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ALIGNING CRYPTOCURRENCIES WITH ISLAMIC LAW: CHALLENGES, ETHICAL CONCERNS, AND REGULATORY SOLUTIONS

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Abstract: Cryptocurrencies, underpinned by blockchain technology, present significant challenges to Islamic law due to their volatile nature, speculative tendencies, and lack of intrinsic value, which introduce elements of gharar (uncertainty) and maysir (gambling), both prohibited under Sharia. Additionally, cryptocurrencies' decentralized and pseudonymous nature has raised concerns about their potential misuse in money laundering and other criminal activities, further complicating their alignment with Islamic principles. The research emphasizes the need for a multi-faceted regulatory approach, incorporating Sharia advisory boards, asset-backed cryptocurrencies, and advanced RegTech solutions such as blockchain analytics and E-KYC protocols. By fostering collaboration among scholars, regulators, and financial experts, this study aims to bridge the gap between innovative financial technologies and Islamic law, promoting ethical growth and stability in the cryptocurrency market.

Keywords: Cryptocurrency transaction, Islamic law, Sharia compliance

A. Introduction

Wei Dai first introduced the concept of cryptocurrency to enable peer-to-peer transactions without relying on traditional intermediaries such as banks. Building on this foundational idea, Satoshi Nakamoto developed Bitcoin, a fully decentralized currency system that operates independently of central authorities.

Blockchain technology is at the core of Bitcoin and other cryptocurrencies, providing a secure, transparent, decentralized ledger system. Unlike traditional centralized systems, blockchain records transactions across a global network of computers. This creates an immutable and auditable record accessible only to authorized participants. The decentralized nature of blockchain eliminates the need for intermediaries, allowing agreement mechanisms within the network to validate transactions. This approach minimizes reliance on central authorities and mitigates risks such as single points of failure. Blockchain technology leverages cryptography to ensure that transactions cannot be altered once they are recorded. This immutability maintains data integrity and facilitates reliable auditing. By guaranteeing transparency, blockchain fosters trust among involved parties. Each transaction is traceable and securely stored in a shared ledger, enhancing accountability and confidence in the system (Almadadha, 2024).

Cryptocurrency can be stored, sent, or received through digital wallets, which provide users with easy access to their digital assets from any location with an internet connection. Many people use wallets in apps or online platforms to handle their money independently of regular banks. This feature makes cryptocurrency a universal type of money that lets people worldwide, even those with limited access to banking services, participate in a worldwide financial system (Giudici et al., 2020).

When someone sends money to another person in a transaction using cryptocurrencies like Bitcoin, they share details protected by a private key that serves as a digital signature for security. Cryptocurrencies follow rules that determine coin creation, limiting the creation process and how the transaction records are safeguarded. Establishing trust in currencies is crucial for their adoption and appreciation in worth. The operational principles supporting blockchain-based currencies may prove intricate and demanding to execute. This careful planning aims to safeguard the system's reliability and consistency by upholding security measures and thwart alterations to uphold the unchangeable nature of the blockchain record (Navamani, 2021).

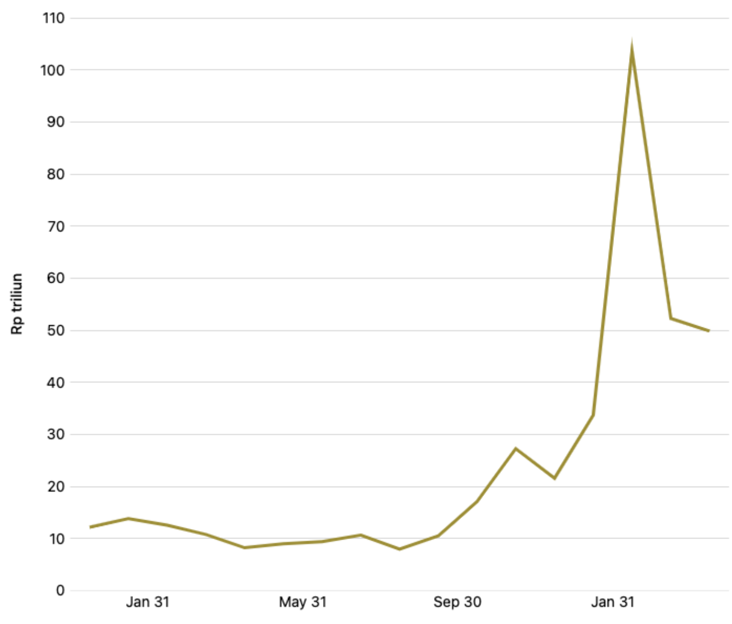

Figure 1 Cryptocurrency Transaction Values in Indonesia January 2023 - May 2024 (source: Katadata, 2024)

Indonesia's crypto asset market saw significant growth, with over 11 million investors by the end of 2021, reflecting the rising public interest in digital investments (Mulyani et al., 2023). Commodity Futures Trading Regulatory Agency (Bappebti) under the Ministry of Trade (Kemendag) reported that in March, the value of cryptocurrency transactions in Indonesia surged to IDR 103.58 trillion, as shown in Figure 1 (Katadata, 2024). There was a rise in numbers even though there needs to be a better-defined legal structure overseeing cryptocurrency from the viewpoints of Islamic principles and government rules.

