as assess the adequacy of current regulations in accommodating this function. This research employs a normative juridical method with a qualitative approach and deductive reasoning. The findings indicate that Bitcoin fulfills the legal criteria of an intangible object and, in theory, can be used as an object of fiduciary security. However, the absence of explicit legal recognition and a digitally integrated collateral registration system has led to legal uncertainty. Although regulations in Indonesia have provided a degree of legality and oversight, systemic institutional integration remains lacking. Therefore, legal reform is needed in the area of digital asset-based collateral, along with the establishment of a comprehensive administrative registration system to ensure the validity of security interests in digital assets.

Keyword: Bitcoin, Digital Asset, Collateral.

INTRODUCTION

The advancement of digital technology has had a significant impact across various sectors of life, particularly in the fields of finance and law. Innovations in payment systems and digital assets have given rise to new forms of intangible wealth, one of which is Bitcoin. Introduced by Satoshi Nakamoto in 2008 through a whitepaper titled Bitcoin: A Peer-to-Peer Electronic Cash System, Bitcoin was designed to enable direct value transfers between parties without the involvement of centralized financial institutions (Satoshi Nakamoto, 2008). The system relies on blockchain technology and a proof-of-work mechanism as substitutes for the third parties typically used in conventional banking systems. Bitcoin possesses a number of unique characteristics that distinguish it from traditional forms of assets or currencies. First, its transactional security is ensured through public-key cryptography, making forgery or data

manipulation exceedingly difficult (Paraskevi Katsiampa, Larisa Yarovaya, and Damian Zięba, 2022). Second, Bitcoin transactions are irreversible, meaning they cannot be unilaterally canceled as in credit card or bank account systems (Gunawan A. Tauda, Andy Omara, and Gioia Arnone, 2023). Third, Bitcoin is decentralized, not controlled by any government, central bank, or financial institution, which grants users worldwide a high degree of freedom and autonomy. Fourth, Bitcoin operates in an entirely decentralized open market system, allowing users to store and transfer value without geographic limitations or institutional authorization.

Due to these characteristics, Bitcoin has evolved not only as a digital means of exchange but also as an economically valuable digital asset, widely traded across various digital platforms. In the context of modern financing, there is a growing trend toward the use of digital assets as collateral for debt. This trend is driven by Bitcoin's high liquidity, significant market capitalization, and ease of electronic ownership transfer. Recent data shows a notable surge in public participation in Indonesia's crypto market. According to a report by the Commodity Futures Trading Regulatory Agency ("Bappebti"), by the third quarter of 2024, the number of crypto asset investors in Indonesia reached 17.4 million, up from 16.7 million the previous year. Meanwhile, the total national value of crypto transactions reached IDR 1,012 trillion (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et al., 2024). This phenomenon reflects the increasing public perception of digital assets as legitimate economic instruments on par with stocks, gold, or bonds.

Nonetheless, from a legal standpoint, several challenges continue to hinder the optimal use of Bitcoin as a collateral object. Indonesian legislation has yet to explicitly recognize Bitcoin as a legal object under the classification of property, nor is there a comprehensive legal framework for its use as collateral. Although Bitcoin is an intangible digital entity, it holds economic value and can be transferred in terms of ownership, thereby essentially fulfilling the characteristics of an object as defined under Book II of the Indonesian Civil Code.

In regulatory terms, Indonesia has recognized Bitcoin as a lawful digital commodity for trading purposes, as stipulated under Commodity Futures Trading Regulatory Agency Regulation No. 8 of 2021 concerning Guidelines for Physical Crypto Asset Trading on Futures Exchanges ("Perbappebti 8/2021"), as most recently amended by Regulation No. 8 of 2024 ("Perbappebti 8/2024"). However, these regulations do not address the legal status of Bitcoin as an object of debt collateral. On the other hand, the Financial Services Authority (OJK) has only recently issued Circular Letter No. 20/SEOJK.04/2024 ("SEOJK 20/2024"), which provides guidelines on risk management and reporting for digital transactions, but it has yet to explicitly accommodate the use of digital assets within fiduciary, pledge, or mortgage schemes.

The absence of such legal norms creates a regulatory gap (*rechtsvacuum*) that complicates the integration of digital assets into the formal financing system and undermines legal certainty for both creditors and debtors. Against this background, this research seeks to answer the following two main questions: 1. What is the legal status of Bitcoin as a digital asset used as collateral, in light of Indonesian property and security law? And 2. How does the current regulatory framework in Indonesia accommodate the optimization of Bitcoin as a debt security instrument? This study aims to provide both conceptual and normative contributions toward the reform of property and security law in Indonesia, making it more adaptive to the dynamics of digital technology and financial innovation.

