

CRYPTOCURRENCY AS MONEY: ISLAMIC MONETARY SYSTEM PERSPECTIVE

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Abstract: *The existence of cryptocurrencies that have emerged and developed since the last decade is still a debate, both in terms of function, regulation and compliance with Islamic economic principles. Different countries give different attitudes towards cryptocurrencies. Some countries accept its existence, while some other countries reject it. This is inseparable from the question that arises whether cryptocurrencies function as money or commodities. In addition, the absence of an official institution that is responsible for and regulates the circulation of cryptocurrencies and no underlying assets is also another problem. This article aims to see how cryptocurrencies are positioned based on their nature, characteristics and functions using an Islamic finance point of view. The results of the study indicate that cryptocurrencies currently carry out more functions as a store of value that are not in accordance with the Islamic financial system. In addition, the use of cryptocurrencies as money and means of payment carries a fairly large risk. This violates the principle of property protection in the maqasid al-shari'ah view.*

الملخص: لا يزال وجود العملات المشفرة التي ظهرت وتطورت منذ العقد الماضي محل نقاش ، سواء من حيث الوظيفة والتنظيم والامتثال لمبادئ الاقتصاد الإسلامي. تعطي الدول المختلفة مواقف مختلفة تجاه العملات المشفرة. تقبل بعض الدول وجودها بينما ترفضها دول أخرى. هذا لا ينفصل عن السؤال الذي يطرح نفسه عما إذا كانت العملات المشفرة تعمل كأموال أم سلع. بالإضافة إلى ذلك ، فإن عدم وجود مؤسسة رسمية مسؤولة عن تنظيم تداول العملات المشفرة وعدم وجود أصول أساسية يمثل أيضًا مشكلة أخرى. تهدف هذه المقالة إلى معرفة كيفية وضع العملات المشفرة بناءً على طبيعتها وخصائصها ووظائفها باستخدام وجهة نظر التمويل الإسلامي. تشير نتائج الدراسة إلى أن العملات

المشفرة تقوم حالياً بمزيد من الوظائف كمخزن للقيمة التي لا تتوافق مع النظام المالي الإسلامي. بالإضافة إلى ذلك، فإن استخدام العملات المشفرة كأموال ووسيلة للدفع ينطوي على مخاطر كبيرة إلى حد ما. وهذا مخالف لمبدأ حفظ المال في مقاصد الشريعة.

Abstrak: Keberadaan cryptocurrency yang muncul dan berkembang sejak satu dasawarsa terakhir masih menjadi perdebatan, baik dari sisi fungsi, regulasi maupun kesesuaiannya dengan prinsip ekonomi Islam. Berbagai negara memberikan sikap yang berbeda terhadap cryptocurrency. Sebagian negara menerima keberadaannya, sementara beberapa negara lain menolaknya. Hal ini tidak terlepas dari pertanyaan yang muncul apakah cryptocurrency berfungsi sebagai uang atau komoditas. Di samping itu, ketiadaan lembaga resmi yang bertanggung jawab dan mengatur peredaran cryptocurrency serta tidak ada aset yang mendasarinya (underlying assets) juga menjadi persoalan lainnya. Artikel ini bertujuan melihat bagaimana posisi cryptocurrency berdasarkan sifat, karakteristik dan fungsinya menggunakan sudut pandang keuangan Islam. Hasil penelitian menunjukkan bahwa cryptocurrency saat ini lebih banyak menjalankan fungsi sebagai penyimpan nilai (store of value) yang tidak sesuai dengan sistem keuangan Islam. Di samping itu, penggunaan cryptocurrency sebagai uang dan alat pembayaran memiliki risiko (madharat) yang cukup besar. Hal ini menyalahi prinsip perlindungan harta dalam tinjauan maqasid al-shari'ah.

Keywords: cryptocurrency, Islamic finance, commodity, money functions.

INTRODUCTION

Cryptocurrency has emerged and developed over the last decade. However, its existence is still being debated in terms of function, regulation, and compliance with Islamic economic principles. The

pros¹ and cons² of the existence of cryptocurrency in the financial system, both conventional and Islamic, are still occurring in various countries worldwide. This is inseparable from the question that arises whether cryptocurrency functions as money or a commodity. In addition, the absence of an official institution responsible for and regulating the circulation of cryptocurrency and there is no underlying asset is another problem.

