

## Crypto Assets and Regulation: Taxonomy and Framework Regulatory of Crypto Assets in Indonesia

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**Abstract.** Cryptocurrency is a new investment commodity that is growing fast in Indonesia. Crypto assets have different taxonomies from one another. For this reason, this research aims to identify the taxonomy of crypto assets as digital assets and analyze the framework of regulation for crypto assets as an investment commodity in Indonesia using normative juridical methods. This research uses statute and an analytical approach. The research data is taken from secondary data sources. The results study show that to create proper regulation of crypto assets in Indonesia is crucial to classify the types of crypto assets appropriately. Although the Indonesian government has issued several specific rules related to crypto assets, such as Bappebti Regulation No. 8 of 2021, these regulations have not provided sufficient legal certainty and protection for crypto asset users who have a broad dimension and scope as digital assets that can be used as a means of payment and investment and involve cross-sectoral. Therefore, stronger regulations in the form of laws are needed to provide legal protection for crypto asset users in Indonesia.

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**Keywords:** *Crypto Assets; Regulation; Commodity; Legal Certainty; Legal Protection*

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### INTRODUCTION

The development and utilization of information technology have given birth to various commodities with high economic value that can be transacted in digital economic activities. The development of information technology, which originated from advances in computerization, has given birth to blockchain technology, one of whose products is crypto assets (Yohan Fitriadi et al., 2022). Crypto assets are a global phenomenon where several reports state that by 2021 more than 200 million people in the world will own and use crypto assets. The global crypto population increased by 178% to nearly 300 million people (Burhan, 2022). This is supported by the results of a Statista survey in 2019-2023 in 55 countries which found that

6%-47% percent of respondents owned and used cryptocurrency as a crypto asset (Best, 2023).

According to the World Economic Forum, by 2027, an estimated 10% of the global gross domestic product will be stored and transacted through distributed ledger technology, with the token market potentially reaching \$24 trillion. According to a survey conducted by Fidelity Digital Assets, involving approximately 800 institutional investors in the United States and Europe between November 2019 and March 2020, it was found that 36% of respondents revealed that they currently invest in digital assets. While cryptocurrencies are used across a variety of industries, their use is most evident in financial services. Member countries of the

Organisation for Economic Co-operation and Development (OECD) have observed a notable rise in the potential utilization of cryptocurrencies in tokenized forms of equities, bonds, and commodities (van der Linden & Shirazi, 2023).

In Indonesia, crypto assets are also growing as evidenced by the increment in the value of crypto asset transactions in 2021 which reached a figure of IDR 859.4 trillion or an increase of 1,222% compared to 2020 which only reached IDR 64.9 trillion. In 2021, every month there was a growth in the transaction value of crypto assets of 16.2% with a daily transaction value of Rp. 2.35 trillion. The growth of crypto assets in Indonesia is also shown by the increase in the number of crypto investors. While the investor count stood at 4 million by the conclusion of 2020, it surged to 11.2 million by the end of 2021 (Annur, 2022). At the end of November 2022, the number of crypto asset investors increased to 16.55 million people, an increase of 48.7% compared to the previous year (Kementerian Komunikasi dan Informasi, 2023).

The data facts above show the extraordinary growth of crypto assets as part of the rapidly growing digital economy, both on a global and national scale. Crypto assets are becoming the alternative investment commodity of choice for investors whose growth can beat the growth of investment in the capital market industry based on securities

such as bonds, stocks, and other securities. This is evidenced by the high number of crypto asset investors compared to the number of investors in the capital market. In April 2022, the number of investors in the capital market only reached 8.6 million (Simamora, 2022). Investor preference to invest in crypto assets will further encourage national economic growth obtained from increased investor spending using the profits earned from investing in crypto assets. Crypto assets are the choice of investors because they are classified as high-risk, high-return investments (Akshay & Bertuah, 2022; Keenan, 2020).

