

CRYPTOCURRENCY IN ISLAMIC LAW

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Abstract

Virtual money is a product of specific cryptocurrency algorithms, where no particular institution or authority controls the circulation of this digital money or *underlying assets* for which there is no basis for pricing and consumer protection. By ceding the money system into the market, Cryptocurrencies require legality considerations. This research aims to explain cryptocurrency as a means of payment from the perspective of Islamic Law. This research uses a literature review or normative approach. The results showed that a Legal *Vacuum* or the empty laws governing Cryptocurrencies could potentially negatively impact. This is because there is the principle of haram li *ghairihi*, where something contains an element of uncertainty. In the Indonesian Ulema Council (MUI) perspective through Fatwa No. 116/DSN/-MUI/IX/2017, cryptocurrency is included in the concept of *sharia maqashid* due to uncertainty of containing element *maysir* (gambling).

Keywords: Cryptocurrency, Bitcoin, Islamic Law

Abstrak

Uang virtual adalah produk dari algoritma cryptocurrency tertentu, di mana tidak ada lembaga atau otoritas tertentu yang mengendalikan peredaran uang digital ini atau *aset dasar* yang tidak ada dasar untuk penetapan harga dan perlindungan konsumen. Dengan menyerahkan sistem uang ke pasar, Cryptocurrency memerlukan pertimbangan legalitas. Penelitian ini bertujuan untuk menjelaskan cryptocurrency sebagai alat pembayaran dari perspektif Hukum Islam. Penelitian ini menggunakan tinjauan literatur atau pendekatan normatif. Hasilnya menunjukkan bahwa *Kekosongan* Hukum atau undang-undang kosong yang mengatur Cryptocurrency berpotensi berdampak negatif. Ini karena ada prinsip haram li *ghairihi*, di mana sesuatu mengandung unsur ketidakpastian. Dalam perspektif Majelis Ulama Indonesia (MUI) melalui Fatwa No. 116/DSN/-MUI/IX/2017, cryptocurrency termasuk dalam konsep *maqashid syariah* karena ketidakpastian mengandung unsur *maysir* (perjudian).

Kata kunci: Cryptocurrency, Bitcoin, Hukum Islam

Introduction

Cryptocurrency is a digital currency that has a blockchain building system. Cryptocurrency technology itself does not require third parties in its transactions, which can be convenient and transparent among its users (Bhiantara, 2018). It is further said that blockchain is an algorithmic code that cannot be changed in performing transaction records. This interconnected and connected model underlies cryptocurrencies that do not require any particular authority or institution to regulate and supervise them. Irawan said blockchain could be used as a new discourse in transactions during the Covid-19 pandemic (Irawan et al., 2020). This is due to the high security and success rate without involving third parties.

Digital money began to appear in 2009 and continues to grow today (Khasanah & Farida, 2021). The high enthusiasm for cryptocurrencies increased demand amid limited stock. Its value is

increasingly high by some as an investment tool or trading commodity, where profits are obtained through the difference in selling and purchase prices. The popularity of Cryptocurrencies has caused various parties to study to anticipate the potential for a financial crisis (Rejeb et al., 2021).

Digital currencies or cryptocurrencies or known as cryptocurrencies, including Bitcoin, have provoked many parties to learn and have it. In Indonesia itself, Bitcoin has been used as a means of investment, transactions, and remittances or transfers to different countries (Saputra, 2018). Huda dan Hambali noted that based on the Global Web Index survey, about 10% of internet users in Indonesia have a cryptocurrency (Huda & Hambali, 2020). It is also mentioned that Indonesia is included in the list of the top 5 countries with the highest interest in cryptocurrency.