The sharp rise in cryptocurrency transactions showcased by Bappebti data and illustrated in Figure 1 indicates a rising enthusiasm from investors toward digital assets. Despite attempts to implement regulations and uphold Sharia guidelines to monitor compliance with standards in Indonesia, the increase in cryptocurrency use persists without faltering. This highlights the necessity for defined legal frameworks to oversee and control this growing sector and tackle the obstacles of aligning Islamic legal doctrines with digital currency dealings.

The swift growth of assets in Indonesia has exceeded the government's capacity to set forth definite regulations. As cryptocurrencies such as Bitcoin become more prevalent in dealings, they have yet to be officially acknowledged as legitimate forms of payment (Ekawati, 2024). The delay in regulations causes uncertainties in the realm and increases risks for investors and users by not providing enough protection through the framework in place as the popularity of digital currencies rises; the necessity for thorough regulation becomes urgent.

In financial systems like online loans (Parsih & Roikhan, 2024), regulatory authorities such as the Financial Services Authority (OJK) play a crucial role in ensuring that ethical financial practices are upheld. They are responsible for ensuring that regulatory standards are followed securely and ethically. The demand for oversight in areas with a population following Sharia principles is growing, particularly in cryptocurrency transactions. Regulatory authorities can develop standards and guidelines to monitor and assess technologies, ensuring compliance with regulations while protecting investors' interests.

There is a dilemma when considering cryptocurrency in the context of Shariah principles due to its characteristics conflicting with core Islamic financial beliefs. Cryptocurrencies are known for their nature of volatility and risky investment potential and introduce elements of gharar (uncertainty) and maysir (speculation), both explicitly prohibited in Islamic finance (Fajaruddin et al., 2023). Considering the volatility of their worth and the possibility of associated dealings raises the question of whether these virtual assets align with economic principles in any way possible. The answer to this query is complex and diverse as it encompasses finding a ground between promoting creativity and enforcing moral values that revolve around openness and justice while mitigating potential harm.

While electronic money, as seen in Sharia-compliant platforms like LinkAja Syariah, provides a model for how modern financial systems can align with Islamic principles, cryptocurrencies are more challenging to reconcile with such frameworks. The DSN MUI Fatwa No. 116/DSN-MUI/IX/2017 outlines how electronic money can adhere to principles such as avoiding riba (usury) and ensuring fair, transparent transactions (Hardiyanti et al., 2024). This fatwa serves as an example of how financial innovation can coexist with religious compliance. Cryptocurrencies often have to adhere to these regulations as they participate in trading, which inherently raises risks and decreases transparency.

Incorporating cryptocurrency into the industry with the added consideration of Shari'a law principles in mind becomes an intricate task to navigate successfully due to the overarching objectives of Sharia that prioritize fairness, ethical conduct, and communal well-being. For a financial practice to be deemed Sharia-compliant, it must not only avoid prohibited elements but also contribute positively to the well-being of society (Nasik & Musadad, 2024). Cryptocurrency presents an opportunity for substantial financial rewards as well as the potential for significant losses and volatility that could hinder efforts to safeguard individuals and cultivate a stable economic climate (Hidayat, 2023). These challenges persistently confront Muslim nations such as Indonesia, where economic activities are expected to adhere to religious principles and regulations.

Economic studies primarily focus on regulating digital assets and the viability of cryptocurrencies as alternative investment vehicles. However, they often neglect ethical and religious considerations crucial for Muslim-majority societies (Noor et al., 2023). While existing research has provided valuable insights into various aspects of cryptocurrency, studies examining their compliance with Islamic law remain limited. Notably, much of the discourse relies heavily on the MUI's fatwa without adequately analyzing diverse scholarly perspectives on cryptocurrency, both from contemporary global viewpoints and within historical Islamic traditions (Abdillah, 2023).

For instance, principles such as *Jalbu al-Masalih wa Daf'u al-Mafasid* (promoting benefit and preventing harm) and the doctrine of *Saddu az-Zari'ah* (blocking harmful means) have been explored in this context. However, these studies often fail to comprehensively evaluate blockchain technology's key features, such as transparency and immutability, and how they align with or challenge Sharia principles (Fatarib & Meirison, 2020). Other studies evaluate cryptocurrency's compatibility with *maqāṣid al-sharī'ah* (objectives of Islamic law), highlighting concerns such as *gharar* (uncertainty) and *iḥtikār* (hoarding), which form the basis for its prohibition. However, these studies predominantly emphasize restrictive aspects, neglecting to explore the potential of cryptocurrencies for promoting financial inclusion or fostering Sharia-compliant innovations (Hidayat, 2023).

Similarly, a study on cryptocurrencies under Islamic economic law finds that they function as both currency and investment tools but conflict with Islamic principles due to elements of *dharar* (harm), *gharar* (uncertainty), and *qimar* (gambling). However, the study is limited to the context of Indonesia. It lacks comparative analysis with other Muslim-majority countries' regulatory and Islamic legal perspectives, which could provide broader insights (Koni, 2023).

