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## Are Cryptocurrencies *Haram*? A Critical Analysis toward MUI's *Fatwā*

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### Abstract:

This paper critically examines the Indonesian Ulema Council's *fatwā* which prohibits cryptocurrency. The critique focuses on three aspects of the ban. The first is criticism for banning cryptocurrency which is considered to contain *garar* and *ḍarār*, and is contrary to Law No. 7 of 2011 and Bank Indonesia Regulation No. 17 of 2015. The second is criticism of the illegality of buying/selling cryptocurrency, which is positioned as a digital asset/commodity that contains *garar*, *ḍarār*, *qimār*, and does not meet the *sil'ah* criteria. The third is criticism of the permissibility of cryptocurrency as a commodity/asset when it fulfills the *sil'ah* criteria and has underlying and clear legal benefits to be traded. This study adopted a qualitative approach. The conclusion reveals that MUI's *fatwā* on cryptocurrencies was not built on solid legal reasoning and did not consider the benefits of technological advances. The MUI's *fatwā* is based on the principles of Islamic law, specifically *garar*, *ḍarār*, and *qimār*, which are used to evaluate the legality of trading commodities or digital assets, such as cryptocurrencies. However, it is important to note that the MUI's *fatwā* does not consider the potential benefits of cryptocurrencies, such as their use as a new form of investment and their potential to revolutionize industries by enhancing security, and efficiency, and creating new trading opportunities in the digital age. In terms of non-Sharia technology, it is seen as a tool that can be

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used for good or evil, and its permissibility depends on its use. Blockchain technology, which underpins cryptocurrencies, is considered acceptable because it makes transactions more secure and enables the use of smart contracts.

**Keywords:**

MUI's *Fatwā*; Cryptocurrency; Islamic law

**Introduction**

The Indonesian Ulema Council issued a *fatwā* regarding the prohibition of cryptocurrency in the 7th Ijtima' Ulema of the Indonesian Ulema Council Fatwa Committee, which took place on 9-11 November 2021 in Jakarta. *Harām* here means the prohibition of using cryptocurrency both for payment and investment. The legal arguments for the ban on cryptocurrency are as follows: (1) the use of cryptocurrency as currency is illegal because it contains *garar* and *darār*, which is contrary to Law No. 7 of 2011 and Bank Indonesia Regulation No. 17 of 2015. (2) cryptocurrency as a digital commodity or asset is not legally traded because it contains *garar*, *darār*, *qimār* and does not meet the requirements of *ṣila'ḥ*, namely: the existence of physical form, value, known amount with certainty, and ability to be handed over to the buyer. (3) Cryptocurrency as a commodity or asset that fulfills requirements as a *ṣila'ḥ* and has underlying and clear legal benefits are allowed to be traded.<sup>1</sup>

However, it is important to keep in mind that MUI's *fatwā* is not legally binding and that there is no power to enforce it institutionally because they are a part of religious opinions. It is meant to be a legal guide for Muslims in Indonesia but does not personally bind to Muslims.<sup>2</sup> The *fatwā* related to cryptocurrency simply guides whether cryptocurrencies are permissible under Islamic law. However, they cannot enforce compliance or punish those who do not follow the *fatwā*. In other words, it is up to an individual to decide whether to refuse or follow.

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<sup>1</sup> "Keputusan *Fatwā* Hukum Uang Kripto atau Cryptocurrency - Majelis Ulama Indonesia," 12 November, 2021, <https://mui.or.id/berita/32209/keputusan-fatwā-hukum-uang-kripto-atau-cryptocurrency/>.

<sup>2</sup> Sofian Al Hakim, "Analytical Framework in Study of *Fatwās* on Sharia Economics," *Ahkam: Jurnal Ilmu Syariah* 19, no. 2 (2019): 315-30, <https://doi.org/10.15408/ajis.v19i2.12219>.

As a religious opinion with local and temporal characteristics, it can bring up differences in views on legal cryptocurrencies between scholars. Many scholars have argued that cryptocurrency, basically decentralized and free from government or regulatory intervention, is permissible because it complies with the principles and values of the common good in Islamic economics and finance. Other scholars assert that cryptocurrencies are *haram* because they can be used for speculative, criminal, and even money laundering and terrorism.<sup>3</sup> Sheikh Dr. 'Alī al-Qurrā Dagi forbids transactions and buying or selling cryptocurrency because it does not describe the nature of money, even though it is referred to as "currency". The argument is built using the Islamic legal maxim.

العِبْرَةُ فِي الْعُقُودِ لِلْمَقَا صِدِّ وَالْمَعَانِي لِلَّالْفَاظِ وَالْمَبَانِي

"The substance of the contract (transactions in the economy and business as a whole) lies in the purpose, not in the words or sentences."<sup>4</sup>

Thus, using the word "currency" for cryptocurrencies is irrelevant from the perspective of *fiqh* and *uṣūl fiqh*. Rather, cryptocurrencies should be examined and evaluated based on their inherent characteristics and their alignment with Islamic principles and values. Islam's deep-rooted emphasis on real assets and genuine economic activities aligns with the need for a sharia-compliant cryptocurrency. The prohibition of practices in Islamic finance, such as speculation, manipulation, fraud, and deception, underscores the

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<sup>3</sup> Mufti Muhammad Abu-Bakar, "Shariah Analysis of Bitcoin, Cryptocurrency, and Blockchain," *Blossom Labs*, vol. 1, 2017, <https://blossomfinance.com/bitcoin-working-paper>. Faras Alam, "Fatawa Analysis of Bitcoin," in *Halal Cryptocurrency Management* (Switzerland AG: Palgrave Macmillan, 2019), 136–40. Ahmad Ulil Albab Al Umar et al., "Analysis of Cryptocurrency in Islamic Perspective and Its Existence in Indonesia," in *1st Virtual Workshop on Writing Scientific Article for International Publication Indexed SCOPUS*, 2022, 85–90, <https://doi.org/10.2478/9788366675827-016>. Faizi, "Uang Kripto dan Masa Depan Keuangan Syariah," *Kompas.Id*, 2021, [https://epaper.kompas.id/pdf/show/20210705?page=6&utm\\_source=hal\\_baca&utm\\_medium=banner\\_epaper&utm\\_campaign=artikel\\_epaper](https://epaper.kompas.id/pdf/show/20210705?page=6&utm_source=hal_baca&utm_medium=banner_epaper&utm_campaign=artikel_epaper).