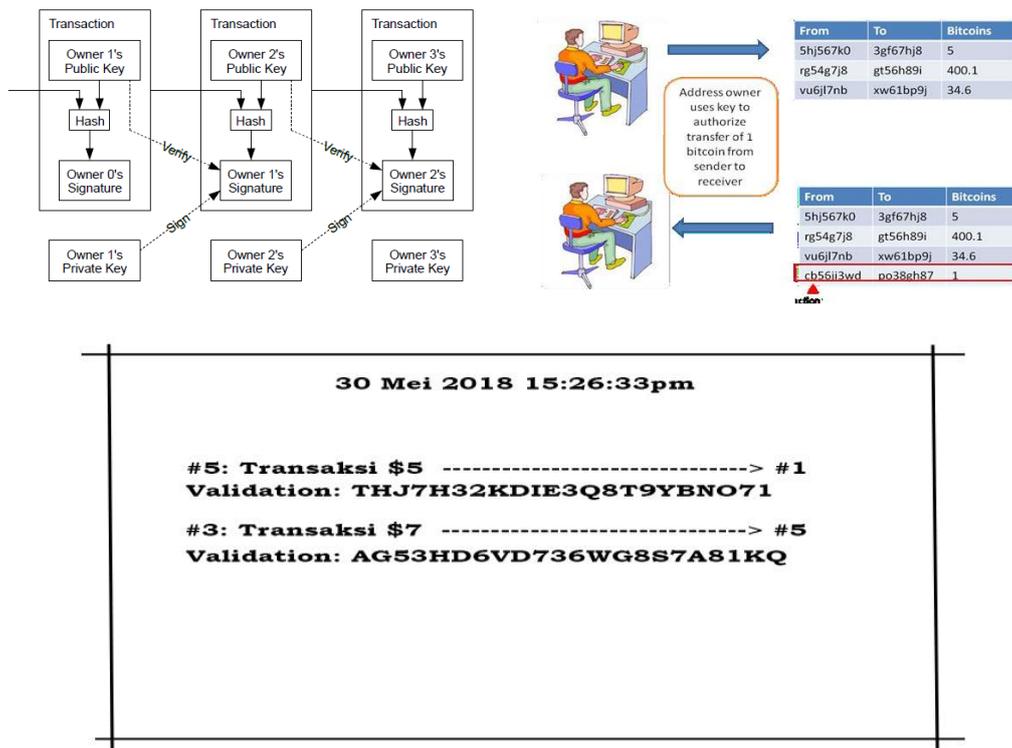


Figure 1. Bitcoin Transactions
 Source: (Tampi, 2017); (Bhiantara, 2018)

Each cryptocurrency has a different character (Widyastuti & Hermanto, 2021). Furthermore, it is said that some of the digital money mats that are widely known and have high value and are attractive to users of the digital currency are Bitcoin / BTC; Ethereum/ETH; Bitcoin Cash/BCH; Tether/USDT; Cardano/ADA; Polkadot/DOT; Chainlink/LINK; Litecoin/LTC; UNISWAP; Ripple/XRP. Bitcoin is the most volatile and most mined digital currency.

#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)
1	Bitcoin	\$137,587,032,436	\$8,103.52	\$4,893,430,000	16,978,675 BTC	0.19%	
2	Ethereum	\$50,466,302,260	\$510.63	\$1,558,410,000	98,831,061 ETH	0.46%	
3	Ripple	\$25,364,090,434	\$0.648320	\$525,815,000	39,122,794,968 XRP *	-0.25%	
4	Bitcoin Cash	\$12,950,484,647	\$758.47	\$274,452,000	17,074,463 BCH	0.60%	
5	Litecoin	\$7,224,276,889	\$128.80	\$240,398,000	56,090,413 LTC	0.34%	
6	EOS	\$6,665,437,396	\$8.39	\$1,221,380,000	794,853,811 EOS *	-4.86%	
7	Cardano	\$5,451,633,268	\$0.210268	\$105,567,000	25,927,070,538 ADA *	3.36%	
8	Stellar	\$4,941,888,481	\$0.266270	\$54,153,600	18,559,689,343 XLM *	4.16%	
9	NEO	\$4,276,291,500	\$65.79	\$83,710,800	65,000,000 NEO *	1.58%	
10	IOTA	\$4,257,211,967	\$1.53	\$76,382,600	2,779,530,283 MIOTA *	10.52%	

Figure 2. The Highest Capitalization Cryptocurrency
Source: (Saputra, 2018)

The concept used by Bitcoin is a privatization concept, where every user is free to commit to asset ownership. Its users have a full range of licenses and designations, in contrast to the management offered by conventional systems (Yusup, 2020). Furthermore, it is said, as a currency, Bitcoin guarantees the confidentiality of its owner because any financial institution does not bind it.

In comparison, (Amboro & Christi, 2019) describes existing regulations in Singapore and Japan related to Cryptocurrencies that can be used as a reference for law in Indonesia, as follows:

Table 1. Japan-Singapore Cryptocurrency Regulation Comparison

Items	Jepang	Singapura
Equation	<ol style="list-style-type: none"> 1. Have cryptocurrency regulatory regulations 2. The use of cryptocurrencies is legal. 3. Maintaining the security of the country's economy 	
Difference	<ol style="list-style-type: none"> 1. Regulations focused on the prevention of laundering and terrorist financing 2. Is income with a tax of 5-45% 	<ol style="list-style-type: none"> 1. In addition to focusing on the prevention of laundering and terrorist financing, regulations also regulate the risk of cryptocurrencies. 2. It is a service provider with a 7% tax.