This study contributes to bridging this gap by focusing on the intersection of cryptocurrency and Islamic law. It critically examines how fundamental Sharia principles can be applied to cryptocurrencies. It addresses key issues such as *gharar* (uncertainty), *qimar* (gambling), and the lack of intrinsic value, which challenge their permissibility. By situating the analysis within Indonesia's socio-economic and regulatory context, this study provides a nuanced understanding of how Islamic law can reconcile with the innovative characteristics of cryptocurrencies. Additionally, it seeks to draw comparisons with other Muslim-majority countries, offering broader insights into regulatory frameworks and practical approaches for developing Sharia-compliant digital assets.

B. Method

This study employs a qualitative research method with a literature study approach. The research is grounded in a juridical analysis framework, focusing on the intersection of cryptocurrency and Islamic law.

The qualitative approach involves an in-depth exploration of relevant primary and secondary sources to understand how Islamic jurisprudential principles such as riba (usury), gharar (excessive uncertainty), and maysir (gambling) are applied to cryptocurrency. The literature study emphasizes analyzing fatwas, government regulations, and academic discussions that provide insights into blockchain's financial and technological dimensions in Islamic law.

Primary data for the study include fatwas, legal frameworks, and reports from Indonesian institutions, such as Bank Indonesia, the Majelis Ulama Indonesia (MUI), and the Commodity Futures Trading Regulatory Agency (Bappebti). These documents were examined to understand the national legal and religious stance on cryptocurrency. Secondary data were drawn from international reports, academic texts, and journal articles that provide comparative perspectives, including works from institutions like Dar al-Ifta' al-Mishriyyah and the Senior Scholars' Council of Saudi Arabia.

The juridical analysis framework ensures a systematic evaluation of legal, financial, and religious aspects, bridging the gap between Islamic finance principles and blockchain technology. This approach offers a comprehensive view of the compatibility and challenges of cryptocurrency within the framework of Islamic law.

C. Result and Discussion

When implementing rules for overseeing cryptocurrency, some challenges and hurdles need to be addressed in advance. Here are a few key points to consider:

1. Legal Uncertainty and Inadequate Regulations

Cryptocurrency is evolving within Indonesia's financial sector dynamics. In 2014, Bank Indonesia clarified that Bitcoin and similar digital currencies were not recognized as payment methods and advised the public against using them for transactions. Despite initially taking a stance, the authorities have since put in place significant measures to regulate the legal aspects of cryptocurrency.

The Commodity Futures Trading Regulatory Agency (Bappebti) has issued regulations, including Regulation No. 7 of 2020, which establishes criteria for cryptocurrencies permitted for trading, and Regulation No. 8 of 2021, which provides guidelines for trading cryptocurrencies in physical markets (Hidayat, 2023). The government's actions show that they accept cryptocurrency trading as legally allowed in Indonesia. This was reinforced in 2019 when Bappebti formally acknowledged cryptocurrencies as commodities that can be traded in future exchanges.

According to Law Article 21, paragraph (1) of Law No. 7 of 2011, it is made clear that the Indonesian Rupiah holds the status as the country's legal tender and sets limitations on the involvement of cryptocurrencies in its financial system operations. Also specified in Article 21, paragraph (1), all transactions for payment purposes must be executed solely in Rupiah as mandated by the Currency Law of Indonesia, showcasing the requirement to utilize Rupiah as the designated currency for all transactions governed by Bank Indonesia, the nations central bank.

Furthermore, Bank Indonesia Regulation No. 17/3/PBI/2015 regarding the Compulsory Use of Rupiah states in Article 2, section (1) that all transactions conducted within Indonesian territory must use Rupiah. This requirement is further supported by Bank Indonesia Regulation No. 18/40/PBI/2016 on implementing Payment Transaction Processing. Article 27 requires payment service providers to adhere to Bank Indonesia regulations and other applicable laws (Watung, 2019).

The rules clearly state that cryptocurrency is not considered a form of payment in Indonesia to uphold the priority of the Rupiah as the official currency and maintain financial stability in the country's economy. The decision shows the government's dedication to managing its system effectively and protecting its economic independence by avoiding the risks associated with decentralized digital currencies.

The consequences of this position are explained in detail in Article 62 of Bank Indonesia Regulation No. 20/6/PBI/2016 concerning Electronic Money, which expressly forbids electronic money providers from engaging in any transactions related to virtual currencies, such as accepting or processing payments involving them. This regulation sets apart electronic financial transactions from those that do not comply with local laws and guidelines explicitly banning the integration of cryptocurrencies into approved payment platforms to address concerns about volatility and the risk of illicit activities associated with emerging digital financial technologies.