<sup>4</sup> Md. Habiburrahman, "Islamic Legal Maxims and Their Relevance to Business and Finance," *Journal of Islam in South Asia (JISA)* 1, no. 1 (2015): 205–32.

significance of transparency and trust in the monetary system.<sup>5</sup> Meanwhile, Dr Mohd. Daud Bakar (Chairman of the Sharia Council of Bank Negara Malaysia) argued that cryptocurrency with blockchain technology provides convenience and advantages that are widely beneficial to humans and, therefore, in line with sharia principles or *maqāsid asy-syarī'ah*.

In fact, scholars' opinions that forbid cryptocurrency based on the speculative element are weak and less solid because they cannot distinguish between *garar* or "uncertainty" and *al-gurm* or "risk" in today's cryptocurrency practice.<sup>6</sup> *Garar* refers to excessive uncertainty, ambiguity, or a lack of clarity in a contract's terms or conditions. This implies the presence of hidden or excessive uncertainty that creates a contract void in Islamic finance. In this context, *garar* is strictly prohibited in Islamic finance, and contracts containing *garar* are considered invalid. This approach is based on the principle of avoiding excessive uncertainty and deception during financial transactions. In cryptocurrency, a contract with highly uncertain terms such as vague obligations or unclear conditions may be considered a *garar*.

On the other hand, *al-gurm* refers to the normal and acceptable level of risk associated with any economic activity or investment. It acknowledges that some degree of risk is inherent in all transactions and investments. *al-gurm* is generally accepted in Islamic finance, as long as the risk is within reasonable and acceptable limits. Islamic finance principles recognize that economic activities involve some level of risk and are considered a natural part of business. In cryptocurrency, the risk associated with price volatility is a common example in *al-gurm*. Therefore, uncertainty cannot be used as a reason for rejecting or banning the existence of cryptocurrencies.

In this context, Islam strictly permits businesses with high-risk potential (*al-gunnm bi al-gurm*) and prohibits activities that harm others. This principle legitimizes profit earning only by risk-sharing and engaging in an economic venture. It is strictly prohibited in Islam to guarantee profits and to avoid liability for losses. While Islam does not prohibit risk-taking, it discourages speculative investments. Uncertainty in Islam is related to speculative activities such as

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<sup>5</sup> Alam, "Fatawa Analysis of Bitcoin."

<sup>6</sup> Alam.

gambling or *maysir*, which are highly prohibited, or *harm*.<sup>7</sup> Hence, Islam permits businesses with high-risk potential and does so under the principle of "*al-gunm bi al-gurm*," which requires risk-sharing and bearing the responsibility for potential losses. In contrast, it prohibits activities that harm others or involve unethical or immoral practices.

Ultimately, whether cryptocurrency is *halāl* or *harām* depends on the interpretation of Islamic law by the respective ulema or religious institutions where the *fatwā* was issued. In this context, it is possible to criticize legal opinions issued by ulema or religious institutions, as long as they are carried out objectively and by scientific standards. The author argues that the legal arguments that resulted in the conclusion that cryptocurrency was forbidden (*harām*) by the Indonesian Ulema Council were not built on solid legal reasoning and did not consider the dimensions of the benefits of technological advances in all aspects of human life. Technology is non-sharia, meaning that it is not bound by *halāl-harām* status as long as its existence is exploited and used for the common good and does not involve any *harām* activities.<sup>8</sup> This nuanced perspective reflects the evolving nature of the Islamic perspective on modern financial instruments and the need to adapt traditional principles to contemporary financial landscapes.

Technology has significantly improved our lives, from communication and transport to healthcare and connectivity. It has also influenced various fields of modern society, such as transportation, education, and medicine. In the context of Islamic ethics, discourse on Information and Communication Technologies (ICTs) tends to focus on what one uses. If ICTs are used for positive purposes, they are generally accepted.<sup>9</sup> However, the debate on the permissibility of cryptocurrencies in Islam is complex. Some scholars argue that cryptocurrencies can be accepted as Sharia-compliant if they are recognized and integrated into the central banking systems of Islamic countries, removing their ambiguity, drastic volatility, and

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<sup>7</sup> Nurul Syazwani Mohd Noor, Abdul Ghafar Ismail, and Muhammad Hakimi Mohd Shafiai, "The Origin and Sources of Shariah Risk in Islamic Finance," in *Persidangan Kebangsaan Ekonomi*, vol. 11, 2016, 27–28.

<sup>8</sup> Umar A. Oseni and S. Nazim Ali, *Fintech In Islamic Finance: Theory and Practice* (New York: Routledge Taylor & Francis Group, 2019). 80.

<sup>9</sup> Amana Raquib, *Islamic Ethics of Technology: An Objectives (Maqasid) Approach* (Selangor, Malaysia: The Other Press Sdn, 2020).

susceptibility to speculation. Others promote the idea of evaluating each crypto-asset in light of sharia principles, checking the project underpinning the crypto-asset, the utility of the token, tokenomics, financials, staking process, and governance.<sup>10</sup>

In addition, the MUI's ruling on cryptocurrency has been controversial, and it is important to note that the debate is not about the technology itself but instead about its application and the potential risks associated with it. The principle of "*al-gunm bi al-gurm*" in Islamic finance, which legitimizes profit earnings only through risk-sharing and engaging in an economic venture, is a key consideration in this debate. Therefore, while technology is not bound by *halāl-harâm* status, its use must be for the common good and not involve activities that are considered *harâm* in Islam.

Several studies and articles have been published on *fatwā* (Islamic legal rule) and cryptocurrency. Studies investigating whether cryptocurrencies align with Islamic principles and economics have been conducted by scholars such as Muhammad Abu Bakar, Muhammad Umar Chapra, and Luqman Nurhisam. Bakar explored the permissibility of Bitcoin in Islamic law and its alignment with Islamic finance principles,<sup>11</sup> Chapra on legal and Sharia perspectives on the compatibility of cryptocurrency with Islamic finance principles,<sup>12</sup> while Nurhisam discussed the use of Bitcoin as a currency and means of payment in Islamic law. The comparative analysis and legal implications have been carried out, among others, by Farrukh Habib, Muhammad Azam, and Santoso. Habib provided a comparative analysis of *fatwā* on cryptocurrency from Islamic scholars and institutions, emphasizing differences and similarities,<sup>13</sup> while Azam and Muhammad Rizwan observe the legal and Shariah (Islamic

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<sup>10</sup> M R Rabbani, "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review," *International Journal of Economics and Business Administration* 8, no. 2 (2020): 65–86, <https://doi.org/10.35808/ijebe/444>.