Amid the development and growth of crypto-asset investment, in recent years the existence of crypto assets as an investment commodity has brought a series of new legal challenges and opportunities, especially in the field of alternative investment in Indonesia (Lewiandy, 2022). This is because the Indonesian government has not yet provided a clear legal framework for the existence of crypto assets and provided legal certainty for investors' investments. This fact will make investors and other market participants unsure of the legality and requirements surrounding their use and trading in the country. The unclear regulation of the existence of cryptocurrencies weakens investor protection and raises concerns about potential fraudulent activities (Riyaadhotunnisa et al., 2022).

Khaldun's research on crypto assets concluded that investing in crypto assets is

very risky and has no legal certainty in regulation (Khalidun, 2021; Shovkhalov & Idrisov, 2021; van der Linden & Shirazi, 2023). Thistanti's and Santoso's research on the legality of cryptocurrency as part of crypto assets also concluded that investment in crypto assets does not have definite legal certainty (Santoso et al., 2020; Thistanti et al., 2022). Crypto assets are not a safe investment commodity in Indonesia (Arfiandi, 2022). Investors as consumers are vulnerable to being harmed due to the high risks they must face because crypto-assets do not have underlying assets (Puspasari, 2020). Some investors have lost their capital due to regulatory uncertainty (Cumming et al., 2019). Security in cryptocurrency transactions is still lacking because it is overshadowed by cybercrimes such as hacking, scamming, and phishing (Murizqy & Dirkareshza, 2022). The results of these studies show the weak protection of investors.

To provide legal certainty and protection to investors, a regulatory framework for crypto assets as an alternative investment commodity is needed (L'Heureux, 2020). In simple terms, a regulatory framework is a set of regulations that apply to a particular industry (Wiktionary, 2023). In a broader sense, the regulatory framework includes regulations, decisions, policies, and procedures established by the relevant authorities (Kharisma, 2021). Based on this concept, this research examines the

regulations, decisions, policies, and procedures related to the crypto asset ecosystem in Indonesia. In addition, to obtain a comprehensive explanation of crypto assets as a global commodity, this study will also be complemented by the regulation of crypto assets in countries that adopt them as a means of payment and countries that prohibit using crypto assets as a means of payment as a legal comparison in formulating regulations on crypto assets.

The review of the taxonomy and regulatory framework for crypto assets is crucial so that crypto asset investment activities as part of the digital economy have vigorous legality and provide legal certainty and protection for the stakeholders involved (Alsindi, 2019). Legal infrastructure in crypto asset investment is crucial because the law can function as a preventive, curative, and facilitative tool (Allott, 1981). Based on these legal functions, regulations on crypto assets that are adjusted to the taxonomy of crypto assets themselves are very important because Indonesia is a state of law based on Pancasila (Hutabarat, 2022). The regulation can be a means to prevent crime, take action against those who commit crimes, and facilitate the growth of crypto assets in Indonesia.

## RESEARCH METHODS

This research is classified as normative juridical research conducted using a statute approach and an analytical approach. The

approach method was chosen because of the development of new concepts in legal science, especially crypto assets, to obtain a comprehensive description of the regulation of crypto assets, starting from an inventory of applicable crypto asset regulations and analyzing the crypto asset regulatory framework. At the axiological level, normative legal research offers justifications concerning legal aspects in order to prevent the existence of gaps, ambiguity, or contradictions in legal principles (Noor, 2023).

Data sources come from secondary data obtained through document study techniques on laws and regulations (primary legal materials), journals, articles, and other relevant scientific works both sourced from books and the internet (secondary legal materials), and legal dictionaries, encyclopedias as tertiary materials. The data obtained is then analyzed qualitatively according to the research topic.