From the viewpoint of law (Sharia) it is considered a duty to follow the laws of the state or those, in authority (ulil amri) as long as these laws do not go against the fundamental principles of Islam. This principle is based on Allah's command in Surah An-Nisa, verse 59 of the Qur'an:

يٰٓاَيُّهَا الَّذِيْنَ اٰمَنُوْٓا اَطِيْعُوا اللّٰهَ وَاَطِيْعُوا الرَّسُوْلَ وَاُولِى الْاَمْرِ مِنْكُمْۚ فَاِنْ تَنَازَعْتُمْ فِيْ شَيْءٍ فَرُدُّوْهُ اِلَى اللّٰهِ وَالرَّسُوْلِ اِنْ
كُنْتُمْ تُؤْمِنُوْنَ بِاللّٰهِ وَالْيَوْمِ الْاٰخِرِۗ ذٰلِكَ خَيْرٌ وَّاَحْسَنُ تَأْوِيْلًا ࣖ

This passage emphasizes the significance of obeying the directives provided by leaders to maintain harmony and solidarity within the Muslim community. While ultimate supremacy lies with Allah and the Prophet Muhammad, it is crucial to demonstrate reverence and comply with the regulations set forth by authorities or governing entities as long as they do not contradict Islamic principles.

Consider important factors when using cryptocurrency for payments in Indonesia. The Indonesian government has explicitly mentioned that utilizing currencies such as Bitcoin for transactions is prohibited as a payment method and has stressed that the Rupiah is the sole accepted legal tender. In line with the concept of ta'zir, which covers punishment or regulatory actions aimed at upholding social order, it is considered a religious obligation for Muslims to comply with such governmental rules. Ta'zir goes beyond penalties and includes following laws safeguarding public welfare and upholding societal harmony.

Islamic scholars stress the importance of adhering to state regulations to maintain harmony and public well-being (maslahah). Henceforth, Muslims are encouraged to abide by the government's ban on using currency for transactions as a form of obedience to ulil amri. The principles align with the goals of Shariah law, which strives to uphold fairness and equality rights, safeguard resources, and minimize harm.

When completing tasks, it is important to focus on following guidance rather than rules that may contradict or challenge core Islamic principles. In the context of currency matters, these restrictions are in place not to go against beliefs but to ensure financial activities are monitored effectively to avoid risky and speculative behaviors that go against Sharia law.

Additionally, participating in actions that go against state laws can lead to consequences for both people and society , eroding trust and the general harmony of the community. The fiqh principle, "The government regulations are established for the welfare of its citizens," highlights that complying with government regulations aligns with Islamic values by supporting the public's well-being and avoiding harm (Idrus, 2021). Thus, adherence to government regulations is consistent with the goals of Shariah, which are to safeguard societal interests and prevent damage.

Addressing legal uncertainty and inadequate regulations in the context of Sharia-compliant cryptocurrencies requires a concerted effort by governments, regulators, Islamic scholars, and market participants. Several solutions can be considered to address these issues. Policymakers should collaborate closely with Shariah advisory boards, financial experts, and industry stakeholders to draft comprehensive frameworks that distinguish permissible activities from prohibited ones. These guidelines should consider Islamic principles by prohibiting riba (usury), gharar (excessive uncertainty), and other unethical elements while also accommodating the beneficial innovations of digital financial technologies (Asyiqin et al., 2024). By developing standards aligned with established Islamic jurisprudence, regulators can cultivate an environment that encourages ethical growth and protects investors.

Publishing well-researched legal opinions (fatwas) from reputable scholars and offering authoritative guidance documents can help businesses and consumers understand their rights, responsibilities, and the religious implications of their financial choices. This approach clarifies the permissible parameters within the Islamic financial ecosystem and reinforces trust, transparency, and long-term market stability. For example, Aleph Zero partners with Shariyah Review Bureau to launch a Sharia-compliant blockchain in GCC (Shariyah Review Bureau, 2024).

However, challenges persist in fully integrating cryptocurrencies into Islamic finance. Issues such as price volatility and the potential for misuse in speculative activities remain concerns for Islamic scholars and regulators, as explained in the next section.

2. Price Volatility and Investment Risk

Throughout Islamic history, money has been closely associated with precious metals like gold (dinar) and silver (dirham), valued for their inherent worth. These metals embodied key Islamic financial principles by providing tangible value, ensuring transparency, and maintaining fairness. They served as stable, trusted forms of currency, essentially free from rampant speculation or external economic shocks. Over time, economic systems evolved from barter to coinage and eventually to paper currency. While paper money offered convenience and efficiency, it also introduced reliance on central authorities, raising concerns about stability and inflation in Islamic finance. This historical progression underscores the enduring objectives of Islamic finance to promote transparency, minimize excessive uncertainty (gharar), and curb speculative elements (maysir), thereby ensuring an ethical and equitable financial system (Katterbauer et al., 2022).

Against this well-established framework, the emergence of cryptocurrencies represents a significant departure. Unlike gold and silver, which possess intrinsic worth and have long underpinned Islamic monetary systems, cryptocurrencies exist solely as digital codes and lack physical backing (Khan & Hakami, 2022). Tangible assets or authoritative institutions do not guarantee their worth. Instead, it hinges on market perceptions, investor sentiment, and speculative trading. Applying traditional Islamic legal standards to such intangible forms of value has proven challenging, prompting ongoing debates about whether to classify these digital tokens as financial assets, commodities, or forms of currency. The resolution of these debates is crucial, as it determines the conditions and permissible boundaries for employing such assets under Sharia principles (Rosele et al., 2022) (Abadi et al., 2023).