Japan is a country that is one step ahead in terms of regulation by mentioning cryptocurrency not as a currency recognized by the government but as an asset so that it can be done in payment methods. Cryptocurrency is a digital asset with material properties attached to it (Wijaya, 2019).

Manurung and Paath give an overview of Cryptocurrency: Russia and Iceland consider Cryptocurrencies illegal (Manurung & Paath, 2020). China allows people to use it as transactions on the internet. The United States and Singapore allow cryptocurrency transactions but impose taxes because cryptocurrencies are a form of commodity.

Library of Congress, as quoted, mentions several countries that have regulations related to the prohibition of cryptocurrencies, as follows:

Table 2. Banning Cryptocurrencies in the World

Absolute Ban	Implicit Prohibition
Aljazair; Bilivia; Mesir; Irak; Maroko; Nepal; Pakistan; Uni Emirat Arab	Bahrain; Bangladesh; Cina; Kolombia; Republic Dominika; Indonesia; Iran; Kuwait; Lesotho; Lithuania; Makau; Oman; Qatar; Arab Saudi; Taiwan

Source: (Hamin, 2020)

In general, cryptocurrency is obtained through *mining*, where it takes a computer with certain specifications, specific scripts, and certain networks to find blocks in the solving of cryptocurrency algorithms. The cryptocurrency mining system itself can be described as follows:

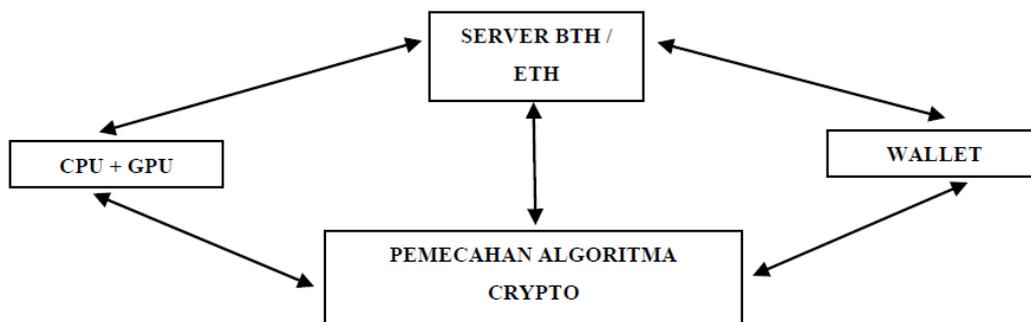


Figure 3. Cryptocurrency Mining System
 Source: (Zain, 2018)

Wardoyo said Bitcoin had made its function as an investment land, although its users know the various negative impacts that can arise, including a rapid and unpredictable decline in assets (Wardoyo et al., 2020). Tampi said the process of mining Bitcoin itself requires various supporting facilities and infrastructure, including computer capabilities and internet access (Tampi, 2017).

The pros and cons that occur related to cryptocurrency by (Azizah, 2020) are explained as follows:

Table 2. Pros and Cons of Cryptocurrency

PRO	counter
1. Bitcoin investments rival gold and other precious metals and have great potential to expand.	1. Existence of <i>an exchange</i> services company that collapsed (loss, bankruptcy)
2. Assets that will make a person a	2. Unexpected impairment decline

Millionaire

- | | |
|---|--|
| 3. In the long run, assets are worth millions of dollars. | 3. There is no guarantee of loss. |
| 4. Easily accessible via the internet | 4. Potential harm to asset owners who sell when the value drops and is unpredictable |
| 5. A security that maintains privacy | 5. Potential for hacking |
| 6. Fluctuating prices go up and continue to rise | 6. More emphasis on investment, open daily needs |
| 7. Countries are starting to regulate cryptocurrencies. | 7. There are not many regulations that govern |
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Source: (Setiawan, 2020) (Azizah, 2020) (*processed*)

Yohandi said the advantages of Bitcoin in terms of investment are the lack of risk to inflation and the absence of intervention from third parties (Yohandi et al., 2017). It is further said that the problem of Cryptocurrency in Indonesia in Indonesia's positive legal outlook there are at least 3 (three) main points, namely: *first*, the absence of legal protection so that all risks to Cryptocurrencies are borne by themselves. *Second*, the government's lack of control and supervision so it is prone to illegal activity. *Third*, cryptocurrency *exchange* service providers have not been able to cooperate with the government.

Rani said in the prospect of law in Indonesia; Cryptocurrency can bring up various types of crimes, including threats to state security (Rani et al., 2021). On the other hand, Cryptocurrencies have a pattern of *volatility clustering*, where the risk of use is not constant or the potential for a significant and sudden decline (Setiawan, 2020). In line with this, (Huda & Hambali, 2020) mentions the volatility that occurs even to the extreme level, where this can cause momentary enthusiasm, potentially being the target of crime, and dependence on technology. High risk is commensurate with the high profits offered by cryptocurrency investments.