<sup>11</sup> Muhammad Abu Bakar, "Cryptocurrency and Islamic Law: A Study of the Permissibility of Bitcoin from an Islamic Perspective," *Journal of Islamic Economics, Banking and Finance* 45, no. 4 (2018): 131–60.

<sup>12</sup> Muhammad Umer Chapra, "Islamic Finance and Cryptocurrency: A Legal and Shariah Perspective," *Journal of Islamic Monetary Economics and Finance* 6, no. 3 (2020): 86–99.

<sup>13</sup> Farrukh Habib, "A Critical Analysis of Bitcoin from an Islamic Legal Perspective," in *Fintech, Digital Currency and the Future of Islamic Finance*, ed. Nafis Alam Syed Nazim Ali (Heidelberg: Springer Books, 2021), 9–29.

law) implications of cryptocurrency and argue that cryptocurrency can be made *halāl* by incorporating certain principles of Islamic finance.<sup>14</sup> Santoso, on the other hand, conducted a comparative analysis of *fatwā* on cryptocurrencies by Islamic scholars and institutions in Indonesia and Malaysia.<sup>15</sup>

Another type is research focusing on critical analysis and the *Maqāṣid asy-syarī'ah* perspective which was done, among others, by Mervan Selcuka and Wartoyo and Haerisma. Selcuka who conducted a critical analysis of cryptocurrency's permissibility considering the potential benefits and drawbacks of a *halāl* economy,<sup>16</sup> while Wartoyo and Haerisma examined the *Maqāṣid asy-syarī'ah* perspective on the existence of cryptocurrencies.<sup>17</sup> In the context of the impact and development of Islamic finance, Imran analyzed the implications of cryptocurrency on the Islamic financial system and the challenges in its development<sup>18</sup> while Muhammad Imran and Muhammad Uzair discussed the potential impact of cryptocurrency on the growth and development of Islamic finance, emphasizing financial inclusion and economic development if made *halāl*.<sup>19</sup>

Lastly, research related to the legal debates in Indonesia is that of Aḥmad Ūlil al-Albāb al-'Umar who reviewed the existence of cryptocurrency in Indonesia while exploring legal status debates among scholars and its status in state laws.<sup>20</sup> It went almost the same with Akbar and Huda who studied intentions to discover the reasons

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<sup>14</sup> Muhammad Azam and Muhammad Rizwan, "Cryptocurrency and Islamic Finance: A Study of the Legal and Shariah Implications," *Journal of Islamic Finance* 10, no. 1 (2021).

<sup>15</sup> Santosa, "Islamic Finance and Cryptocurrency: A Comparative Study of the *Fatwā* in Indonesia and Malaysia," *Journal of Islamic Monetary Economics and Finance* 56, no. 7 (2021).

<sup>16</sup> Mervan Selcuk and Suleyman Kaya, "A Critical Analysis of Cryptocurrencies from an Islamic Jurisprudence Perspective," *Turkish Journal of Islamic Economics* 8, no. 1 (2021): 137-52, <https://doi.org/10.26414/a130>.

<sup>17</sup> Alvien Septian Haerisma, "Cryptocurrency in the Perspective of Maqasid Al-Shariah: A Critical Analysis of the Mafsadah (Harm) and the Maslahah (Benefit) of Cryptocurrency," *Afkarunakaruna* 18, no. 1 (2022).

<sup>18</sup> Muhammad Imran, "The Implications of Cryptocurrency for the Islamic Financial System," *Journal of Islamic Accounting and Business Research* 12, no. 6 (2021).

<sup>19</sup> Muhammad Imran and Muhammad Uzair, "Cryptocurrency in Islamic Finance: A Game Changer or a Threat?," *Journal of Islamic Finance* 9, no. 1 (2020).

<sup>20</sup> Al Umar et al., "Analysis of Cryptocurrency in Islamic Perspective and Its Existence in Indonesia."

behind the prohibition of cryptocurrency as a currency or commodity/asset by the Indonesian Ulema Council. *Garar*, *ḍarār*, and *qimār* are the legal bases used to determine the illegality of cryptocurrencies in Indonesia.<sup>21</sup>

Based on the literature review, the position of this research can be mapped in comparison to previous studies. More specifically, this paper critically analyzes the Islamic legal ruling (*fatwā*) for banning cryptocurrencies by the Indonesian Ulema Council. Criticism of the *fatwā* for refusing cryptocurrencies in the Indonesian context is yet to be made by many reviewers and academics. Therefore, this research fills gaps in the limitations of this study. This critical analysis is expected to provide a new orientation in responding to the dynamics of the community, which needs to be sufficiently approached by a legalist-formalist approach but is more progressive-dynamic by taking into account the demands of a fast-paced and dynamic.

## **Method**

This research employs a qualitative methodology that involves a thorough review of the relevant literature. The data for this research were collected from a literature review and further analyzed using qualitative methods. To facilitate this, the data for this research were categorized and selected and then linked to the problem being studied to answer the research question. The data were gathered through careful observation, specifically through the analysis of relevant documents and records. This qualitative study used inductive thinking, which involves drawing conclusions that begin with a symptom and progress to several facts, which can be used to generalize the conclusions of this research.<sup>22</sup>

## **Result and Discussion**

### **The Criticism of Notion about *Garar*, *Ḍarār*, and Contradiction to Existing Rules**

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<sup>21</sup> Taufik Akbar and Nurul Huda, "Haramnya Penggunaan Cryptocurrency (Bitcoin) Sebagai Mata Uang atau Alat Tukar Di Indonesia Berdasarkan *Fatwā* MUI," *Jurnal Ilmiah Manajemen dan Bisnis (Jambura)* 5, no. 2 (2022): 747-56.

<sup>22</sup> Luis H. Toledo-Pereyra, *Research Design, Journal of Investigative Surgery*, vol. 25 (California: Sage Publications, 2012), <https://doi.org/10.3109/08941939.2012.723954>. Michael Quinn Patton, *Qualitative Research & Evaluation Methods*, 4th ed. (California: Sage Publications, 2014).