## DISCUSSION

### Taxonomy of Crypto Assets as Digital Assets

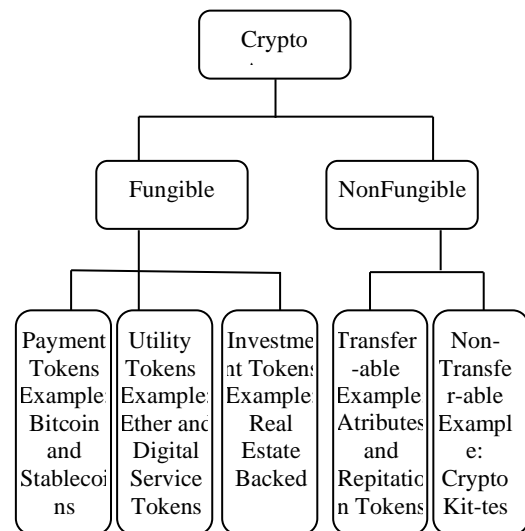
Cryptocurrency is one of the fastest-growing global commodities and continues to grow in all parts of the world (Feyen, Erik., Kawashima, Yusaku., Mittal, 2022). The rapid development of crypto assets has been responded to differently by countries around the world; some countries wholeheartedly accept crypto assets as a currency or as a commodity, while others are more cautious in

allowing crypto assets as a currency or commodity (Shawver, 2021). Crypto assets are digital assets that utilize cryptography technology, peer-to-peer networks, and public ledgers to generate new units, authenticate transactions, and ensure transaction security, all without the need for intermediaries (Khan et al., 2021; Paralegal, 2021). It can also be explained that cryptocurrencies are electronically stored digital assets that rely on cryptography, distributed ledger technology (DLT), or similar technologies and have intrinsic value (Banco de Portugal, 2020; Kostoula, 2023). Crypto assets have a broad scope of meaning as they include cryptocurrencies such as Bitcoin, utility tokens such as Golem, and transactional tokens such as Ripple (Pahwa, 2023). Based on this concept, crypto-assets are not identical to cryptocurrencies because they are themselves part of crypto-assets.

A cryptocurrency is a form of digital asset that functions as a means of exchange and storage of value and generally uses DLT technology (better known as blockchain). Blockchain is a distributed transaction database where multiple computers called nodes work together as a system to store several bits that have been encrypted as a single unit or block, which are then linked sequentially (Lemieux, 2016). The blockchain contains a mathematical function called a hash, which can take 10 minutes to calculate but only a fraction of a second to verify.

Performing the hash calculation requires the computer power of many users in the world. The user who calculates the hash the fastest will be rewarded with 12 bitcoins. Every transaction verified by six correct hash calculations is entered into the distributed ledger (Bashynska et al., 2019). This technology allows all parties involved to transact directly without a central entity to coordinate transactions (such as a bank or clearinghouse). The blockchain ledger serves as a historical record of all verified financial transactions and also governs the creation of additional units (Edwards et al., 2019).

From a financial economics perspective, blockchain is a software network protocol that allows users to securely transfer money, assets, and information over the Internet without third-party intermediaries (Swan & de Filippi, 2017). In practice, the world of cryptocurrencies has many innovations every month, with new products incorporating various features of cryptography and distributed ledger technology. This proliferation of cryptocurrencies has made it difficult to determine the taxonomy of cryptocurrencies, leading to different taxonomies. One of the crypto asset taxonomies was proposed by Henri Arslanian and Fabrice Fischer, and the crypto asset taxonomy is as follows (Arslanian and Fischer, 2019):



In the chart, crypto assets are divided into two types, namely fungible crypto assets and non-fungible crypto assets. Fungible crypto assets are divided into payment tokens, utility tokens, and investment tokens. Payment tokens are crypto assets whose features are intended to serve as a medium of exchange, store of value, and unit of account in various transactions. Utility tokens are crypto assets that are designed to be consumed and to provide their users with some specialized utility. For example, consumer tokens can be used to access services offered by a particular blockchain, and investment tokens are crypto assets that function primarily as financial investment instruments for token holders and thus can be considered securities.