The legality of using cryptocurrency as a means of rupiah replacement transactions in Indonesia is a form of *illegal payment* (Honggowongso & Kholil, 2021). Cryptocurrency circulation and government control are needed affirmation if cryptocurrency is not recognized as a digital currency that can be converted into Rupiah (Ilyasa & Arifin, 2019). This is to realize that cryptocurrency has not been in a vague or a grey area *status*.

Cryptocurrencies are considered unsuitable for long-term investments. This is because there are thousands of digital currencies in circulation worldwide, but only a dozen are promising in terms of investment through fluctuations in value. Digital currency investments have different daily *returns* or returns, as illustrated as follows:

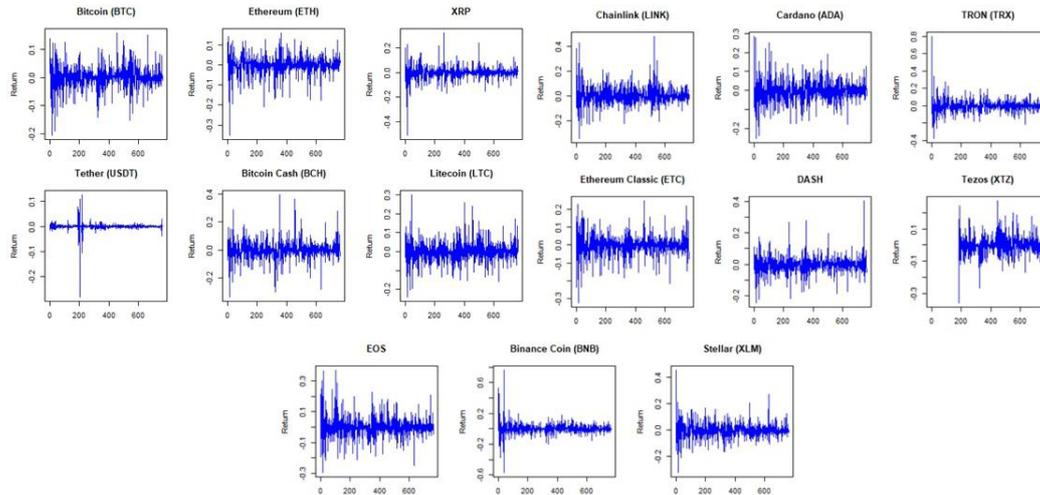


Figure 4: Daily Return on Cryptocurrency
Source: Setiawan (2020: 135-136)

In contrast to the opinion that cryptocurrency is a promising investment asset, (Warsito, 2020) in his research, said that the Cryptocurrency market is not one of the effective markets. This is because the value can be analyzed from the price in the past. One example is Bitcoin, where other variables do not influence bitcoin's volatility but only by past prices. The thing that same indicated by ethereum type cryptocurrency.

From a positive legal perspective in Indonesia, Cryptocurrency can be explained as follows: (Wijaya, 2019)

1. Article 499 of the Civil Code: Cryptocurrency is a set of objects (electronic data) that have economic value and can be controlled
2. Article 504 of the Civil Code: Cryptocurrency falls into the category of intangibles
3. Article 505 of the Civil Code: Cryptocurrencies include moving objects.
4. Law No. 10 of 2011 on Commodity Futures Trading: Cryptocurrencies include commodity forms due to the characteristics of high volatility due to price fluctuations.

It is also said that although Bapepti has supervised PT. Indodax is a business actor in digital asset exchange services, but the community requires higher regulation of the level.

According to (Musyafah, 2020) mentions the main problem of Bitcoin in Indonesia lies in the legality aspect. Bitcoin has been widely recognized and used by the public in Indonesia but has not been recognized by the government. This recognition is important because the requirement of currency issuance is the recognition of local authorities or governments. Nababan mentions several conditions that must be met by an object to be referred to as a medium of exchange or money (Nababan, 2019), namely: *Acceptability* (generally accepted); *Stability of value* (stable value); *Portability* (light and easy to carry); *Durability* (durable); *Uniformity* (near the same quality); *Security* (limited and difficult to counterfeit); and *Divisibility* (easily divided without reducing in value).

One thing that needs to be considered in the preparation of aligned and in line regulations and does not overlap related to Cryptocurrencies is that it is also necessary to affirm cryptocurrency from the Islamic point of view. Ilyasa and Arifin quoted the Hadith of the Prophet who mentioned that (Ilyasa & Arifin, 2019):

"If the goods (barter objects) are different, then the dose may be as you please as long as it is cash" (HR. Muslim 4147).