A key issue complicating their acceptance in Islamic finance is the extreme volatility that often characterizes cryptocurrency markets. Bitcoin, for instance, has unpredictable price swings, as shown in Figure 2. The graph shows that Bitcoin exhibits significantly higher fluctuations than other assets such as gold, ACWI IMI, and US Aggregate bonds. While the value of Bitcoin has experienced dramatic swings, reaching volatility levels of up to 80%, other assets like gold and global stocks (ACWI IMI) have remained relatively stable, with fluctuations around 10-20%. This factor contradicts its essence as a stable store of value like traditional currencies such as gold and stocks, which exhibit lower and more consistent volatility patterns than Bitcoin's erratic behavior, posing substantial long-term investment risks for individuals looking to preserve value over time.

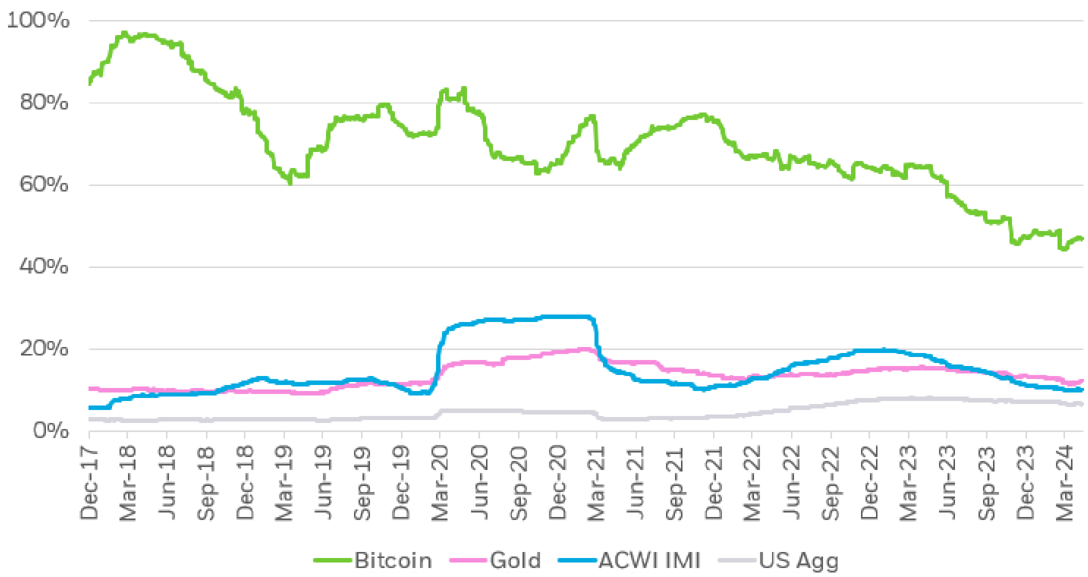

Figure 2 Volatility Bitcoin, Gold, ACWI IMI, US Agg Annualized using daily returns (Source: Bloomberg)

The decentralized and unregulated aspect of cryptocurrencies allows market manipulation to occur quickly; powerful private entities or individuals can influence prices by controlling the supply and demand in the market space without any supervision or checks to prevent such actions from happening. Significant fluctuations have been observed without oversight in dictating the flow of transactions and pricing decisions. This scenario has resulted in instances where certain actors can artificially boost or crash cryptocurrency values, notably evident during the episodes involving Terra Luna and other prominent digital currency crashes. Such manipulative practices shake investor confidence. Heighten the uncertainties tied to investing in cryptocurrencies. Due to this fact, even though cryptocurrencies present the appeal of promising profits, their erratic behavior significantly affects their appeal as an investment. This results in investors encountering substantial risks of significant losses (Tauda et al., 2023).

Drastic price fluctuations can result in substantial losses for investors and involve elements of gharar (uncertainty) and maysir (speculation), both prohibited in Islam. These elements create challenges in applying Sharia principles, which require transactions to be conducted fairly and without excessive uncertainty.

Addressing price volatility and investment risk in a Shariah-compliant manner involves emphasizing stability, transparency, and adherence to Islamic ethical principles. One practical approach is the use of asset-backed cryptocurrencies, such as those tied to halal commodities or Shariah-compliant instruments, which can mitigate excessive uncertainty (gharar) and speculation (maysir) (Katterbauer et al., 2022) (Aliyu et al., 2020). Asset-backed cryptocurrencies are designed to provide more stability and reduce uncertainty by tying their value to tangible assets or commodities. This approach aligns with Islamic financial principles, as it helps mitigate the risks associated with excessive volatility and speculation, contrary to Shariah guidelines (Hidayat, 2023).

For example, gold-backed cryptocurrencies like OneGram and X8X have been approved by Islamic scholars as Shariah-compliant (Nugroho, 2023). These cryptocurrencies derive value from real-world assets, offering a more stable alternative to traditional cryptocurrencies while adhering to Islamic financial principles.

