

Cryptocurrency vs Islamic E-Money: Assessing Shariah Compliance and Monetary Policy Implications

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Abstract

This study aims to compare the characteristics, risk levels, sharia foundations, and implications for monetary stability between cryptocurrency and Islamic e-money. The rapid development of digital financial technology has encouraged the use of both instruments in economic transactions, but they have fundamental differences that could potentially impact the effectiveness of national monetary policy. The research method used a descriptive qualitative approach through analysis of literature, regulations, sharia fatwas, and central bank documents. The results show that cryptocurrency is decentralized, highly volatile, lacks a clear underlying asset, and is vulnerable to speculation and digital security risks, which can disrupt monetary policy transmission and cause value instability. In contrast, Islamic e-money is under the supervision of Bank Indonesia and the National Sharia Board, its value is stable because it is pegged to the rupiah, and it implements sharia contracts that emphasize transparency and consumer protection, thus contributing positively to the efficiency of the payment system and the effectiveness of inflation control. Thus, Islamic e-money has better prospects as an instrument supporting national monetary stability, while cryptocurrency requires strengthened regulation and systemic risk mitigation to be safely integrated into the financial system.

Keywords: Cryptocurrency; Islamic E-Money; Sharia; Monetary Stability; Monetary Policy.

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INTRODUCTION

The development of digital technology has driven a transformation in the global payment system, including the emergence of crypto assets that offer fast transactions without a central authority (Nakamoto, 2018). However, cryptocurrency price volatility exhibits a high degree of instability, triggering speculative behavior and significant market risk. Furthermore, this uncertainty in value is considered to be inconsistent with the characteristics of stable money (Susanna Leventasi, 2025).

According to the Bank for International Settlements (Claudio Borio, 2021) crypto assets can pose systemic risks that could disrupt the transmission of monetary policy. In fact, the European Central Bank (2022) assessed that crypto decentralization could undermine monetary sovereignty if widely used as a medium of exchange. In the Indonesian context, the government, through, regulated crypto as a commodity, not a currency (Bappebti, 2019).

From an Islamic perspective, the use of cryptocurrency as a medium of exchange is considered to contain elements of uncertainty (gharar), speculation (maisir), and is not backed by physical assets. Therefore, the Indonesian Ulema Council (MUI) has declared it haram as a currency (haram) (MUI, 2021). On the other hand, electronic money (e-money) has shown positive developments in supporting the digitalization of the national payment system. Based on the 2025 Indonesian Payment System Blueprint, Bank Indonesia asserts that strengthening digital infrastructure can increase efficiency, accelerate transactions, and control monetary policy. The (World Bank Group, 2025) also emphasizes the role of digital financial services in expanding public financial inclusion.

From a muamalah jurisprudence perspective, e-money has been declared halal by the MUI National Sharia Council because it uses clear contracts such as wadiah and ujah, and meets the principle of clarity of transaction objects (DSN-MUI, 2017). This aligns with (Mishkin, 2016), who explained that stable payment instruments support optimal monetary policy transmission. Thus, the aim of this research is to determine the differences in characteristics, risks, sharia basis, and implications for monetary stability between cryptocurrency and Islamic e-money.

Literature Review

Cryptocurrency Concept

Cryptocurrency is a digital asset developed using blockchain technology and decentralized without a central authority (Nakamoto, 2018). This technology enables consensus verification of transactions by a computer network, eliminating the need for intermediaries (Guanglong Zhang a, 2025). According to Badea & Mungiu-Pupazan the main characteristics of cryptocurrency include cryptography, ledger transparency, and transaction cost efficiency.

On the other hand, high price volatility causes cryptocurrencies to be treated more as speculative instruments than as a medium of exchange. (Agata Kliber, 2019) added that crypto assets fail to function as a store of value due to sharp fluctuations. Therefore, some central banks consider cryptocurrencies to have the potential to disrupt financial stability.

From a muamalah fiqh perspective, some scholars consider cryptocurrencies to contain elements of uncertainty (gharar), speculation (maisir), and lack of physical form, which are considered legitimate as tsamaniyyah (the nature of "money") (Othman, 2021). A fatwa from the Indonesian Ulema Council (MUI) stipulates that cryptocurrency is haram (forbidden) for use as currency because it does not meet the standards of stable value (MUI, 2021). Rahman (2019) added that the lack of an underlying asset can trigger price manipulation. However, a different perspective considers that cryptocurrency can be considered halal when positioned as an investment commodity with the principle of transaction clarity.