The first point of MUI's *fatwā* reads, "The use of cryptocurrency as currency is illegal because it contains *garar*, *darār*, and is contrary to Law No. 7 of 2011 and Bank Indonesia Regulation Number 17 of 2015." The use of currency in Islam has no specific restrictions or conditions, meaning that all people may use this type of currency and not other types. Currency is only a payment whose form can vary and differ.<sup>23</sup> If anyone decides to use camel or goat skin as a means of payment, it is his/her prerogative. Furthermore, suppose that money is used as a means of payment for buying and selling and the parties involved agree with the payment instrument. In this case, outsiders have no power to decide and intervene in the choice of currency that has been agreed upon and decided autonomously. There were no specific restrictions and conditions for using currencies in the *al-Qur'ān* and *as-Sunnah*; even dinars and dirhams are not the official currencies in Islam, and Muslims are not obligated to use them until now.

As money is understood in the context of a monetary economy, money or currency must meet three criteria: (i) a store of value, (ii) a medium of exchange, and (iii) a unit of account. Currencies can be classified based on monetary authorities or regulators and those who assign value to the issued currency. In today's global monetary system, the term fiat money which functions as a store of value and a means of payment is familiar. This approach differs from money, whose value is built up with physical values, such as gold and silver, called commodity money. However, in recent decades, the global currency system has tended to be centralized amid the strengthening of digital-based models and types of money with e-payment systems.<sup>24</sup> The majority of cryptocurrencies in circulation today are distributed through blockchain technology, with the main help of the internet network capable of working across countries and territories. The difference between one cryptocurrency and another lies in its users making changes to the general ledger, payment mechanism, and number of rewards provided. However, the technology used remains the same: the blockchain.

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<sup>23</sup> Muhammad Zulkhibri, "Halal Cryptocurrency and Financial Stability," in *Halal Cryptocurrency Management* (Switzerland AG: Palgrave Macmillan, 2019), 43.

<sup>24</sup> John Bagnall et al., "Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data," *International Journal of Central Banking* 12, no. 4 (2016): 1-61, <https://doi.org/10.2139/ssrn.2796990>.

The argument that there is an element of *garar* and *ḍarār*, in cryptocurrency is very weak and less solid. This is mainly because all transactions using cryptocurrency are transparent, accountable, and secure, where everything is recorded very well and accurately on the blockchain system. The most important thing is that the transaction is based on the principle of mutual consent and is not under pressure—a significant prerequisite in business and economic activities in Islam. Blockchain technology provides very high transparency and accountability guarantees so that no party is harmed due to something being covered as the *garar* and *ḍarār* criteria in the term of MUI's *fatwā*.

Indonesian Ulema Council members, however, failed to interpret the term *garar* (uncertainty) within the classical *fiqh* in the context of modern economic practices. Risk or uncertainty cannot be used to justify establishing cryptocurrencies as illegal. From an Islamic perspective, something cannot be labeled *ḥarām* because it contains risks or uncertainties. Risk is natural and can be mitigated according to need. Mitigating risk is recommended in Islam to safeguard the interests of oneself and others.<sup>25</sup>

Prophet Muhammad forbade buying and selling something unclear or *garar*, for instance, buying a calf still in its mother's stomach. In this case, the shape and type of the calf are unclear, whether it will live or die, whether the mother will survive, and so on. What about using cryptocurrencies in connection with your financial transactions? Certainly, understanding the essence of what a person buys or sells is crucial in any transaction, and this principle holds for cryptocurrencies. It is akin to being aware of the quantity and nature of items involved in a transaction. In the context of cryptocurrencies, it is clear and transparent; the buyer precisely knows the number and type of coins in each transaction. However, a noteworthy misconception arises when people overlook the fundamental benefits of what they are transacting, and this misinterpretation aligns with the Islamic concept of *garar*, prohibiting such transactions. In Islam, engaging in transactions without a clear understanding of the benefits falls under the category of *garar*, which emphasizes the importance of

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<sup>25</sup> Mohammad Hashim Kamali, "Uncertainty and Risk-Taking (Gharar) in Islamic Law," *IJUM Law Journal* 7, no. 2 (1999): 200–206. Sami Al-Suwailem, *Hedging In Islamic Finance, Occasional Paper No. 10* (Jeddah: Islamic Development Bank, 2006).

informed and transparent dealings. It is impossible for someone to purchase something without considering the benefits. In some cases, the benefits of cryptocurrency are not known at the time of purchase, and it is only possible to know the purchased type and amount. Therefore, the criteria for *garar* formulated in the MUI's *fatwā* are ambiguous and debatable.

It is true that there are elements of uncertainty and risk associated with cryptocurrencies, such as Bitcoin, as highlighted by Islamic finance scholars. The lack of intrinsic value and absence of a central bank's supervision are valid concerns when evaluating the compatibility of cryptocurrencies with Islamic principles. However, it is important to note that cryptocurrencies have their own unique characteristics that set them apart from traditional financial instruments. Although the value of Bitcoin may not be tied to real assets or government regulations, it operates in a decentralized network that ensures transparency and security through advanced cryptographic techniques. Additionally, the underlying technology of cryptocurrencies, known as blockchain, provides a transparent and immutable record of all transactions, which can address concerns about accountability and fraud.

Furthermore, it is worth mentioning that there are efforts being made to develop Sharia-compliant cryptocurrencies. Cryptocurrencies such as Onegram and X8X are designed to adhere to Islamic principles by being backed by tangible assets like gold.<sup>26</sup> This provides a clear underlying value and a solid foundation from the Sharia perspective.

### **The Criticism of Notion about Unfulfillment of *Ṣila'h* Criteria in Buying/Selling Digital Assets**

The second point of MUI's *fatwā* reads "*Cryptocurrencies as digital commodities/assets are illegal to be traded because they contain *garar*, *ḍarār*, *qimār* and do not meet the requirements of *ṣila'h*, namely the existence of physical form, value-based, known amount with certainty, property right-based, and ability to be handed over to the buyer*". In this

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<sup>26</sup> Irene K.F. Kirchner, "Are Cryptocurrencies Halāl? On the Sharia-Compliance of Blockchain-Based Fintech," *Islamic Law and Society* 28, no. 1–2 (2021): 76–112, <https://doi.org/10.1163/15685195-BJA10005>. M. Kabir Hassan et al., "Application of Precious Metal-Backed Cryptocurrency in Islamic Finance," *Journal of Islamic Finance Accountancy* 5, no. 2 (2020): 17–26.

case, the MUI's *fatwā* contradicts the regulation of the Commodity Futures Trading Regulatory Agency (BAPPEBTI) Number 2 of 2019 concerning the implementation of physical commodity markets in futures exchanges. The Commodity Futures Trading Regulatory Agency (BAPPEBTI) regulation number 5 of 2019 concerns technical provisions for organizing the physical crypto asset market on the future exchange as amended by agency regulation number 9 of 2019, agency regulation number 2 of 2020, and number 3 of 2020, and regulation commodity futures trading regulatory agency (BAPPEBTI) number 7 of 2020 concerning the establishment of lists of crypto assets that can be traded on the physical market of crypto assets.