In the chart above, nonfungible tokens (NFTs) consist of transferable and non-transferable types. Transferable NFTs are tokens that leverage the features of blockchain technology to enable a more transparent and



practical representation of digital asset scarcity. They achieve this by ensuring that scarcity can be easily verified, and ownership can be transferred with ease. Non-transferable tokens, on the other hand, are NFTs that are not fungible and cannot be traded because the immutability of the blockchain will provide value. Examples of such tokens are identities such as age, country of residence, and other identities. In theory, individuals or holders of these tokens possess enhanced control over their data, granting them increased autonomy in determining which identity attributes they prefer to disclose to other parties.

Ankenbrand et al. proposed a more comprehensive taxonomy system for crypto assets, aiming to establish connections between physical, digital, and cryptographic forms of assets. In certain instances, an asset may exist in all three forms. To unveil this taxonomy, Ankenbrand et al. identified fourteen distinct attributes. These attributes include claim structure, technology, value basis, consensus/validation mechanism, legal status, legal structure, manageability, information complexity, information interface, total supply, transferability, issuance, return, and fungibility (Ankenbrand et al., 2020). Based on these fourteen attributes, there are several types of crypto assets, such as bitcoin, ether, token assets, and crypto kitties. The taxonomy of crypto assets can be expanded in dimensions and characteristics depending on new aspects that

are easily observable and inherent to cryptocurrencies (Lausen, 2020). Thus, the types of cryptocurrencies are likely to evolve following the development of the technology on which they are based.

### **Regulatory Framework for Crypto Assets in Indonesia**

The existence of crypto assets as digital commodities has led to mixed reactions from state administrators in this world. The response to the existence of crypto assets can be seen in the different crypto asset regulations issued by these countries. El Salvador is the first country to adopt Bitcoin as one of the crypto assets to be used as legal tender (Aljazeera, 2023; Gaikwad & Mavale, 2021). The use of crypto as a means of payment has changed the laws that were previously in place in El Salvador (McCall, 2022). The legality of crypto as a payment was outlined in a law approved by a majority of lawmakers known as the Bitcoin Law (Decree No. 57).

The Bitcoin Law allows the government to design and implement institutional architecture to accelerate the use of Bitcoin as a payment (Ai & Yao, 2022). One of the policies carried out by the government of El-Salvador is to launch a network of 200 Bitcoin Automated Teller Machines, introduce an e-Bitcoin application called Chivo, and distribute \$30 to each citizen to use it as a payment in financial transactions (Quirk, 2021).

Meanwhile, China is an example of a country that banned the use of crypto assets such as Bitcoin as a means of payment. Articles 16 and 20 of the People's Bank of China (PBoC) Law state that the renminbi is the only currency and prohibit units or persons other than the PBoC from printing and issuing token tickets that replace the renminbi (RMB) (Rain Xie, 2019). In September 2017, the Chinese government introduced more stringent regulations. These regulations encompass three main aspects: firstly, the ban on Initial Coin Offerings (ICOs) in China; secondly, restrictions on cryptocurrency exchanges that include limitations on converting Chinese Yuan (RMB) into cryptocurrencies, as well as buying, selling, and determining cryptocurrency prices; thirdly, the prohibition for financial institutions and non-bank payment institutions to offer direct or indirect services related to ICOs and cryptocurrencies. (Borri & Shakhnov, 2020). In 2019, the government considered banning Bitcoin mining and trading.

In September 2021, the Chinese government expressly banned all crypto-asset trading and transactions. People working for crypto-related Chinese tech companies could face imprisonment, and any Chinese person or citizen is restricted from sending cryptocurrencies such as Bitcoin and Ethereum for business purposes (Milutinović, 2018; Pathan, 2023; WordlCoin, 2023). China,

with its growing financial industry based on information technology, does not have a centralized regulatory framework in the form of laws governing cryptocurrencies, stablecoins, and other crypto assets (Allen et al., 2022). This increases the risk of fraud and manipulation, creates legal uncertainty, and provides low protection for crypto asset users.