Electronic Money Concept

Electronic money is a monetary value in digital form stored in hardware or applications and issued based on user deposits (Bank Indonesia, 2020). This instrument facilitates non-cash payments with a high level of efficiency. According to the (Group, 2025), e-money supports financial inclusion and reduces national transaction costs. In modern payment systems, the value of e-money is guaranteed by the issuing institution and fully backed against fiat currencies (Mishkin, 2016). Because its regulation is under the supervision of monetary authorities, the level of speculative risk in e-money transactions tends to be low (Tobias Andrian, 2019).

The National Sharia Council (DSN-MUI) states that the use of e-money is permissible as long as the contract and object of the transaction are clear, use a wadiah or ujah contract, and do not involve usury (DSN-MUI, 2017). According to (Ayub, 2007), financial instruments that follow fiat exchange rates and are guaranteed by authoritative institutions fulfill the principles of justice and benefit (masalah). (Antonio, 2021) asserts that e-money supports halal transactions through clear record-keeping, oversight by sharia institutions, and minimizes the risk of fraud. Due to its value stability, e-money is considered consistent with the maqasid of sharia in facilitating transactions.

Implications of Cryptocurrency for Monetary Policy

The widespread adoption of cryptocurrency has significant implications for the implementation of monetary policy due to its decentralized, volatile nature, and ability to bypass the banking system (European Central Bank, 2022). In a conventional monetary system, central banks control the money supply through interest rates, reserve requirements, and open market operations. However, cryptocurrencies are not subject to such regulations, thus depriving central banks of a transmission channel for money flows within the public (IMF, 2022).

Furthermore, the volatility of cryptocurrency prices makes them objects of investment speculation. Drastic fluctuations in value can cause economic instability, increase the risk of asset inflation, and create uncertainty in the financial sector (Corbet, Lucey, & Yarovaya, 2019). This phenomenon can undermine the core objective of monetary policy, namely price stability.

The use of crypto as an alternative payment method also has the potential to create competition with domestic currencies. If the public begins to trust cryptocurrency more than the national currency, this could trigger a decrease in demand for fiat money, a phenomenon known as currency substitution (BIS, 2021). If it occurs on a large scale, the effect can weaken the exchange rate, suppress foreign exchange reserves, and reduce market confidence in the country's monetary policy.

Implications of Cryptocurrency for Monetary Policy

Unlike cryptocurrency, e-money is directly linked to the formal financial system. Because it is issued and supervised by a licensed institution, e-money is a crucial instrument in supporting the effective transmission of monetary policy (Bank Indonesia, 2020). In a digital payment system, every transaction is recorded in a centralized database, allowing real-time monitoring of fund flows.

E-money helps accelerate the speed of money circulation. The faster the money circulates, the more effective monetary policy is in influencing aggregate demand. This is crucial for controlling inflation and maintaining economic growth (IMF, 2022). The use of e-money creates economic transparency. Digital transaction data can assist central banks in predicting inflation, mapping consumption behavior, detecting potential economic crises, and designing more accurate policies.

METHOD

This study uses a qualitative-descriptive approach with library research to analyze the comparison between cryptocurrency and Islamic e-money and its implications for monetary policy. The data used in this study are secondary data obtained from academic

sources such as scientific journals, research articles, Islamic economics textbooks, fatwa reports from the National Sharia Council (DSN-MUI), publications from Bank Indonesia (BI), the Financial Services Authority (OJK), the Bank for International Settlements (BIS), and international monetary policy reports. Data collection was conducted through a search of relevant literature in academic repositories such as Google Scholar, ScienceDirect, and the official portals of relevant financial institutions. Data analysis was conducted using content analysis by identifying, classifying, and interpreting data sources according to the research variables, namely instrument characteristics, aspects of sharia compliance, and implications for monetary transmission. Source triangulation techniques were used to validate data reliability and avoid interpretation bias. The results of the analysis are presented narratively, comparatively, and argumentatively to produce comprehensive conclusions regarding the position of cryptocurrency and Islamic e-money from a modern monetary perspective.