This hadith signifies that cryptocurrency is a currency in the rules of Fiqh. Meanwhile, regarding favourable laws in Indonesia, disputes against Cryptocurrencies will be challenging to resolve in litigation or court, given the absence of consumer protection rules related to this (Julianti & Apriani, 2021).

In the perspective of the philosophical foundation, one part of muamalah is the financial economy (*iqtishadiyah*), where it becomes a joint responsibility with *ulu al-Amri* (Government) as the main person in charge (Asep Zaenal Ausop & Aulia, 2018). The government makes regulations taking into account the benefit of the people, considering that the times have created a new form of currency, which in *the iqtishadiyah* point of view is *nuqud*. The potential of negative that arises because of the existence of Cryptocurrencies is what needs to be made clear law (Fitriani, 2018).

Based on this description, this study aims to work on the legal basis of the use of Cryptocurrencies from the perspective of Islamic law.

Methods

This research uses a library or normative approach. The data sources used are literature studies, theories and research related to the focus of research, namely cryptocurrency about Islamic Law. Data analysis uses triangulation, including data collection, reduction, data grouping, and conclusions.

Results And Discussion

In Indonesia itself, learning from other countries, it is necessary to have regulations about Bitcoin transactions. This is useful in anticipating the impact that can occur. This regulation must regulate and know the identity of the account used in Bitcoin transactions (Tampi, 2017). Bhiantara noted the negative impact of using Cryptocurrencies more on the fraud process by offering investments in the value of Bitcoin (Bhiantara, 2018).

There are at least 2 (two) regulations governing Bitcoin itself, as said by (Yusup, 2020), namely: *first*, MUI Fatwa No. 116/DSN/-MUI/IX/2017 on Islamic electronic money. In this fatwa,

Bitcoin mining, circulation, and its designation in the perspective of sharia *maqashid* are prohibited or haram. This is because it contains elements of gambling or *maysir*. The investment offered by Bitcoin is the utilization of fluctuations in the value of Bitcoin itself. Thus in its conclusion, fatwa concluded that Bitcoin could not be an Islamic currency. *Second*, Bank Indonesia Regulation No. 20/6/PBI/2018 on electronic money states that Bitcoin is not a currency in units of rupiah due to its volatile value and is vulnerable to the risk of bubble or *bubble*. This decision is based on consideration of the absence of responsible institutions or authorities, the lack of *underlying assets* underlying the price of Bitcoin, and the low protection of consumers.

This is also based on Law No. 7 of 2011 on currencies, which states that the currency is the currency issued by the Government of Indonesia, referred to as Rupiah (Saputra, 2018). This makes Cryptocurrencies less developed in Indonesia due to the ban from Bank Indonesia on all transactions using Bitcoin. Rani said that if based on Law No. 7 of 2011, all transactions carried out are considered legally invalid (Rani et al., 2021).

Previously, Bank Indonesia has also issued Bank Indonesia Regulation No. 18/40/PBI/2016 on the implementation of payment transaction processing; and No. 19/12/PBI/2017 on the performance of financial technology, where there are no arrangements regarding virtual currency or cryptocurrency as digital products that can be used in transactions or traded through internet media (Amboro & Christi, 2019). In addition, the use of Cryptocurrencies can disrupt the economy's stability because the Trend of Bitcoin can experience swelling in value. Bitcoin as part of the digital currency is thus not recognized and cannot be exchanged for rupiah, so Bitcoin is not a means of payment in Indonesia (Nababan, 2019).

The whole discussion related to cryptocurrency law in Islam puts it on the side of gharar and maysir. This is because digital currencies in many countries are not officially recognized as currencies (Azizah, 2020).

Islam asserts that property has at least 4 (four) elements, as quoted by (Zain, 2018), namely: *first*, has substances that can be seen and touched; *second*, it can be stored for a long time and does not change; *Third*, has a principle of benefits and does not have a mafsadat principle; and *fourth*, forms, such as money, vehicles, jewellery, etc. The cryptocurrency does not own these four things as a form of property, even though its value exceeds many valuables. It is also said that Bitcoin as a Cryptocurrency is prohibited considering that in the Fiqh rule, several criteria cannot be met by cryptocurrency, namely: *first*, *all-age bimaqasidiha* (according to the purpose); second, *al-maisur la yasqut bi al-ma'sur* (not easily fall under challenging times); and *third*, *ma la yatim al-wajib illa bihi fahuwa mandatory* (being a compulsory complement). The unfulfillment of cryptocurrencies is due to the negative potential that can arise. The prohibition of cryptocurrencies is based on the principle of *dar'u al-mafasid muqaddam ala jalb al-masalih* (preventing damage is prioritized) (Zain, 2018).