METHOD

This research adopts a normative legal method, focusing on the analysis of written legal norms related to property law and digital assets (Soerjono Soekanto & Sri Mamudji, 2012). Primary legal sources include Indonesian laws and regulations, while secondary sources consist of journals, books, and other academic literature (Nanda Dwi Rizkia, 2021). The study applies a normative-qualitative approach with deductive reasoning drawing conclusions from general legal principles and applying them to specific cases, particularly the status of Bitcoin as an

object of collateral (Muhaimin, 2021). Legal interpretation is conducted using a hermeneutic approach to bridge classical property law with contemporary digital developments (Peter Mahmud Marzuki, 2010). The main objective is to deliver a clear, systematic, and relevant normative analysis that supports legal reform in Indonesia's digital financing framework

RESULTS AND DISCUSSION

An Analysis of the Legal Status of Bitcoin as a Digital Asset under Indonesian Property Law as a Potential Object of Debt Collateral

1. Classification of Property under the Indonesian Civil Code and the Positioning of Bitcoin as Intangible Movable Property

In the context of digital economic law, the concept of a digital asset is characterized by specific features that distinguish it from ordinary data. A digital asset is broadly understood as an entity that exists through information technology, possesses economic value, is transferable, and is legally protected as an object that can be owned and used as collateral (Teguh Tresna Puja Asmara, Lastuti Abubakar, and Tri Handayani, 2019). Within this framework, Bitcoin built on blockchain technology and public-key cryptography fulfills the fundamental characteristics of a digital asset.

Circular Letter of the Financial Services Authority (SEOJK) No.20/SEOJK.07/2024 defines digital financial assets as valuable instruments issued and/or traded via electronic infrastructure, including crypto assets, which may be used for investment, payment, or collateral purposes. Crypto assets are categorized as a type of digital financial asset that can be traded through technology-based financial service providers, with obligations for risk management and transaction transparency by providers registered with the OJK.

Further, within the scope of commodity law, Article 1 point 3 of Bappebti Regulation No. 8 of 2021, as most recently amended by Bappebti Regulation No. 9 of 2024, states that crypto assets are intangible commodities in the form of digital assets that utilize cryptography, peer-to-peer networks, and distributed ledger technology. This regulation officially includes Bitcoin in the list of 383 legally tradable crypto assets in Indonesia (Annex III of Bappebti Regulation No. 9 of 2024). This signifies formal recognition of Bitcoin's economic existence as a lawful object of trade and ownership, thereby affirming its potential to serve as a financing asset.

This legal recognition of Bitcoin as a valid digital commodity traded on futures exchanges provides it with concrete economic legal status under Indonesia's legal system. In practice, Bitcoin has already been used as a form of collateral by various blockchain-based financial platforms in countries such as the United States and Japan, suggesting similar potential for implementation in Indonesia, provided that security law is reformed accordingly.

Moreover, under the general principles of property law, the treatment of non-physical forms of property is not unfamiliar in civil law systems. Legal scholars have developed the doctrine that intangible objects such as shares, copyrights, or patents can be owned and used as collateral. This is relevant in bridging the legal status of Bitcoin through the analogy of digital property. Even the Supreme Court of the Republic of Indonesia, in decisions related to intellectual property disputes, has acknowledged that intangible objects possess both legal and economic value, and thus fall within the scope of general property law principles.

The classification of property in Indonesian civil law is regulated under Book II of the Indonesian Civil Code (Known as Kitab Undang-Undang Hukum Perdata), specifically in Articles 499 to 504. According to Article 499, property is divided into two main categories: movable and immovable property. Movable property includes anything that, by its nature, can be transferred, or is deemed movable under statutory provisions. Meanwhile, Article 503 further classifies property into tangible (corporeal) and intangible (incorporeal) assets.

In this context, Bitcoin cannot be categorized as tangible property, as it does not possess physical form or exist in a specific place and time. Nevertheless, Bitcoin may be classified as

intangible movable property, since it can be transferred digitally from one legal subject to another. In property law logic, physical form is not the sole essential element; rather, what is crucial is the asset's ability to be owned, transferred, and hold economic value. Modern property law thus necessitates an expanded conception of property to include digital assets, which are intangible yet economically valuable (Teguh Tresna Puja Asmara, Lastuti Abubakar, and Tri Handayani, 2019).

Furthermore, Article 504 of the Civil Code broadens the definition of movable property by stipulating that claims to receivables and the interests derived therefrom are considered movable assets. Based on this systematic analogy, digital assets such as Bitcoin which can be traded, used as collateral, and inherited share legal characteristics with receivables or shares, which have long been recognized as objects of intangible movable collateral. This is further reinforced by the nature of Bitcoin transactions, which are not only actual but also irrevocable and permanently recorded on the blockchain (Satoshi Nakamoto, 2008).

The legal analogy to shares may also serve as a relevant point of comparison, despite the fact that positive law explicitly recognizes shares as objects of pledge or fiduciary transfer (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024). Shares represent ownership in a company's capital and do not have a physical form in the conventional sense, yet they are recognized as property and can be pledged through fiduciary arrangements. Similarly, Bitcoin ownership is not evidenced by physical form, but through control over a private key that provides access and full authority over assets held in a digital wallet. The private key thus functions as the manifestation of individual legal ownership in accordance with property law principles.

Therefore, Bitcoin meets the criteria of a legal object (*benda*) as defined in Articles 499 to 504 of the Civil Code: it can be owned, transferred, used as the object of a legal agreement, and holds real economic value in the market. As a legal entity, the status of Bitcoin aligns with progressive views in modern property law, which increasingly recognize digital assets as legitimate components of the financing system.

2. Legal Characteristics of Property and the Compatibility of Bitcoin in Terms of Ownership, Transferability, and Valuation

Under Indonesian property law (*Hukum Benda Nasional*), an object may be classified as a "thing" (*benda*) to the extent that it fulfills the elements of being ownable, usable, transferable, and economically valuable. These features form the basis for the principles of *specialiteit* and *individualiteit*, which require each object to be specifically identifiable and distinguishable from others (Subekti, 2004). Bitcoin meets these criteria through its technical structure based on blockchain, where each unit of Bitcoin is recorded in a unique and transparent transaction chain.