Indonesia is a different country from El Salvador, which is very accommodating to crypto assets both as currencies and assets, and China, which ban the existence of crypto assets, including as a means of payment in transactions. Indonesia is selective in implementing policies toward cryptography. The government explicitly ban the use of crypto as currency because it contradicts Law 7/2011 on Currency. Article 2 paragraph 1 of this law clearly states that the rupiah is the only currency and that there are only two kinds, namely paper and metal. Indonesia also prohibits the use of crypto as legal tender, as stipulated in Bank Indonesia Regulation (PBI) 18/2016 on the Implementation of Payment Transaction Processing.

In addition to the PBI, Bank Indonesia also issued PBI 23/2021 concerning payment service providers. Payment service providers are prohibited from accepting cryptocurrency as a means of payment. In the explanation of Article 202, it is stated that Bitcoin, BlackCoin, Dogecoin, Litecoin, and Ripple are examples of virtual currencies and are classified as cryptocurrencies that cannot be

used as legal tender. Article 205 of PBI 23/2021 states that payment service providers that use virtual currencies can be subject to sanctions ranging from warnings to a partial or complete suspension of activities, including cooperation, or even revocation of their licenses as payment service providers. In addition, Article 33 of the Currency Law also threatens imprisonment and fines for those who do not use rupiah in financial transactions or payments. The maximum imprisonment is 1 year, and the maximum fine is IDR 200 million.

To accommodate the existence of well-developed crypto assets in Indonesia and hold back the rate of national investment funds leaving Indonesia, the government has stipulated crypto assets as commodities that can be traded on the Commodity Futures Exchange supervised by the Commodity Futures Trading Supervisory Agency (Bappebti) of the Ministry of Trade, not as currencies. The provision is stipulated in Regulation of the Minister of Trade (Permendag) No. 99/2018. Article 2 of the Permendag states that Bappebti determines crypto assets as the subject of futures contracts that can be traded on futures exchanges, and supervision is carried out under Law No. 32/1997, which has been amended by Law No. 4 of 2023 concerning the Development and Strengthening of the Financial Sector.

Based on Article 3 of Law 32/1997 and Article 2 of MOT 99/2018, Bappebti has issued Commodity Futures Trading Supervisory Agency Regulation (Perba) 5/2019, which was later amended by Perba 3/2020, in October 2021, the Head of Bappebti issued Perba 8/2021 which revoked Perba 5/2019 and its amendments. Technically, this regulation is the legal basis for recognizing crypto assets as investment commodities that have economic value. The regulation explains that crypto assets are a type of digital commodity that is intangible and uses network information technology and cryptography, as well as DLT, to create new units, verify transactions, and maintain transaction security without going through intermediaries.

Perba 8/2021 is substantially "better" and more comprehensive than the previous regulation. This regulation contains, among others, institutions related to crypto assets such as crypto asset committees and futures exchanges along with the formation mechanism and requirements, futures clearing houses, crypto asset depository managers on the crypto asset physical market and storage procedures, crypto asset traders and the scope of activities that can be carried out and registration procedures, mechanisms for granting system audit approvals and examining crypto asset physical market trading organizers, trading mechanisms, crypto asset transactions, crypto asset withdrawals, and fund withdrawals, and anti-



money laundering. To improve Perba 8/2021, the Head of Bappebti issued Perba 13/2022 in November 2022, which amends and adds articles or paragraphs to Perba 8/2021. Some of the articles that have been amended include provisions of Article 1, provisions of Article 31, paragraphs (3), (5), (10), (12), and (13). Meanwhile, the provisions of the added articles include Article 14, which inserts paragraph 1a, adds 1 letter, namely letter h, and adds paragraphs (8), (9), and (10). In addition to the provisions of these articles, four articles are also inserted in Article 31 and Article 32, namely Article 31A to Article 31D, and paragraphs (1a), (1b), (1c), and (1d) are added to Article 51.