Related to Law No. 10 of 2011 on Commodity Futures Trading, which states that cryptocurrency is a commodity asset, in an Islamic perspective, it can be used the legal basis of *murabahah* (there is direct transaction); *tawarruq* agreement (there are goods for sale); and akad *taukil*, where there are representatives or givers and recipients of power of attorney in terms of buying and selling. In this case, PT. indodax is a means in the process of buying and selling (Kusuma, 2020: 118). Meanwhile, when viewed from various perspectives of scholars and regulations of Muslim countries, it can be explained as follows: (Kusuma, 2020)

1. Mufti Shaykh Shawki Allam, Egypt: Cryptocurrency is haram because its functions can be turned into illegal activities.
2. Turkish religious authorities: Cryptocurrency is haram due to the openness of potential for speculation (*gharar* and *maysir*).
3. Palestinian Fatwa Center: Cryptocurrency is haram because its publisher is unknown and is focused on gambling.
4. Shaykh Haitam, UK: Cryptocurrencies are prohibited and do not conform to Islamic sharia.
5. Syech Assim al-Hakeem, Saudi Arabia: Cryptocurrency is banned because it is the gateway to efficacy.
6. Indian Muslim Personal Law Council or AIMPLB: Cryptocurrency is un-Islamic.
7. Islamic Seminar Fatwa Center, South Africa: Cryptocurrency can be categorized as a currency and traded as long as it gets approval from local authorities or the government.
8. The Islamic Scholars Authority, Malaysia: approved the launch of GOLDX as a Cryptocurrency in response to the ambiguity of pricing.

Ilyasa and Arifin, in their conclusion, mentioned that the many debates about cryptocurrency about its law from the Islamic point of view, demanding the Muslim community to leave it (Ilyasa & Arifin, 2019). This is because the legal status of Cryptocurrency in Islam is still vague. On the other hand, there needs to be regulation from the Government of Indonesia that regulates the legality of this cryptocurrency, given the magnitude of potential that can be developed from it, while still not ruling out the negative side that can arise.

In agreement with the vague status of Cryptocurrencies, (Musyafah, 2020) mentions this raises concerns about open violations of favourable laws in Indonesia. In the lens of Al-Ghazali's Financial Theory, gold and silver can be used as a medium of exchange, considering there is value in it, not just its form. The same is true of Bitcoin, which, although only in the form of digital assets, has a value that can be used as a medium of exchange and gold and silver. This is reinforced by History, which records that Caliph Umar Ibn Khattab once proposed to make money from camel skins but cancelled considering camels are animals that could one day become extinct.

According to (Tektona & Safilia, 2020), applying Islamic law in cryptocurrency is *gharar* or uncertainty and haram. The illustration is *al-ashl* (buying a cat in a sack), *furu'* (selling goods in the form of shadows and expectations), *'illat* (unclear quality and quantity of goods). The consequences of this haram and *gharar* law are one of them is the prohibition of Bitcoin to be used in zakat payments, as stated in MUI Fatwa No. 13 of 2011 on zakat law on illegal property, which states that haram property cannot be used as a mandatory object of zakat. It is further said that there is another discourse that the Chairman has delivered of the MUI Da'wah Commission, Cholil Nafis, who mentioned cryptocurrency law as a medium of exchange for people to use and admit it. But as an investment tool, cryptocurrency is haram because it contains elements of speculation and gambling.

According to (Hamin, 2020) mentioning cryptocurrency in the view of Islamic Business is included in the criteria of haram li *ghairihi*. The objects traded contain obscurity, both in form, nature, value, quality, and quantity.

Conclusion

Cryptocurrency is one of the currencies circulating in cyberspace as a digital currency that can be traded and used as a transaction. The legal aspect of Cryptocurrency in Indonesia itself in the perspective of regulation of the Government of Indonesia is still fairly half-and-half. While from the standpoint of the Indonesian Ulema Council (MUI), it is mentioned that cryptocurrency is haram in character contains elements of *maysir* or justice. On the other hand, the ever-evolving era demands a new understanding of the fiqh rules that answer the challenges of that era. Currently, cryptocurrency is categorized as haram but does not rule out the future cryptocurrency is stated otherwise. In Islamic studies, it is said that digital money is also an *'umlah* (currency). In the Book of *I'lam al-Muwaqqin*, Ibn Qayyim that fatwas can change with the changing times because everything comes from Allah.