The rationale for determining cryptocurrency assets as commodities is (i) the price of cryptocurrency assets (coins or tokens) fluctuates significantly from time to time over time, and trading is highly liquid; (ii) there is no government intervention, cryptocurrency assets emerging from the technology blockchain are freely traded without government intervention. Thus, the market structure is perfect, (iii) a large number of market demands and offers huge demand and supply both nationally and globally, and (iv) availability of supply cryptocurrency assets which have grown as a trading center for cryptocurrency assets (exchange) in the world. In Indonesia, cryptocurrency asset traders have emerged with many customer transactions; (v) commodity standards as a digital commodity, and cryptocurrency assets have bars like other commodities, which include the use of technology, a price/value that can be traded and used as a means of payment within a particular community/project.<sup>27</sup> The rules of the BAPPEBTI came out before the MUI's *fatwā*, so it is contrary to pre-existing regulations. The position of this regulation in the context of constitutional law in Indonesia is higher than that of MUI's *fatwā*.

Apart from contradicting the regulations above, it is unclear what criteria were used by the Indonesian Ulema Council in terms of the formulation of the *fatwā* so that buying and selling cryptocurrency assets/commodities using internet platforms is considered to fulfill the elements of *garar*, *darār*, and *qimār*. Everyone can experience losses from buying and selling cryptocurrency assets, which is common in investment. However, this case cannot be used as an excuse to

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<sup>27</sup> BAPPEBTI, "Perdagangan Aset Kripto" (2021).

stipulate that all technology is *haram*, and therefore, may not be used. The existence of several cases of losses arising from buying and selling cryptocurrency assets is not enough to decide on their illegal status. In addition to considering the *ḍarār* (loss), it is essential to look at the *maṣlahah* (benefit) before concluding the *fatwā*. It is argued that there is no evidence from the MUI *fatwā* that cost-benefit is used to decide whether an investment in cryptocurrencies is illegal. What happens if the benefits are greater than the damage? Of course, this opens up space for more debate than just a *halāl-ḥaram*. Does this *fatwā* also consider the diversity of cryptocurrencies other than Bitcoin, in which there are thousands of cryptocurrencies worldwide and have different characteristics and benefits? It is clear that the MUI *fatwā* does not consider this fact. Therefore, the proposed legal opinion was biased and impractical.

The potential for losses in cryptocurrency trading is a reality, with studies indicating that a significant proportion of investors have experienced losses. For instance, a survey by LendingTree found that 38% of investors sold their cryptos less than it was worth buying them.<sup>28</sup> Similarly, a study by the Bank for International Settlements suggests that approximately, three-quarters of users are likely to have lost money on their investments in cryptocurrencies. These losses can be amplified when investing in margin, a strategy that can prove lucrative if investments perform well, but can lead to significant losses if the market dips.<sup>29</sup> However, it is important to note that the potential for losses is not unique to cryptocurrency but is a common risk associated with any form of investment. The volatility and complexity of cryptocurrencies contribute to their risk profile, but they also offer potential benefits, such as cheaper and faster money transfers and decentralized systems that do not collapse at a single point of failure.<sup>30</sup>

The Islamic perspective on technology is generally considered permissible as long as it does not contradict sacred law. Technology is

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<sup>28</sup> "38% of Investors Have Lost More in Crypto Than Made It | LendingTree," accessed November 5, 2023, <https://www.lendingtree.com/debt-consolidation/crypto-investors-survey/>.

<sup>29</sup> "Did You Lose Money Investing in Bitcoin? You're Not Alone, Says Study. - Barrons," accessed November 5, 2023, <https://www.barrons.com/articles/bitcoin-crypto-losses-bis-study-51668619666>.

<sup>30</sup> Rabbani, Khan, and Thalassinou, "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review."

a tool that can be used for good or evil, and its permissibility depends on how it is used. For instance, using a mobile phone is permissible, but using it in an illicit relationship is harmful. Similarly, blockchain technology, which underpins cryptocurrencies, is considered acceptable because it makes transactions more secure and enables the use of smart contracts.<sup>31</sup>

Regarding the “*qimār*” gambling allegations, it seems that the conclusion of the *fatwā* is based solely on the fact that cryptocurrency is volatile and, therefore, a risky investment. In this case, it may be counterintuitive or perceptual between one person and another. Risk differs from gambling, and there is no relationship between gambling and risk. Both had other characteristics. An activity can have negligible risk, which is considered gambling. For example, the score of a soccer match between teams A and B was estimated. On the other hand, some activities carry a significant risk but are not considered gambling. For example, a person may open a large restaurant with the potential for substantial loss. Gambling is closely related to the “zero-sum game” concept: one party gains by receiving rewards, while the other loses by giving tips. When buying fluctuating cryptocurrency assets, it cannot be equated with a “zero-sum game” because money and assets are exchanged. Assets in the hands of buyers are valued higher than the price they pay and vice versa. The exchange of goods is a trade practice that involves both parties and is carried out based on mutual consent. Whether goods must be handed over face-to-face in the current digital economy is not a crucial issue and, therefore, irrelevant to being questioned through *haram* status.

Another issue that needs to be criticized is the fulfillment of the *sil'ah*, which exists in physical form, has value, has a known amount with certainty, is proprietary, and ability to be handed over to the buyer. Whether cryptocurrencies can fulfill *māl* (property) characteristics according to an Islamic perspective is crucial. To be considered fulfilling the criteria for assets and be traded, something must meet the requirements of *mutaqawwim* (legal value in sharia),<sup>32</sup> namely having desirability and storability. To this extent, cryptocurrencies meet the desirability criteria. For example, blockchain technology, as the primary basis for operating

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<sup>31</sup> Abu-Bakar, “Shariah Analysis of Bitcoin, Cryptocurrency, and Blockchain.”

<sup>32</sup> Alam, “Fatawa Analysis of Bitcoin.”

cryptocurrencies, can replace the proof-of-work protocol, decentralization, limited supply, and borderless payment with less transactional fees, making cryptocurrency desirable. This is evidenced by the high market demand for cryptocurrencies. Cryptocurrencies are encoded in the blockchain technology and entered into a publicly accessible ledger system. Considering these two criteria, it can be concluded that cryptocurrencies such as Bitcoin have *mutaqawwim* (legal value in sharia) criteria and are legally traded in the open market.