Perba 13/2022 is complemented by Perba 11/2022, which stipulates the list of crypto assets. In Perba 11/2022, 383 types of crypto assets can be traded. This number is higher than crypto assets list contained in Perba 7/2020, which only includes 229 types of crypto assets. To anticipate the emergence of new crypto assets, Article 2 of Perba 11/2022 emphasizes that crypto asset physical traders can propose to add or reduce crypto assets to be designated as tradable assets, provided that the proposal has been discussed jointly by the crypto asset futures exchange and the crypto asset committee.

The discussion aims to ensure that the proposed crypto assets meet the criteria for being crypto assets based on distributed ledger technology (DLT), as stipulated in Article 3 of

Perba 8/2021. This is intended so that crypto asset users get a guarantee that their crypto assets have been guaranteed validity by laws and regulations as a form of legal protection for crypto asset users (Permana, 2022). In addition to regulating the guarantee of the validity of crypto assets, Perba 8/2021 and its amendments also regulate the requirement for traders to be registered with Bappebti. This is another form of protection for users so that it is known which trader is selling the crypto asset.

In terms of guaranteeing the validity of transactions carried out by crypto asset traders and their customers, before the development of crypto assets, the government had promulgated Law 11/2018, which was last amended by Law 19/2016 concerning ITE, which was complemented by PP. No. 71/2019 on the Implementation of Electronic Systems and Transactions. Both regulations guarantee the validity of electronic transactions and guarantee the security of the personal data of the creators. The protection of users' data is also guaranteed by Law 27/2022 on Personal Data Protection. The state is obliged to protect its citizens, including when citizens conduct electronic transactions using information technology facilities (Noor & Wulandari, 2021). Thus, electronic transactions and user personal data used in trading or investing in crypto assets have a strong legal basis.

Referring to the research recommendations conducted by Franklin R.

Edwards et al. that regulation of crypto assets should not hinder their legitimacy and innovative use, regulators must decide on eligible crypto tokens and institutions that can exchange crypto assets (Edwards et al., 2019). The regulation of crypto assets in Indonesia to date is considered to have been able to provide space for the development of crypto assets as an investment commodity that has a guarantee of legal certainty and that user rights are protected by law Protection of users, besides being stated in Perba 8/2021 and its amendments in general, is also contained in Law 8/1999, Law 11/2008 and its amendments, and other legislation. However, the large number of regulations governing crypto assets can also lead to arbitrage situations (Smith, 2019). For this reason, formal strong regulations are needed in the form of laws that specifically regulate crypto assets and other comprehensive digital assets (Kurniawan et al., 2023). The existence of Law No. 4 of 2023 is a breath of fresh air, but the law is an omnibus law that has not been tested and has not been effective amid the rapid development of crypto assets in Indonesia.

## CONCLUSION

From the study of the taxonomy and regulatory framework of crypto assets in Indonesia, can conclude that producing appropriate regulations for the existence of crypto assets requires accuracy in determining the taxonomy of crypto assets themselves.

With a clear taxonomy, it is hoped that it can help the government to develop better and more targeted regulations to encourage the development of the crypto asset market in Indonesia in a more organized, controlled, legal certainty and protect the parties involved in trading or investing in crypto assets. The regulation of crypto assets as a commodity is formally only outlined in the form of Bappebti regulations as stated in the Commodity Futures Trading Supervisory Agency Regulation (Perba) 8/2021 that was last amended by Perba 13/2022 which is supplemented by Perba 11/2022 which is based on the order of laws and regulations as stipulated in Law No. 12/2011 under the law is not optimal in assuring legal certainty and protection while crypto assets have broad dimensions and scope as digital assets that can be used as a means of payment and investment vehicles involving cross-sectoral. For this reason, stronger regulations in the form of laws are needed to provide legal certainty and protection to investors.

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