References

- Amboro, F. Y. P., & Christi, A. (2019). Prospek Pengaturan Cryptocurrency sebagai Mata Uang Virtual di Indonesia (Studi Perbandingan Hukum Jepang Dan Singapura). *Journal of Judicial Review*, 21(2), 14–40. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- Asep Zaenal Ausop, & Aulia, E. S. N. (2018). Teknologi Cryptocurrency Bitcoin Untuk Investasi Dan Transaksi Bisnis Menurut Syariat Islam. *Jurnal Sositologi*, 17(1), 74–92. <https://doi.org/10.5614/sostek.itbj.2018.17.1.8>
- Azizah, A. S. N. (2020). Fenomena Cryptocurrency Dalam Perspektif Hukum Islam. *Shautun A*, 1(1), 62–80.

- Bhiantara, I. B. P. (2018). Teknologi Blockchain Cryptocurrency Di Era Revolusi Digital. *Prosiding Seminar Nasional Pendidikan Teknik Informatika (SENAPATI)*, 9(September), 173–177. <http://eproceeding.undiksha.ac.id/index.php/senapati/article/view/1204>
- Fitriani, H. (2018). Implikasi Cryptocurrency Bitcoin Terhadap Konsistensi Regulasi Keuangan Dalam Perspektif Islam. *ACTIVA: Jurnal Ekonomi Syariah*, 1(1), 94–109. <http://www.jurnal.stitnualhikmah.ac.id/index.php/activa/article/view/319>
- Hamin, D. I. (2020). Crypto Currensi Dan Pandangan Legalitas Menurut Islam: Sebuah Literature Review. *JURNAL ILMIAH MANAJEMEN DAN BISNIS*, 3(2), 127–139. [http://jurnal.globalhealthsciencegroup.com/index.php/JPPP/article/download/83/65%0Ahttp://www.embase.com/search/results?subaction=viewrecord&from=export&id=L603546864%5Cnhttp://dx.doi.org/10.1155/2015/420723%0Ahttp://link.springer.com/10.1007/978-3-319-76887-](http://jurnal.globalhealthsciencegroup.com/index.php/JPPP/article/download/83/65%0Ahttp://www.embase.com/search/results?subaction=viewrecord&from=export&id=L603546864%5Cnhttp://dx.doi.org/10.1155/2015/420723%0Ahttp://link.springer.com/10.1007/978-3-319-76887-76887-)
- Honggowongso, M. S., & Kholil, M. (2021). Legalitas Bitcoin Dalam Transaksi E-Commerce Sebagai Pengganti Uang Rupiah. *Privat Law*, 9(1), 143–154.
- Huda, N., & Hambali, R. (2020). Risiko dan Tingkat Keuntungan Investasi Cryptocurrency. *Jurnal Manajemen Dan Bisnis: Performa*, 17(1), 72–84.
- Ilyasa, R. M. A., & Arifin, R. (2019). Transaksi Bitcoin Dalam Perspektif Hukum Islam Dan Hukum Positif Indonesia. *Mahkamah: Jurnal Kajian Hukum Islam*, 4(1), 26–35.
- Irawan, B., Juman, K. K., & Tjahjono, B. (2020). Teknologi Blockchain Sebagai Alternatif Transaksi Di Era New Normal. *Abdimas*, 7(1), 49–53.
- Julianti, T., & Apriani, R. (2021). Legalitas Investasi Bitcoin Ditinjau Undang-Undang Nomor 7 Tahun 2011 Tentang Mata Uang Serta Penyelesaian Sengketa. *YUDISIA : Jurnal Pemikiran Hukum Dan Hukum Islam*, 12(1), 127–138. <https://doi.org/10.21043/yudisia.v12i1.10359>
- Khasanah, Z. S. U., & Farida, Y. (2021). Analisis Performa Mata Uang Virtual (Cryptocurrency) Menggunakan Preference Ranking Organization Method For Enrichment Evaluation (Promethee). *Rekayasa Journal of Science and Technology*, 14(1), 1–9. <https://doi.org/10.21107/rekayasa.v14i1.8793>
- Kusuma, T. (2020). Cryptocurrency dalam Perdagangan Berjangka Komoditi di Indonesia Perspektif Hukum Islam. *Tsaqafah*, 16(1), 109–126. <https://doi.org/10.21111/tsaqafah.v16i1.3663>
- Manurung, R., & Paath, D. K. (2020). Pengaruh Regulasi Digital Cryptocurrency Model Bitcoin Terhadap Sistem Pembayaran Pada UMKM. *@is The Best Accounting Information Systems and Information Technology Business Enterprise This Is Link for OJS Us*, 5(2), 151–165. <https://doi.org/10.34010/aisthebest.v5i2.4017>
- Musyafah, A. A. (2020). Transaksi Bitcoin dalam Perspektif Islam dan Hukum Positif Indonesia. *DIPONEGORO PRIVATE LAW REVIEW*, 7(1), 700–712.
- Nababan, K. N. N. (2019). Tinjauan Legalitas Transaksi Bitcoin Di Indonesia. *Jurist-Diction*, 2(5), 1745–1764.
- Rani, D. A. M., Sugiarta, I. N. G., & Karma, N. M. S. (2021). Uang Virtual (Cryptocurrency) Sebagai Sarana Tindak Pidana Pencucian Uang dalam Perdagangan Saham. *Jurnal Konstruksi Hukum*, 2(1), 19–23. <https://doi.org/10.22225/jkh.2.1.2961.19-23>