Market manipulation can be addressed through comprehensive regulations similar to the Markets in Crypto-Assets (MiCA) framework introduced by the European Union. MiCA aims to establish a robust regulatory environment for crypto-assets, preventing market abuse and ensuring market integrity. Its provisions include mandatory disclosure of inside information, prohibitions on insider trading and market manipulation, and the requirement for stringent surveillance mechanisms at crypto service providers. A similar regulatory approach could be implemented in Indonesia to strengthen oversight, enhance investor protection, and promote a fairer crypto market environment (Conlon et al., 2024).

3. Technical Challenges in Monitoring Cryptocurrency Transactions

Blockchain transactions can be quite complex to follow, as it can be challenging to identify the individuals participating in them. This is due to the structure of blockchain technology, which removes the reliance on third-party entities such as banks or intermediaries for processing and validating transactions autonomously without external supervision (Atiyah et al., 2024). Although this setup benefits effectiveness and openness in transactions and operations, it also presents difficulties monitoring and overseeing asset movements.

The rise of cryptocurrency systems presents difficulties for law enforcement agencies since no central authority monitors transactions on the blockchain network (Sandie & Wibowo, 2022). The absence of oversight results in weaknesses in financial monitoring systems that impede efforts to combat illicit activities effectively. Law enforcement authorities find it challenging to track transactions, which limits their capacity to enforce regulations against money laundering and fraud. This challenge is evident in criminal cases involving cryptocurrency in Indonesia, such as the PT Asabri corruption case, where profits from fraudulent share price manipulation were converted into Bitcoin, demonstrating how digital assets can be misused for illicit purposes (Sucitrawan et al., 2024).

Moreover, the cryptocurrency markets' dependence on enterprises instead of government-regulated bodies presents a notable potential for price and supply manipulation. In contrast to currencies or financial markets that central banks and regulatory authorities closely monitor to manage supply and regulate inflation, cryptocurrencies function in a largely unregulated environment. The lack of oversight allows private entities like exchanges and token issuers to influence digital asset valuation.

These groups can impact market trends by controlling the balance of supply and demand, leading to price fluctuations that may sometimes surprise. For example, by restricting the availability of a cryptocurrency or fabricating scarcity, corporations can boost its worth, enhancing its appeal to potential investors. By introducing substantial amounts of tokens into circulation, they can decrease prices, adjusting the currency's value in line with their objectives.

This dynamic is often exacerbated by "whale trading," where a small number of individuals or entities holding large amounts of a cryptocurrency can buy or sell in bulk, dramatically impacting prices. The practice of "pump and dump" schemes—where groups work to artificially inflate a cryptocurrency's price before selling off large quantities to unsuspecting buyers—further exemplifies how the market can be manipulated (Tsuchiya, 2021).

The resulting volatility not only heightens risks for everyday investors but also creates an environment where the prices of cryptocurrencies are highly susceptible to artificial influences. In the absence of measures in place for oversight and control, these actions are left unmonitored. This allows private organizations to gain advantages from methods deemed unlawful in conventional markets, risking the cryptocurrency environment's stability and dependability (Widyatmoko et al., 2024).

Cryptocurrencies' decentralized and unregulated nature fosters an environment favorable for illicit activities such as money laundering because of the absence of oversight and the anonymity offered by these digital assets. In finance systems, regulatory authorities and institutions constantly supervise transactions and implement measures to identify and deter financial crimes. However, in cryptocurrencies, there is no central authority to track or flag suspicious transactions, allowing individuals to transfer large amounts of money without scrutiny.

When digital assets are obtained from illegal sources or used to conceal the origins of illicit funds, their use can qualify as money laundering under financial crime regulations (Albrecht et al., 2019). It can be challenging to keep track of this process since cryptocurrency transactions frequently occur on decentralized platforms, where money can travel between unidentified accounts across borders and be readily exchanged for other digital or traditional currencies—making it tricky to trace their beginnings.

Furthermore, using pseudonyms in transactions hides user identities with alphanumeric addresses instead of personal identifiers. It makes it harder for agencies to monitor fund transfers effectively. With no data tracking, authorities need to use time-consuming and intricate investigative techniques to trace the digital path of funds. This lack of transparency in cryptocurrency transactions thus elevates the risk that financial crimes such as money laundering will go undetected, allowing criminals to exploit these gaps for illegal financial gains.

This lack of transparency and oversight contradicts fundamental Sharia principles, such as fairness and preventing harm (gharar and maysir), which require precise, transparent transactions. The capacity of firms to influence the market adds complexity to the issue since they have the power to manage supply and demand levels, which can result in price fluctuations. This complexity poses a challenge in ensuring that cryptocurrency transactions adhere to ethical and legal standards set by Islamic law, thereby creating opportunities for misuse and fraudulent activities within a regulatory grey area.

Overcoming the technical challenges of monitoring cryptocurrency transactions requires advanced technology and strategic regulatory measures. RegTech, or regulatory technology, is emerging as a crucial tool in addressing the challenges of monitoring cryptocurrency transactions; employing cutting-edge blockchain analytics tools and implementing robust *Electronic-Know-Your-Customer (E-KYC)* and *Anti-Money Laundering (AML)* protocols can help Islamic financial institutions and regulators track fund flows, detect suspicious activities, and ensure compliance with Shariah guidelines (Kharisma Fatmalina Fajri & Dekar Urumsah, 2023) (Nicknora, 2024) (Ghozi, 2022).