Ownership of Bitcoin is functionally manifested through the control of a private key, a cryptographic code that provides access to the digital wallet where Bitcoin is stored. Within the framework of property law, the private key can be seen as a legal control mechanism that distinguishes the legitimate owner from third parties. This access is exclusive and cannot be unilaterally revoked, demonstrating compliance with the principle of *animus domini*, the intent to possess which is essential in property ownership (Teguh Tresna Puja Asmara, Lastuti Abubakar, and Tri Handayani, 2019).

Technically, users of crypto platforms like Indodax or Pluang do not directly hold the private key, as these systems are custodial. In such systems, ownership is recorded administratively within the platform, and users exercise control through authenticated accounts. Conversely, platforms like Trezor or Metamask (non-custodial) provide direct access to the private key, more closely reflecting the model of pure personal ownership as understood in digital property law (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024). Despite differences in infrastructure, both models demonstrate the presence of "legal control and dominion," qualifying them within the legal category of ownership.

Transfer of Bitcoin ownership occurs through transactions signed using the former owner's private key and verified by the blockchain network's nodes. Each transaction is permanently recorded in the public blockchain ledger, creating an immutable legal trail. This process is even more transparent than a conventional deed-based transfer of rights, as it requires no institutional authorization and is executed automatically within the system (Satoshi Nakamoto, 2008). On platforms like Indodax, Bitcoin trading involves order confirmation, price matching, and automatic settlement upon completion of the transaction. While these occur off-chain (not directly on the blockchain), ownership principles are preserved through KYC-based systems and the accountability of platforms regulated by Bappebti.

The valuation of Bitcoin is dynamic and market-based. Its price is determined through supply and demand mechanisms on both global and local platforms. In Indonesia, platforms such as Indodax, Ajaib Kripto, and Pluang use an order book system that automatically matches buyers and sellers at the best available price. At any given moment, Bitcoin's value is reflected in real-time bid and ask prices. In this sense, Bitcoin's valuation is not merely speculative but grounded in an objective, verifiable, and regulator-recognized market structure, as evidenced by its listing in Annex III of Bappebti Regulation No. 9 of 2024 as a legal commodity.

Unlike assets such as artwork or collectibles, Bitcoin benefits from publicly transparent reference pricing, satisfying the requirement of having economic value as outlined in Article 503 of the Indonesian Civil Code and aligning with the principle of accountability in contract law. The Bitcoin system also incorporates the principles of unitarity and divisibility in property law. Each Bitcoin can be divided into smaller units (down to 1 satoshi, or 0.00000001 BTC), much like nominal shares or other fractional ownership instruments. These characteristics strengthen the argument that, both structurally and functionally, Bitcoin fulfills the legal elements of a property object and can be legally equated with conventional property such as shares, receivables, or digital bonds.

In the context of property law, it is crucial to distinguish that not all cryptocurrencies can automatically be treated as "objects" (*benda*) that fulfill the requirements to serve as collateral in secured transactions. Bitcoin holds a particularly unique position compared to other cryptocurrencies due to its relatively simple technological structure, stable economic function, and legal recognition as a tradable commodity in Indonesia (Teguh Tresna Puja Asmara, Lastuti Abubakar, and Tri Handayani, 2019). Technically, cryptocurrencies other than Bitcoin are commonly referred to as altcoins (alternative coins), which include all crypto assets created after Bitcoin. Some notable altcoins include: Ethereum (ETH), which serves as a platform for smart contract development and decentralized applications; Ripple (XRP), designed as a cross-border payment system by Ripple Labs; as well as Solana (SOL) and Cardano (ADA), which focus on transaction efficiency and advanced blockchain ecosystems (Giancarlo Giudici, Alistair Milne, and Dmitri Vinogradov, 2020).

Unlike Bitcoin, which was created solely as a peer-to-peer medium of exchange and store of value, many altcoins contain additional functionalities that render them less stable from a legal perspective as collateral objects. For example, Ethereum's network supports various token types (such as ERC-20 tokens), making it difficult to identify and isolate specific units of Ethereum in accordance with the legal principle of certainty (*asas kepastian hukum*) and object specification (*specialiteit*). Similarly, coins like Dogecoin and Shiba Inu, despite their popularity, lack a defined supply cap and experience extreme price volatility, as they were originally created as satirical projects with weak underlying fundamentals (Katarzyna Śledziowska and Renata Włoch, 2022).

Under secured transaction law, a collateral object must satisfy the principle of *specialiteit*, meaning it must be specifically identifiable and clearly described in the collateral agreement (Zaeni Asyhadie and Rahma Kusumawati, 2018). Bitcoin satisfies this principle due to the following characteristics:

- A fixed and known total supply (maximum of 21 million units);

- Each unit is traceable via wallet addresses and immutable blockchain transaction IDs;
- Its market value can be determined in real time based on global price references.

By contrast, altcoins such as Ethereum, which function more as platforms, often have a wide variety of derivative tokens circulating, many of which possess distinct legal and technical characteristics. Some of these tokens are stored within smart contracts instead of individual wallets, creating difficulties in proving legitimate ownership and increasing legal risk in establishing a valid security interest (Gunawan A. Tauda, Andy Omara, and Gioia Arnone, 2023).