- Rejeb, A., Rejeb, K., & Keogh, J. G. (2021). Cryptocurrencies in Modern Finance: A Literature Review. *Etikonomi*, 20(1), 93–118. <https://doi.org/10.15408/etk.v20i1.16911>
- Saputra, E. (2018). Perekonomian Indonesia Dampak Cryptocurrency Terhadap Perekonomian Indonesia. *Seminar Nasional Royal (SENAR)*, 1(1), 491 – 496. <https://jurnal.stmikroyal.ac.id/index.php/senar/article/view/227/171>
- Setiawan, E. P. (2020). Analisis Potensi dan Risiko Investasi Cryptocurrency di Indonesia. *Jurnal Manajemen Teknologi*, 19(2), 130–144. <https://doi.org/10.12695/jmt.2020.19.2.2>
- Tampi, M. M. (2017). Legal Protection for Bitcoin Investors in Indonesia: To Move Beyond the Current Exchange System. *Jurnal Hukum & Pembangunan*, 47(1), 83–99. <https://doi.org/10.21143/jhp.vol47.no1.136>
- Tektona, R. I., & Safilia, N. U. (2020). Penggunaan Bitcoin Sebagai Alat Pembayaran Zakat Menurut Perspektif Hukum Islam. *ADLIYA: Jurnal Hukum Dan Kemanusiaan*, 14(1), 27–40. <https://doi.org/10.15575/adliya.v14i1.8542>
- Wardoyo, W., Nuryakin, C., & Hambali, S. (2020). Bitcoin in Indonesia: Hedging or Investment Instrument? *Jurnal Ekonomi Indonesia*, 9(3), 209–232. <https://doi.org/10.52813/jei.v9i3.62>
- Warsito, O. L. D. (2020). Analisis Volatilitas Cryptocurrency, Emas, Dollar, Dan Indeks Harga Saham (IHSG). *International Journal of Social Science and Business*, 4(1), 40–46. <https://doi.org/10.23887/ijssb.v4i1.23887>
- Widyastuti, M., & Hermanto, Y. B. (2021). Cryptocurrency Analysis of Indonesian Market Education Facilities. *International Journal of Economics, Bussiness and Accounting Research (IJEBAR)*, 2021(2), 534–546. <http://jurnal.stie-aas.ac.id/index.php/IJEBAR/article/view/2321>
- Wijaya, F. N. A. (2019). Bitcoin Sebagai Digital Aset Pada Transaksi Elektronik Di Indonesia (Studi Pada PT. Indodax Nasional Indonesia). *Jurnal Hukum Bisnis Bonum Commune*, 2(2), 126–136. <https://doi.org/10.30996/jhbbc.v2i2.2388>
- Yohandi, A., Trihastuti, N., & Hartono, D. (2017). Implikasi Yuridis Penggunaan Mata Uang Virtual Bitcoin Sebagai Alat Pembayaran Dalam Transaksi Komersial (Studi Komparasi Antara Indonesia-Singapura) Cryptocurrency Dalam Hukum Islam. *DIPONEGORO LAW JOURNAL*, 6(2), 1–19. <https://doi.org/10.1017/S0269888907001014>
- Yusup, M. (2020). Analisis Hukum Bitcoin Dalam Perspektif Fatwa MUI No: 116/DSN-MUI/IX/2017 Tentang Uang Elektronik Syariah. *KHOZANA: Journal of Islamic Economic and Banking*, 3(1), 69–86. <http://journal.stebisdarussalamoki.ac.id/index.php/khozana>
- Zain, M. F. (2018). Mining-Trading Cryptocurrency dalam Hukum Islam. *Al-Manahij: Jurnal Kajian Hukum Islam*, 12(1), 119–132. <https://doi.org/10.24090/mnh.v12i1.1303>