RESULTS AND DISCUSSION

Differences in Characteristics of Cryptocurrency and Islamic E-Money

Cryptocurrency and Islamic e-money have fundamentally different characteristics related to their technological design, intended use, and regulatory oversight. Cryptocurrency operates through a blockchain and a decentralized system without the oversight of financial institutions, making it free and global (Narayanan et. al, 2016). Meanwhile, Islamic e-money is an electronic payment instrument whose value is pegged to fiat currency and managed by licensed financial institutions, thus falling under the authority of the central bank (Bank Indonesia, 2020). This difference in authority impacts the level of value stability and its use in real economic activities.

Cryptocurrency prices tend to fluctuate due to market sentiment, speculation, and global demand, making them unstable for use as a means of payment. Conversely, the value of Islamic e-money is stable because it is always pegged to the rupiah and is not subject to open market fluctuations. This provides a sense of security for consumers when purchasing goods and services and supports the efficiency of digital transactions, which continue to grow in Indonesia (Bank Indonesia, 2021)

Furthermore, cryptocurrency is widely used as a speculative investment instrument, while Islamic e-money is used for consumer transactions that comply with Sharia principles, such as transparency, fairness, and consumer protection (Ayub, 2007)). This function suggests that Islamic e-money is more suitable within the context of a national payment system.

These differences in characteristics impact risk perception, public trust, and have implications for monetary stability. Islamic e-money supports controlled money circulation, while cryptocurrency has the potential to create currency volatility through speculative activity if its widespread adoption increases.

Risk Differences Cryptocurrency & E-Money

Cryptocurrency risks can be categorized as market risk, cyber risk, and regulatory risk. Market risk primarily stems from volatile price volatility, influenced by global sentiment, social media sentiment, and speculative activity. This risk can lead to extreme losses for users without adequate legal protection. From a security perspective, cryptocurrencies are vulnerable to hacking, phishing, and loss of private key access, which can result in permanent losses. Regulatoryly, the uncertainty of the legal status in various countries can trigger systemic risk if users perceive cryptocurrencies as legal tender.

Islamic e-money presents more manageable risks. Operational risks such as server disruptions and system malfunctions are a major concern, but mitigation is relatively clear through Bank Indonesia's payment system security standards. Furthermore, Islamic e-money offers consumer protection through refund policies and dispute resolution procedures. Sharia risks must also be considered, particularly regarding the contract structure and stored balances, but the existence of a Sharia Supervisory Board serves as a filter to ensure compliance.

Thus, the risk spectrum of cryptocurrencies is far more potentially disruptive to financial stability than Islamic e-money, especially in the context of developing countries that are strengthening the stability of the digital financial sector.

Cryptocurrency and E-Money: A Sharia Perspective

From a sharia perspective, cryptocurrency remains a matter of debate. Some Islamic scholars believe that cryptocurrency contains elements of gharar (uncertainty of value), maisir (speculation), and dharar (potential loss) due to its high volatility (Elasrag, 2017). Furthermore, the lack of an underlying asset raises doubts about cryptocurrency's status as wealth under Islamic law (Kermani, 2020)

However, some modern Islamic scholars argue that cryptocurrency can be considered halal if used as a medium of exchange and not dominated by speculative motives (Meera, 2009). This opinion refers to the maqasid of sharia, which permits financial innovation if it serves the public good. This debate demonstrates that the legal status of cryptocurrency is contextual.

In contrast, Islamic e-money has a clear basis in sharia law. The Indonesian Ulema Council (DSN-MUI) regulates the use of e-money based on wadi'ah or wakalah contracts and emphasizes the prohibition of usury, invalid transactions, and balance manipulation (DSN-MUI, 2017). With these regulations, Islamic e-money meets the requirements of fairness, transparency, and consumer protection. Its sharia foundation is a fundamental differentiator that positions Islamic e-money as more suitable for use in the Muslim transaction ecosystem.

Implications for Monetary Stability

Cryptocurrencies can disrupt monetary stability because they are outside the oversight of central banks. If cryptocurrencies are widely adopted in payment systems, the potential for disruption to monetary policy transmission is significant. Because they are not controlled by central banks, the supply of cryptocurrencies is outside the control of monetary authorities (Raphael Auer, 2018). This can reduce the effectiveness of controlling inflation, the money supply, and interest rates. Furthermore, high speculative capital flows into crypto assets can disrupt exchange rate stability, especially for countries with limited foreign exchange reserves.