Additionally, price stability and liquidity are critical considerations. Bitcoin is the only cryptocurrency explicitly recognized in Bappebti Regulation No. 8 of 2021 in conjunction with No. 9 of 2024 as a legally tradable commodity. Data from Bappebti shows that Bitcoin continues to hold the largest transaction volume among all cryptocurrencies, reflecting a higher level of market trust and price stability compared to altcoins. In other words, a valid collateral object must satisfy the following criteria (Munir Fuady, 2013):

- It must be ownable and transferable;
- It must have an objectively determinable value;
- It must be enforceable in the event of default;
- It must be specifically describable and identifiable in the deed of security.

Accordingly, Bitcoin far exceeds other cryptocurrencies in meeting these requirements. This makes Bitcoin the most viable candidate for optimizing digital assets as collateral under property security law, both in legal theory and in modern digital financing practices.

Some legal scholars may express concern that recognizing Bitcoin as a legal object (*benda*) could conflict with the closed system (*gesloten stelsel*) principle embedded in Book II of the Indonesian Civil Code (KUHPerdata). However, it is important to understand that the closed system applies strictly to the types of property rights (*hak kebendaan*), not to the scope of objects that may serve as the subject of such rights. In other words, while the creation of new types of property rights (beyond ownership, mortgage, etc.) is not permitted, the definition of "objects" (*benda*) to which those rights may attach can develop progressively. Therefore, the classification of Bitcoin as an intangible object does not violate the closed system principle, as it still fits within the established legal framework of property rights, particularly through the fiduciary security (*fidusia*) mechanism (Moch. Isnaeni, 2020).

Law No. 42 of 1999 on Fiduciary Transfer explicitly broadens the definition of property to include intangible assets, thereby providing a legal basis for the encumbrance of receivables, shares, and digital assets such as Bitcoin. This indicates that the normative recognition of digital property already has a legitimate legal foundation, and is not an unconstitutional innovation or a violation of the principles of property law.

Furthermore, both doctrinal writings and scholarly opinions support the need for interpretative reform of property law to ensure that it does not fall behind the realities of the digital economy. These perspectives emphasize that property no longer needs to have a physical form; as long as it can be owned, transferred, and holds economic value, it can, in substance, be treated as a legal object (*benda*) within a system that continues to respect the structural limitations of property rights under the closed system (Teguh Tresna Pujana Asmara, Lastuti Abubakar, and Tri Handayani, 2019).

From both a technical and normative standpoint, the fiduciary approach provides a concrete solution for using Bitcoin as debt collateral. A fiduciary object does not need to be tangible, possession does not have to be transferred, and fiduciary registration still creates legal certainty and protection for creditors. Thus, Bitcoin not only meets the theoretical requirements to serve as a collateral object, but it can also be executed and tracked in practice through existing systems.

3. The Concept and Systematics of Security Rights over Property under Indonesian Positive Law and the Potential Application to Bitcoin

Based on the previous discussion, Bitcoin may be qualified as intangible movable property, and thus, from a normative standpoint, it meets the requirements to serve as an object of collateral within the Indonesian legal system. Its compatibility as a collateral object is assessed not only from the perspective of property classification under the Civil Code but also through the practical and legal feasibility of imposing security rights, particularly in terms of legal control and asset execution. Indonesian law recognizes two categories of collateral: general security, as stipulated in Articles 1131 and 1132 of the Civil Code, and specific security rights (*jaminan kebendaan khusus*), including pledge (*gadai*), fiduciary transfer (*fidusia*), mortgage (*hak tanggungan*), hypothec (*hipotik*), and warehouse receipts. Given Bitcoin's nature as an intangible and digital object, the most applicable form of security interest is fiduciary transfer (*fidusia*), whereas the use of pledge is normatively and technically problematic.

In legal doctrine, a pledge requires the physical delivery of the pledged object to the creditor or a third party (Article 1152 of the Civil Code). Since Bitcoin has no physical form and only exists digitally on the blockchain, it cannot be "delivered" in the conventional sense, as with tangible movable property such as cars or jewelry. A person holds Bitcoin insofar as they possess the private key that grants exclusive access to transfer the asset. However, handing over the private key to a creditor would transfer full control without the ability to divide or limit access, contradicting the temporary possession principle that characterizes a pledge. Moreover, the legal framework for pledge lacks the mechanisms to register, monitor, or regulate control over digital objects such as crypto wallets, creating legal uncertainty (Subekti, 2004).

Conversely, the fiduciary system offers greater flexibility, as it allows intangible assets to remain under the debtor's control, provided that the fiduciary agreement is executed by notarial deed and registered with the Fiduciary Registration Office (Articles 5–14 of the Fiduciary Law). Article 1 point 2 of Law No. 42 of 1999 explicitly states that "property" includes both tangible and intangible movable assets, thus normatively including Bitcoin as a valid object of fiduciary collateral. This aligns with the opinion of Lastuti Abubakar, who argues that as long as an entity has economic value, can be transferred, and is ownable, it may legally be subject to a fiduciary arrangement (Lastuti Abubakar and Tri Handayani, 2019).

Technically, a digital asset-based fiduciary scheme may be implemented in two ways (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024):

- Custodial Wallet: When Bitcoin is stored on platforms such as Pluang or Indodax, the user's wallet account may be pledged by locking the account, restricting access until the debt obligation is fulfilled.
- Non-Custodial Wallet: Using a multisignature (multisig) scheme, where the wallet is controlled by two private keys, one held by the creditor and one by the debtor. Transactions can only be executed with the approval of both parties, providing technical assurance that the pledged asset cannot be unilaterally transferred in violation of the fiduciary deed.