Despite the potential benefits, implementing these technologies in Islamic finance presents challenges. These include the need for a strong infrastructure, a lack of understanding among customers, and immature regulatory aspects. Additionally, the current regulations in some jurisdictions, such as the UAE, do not cover decentralized finance (DeFi) and non-fungible tokens (NFTs), creating potential loopholes for money laundering and related criminal activities (Al-Tawil, 2023).

In conclusion, while monitoring cryptocurrency transactions in Islamic finance presents significant challenges, combining blockchain technology, RegTech solutions, and improved Shariah-compliant smart contracts offer promising avenues for enhancing transparency, efficiency, and compliance in the Islamic financial system.

4. Differences of Opinion Among Scholars

A significant challenge is the lack of knowledge and familiarity with cryptocurrency among Islamic scholars and the Muslim community. Unlike traditional banking or stock trading, where understanding is more widespread, the complexity of digital assets and blockchain technology requires technical expertise that many scholars may lack. It makes applying Sharia principles to such matters difficult, leading to legal uncertainty and differing views on cryptocurrency's validity within the Muslim community (Abadi et al., 2023).

The categorization of cryptocurrencies has sparked diverse viewpoints among Islamic scholars, reflecting varying interpretations and the legal complexities of determining their permissibility under Shariah law. Some scholars and experts see merit in cryptocurrencies, highlighting their potential to foster financial inclusion and technological advancement (Othman et al., 2023). They argue that cryptocurrencies can be permissible if structured by Islamic principles. This ongoing debate underscores the importance of developing Shariah-compliant frameworks to guide the growing use of these financial assets. Providing clear, principled guidance can ensure that the opportunities offered by cryptocurrency are harnessed in a manner consistent with Islamic ethical and legal standards (Anggriani & Maulana, 2024).

For example, Ali Jum'ah's approach to ijtihad provides a valuable framework for addressing such contemporary financial challenges. Ali Jum'ah emphasizes using various methodologies, including bayani, qiyasi, istislahi, and intiqa'i, in providing fatwas on modern financial transactions. His approach allows for flexibility in adapting Islamic law to emerging issues, such as cryptocurrency, by considering public welfare and applying general Islamic principles where specific guidance may be lacking in traditional texts (Fajar, 2019). The intricate nature of cryptocurrency necessitates researchers' involvement. The speculative and uncertain characteristics of assets often clash with the principles of Sharia law (Abadi et al., 2023).

The Majelis Ulama Indonesia (Indonesian Council of Religious Scholars), the top religious body in Indonesia, has released an edict concerning the utilization of currency, noting its unique dual nature as both a form of currency and a commodity (Abdillah, 2023).

In the 7th Ijtima Ulama of MUI's Fatwa Commission in 2021, MUI declared that the use of cryptocurrency as a currency is forbidden (haram) because it contains elements of gharar (uncertainty), dharar (harm) and contradicts Law No. 7 of 2011 on Currency. MUI also stated that cryptocurrency does not qualify as sil'ah (goods that can be traded) in Islam because it lacks physical form, value, and transactional certainty. In addition, MUI emphasized that cryptocurrency transactions involve maysir (gambling) and qimar (speculation) due to the volatile nature of its value. This situation could lead to one party experiencing losses without the assurance of profitability involved in transactions related to cryptocurrency investment, which is often deemed incompatible with Sharia principles as they emphasize conducting transactions with transparency and equity while avoiding harm to any party.

The categorization of cryptocurrency as a commodity by the Majelis Ulama Indonesia (MUI) offers a viewpoint in the finance realm. According to the MUI stance on cryptocurrency usage as a currency being prohibited (haram), its classification as a commodity is handled differently. The MUI acknowledges that cryptocurrencies can be deemed compatible with Sharia principles when seen as assets or commodities. To be considered an acceptable commodity in cryptocurrency within guidelines requires meeting criteria such as providing tangible advantages to users and upholding clear ownership rights while discouraging speculative behaviors that go against ethical principles. This classification implies that while using cryptocurrencies as an alternative to traditional money is impermissible, their role as commodities in financial markets may be acceptable if they are traded transparently, provide real value, and avoid elements of gambling or speculation (maysir). This distinction highlights the MUI's commitment to fostering financial practices that align with Sharia law while acknowledging digital assets' evolving nature and potential economic contributions as long as they uphold the ethical guidelines prescribed by Islamic jurisprudence (Abdillah, 2023).

International scholars' opinions on cryptocurrency vary widely. Several scholars and fatwa-issuing bodies in Muslim countries have issued rulings prohibiting the use of cryptocurrency. For instance, Dar al-Ifta' al-Mishriyyah (the Egyptian Fatwa Institution) declared cryptocurrency as haram due to the element of gharar (uncertainty) and its potential use in illegal activities such as money laundering and terrorism financing (Dar al-Ifta' al-Mishriyyah, 2017). The Grand Muftis of Egypt and the Senior Scholars Council of Saudi Arabia expressed concerns about cryptocurrency needing to meet the regulations and stability for Sharia financial transactions due to its risky nature and unpredictable outcomes.