The next question is how to measure a cryptocurrency's intrinsic value, and what drives someone to trade something whose value must be clarified. Similar to fiat money, digital money has an intrinsic value. Fiat money is valuable because it is circulated by monetary authorities and is agreed upon as a legal tender. At the same time, cryptocurrency has an inherent value attached to blockchain, anonymity, the replacement of trusted party intermediation with the proof-of-work protocol, borderless payments with less transactional fees, and the notion and craze over an innovative monetary system.

### **The Criticism of Notion about Permissibility of Cryptocurrency with *Sil'ah* Criteria Compliance**

The third point of MUI's *fatwā* reads, "*Cryptocurrency as a property/asset that fulfills the requirements of *ṣila'h* while having underlying as well as clear legal benefits are allowed to be traded*". This provision is a dilemma and pragmatic because it gives the impression of being an alternative opinion to the strict prohibition of buying and selling assets/commodities that do not meet the *ṣila'h* in the second point of the *fatwā*, so it seems to be a rubber *fatwā*, meaning that it can be interpreted according to the interests of each individual. As a result, precise regulation as the primary foundation for the law is biased and has multiple interpretations. The critical question is who can determine whether cryptocurrency is valuable, whereas others are not. It could be that some people may say that a certain type of cryptocurrency has high value and fulfills the *sil'ah* criteria, while others have low value. This assessment is subjective and cannot be used as a reference for determining the *sil'ah* criteria. Therefore, it is essential to decide on the criteria for *sil'ah* in terms of cryptocurrency both qualitatively and quantitatively.

*Sil'ah* is an Arabic term in Islamic finance and refers to the transfer of ownership or debt from one person to another. In cryptocurrency, *sil'ah* can refer to the transfer of ownership of a digital asset from one person to another, typically through a peer-to-peer transaction on a blockchain network. In order for *sil'ah* to be considered permissible under Islamic finance principles, specific criteria must be met. Some of these criteria include: (i) Object of the transaction: The object of the transaction must be *ḥalāl* (permissible under Islamic law) and must not involve any prohibited activities such as *riba* (usury), gambling, or speculation, (ii) Transfer of ownership: The transfer of ownership or debt must be genuine and complete, with no conditions attached, (iii) Delivery of the object: The object of the transaction must be delivered to the new owner and the transfer of ownership must be complete, (iv) Fairness and justice: The transaction must be conducted in a fair and just manner, with no exploitation or oppression of any of the parties involved, (v) Risk-sharing: The transaction must involve an element of risk-sharing, where both parties share in the profits and losses of the transaction, (vi) Profit and loss sharing: The transaction must be based on profit and loss sharing, where the profit or loss is shared between the parties involved in the transaction, and (vii) Disclosure: All relevant information about the transaction must be disclosed to both parties involved so that they can make an informed decision.<sup>33</sup> These criteria are essential to ensure that a transaction complies with the principles of Islamic finance and is considered permissible under Islamic law.

MUI's *fatwā* rejects an alternative discourse related to the criteria for underlying assets in cryptocurrencies. However, it is important to note that the *fatwā* issued by MUI does not reflect the views of all Islamic scholars. There are alternative discourses and opinions regarding the criteria for the underlying assets in cryptocurrencies. These alternative viewpoints argue that cryptocurrency can be considered permissible if it satisfies certain conditions. One such condition, as suggested by some scholars, is that cryptocurrencies should be backed by a real asset. This ensures that the value of cryptocurrency is derived from tangible and identifiable

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<sup>33</sup> Mohd Ma'sum Billah and Mohammed Fawzi Aminu Amadu, "Shariah Code of Ethics in Cryptocurrency," in *Halal Cryptocurrency Management*, ed. Mohd Ma'sum Billah (Switzerland AG: Palgrave Macmillan, 2019), 149–63.



assets, rather than being purely speculative.<sup>34</sup> Proponents of this viewpoint argue that cryptocurrency becomes less prone to volatility and speculation by having a solid underlying asset. Furthermore, this approach aligns with the principles of Islamic finance, which emphasize the importance of tangible assets and real economic activities. Backing a cryptocurrency with a real asset ensures that the currency has inherent value and is backed by something of substance.<sup>35</sup> In addition, the requirement for a clear underlying asset provides transparency and accountability. This allows users to have a clear understanding of what supports the value of cryptocurrency and instills confidence in its stability.<sup>36</sup>

Several experts and practitioners have offered alternative approaches that align with Islamic principles to ensure the fulfillment of the criteria for underlying assets in cryptocurrencies. One of these is metal-based or gold-based crypto money. James Clark released dozens of companies in various parts of the world that promote precious metal-based cryptocurrencies<sup>37</sup>. The first company to have a sharia certificate was HelloGold, which was based in Malaysia. This company obtained a Sharia certificate in February 2018 for its product GOLDX. The Amanie Advisor issues its Sharia certificate. At the same time, OneGram, a company with offices in Dubai in 2018, declared itself a metal-based cryptocurrency service provider per the Sharia principle. Each OneGram unit is backed by a physical gold store in a vault, a feature that aims to address speculation and price volatility, and their tokens are paired now for trading against Bitcoin.<sup>38</sup> Alternative cryptocurrencies based on precious metals and fulfilling

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<sup>34</sup> Bayu Adi Nugroho, "The Stability of Islamic Cryptocurrencies and Copula-Based Dependence With Alternative Crypto and Fiat Currencies," *ISRA International Journal of Islamic Finance* 15, no. 2 (2023): 80-97, <https://doi.org/10.55188/ijif.v15i2.543>.

<sup>35</sup> Selcuk and Kaya, "A Critical Analysis of Cryptocurrencies from an Islamic Jurisprudence Perspective."

<sup>36</sup> Huaqun Guo and Xingjie Yu, "A Survey on Blockchain Technology and Its Security," *Blockchain: Research and Applications* 3, no. 2 (2022): 100067, <https://doi.org/10.1016/j.bcra.2022.100067>.

<sup>37</sup> "Complete Gold-Backed Cryptocurrency Guide - 2021," 2022, <https://www.goldscape.net/gold-blog/gold-backed-cryptocurrency/>.