The principle of publicity, essential for protecting third parties and creating preferential creditor status, is fulfilled through fiduciary deed registration, as mandated in Articles 11–14 of the Fiduciary Law. The object of the fiduciary, i.e., the amount of Bitcoin, the wallet address, and its exchange value at the time of encumbrance, may be specified in the deed as a concrete application of the *specialiteit* principle in secured transactions law.

In terms of execution, Article 29 of the Fiduciary Law grants the creditor the right to enforce the fiduciary object upon the debtor's default, either through private sale or public auction. In the case of Bitcoin, enforcement can be carried out through exchange platforms such as Indodax, which already operate under KYC systems and legally authorized account protocols. This provides efficient liquidation and certainty in converting the digital asset into cash, fulfilling the fundamental purpose of secured transactions. Therefore, from both a legal and technical implementation standpoint, Bitcoin is most suitable to serve as collateral under a

fiduciary scheme, while the pledge framework cannot be applied due to the lack of physical transfer and limitations on divided possession.

In the law of security rights over property, one of the essential elements that must be fulfilled for an object to serve as collateral is the existence of legal possession and the intention of ownership doctrinally known as *corpus* and *animus domini*. *Corpus* refers to the physical or factual control over an object, whereas *animus domini* signifies the intent or legal will to possess the object as one's own (Moch. Isnaeni, 2016). In the case of digital assets such as Bitcoin, this doctrine is no longer tied to physical presence but is instead translated into technological control and digital authentication.

In the context of Bitcoin, the *corpus* element is represented through technical control of the digital wallet where the Bitcoin is stored, and the private key as the primary access mechanism. Although there is no tangible form to touch or deliver, possession of Bitcoin is not abstract, as the private key is the sole legal means to transfer or utilize the asset. Thus, for digital property, *corpus* does not require physical form but can be sufficiently established through system authorization and cryptography-based digital authentication, such as electronic signatures (Katarzyna Śledziowska and Renata Włoch, 2022).

Meanwhile, *animus domini* in the context of Bitcoin can be demonstrated through legal actions performed by the owner over the asset, such as selling, transferring, pledging, or storing it in a non-custodial wallet. On platforms like Ajaib Kripto or Pintu, when an investor actively manages their crypto assets, engages in trading, or chooses a specific storage method (custodial or non-custodial), it reflects their legal intention to act as the full owner. These platforms also verify ownership records through KYC (Know Your Customer) processes and two-factor authentication (2FA), further strengthening the evidentiary basis for *animus domini* (Gunawan A. Tauda, Andy Omara, and Gioia Arnone, 2023).

In the context of security rights, Bitcoin also exhibits the characteristic of executability, which is vital to securing the rights of creditors. Unlike other intangible assets such as copyrights or trademarks, which require lengthy legal proceedings for execution, Bitcoin is highly liquid and can be executed within minutes in an open market. Through exchanges such as Indodax, pledged assets can be sold directly upon default without formal auction procedures, as long as such terms have been agreed upon in the collateral agreement or included in the fiduciary deed (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024).

From the perspective of the fundamental principles of security law, the elements of certainty, publicity, and object specification are also satisfied. Publicity is achieved through fiduciary registration, while object specification is realized by describing the number of Bitcoin units, wallet address, date of encumbrance, and market value at the time of registration. This data can be verified on-chain or through audit reports issued by platforms registered with Bappebti. The combination of digital uniqueness, permanent transaction records (immutability), and market liquidity positions Bitcoin as a strategically valuable asset for modern secured transactions. In conclusion, Bitcoin fulfills all the core elements of security rights theory, including when examined through classical doctrines such as *corpus* and *animus domini*, as well as modern legal principles of execution, legal control, and asset registration.

Indonesia's Regulatory Framework as a Basis for Optimizing Bitcoin as Debt Collateral

1. The Legal Standing of Bitcoin within Indonesia's Financial Legal System and Its Legality as a Crypto Asset

In this study, it is important to clarify from the outset that the discussion of Bitcoin is not intended to debate its status as legal tender, but rather to specifically examine its potential as an object of debt collateral. Under Indonesian positive law, Bitcoin is not considered a currency and cannot be used as legal tender. This is affirmed in Article 1 point (2) and Article 2 paragraph (1) of Law No. 7 of 2011 on Currency, which stipulate that the Rupiah is the sole legal tender

within the territory of the Republic of Indonesia. All forms of payment, coins, banknotes, or digital money, must use the Rupiah.

A similar position is outlined in Bank Indonesia Regulation No. 23/6/PBI/2021 on Payment Service Providers, which explicitly states that crypto assets are not recognized as legal means of payment within Indonesia's payment system. In line with this, the Governor of Bank Indonesia, Perry Warjiyo, as cited by Hukumonline, stated that cryptocurrencies such as Bitcoin are not legal payment instruments. The Rupiah is the only currency accepted for transactions in Indonesia, and Bitcoin cannot be used for the purchase of goods or services domestically (Tiara Amanda Putri, 2025).