Some modern academics suggest that, under the circumstances, cryptocurrency could be acceptable according to Sharia principles if it is regarded as a commodity or digital asset. These principles include transparency in transactions, the absence of elements such as riba (usury), gharar (uncertainty), and maysir (gambling), and the existence of proper regulations and oversight to prevent misuse.

Scholars such as Monzer Kahf believe cryptocurrency is permissible compared to other currencies, provided there is no price manipulation or speculation. He emphasizes that, like other forms of currency, cryptocurrency can be used within the boundaries of Sharia as long as these conditions are met.

Similarly, the Bahtsul Masail Institute in Yogyakarta (DIY) recognizes cryptocurrency, particularly Bitcoin, as a valid form of exchange and digital asset. Some believe that Bitcoin fits the definition of goods in Islamic law and is allowed if it avoids speculation that aligns with Sharia principles.

These experts stress the need to adjust the law to keep up with contemporary technological and economic advancements as long as they align with core Sharia principles. They suggest that advancements such as cryptocurrency should be evaluated within an Islamic legal structure. If such technology is employed openly and does not breach values like fairness, integrity, and minimizing harm to others, its usage may be approved.

Generally, scholars fall into three main views: (1) Cryptocurrency is classified as *haram* under Islamic law, as it lacks intrinsic value or stability, failing to qualify as *maal* (property) and involving elements of *gharar* (uncertainty) and *maysir* (gambling) due to its speculative and intangible characteristics; (2) Cryptocurrency is considered *halal* as an asset but not as a legitimate currency, given its ability to store value and be exchanged, yet not recognized as money due to its price volatility, limited societal acceptance, and minimal use in daily transactions; and (3) Cryptocurrency is regarded as permissible both as property and currency, with its value derived from its role as a medium of exchange in peer-to-peer transactions.

Expert disagreements pose a hurdle to implementing Islamic principles in cryptocurrency transactions. This variation in interpretation creates legal uncertainty within the Muslim community, making it challenging to provide consistent guidance.

When confronted with differing scholarly opinions on the permissibility and usage of cryptocurrencies in Islamic finance, fostering open dialogue and collaborative discourse is essential. Communities can better understand the various perspectives by encouraging regular consultation sessions, roundtable discussions, and workshops that bring together respected Islamic jurists, financial experts, economists, and tech specialists. These engagements can help clarify nuanced arguments, identify common ground, and formulate balanced Shariah guidelines that reflect established religious principles and the evolving nature of financial technology (Birjaman et al., 2024). Such collaborative efforts are crucial in bridging the knowledge gap between traditional Islamic finance and modern digital assets, allowing for a more nuanced and informed assessment of cryptocurrencies' compliance with Shariah law (Wiwoho et al., 2024).

Equally important is the development of standardized frameworks and methodologies for issuing fatwas and scholarly verdicts on emerging financial technologies. By relying on recognized standards of Islamic jurisprudence, referencing authoritative texts, and consulting reliable bodies like AAOIFI (Accounting and Auditing Organization for Islamic Financial Institutions), arriving at informed conclusions becomes more uniform (Hidayati et al., 2023). Continuous education, capacity-building efforts, and transparent documentation of scholarly reasoning can instill greater confidence among practitioners and laypersons. This approach is critical given the complexity of digital assets and blockchain technology, which requires technical expertise that many scholars may lack (Abadi et al., 2023). By implementing these solutions, the Islamic finance community can work towards resolving the challenges posed by cryptocurrencies while harnessing their potential benefits consistent with Shariah principles (Wiwoho et al., 2024).

D. Conclusion

Indonesia's cryptocurrency regulation faces legal, Sharia, and security challenges. While the Rupiah remains the sole legal tender, cryptocurrencies are recognized as commodities but lack robust measures to tackle market manipulation, volatility, and investment risks. Their decentralized nature facilitates money laundering and criminal activities, complicating enforcement. From an Islamic perspective, gharar (uncertainty) and maysir (speculation) further question their Sharia compliance, while differing scholarly opinions add to the complexity.

A multi-faceted approach is necessary to address the challenges of cryptocurrency regulation in Indonesia. Regulators should collaborate with Sharia advisory boards to establish ethical guidelines emphasizing transparency, fairness, and stability, incorporating asset-backed cryptocurrencies tied to halal commodities to align with Sharia principles. Implementing advanced RegTech solutions, blockchain analytics, and robust E-KYC and AML protocols can enhance transaction monitoring and prevent misuse of illicit activities. Additionally, introducing stricter regulations similar to the EU's MiCA framework can help mitigate volatility and prevent market manipulation. Encouraging dialogue among scholars, financial experts, and technology specialists, alongside issuing fatwas and standardizing Sharia-compliant methodologies, will foster informed decision-making, bridging gaps between modern financial innovations and Islamic principles while promoting trust and stability in the cryptocurrency market.

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