<sup>38</sup> M. Kabir Hassan et al., "Application of Precious Metal-Backed Cryptocurrency in Islamic Finance," *Journal of Islamic Finance Accountancy* 5, no. 2 (2020): 17-26.

the *sil'ah* requirements are available on the market to be used as an alternative Sharia-based investment.

### **Conclusion**

The Indonesian Ulema Council has determined that cryptocurrencies, such as Bitcoin and Ethereum, are harmful. Furthermore, MUI's *fatwā* not only forbids cryptocurrencies as currency but also as a commodity or digital asset. One reason is that this type of currency does not have a physical form that can be handed over to buyers, ultimately creating uncertainty in transactions. This *fatwā* was intended for Muslims to conduct *mu'amalah* transactions. However, legal arguments related to the prohibition of cryptocurrency have been built on subjective, weak, and inaccurate legal reasoning. They do not consider the dimensions of the benefits of technological advances in all aspects of human life. Technology is non-sharia, meaning that it is not bound by *halāl-harām* status as long as its existence is exploited and used for the common good. Blockchain technology is increasingly used in various sectors of life, driven by different market players ranging from small to large business scales. Then, with this MUI's *fatwā*, is the use of cryptocurrencies in other sectors automatically illegal or *harām*? One of the limitations of this study is that it cannot assess the economic and social impacts of the MUI's *fatwā*. Hence, future studies should further examine the effect of the prohibition of cryptocurrencies, particularly in the financial and non-financial sectors, both with a quantitative approach and a combination of qualitative and quantitative approaches.

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### **Bibliography**

Abu-Bakar, Mufti Muhammad. "Shariah Analysis of Bitcoin, Cryptocurrency, and Blockchain." *Blossom Labs*. Vol. 1, 2017. <https://blossomfinance.com/bitcoin-working-paper>.

- Abu Bakar, Muhammad. "Cryptocurrency and Islamic Law: A Study of the Permissibility of Bitcoin from an Islamic Perspective." *Journal of Islamic Economics, Banking and Finance* 45, no. 4 (2018).
- Akbar, Taufik, and Nurul Huda. "Haramnya Penggunaan Cryptocurrency ( Bitcoin ) Sebagai Mata Uang Atau Alat Tukar Di Indonesia Berdasarkan Fatwā MUI." *Jurnal Ilmiah Manajemen Dan Bisnis (Jambura)* 5, no. 2 (2022): 747-56.
- Al-Suwailem, Sami. *Hedging In Islamic Finance. Occasional Paper No. 10*. Jeddah: Islamic Development Bank, 2006.
- Alam, Faras. "Fatawa Analysis of Bitcoin." In *Halāl Cryptocurrency Management*, 136-40. Switzerland AG: Palgrave Macmillan, 2019.
- Ammer, Mohammed Abdullah, and Theyazn H.H. Aldhyani. "Deep Learning Algorithm to Predict Cryptocurrency Fluctuation Prices: Increasing Investment Awareness." *Electronics (Switzerland)* 11, no. 15 (2022): 1-22. <https://doi.org/10.3390/electronics11152349>.
- Astuti, Intan Dwi, Suryazi Rajab, and Desky Setiyouji. "Cryptocurrency Blockchain Technology in the Digital Revolution Era." *Aptisi Transactions on Technopreneurship (ATT)* 4, no. 1 (2022): 9-16. <https://doi.org/10.34306/att.v4i1.216>.
- Azam, Muhammad. "Islamic Finance and Blockchain Technology: A Study of the Legal and Shariah Implications." *Journal of Islamic Finance* 10, no. 3 (2021).
- Azam, Muhammad, and Muhammad Rizwan. "Cryptocurrency and Islamic Finance: A Study of the Legal and Shariah Implications." *Journal of Islamic Finance* 10, no. 1 (2021).
- Bagnall, John, David Bounie, Kim P. Huynh, Anneke Kosse, Tobias Schmidt, Scott Schuh, and Helmut Stix. "Consumer Cash Usage: A Cross-Country Comparison with Payment Diary Survey Data." *International Journal of Central Banking* 12, no. 4 (2016): 1-61. <https://doi.org/10.2139/ssrn.2796990>.
- BAPPEBTI. *Perdagangan Aset Kripto* (2021).
- Billah, Mohd Ma'sum, and Mohammed Fawzi Aminu Amadu. "Shariah Code of Ethics in Cryptocurrency." In *Halāl Cryptocurrency Management*, edited by Mohd Ma'sum Billah, 149-63. Switzerland AG: Palgrave Macmillan, 2019.
- Chapra, Muhammad Umer. "Islamic Finance and Cryptocurrency: A Legal and Shariah Perspective." *Journal of Islamic Monetary*

- Economics and Finance* 6, no. 3 (2020).
- "Complete Gold-Backed Cryptocurrency Guide - 2021," 2022. <https://www.goldscape.net/gold-blog/gold-backed-cryptocurrency/>.
- Demirkan, Sebahattin, Irem Demirkan, and Andrew McKee. "Blockchain Technology in the Future of Business Cyber Security and Accounting." *Journal of Management Analytics* 7, no. 2 (2020): 189–208. <https://doi.org/10.1080/23270012.2020.1731721>.
- "Did You Lose Money Investing in Bitcoin? You're Not Alone, Says Study. - Barrons." Accessed November 5, 2023. <https://www.barrons.com/articles/bitcoin-crypto-losses-bis-study-51668619666>.
- Faizi. "Uang Kripto Dan Masa Depan Keuangan Syariah." *Kompas.Id*, 2021. [https://epaper.kompas.id/pdf/show/20210705?page=6&utm\\_source=hal\\_baca&utm\\_medium=banner\\_epaper&utm\\_campaign=artikel\\_epaper](https://epaper.kompas.id/pdf/show/20210705?page=6&utm_source=hal_baca&utm_medium=banner_epaper&utm_campaign=artikel_epaper).
- Franco, Pedro. *Understanding Bitcoin: Cryptography, Engineering and Economics*. West Sussex: Wiley, 2014.
- Guo, Huaqun, and Xingjie Yu. "A Survey on Blockchain Technology and Its Security." *Blockchain: Research and Applications* 3, no. 2 (2022): 100067. <https://doi.org/10.1016/j.bcra.2022.100067>.
- Habib, Farrukh. "A Critical Analysis of Bitcoin from an Islamic Legal Perspective." In *Fintech, Digital Currency and the Future of Islamic Finance*, edited by Nafis Alam Syed Nazim Ali, 9–29. Heidelberg: Springer Books, 2021.
- Habiburrahman, Md. "Islamic Legal Maxims and Their Relevance to Business and Finance." *Journal of Islam in South Asia (JISA)* 1, no. 1 (2015): 205–32.
- Haerisma, Alvien Septian. "Cryptocurrency in the Perspective of *Maqāṣid Asy-syari'ah*: A Critical Analysis of the Mafsadah (Harm) and the *Maṣlahah* (Benefit) of Cryptocurrency." *Aḥkarunakaruna* 18, no. 1 (2022).
- Hakim, Sofian Al. "Analytical Framework in Study of *Fatwās* on Sharia Economics." *Ahkam: Jurnal Ilmu Syariah* 19, no. 2 (2019): 315–30. <https://doi.org/10.15408/ajis.v19i2.12219>.
- Hassan, M. Kabir, Aishath Muneeza, Mustapha Abubakar, and Muhammad Auwalu Haruna. "Application of Precious Metal-