Accordingly, from a legal standpoint, Bitcoin does not hold the status of currency, but it has been formally recognized in Indonesian positive law as a digital commodity or crypto asset that may be legally traded. This legal recognition is affirmed through Commodity Futures Trading Regulatory Agency (Bappebti) Regulation No. 8 of 2021, which has since been updated and refined by Regulation No. 13 of 2022, No. 8 of 2024, and most recently No. 9 of 2024.

According to Article 1 point 3 of Bappebti Regulation No. 8 of 2021, a crypto asset is defined as "an intangible commodity that utilizes cryptographic technology, a peer-to-peer network, and distributed ledger technology." Furthermore, Annex III of Bappebti Regulation No. 11 of 2022 (still in effect and incorporated into subsequent amendments) states that only 383 types of crypto assets are legally approved for trading in Indonesia, with Bitcoin listed as one of them. This Bappebti decision is crucial, as it normatively confirms that (Financial Services Authority (OJK), *Circular Letter No. 20/SEOJK.07/2024*):

- Bitcoin has legal status as an economic object
- It has undergone verification, risk assessment, and substantive curation
- It qualifies as a legitimate subject of civil law contracts

Implicitly, Bitcoin's status as a legal asset that may be owned, transferred, and traded opens the door for its use as a collateral object, particularly through the fiduciary security approach discussed in Subsection A. However, to fully realize this potential, it is necessary to examine whether the current Indonesian financial regulatory framework is adequate to accommodate Bitcoin's emerging role as a financing instrument, and not merely as a tradable commodity.

After it has been established that Bitcoin has attained legal recognition as a crypto asset within Indonesia's trading system, the next question is the extent to which the regulatory frameworks in the commodity and financial sectors have opened the way for Bitcoin not only to be traded, but also to be integrated into the financing system, particularly as a collateral object. As stipulated in Bappebti Regulation No. 8 of 2021, updated through Regulations No. 13 of 2022, No. 8 of 2024, and No. 9 of 2024, Bitcoin is classified as an intangible commodity that is legally tradable in the physical crypto asset market. These provisions not only legitimize the legal status of Bitcoin but also impose strict governance and risk management standards on exchanges, physical crypto asset traders, and clearing institutions.

The regulations also require such entities to implement systems for information security, transaction recording, and risk management. Indirectly, these requirements form a crucial foundation for Bitcoin's use as a collateral object, as they ensure that:

- Transaction and ownership data can be verified,
- The asset can be controlled and monitored by an independent third party,
- There are systemic mechanisms for asset valuation and custody.

Furthermore, Annex III of Bappebti Regulation No. 11 of 2022, which remains valid and has been incorporated into subsequent regulations, explicitly lists Bitcoin as one of 383 legally approved crypto assets. This establishes Bitcoin's strong legal status as a subject in civil law contracts, including secured transactions, provided that its legal construction is aligned with existing frameworks, such as a fiduciary scheme.

A significant development also comes from the financial sector through OJK Circular Letter (SEOJK) No. 20/SEOJK.07/2024 concerning the Implementation of Digital Financial Asset Trading, including crypto assets. Although it does not explicitly state that Bitcoin may be used as collateral, this SEOJK provides a meaningful regulatory foundation for opening such opportunities in the future.

Some of the key provisions under SEOJK 20/2024 include:

- Obligations for Digital Financial Asset Service Providers (PPAKD) to submit daily and monthly transaction reports to OJK, including transaction value, volume, and user identities.
- Mandatory implementation of Know Your Customer (KYC) principles, customer due diligence, and risk profiling of digital investors.
- Enhanced risk management, including operational risk, market risk, and compliance risk, all of which contribute to a more transparent and reliable digital asset ecosystem.

In the context of secured transactions, the reporting mechanisms and risk management structures provided in this SEOJK can be adopted as the regulatory basis for oversight and risk mitigation in the use of Bitcoin as collateral. Transactional and valuation data may be used for fiduciary audits, while wallet tracking can be reinforced through compliance standards similar to those applied in the banking sector.

Moreover, SEOJK 20/2024 recognizes the potential for integration between financial service providers and crypto asset operators, opening the door to a digital asset-based financing system in which Bitcoin may be used as an underlying asset in loan products governed by enforceable agreements under regulatory supervision.

2. Strengths of Indonesia's Regulatory Framework in Enabling Bitcoin as Debt Collateral

Following the elaboration of Bitcoin's legal status as a digital asset and the role of Bappebti and OJK in its regulation, it is important to analyze to what extent Indonesia's current regulatory framework has provided space for Bitcoin to be optimized as a collateral object in debt agreements. This assessment does not only focus on the existence of regulations, but also considers the availability of legal instruments, institutional integration, and the compatibility of the financial system with digital assets.

The first and most fundamental strength of Indonesia's regulatory framework is the explicit recognition of Bitcoin's legality as a digital commodity through Bappebti regulations. With the issuance of Bappebti Regulation No. 8 of 2021 and its subsequent amendments, including Regulation No. 13 of 2022, No. 8 of 2024, and No. 9 of 2024, the Indonesian government has established that Bitcoin has been (Sri Budi Purwaningsih, 2021):

- Recognized as a legal and tradable crypto asset;
- Included in the list of 383 legal crypto assets based on fundamental evaluation, risk, and market capitalization;
- Monitored through the Crypto Asset Exchange, Clearing Institution, and Custodian Institution.

These regulations provide legal assurance regarding Bitcoin's status as a legal object that can be owned, controlled, and transferred, thus fulfilling the criteria of an object in a secured transaction framework.