In contrast, Islamic e-money supports monetary transmission by strengthening a recorded digital payment system. Every transaction generates real-time economic data, making it easier for central banks to monitor the movement of public liquidity (Catalini, 2016). Furthermore, e-money promotes an efficient cashless society, reduces the costs of circulating physical currency, and facilitates data-driven policy formulation. Thus, digitizing payments through e-money can increase the effectiveness of inflation control and reduce transaction costs in the national economy. This implication shows that sharia-based digital financial instruments have great potential to support the resilience of the monetary system, compared to speculative instruments that are difficult to control.

Socioeconomic and Regulatory Impacts

The growth of cryptocurrency opens up opportunities for fintech, blockchain, and smart contract innovations that boost the efficiency of the global financial system (Tapscott, 2016). However, because many countries are still testing their regulations, cryptocurrency can create a shadow economy that is difficult for fiscal bureaus to monitor ((IMF), 2021) This has the potential to reduce tax revenues and disrupt financial stability.

Some countries have implemented regulatory sandboxes to test the impact of cryptocurrency use on the financial system before fully legalizing it. This approach helps regulators understand systemic risks and minimize the potential for financial crimes such as money laundering and terrorism financing (FATF, 2021). Without regulation, the potential for consumer losses increases.

Meanwhile, Islamic e-money regulations have been clearly regulated through the national payment system and fatwas issued by the National Social and Cultural

Organization (DSN-MUI). Thus, Islamic e-money has legal certainty, a high level of public trust, and supports secure financial inclusion (OJK, 2021). This helps strengthen the digital ecosystem and structure national payments.

Table 1. Table captions should be placed above the tables

Regulatory Aspects	Cryptocurrency	Islamic E-Money
Legality	Commodities (Bappeti)	Payment Instruments (BI-OJK)
Decision Standards	No Fraud, No Terrorism	DSN-MUI Fatwa No. 116/2017
Supervision	Government & Exchange	Bank Indonesia

Regulations regarding cryptocurrencies in Indonesia emphasize that these digital assets do not have legal tender status, but rather are positioned as tradable commodities under the jurisdiction of the Commodity Futures Trading Regulatory Agency (Bappebti). This regulatory framework prioritizes the implementation of Anti-Money Laundering (AML), Counter-Terrorism Financing (CTF), and Know Your Customer (KYC) procedures to mitigate potential abuse due to the pseudonymous, non-territorial nature of blockchain transactions, which are vulnerable to cross-border illegal activity. However, the extreme price volatility of cryptocurrencies remains beyond the control of monetary authorities, thus weakening the effectiveness of monetary policy transmission and potentially triggering currency substitution a phenomenon where the public prefers digital assets over official currencies. Furthermore, empirical literature demonstrates the high incidence of fraud and financial crime associated with crypto assets as a direct consequence of the distributed nature of the network.

In contrast, Islamic e-money is legally recognized as an official payment instrument under Bank Indonesia Regulations and normative authorization through the DSN-MUI Fatwa No. 116/2017, which regulates operational compliance with the prohibitions on *riba* (usury), *gharar* (gharar), and *maisir* (gambling). This instrument utilizes verified contract structures, such as *ujrah* (trading) and *ijarah* (trading), thus integrating with the values of asset protection (*ḥifẓ al-māl*) within the *maqāṣid al-sharī'ah* (the principles of Islamic law). Centralized supervision by Bank Indonesia complemented by capacity-based monitoring, payment system audits, and operational risk mitigation enhances the stability of public trust and improves the integrity of digital transaction data. These characteristics enable Islamic e-money to play a significant role in strengthening the efficiency of monetary policy transmission mechanisms, increasing the speed of money circulation, and supporting the stability of the national payment system. Furthermore, institutional integration between Islamic banking and digital payment systems has demonstrated a positive correlation with macroeconomic monetary stability (Bank Indonesia., 2021)

CONCLUSION

This study concludes that cryptocurrency and Islamic e-money differ significantly in their technological characteristics, economic functions, risk levels, sharia foundations, and implications for monetary stability. Cryptocurrencies are decentralized, high-risk, and tend to be used as speculative instruments, potentially disrupting monetary policy transmission and causing exchange rate volatility. In contrast, Islamic e-money operates under the supervision of Bank Indonesia and the National Sharia Council, has a stable value because it is pegged to the rupiah, and is supported by sharia contracts that guarantee transparency and consumer protection, thus strengthening the effectiveness of monetary policy and supporting a secure digital payment ecosystem. Therefore, Islamic e-money is considered more feasible and prospective for supporting national economic stability than cryptocurrency, while policy development regarding crypto assets requires strengthened regulation and systemic risk mitigation.

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