- Backed Cryptocurrency in Islamic Finance." *Journal of Islamic Finance Accountancy* 5, no. 2 (2020): 17–26.
- Imran, Muhammad. "The Implications of Cryptocurrency for the Islamic Financial System." *Journal of Islamic Accounting and Business Research* 12, no. 6 (2021).
- Imran, Muhammad, and Muhammad Uzair. "Cryptocurrency in Islamic Finance: A Game Changer or a Threat?" *Journal of Islamic Finance* 9, no. 1 (2020).
- Izhar, Hylmun, and Ahmet Suayb Gundogdu. "Characterizing Cryptocurrencies and Why It Matters." In *Halāl Cryptocurrency Management*, 108. Switzerland AG: Palgrave Macmillan, 2019.
- Kamali, Mohammad Hashim. "Uncertainty and Risk-Taking (Garar) in Islamic Law." *IIUM Law Journal* 7, no. 2 (1999): 200–206.
- "Keputusan Fatwā Hukum Uang Kripto Atau Cryptocurrency - Majelis Ulama Indonesia." 12 November, 2021. <https://mui.or.id/berita/32209/keputusan-fatwā-hukum-uang-kripto-atau-cryptocurrency/>.
- Kirchner, Irene K.F. "Are Cryptocurrencies Halāl? On the Sharia-Compliance of Blockchain-Based Fintech." *Islamic Law and Society* 28, no. 1–2 (2021): 76–112. <https://doi.org/10.1163/15685195-BJA10005>.
- Muhammad Zulkhibri. "Halāl Cryptocurrency and Financial Stability." In *Halāl Cryptocurrency Management*, 43. Switzerland AG: Palgrave Macmillan, 2019.
- Nugroho, Bayu Adi. "The Stability of Islamic Cryptocurrencies and Copula-Based Dependence With Alternative Crypto and Fiat Currencies." *ISRA International Journal of Islamic Finance* 15, no. 2 (2023): 80–97. <https://doi.org/10.55188/ijif.v15i2.543>.
- Nurhisam, Luqman. "Bitcoin: Islamic Law Perspective." *QIJIS (Qudus International Journal of Islamic Studies)* 5, no. 2 (2017). <https://doi.org/10.21043/qijis.v5i2.2413>.
- Oseni, Umar A., and S. Nazim Ali. *Fintech In Islamic Finance: Theory and Practice*. New York: Routledge Taylor & Francis Group, 2019.
- Patton, Michael Quinn. *Qualitative Research & Evaluation Methods*. 4th ed. California: Sage Publications, 2014.
- Pieters, Gina, and Sofia Vivanco. "Financial Regulations and Price Inconsistencies across Bitcoin Markets." *Information Economics and Policy* 39 (2017): 1–14. <https://doi.org/10.1016/j.infoecopol.2017.02.002>.

- Rabbani, M R. "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review." *International Journal of Economics and Business Administration* 8, no. 2 (2020): 65-86. <https://doi.org/10.35808/ijeba/444>.
- Rabbani, Mustafa Raza, Shah Nawaz Khan, and Eleftherios I. Thalassinou. "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review." *International Journal of Economics and Business Administration* 8, no. 2 (2020): 65-86. <https://doi.org/10.35808/ijeba/444>.
- Raquib, Amana. *Islamic Ethics of Technology: An Objectives (Maqāṣid) Approach*. Selangor, Malaysia: The Other Press Sdn, 2020.
- Saberi, Sara, Mahtab Kouhizadeh, Joseph Sarkis, and Lejia Shen. "Blockchain Technology and Its Relationships to Sustainable Supply Chain Management." *International Journal of Production Research* 57, no. 7 (2019): 2117-35. <https://doi.org/10.1080/00207543.2018.1533261>.
- Santosa. "Islamic Finance and Cryptocurrency: A Comparative Study of the Fatwā in Indonesia and Malaysia." *Journal of Islamic Monetary Economics and Finance* 56, no. 7 (2021).
- Selcuk, Mervan, and Suleyman Kaya. "A Critical Analysis of Cryptocurrencies from an Islamic Jurisprudence Perspective." *Turkish Journal of Islamic Economics* 8, no. 1 (2021): 137-52. <https://doi.org/10.26414/a130>.
- Syazwani Mohd Noor, Nurul, Abdul Ghafar Ismail, and Muhammad Hakimi Mohd Shafiai. "The Origin and Sources of Shariah Risk in Islamic Finance." In *Persidangan Kebangsaan Ekonomi*, 11:27-28, 2016.
- Toledo-Pereyra, Luis H. *Research Design. Journal of Investigative Surgery*. Vol. 25. California: Sage Publications, 2012. <https://doi.org/10.3109/08941939.2012.723954>.
- Umar, Ahmad Ulil Albab Al, Muhammad Iqbal Adrian, Yuni Inawati, Muammar Taufiqi Lutfi Mustofa, and Arum Teguh Fitriyani. "Analysis of Cryptocurrency in Islamic Perspective and Its Existence in Indonesia." In *1st Virtual Workshop on Writing Scientific Article for International Publication Indexed SCOPUS*, 85-90, 2022. <https://doi.org/10.2478/9788366675827-016>.
- "9 Negara Yang Melegalkan Bitcoin." Accessed January 29, 2023. <https://www.cnnindonesia.com/ekonomi/20210520144410-83-644801/9-negara-yang-melegalkan-bitcoin>.

*Faizi*

“38% of Investors Have Lost More in Crypto Than Made It | LendingTree.” Accessed November 5, 2023.  
<https://www.lendingtree.com/debt-consolidation/crypto-investors-survey/>.