Second, the oversight and risk management system established through SEOJK No. 20/SEOJK.07/2024 is a crucial element in supporting risk mitigation and transparency. The obligation for Digital Financial Asset Trading Providers (PPAKD) to report daily and monthly transactions creates space for (Financial Services Authority (OJK), *Circular Letter No. 20/SEOJK.07/2024*):

- Ensuring that transaction data and asset values can be accessed by the authorities;
- Providing a monitoring mechanism for digital asset-based collateral;

- Promoting alignment between crypto asset market practices and financial supervision in the formal sector.

The presence of such mechanisms establishes institutional prerequisites to support digital asset collateral, which was previously difficult due to the lack of adequate audit and oversight systems for crypto assets.

Third, from a normative standpoint, Law No. 4 of 2023 on the Development and Strengthening of the Financial Sector (UU PPSK) offers structural support for the integration of financial technology, including digital assets. Article 3 (h) and Article 8 of the PPSK Law state that the development of financial technology innovation (ITSK) is part of the structural reform of the financial sector, which must be supported by adaptive regulation and inter-agency collaboration. This provision offers legal justification that the integration between secured transaction systems and digital assets is not only permissible but encouraged as part of Indonesia's financial transformation agenda. Moreover, through the principle of "strengthening integrated supervisory authority," the PPSK Law creates a path for coordination between OJK, Bappebti, and Bank Indonesia in managing digital assets from the perspectives of property law, transaction regulation, and monetary oversight.

Fourth, support for the principles of *specialiteit* and *publiciteit*, as prerequisites for collateral, has also been provided through fiduciary registration mechanisms. Under the current legal framework, Bitcoin can be pledged as collateral by fulfilling the following principles:

- *Specialiteit*, by specifying the object of collateral through wallet address, unit quantity, and market price at the time of the agreement;
- *Publiciteit*, through the registration of the fiduciary deed with the Fiduciary Registration Office, as regulated under Law No. 42 of 1999.

This regulation de facto demonstrates that Bitcoin is not merely a speculative instrument, but has entered a legal system that allows it to be administered and its legal status traceable as a subject of contractual obligation.

Fifth, the digital asset reporting system within SEOJK and the clearing system under Bappebti regulations may also be regarded as a prototype for developing a "digital asset registry" that could function similarly to an electronic fiduciary system or a mortgage registry. Such a system would allow for:

- Real-time blockchain-based registration of collateral;
- Legal linkage between lenders and asset holders;
- Automatic execution in the event of default based on a digital agreement.

Thus, the regulatory framework in Indonesia already contains many important elements to support the optimization of Bitcoin as debt collateral, including:

- Its legality as a legal object;
- Regulatory supervision of transactions (even though not specifically aimed at collateralization);
- Market value transparency;
- Reliable risk management systems;
- Normative justification provided under the financial sector law.

Nevertheless, although these advantages already exist, the current regulatory structure remains sectoral and has yet to be consolidated into a unified and explicit legal framework for digital asset-based collateral. Therefore, a more critical legal analysis is required, which will be presented in the next section.

3. Legal Vacuum in the Regulatory Framework for Bitcoin Collateralization and Proposals for Systemic Reform

Although Indonesia's regulatory framework has recognized Bitcoin as a legal and tradable asset, efforts to optimize its role as collateral still face a legal vacuum (*rechtsvacuum*). This void is not only due to the absence of explicit legal norms but also the lack of a structured

legal and institutional infrastructure to systematically support digital collateral. Including but not limited to (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024):

a. Absence of Explicit Recognition of Bitcoin as a Collateral Object

To date, there is no regulation that explicitly states that Bitcoin or similar digital assets may be used as collateral in secured transactions. While Law No. 42 of 1999 on Fiduciary Transfer does provide space for intangible objects, it does not clearly include crypto assets (Moch. Isnaeni, 2016). As a result, the use of Bitcoin as fiduciary collateral remains interpretative in nature, leading to legal uncertainty for creditors. This absence undermines creditor protection, as there is no legal standard governing how digital assets should be described in a collateral deed, nor how the creation and enforcement of such security interests would be legally recognized.

b. Limited Accommodation within the Conventional Financial System

The banking system is also not yet prepared to accommodate Bitcoin as collateral. According to Law No. 10 of 1998 on Banking, collateral must be legally assessable and controllable. Although this provision was not revoked by Law No. 4 of 2023 (PPSK), no implementing regulation has extended the definition of collateral to include digital objects. In addition, Bank Indonesia Regulation No. 23/6/PBI/2021 explicitly excludes crypto assets from the national payment system, affirming that assets like Bitcoin are not yet considered part of credit risk mitigation mechanisms within the banking sector. As a result, financial institutions are reluctant to accept crypto assets as collateral, due to the absence of legal clarity and implementation mechanisms.

c. Absence of a Legal Digital Collateral Registration Infrastructure

There is no legally recognized and integrated system for registering digital collateral. In conventional practices, such as fiduciary transfer or mortgage rights, collateral must be registered with an official authority (the Fiduciary Office or the National Land Agency). However, Bitcoin lacks any legal registration channel for purposes of recording, rights recognition, or enforcement in cases of default. This absence presents several risks, among others: lack of protection for creditors' rights, uncertainty regarding the actual control and ownership of assets, no available mechanism for legal tracking or execution.

d. Regulatory and Institutional Fragmentation

At present, the regulation of crypto assets is fragmented among Bappebti (commodities), OJK (finance), and Bank Indonesia (monetary affairs). There is no coordinating forum or cross-sector regulation that provides unified legal guidance for using digital assets as collateral. This fragmentation has resulted in (Dahris Siregar, Sri Wahyuni, Noni Elvina Br. Surbakti, et. al., 2024):

- No single authority that can authorize the use of Bitcoin as collateral
- No standard contract templates, agreement models, or legal formats for digital collateralization

To address this legal vacuum, the following normative reforms are proposed:

- Amendment of the Fiduciary Law and Book II of the Civil Code to accommodate digital assets as a distinct category of property;
- Development of a digital collateral registration system that electronically connects crypto exchanges, notaries, and supervisory authorities such as OJK and Bappebti;
- Issuance of a Joint Regulation by OJK, Bappebti, and Bank Indonesia to govern the technical aspects of creation, valuation, and execution of digital asset collateral; and/or
- Institutional capacity-building, including training for notaries and the development of a blockchain-based fiduciary tracking system.

Through these reforms, Indonesia would not only fill the current legal vacuum but also lead innovation toward digitally integrated financing grounded in legal certainty.

4. International Regulatory Comparison and Reflections on Digital Asset Law Reform in Indonesia

In assessing the optimization of Bitcoin as a collateral object, it is insufficient to consider only the national legal framework. An international comparison is necessary to evaluate how well Indonesia aligns with global practices. One of the most important references is the Markets in Crypto-Assets Regulation (MiCA), which was formally adopted by the European Union in 2023, specifically on article 3. MiCA is the first comprehensive legal framework that governs the entire lifecycle of crypto-assets, from offering and listing to the provision of digital asset services. MiCA is built upon four main pillars: legal certainty, consumer protection, financial stability, and the promotion of innovation based on blockchain technology.

Although MiCA does not directly regulate collateralization mechanisms for Bitcoin, it provides room for:

- Recognition of crypto-assets as non-instrument financial assets, which remain subject to both public and private regulatory regimes;
- Requirements for transparency, disclosure, and governance by issuers and wallet providers, thereby ensuring legal assurance of ownership;
- Support for blockchain interoperability within financial systems, allowing for collateral schemes based on distributed ledger technology (DLT).

These provisions create space for assets such as Bitcoin to be qualified as collateral in cross-jurisdictional financial transactions.

The EU's experience in designing MiCA offers several key lessons for Indonesia:

- a. The urgency of legal classification of digital assets
MiCA differentiates crypto-assets into three categories: asset-referenced tokens, e-money tokens, and utility tokens. Indonesia has not yet adopted this classification in its legal system; all types of crypto-assets are currently treated uniformly as commodities under Bappebti.
- b. The importance of a single supervisory authority and integrated registration system
The EU designates ESMA (European Securities and Markets Authority) as the sole regulatory body authorized to issue licenses for CASPs (Crypto Asset Service Providers). By contrast, Indonesia's regulatory system is fragmented between Bappebti, OJK, and Bank Indonesia, with no unified system for digital asset collateral.
- c. The need for a legal system for asset tracking and enforcement
One of MiCA's key strengths is the mandatory use of legal and auditable electronic ledgers and documentation to support crypto transactions. In Indonesia, the absence of a digital collateral registry remains a major barrier to legally binding Bitcoin as collateral.
- d. Legal certainty in consumer and asset owner protection
MiCA emphasizes investor protection and information transparency. This aligns with the principle of collateral law: the collateral object must have clear legal status, value, and ownership. Indonesia could emulate this through revision of the Fiduciary Law and the development of a digital fiduciary reporting system.

In this regard, European Union's MiCA Regulation demonstrate that legal recognition of digital assets requires integrated cross-sectoral reform. If Indonesia intends to adopt Bitcoin as part of its formal financing system, legal reform of secured transactions, the establishment of a digital registry, and stronger inter-agency coordination will be essential.

CONCLUSION

Bitcoin as a digital asset in the perspective of Indonesian property law can be classified as a movable intangible object that fulfills the elements of property under the Civil Code (KUHPerdota). Its ownership can be proven through the blockchain system, and theoretically, it can be used as a collateral object through the fiduciary mechanism. However, the absence of explicit regulation in positive law causes the binding of collateral on Bitcoin to remain

analogical and legally less protected. On the other hand, regulations such as Bappebti Regulation and SEOJK 20/2024 have provided the legal basis and supervision over Bitcoin as a digital commodity. Nevertheless, the absence of technical regulations regarding the mechanism of collateral binding, registration, and execution, as well as the fragmentation between authorities, makes the utilization of Bitcoin as collateral not yet optimal. A comparison with the MiCA Regulation of the European Union shows the importance of integration between the legal framework and technology in strengthening the role of digital assets in the national financing system.

The government needs to affirm the position and provide legal certainty for digital property as a legal object and collateral, either by revising existing legislation or by specifically drafting new regulations. In addition, implementing regulations are needed to govern the technical aspects of binding and registering crypto assets as fiduciary collateral objects. To support its implementation, it is necessary to establish a national digital collateral registration administrative system that allows for the legal and transparent recording and tracking of encumbrances on Bitcoin. This system can be managed by OJK or Bappebti and connected to domestic crypto exchanges. Strengthening inter-agency coordination must also be a priority, to avoid overlapping authority and to ensure legal certainty for parties involved in digital asset-based transactions.

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