Cryptocurrency as virtual money in cyberspace in the current digital era is overgrowing. Cryptocurrency uses a decentralized database system with a peer-to-peer network type and open-source cryptography that does not depend on a central authority, such as a central bank or other official institutions. One of the triggers for the emergence of cryptocurrency is the globalization of the economy and business in the digital era which demands convenience in payment transactions through non-cash or electronic payment instruments for the public. With cryptocurrency, business transactions are faster, easier, and can cut costs because transactions are carried out online without involving third parties, such as banks. Moreover, the extraordinary advances in digital technology also support the development of cryptocurrency.

Many people are interested in using and buying digital currency with cryptocurrency technology for various purposes and interests,

¹ Gapur Oziyev and Magomet Yandiev, "Cryptocurrency from Shari'ah Perspective," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, December 29, 2017), doi:10.2139/ssrn.3101981; Muhammad Fuad Zain, "Mining-Trading Cryptocurrency Dalam Hukum Islam," *Al-Manahij: Jurnal Kajian Hukum Islam* 12, no. 1 (June 22, 2018): 119–32, doi:10.24090/mnh.v12i1.1303. tax payment and auditing. Some others disagree with these arguments and claim that any mode of payment in other than traditionally known instruments such as cash payment, TT, cheques etc will open the door to avoid tax and auditing, which in turn will cause a serious trouble to government budget and the overall decrease in GDP. This research uses theoretical, descriptive and analytical methods of research and therefore focuses on the following important points: a

² Nashirah Abu Bakar, Sofian Rosbi, and Kiyotaka Uzaki, "Cryptocurrency Framework Diagnostics from Islamic Finance Perspective: A New Insight of Bitcoin System Transaction," *International Journal of Management Science and Business Administration* 4, no. 1 (2017): 19–28; Ahmad Kameel Mydin Meera, "Cryptocurrencies from Islamic Perspectives: The Case of Bitcoin," *Buletin Ekonomi Moneter Dan Perbankan* 20, no. 4 (2018): 475–92; Luqman Nurhisam, "Bitcoin: Islamic Law Perspective," *QJIS (Qudus International Journal of Islamic Studies)* 5, no. 2 (August 26, 2017), doi:10.21043/qjiss.v5i2.2413.

such as convenience for payment transactions, currency trading, and investment.³ As a means of payment, currently, there are many merchants that accept payments using cryptocurrencies, such as Wordpress, PayPal, Steam, and others. On the other hand, the increasing value of several cryptocurrencies from time to time is a special attraction for speculators and many people as an investment in the future. In addition, cryptocurrencies that can be easily exchanged for a country's currency are another attraction.

Cryptocurrency from time to time shows a significant development trend, both in terms of currency amounts and asset capitalization. The number of cryptocurrencies from the coinmarketcap.com site as of 7 August 2019 was 2,305 with a market cap of \$ 302,737,569,231. This data does not include many other cryptocurrencies that have not been registered on the site. Based on the coinmarketcap.com site, the top five cryptocurrencies by market cap are Bitcoin, Ethereum, XRP, Bitcoin Cash, and Litecoin.⁴

However, despite all the developments and increasing public interest in cryptocurrency, many people oppose the existence of cryptocurrency with all the risks and consequences it caused. As a virtual currency, cryptocurrency is not the official currency of a country and there is no official institution that is responsible for its circulation and all transactions.⁵ This condition is undoubtedly prone to and can lead to misuse of cryptocurrency use, such as theft, money laundry, fraud, and other criminal acts.

Financial Counselor and Director for the Monetary and Capital Markets Department of the IMF, Tobias Adrian stated that cryptocurrencies hold adverse risks to the financial system. As a digital asset, cryptocurrency is very volatile and can be easily misused for transactions that can be carried out across national borders.⁶ This means that cryptocurrency can be used by anyone to transact in various parts of the country. On the other hand, cryptocurrency

³ Dimaz Ankaa Wijaya, *Bitcoin Mining Dan Cryptocurrency Lainnya* (Jasakom, 2018), 115–19.

⁴ “All Cryptocurrencies,” August 7, 2019, <https://coinmarketcap.com/all/views/all/>.

⁵ Dimaz Ankaa Wijaya and Oscar Darmawan, *Blockchain Dari Bitcoin Untuk Dunia* (Jakarta: Jasakom, 2017), 8.

⁶ Dana Aditiasari, “IMF Ungkap Bahaya Cryptocurrency,” 2018, <https://finance.detik.com/moneter/d-3979293/imf-ungkap-bahaya-cryptocurrency>.

transactions are difficult to trace. It is feared that this will increase several acts of violation by irresponsible parties, such as tax evasion, money laundering, drug trafficking, smuggling, and other illegal activities.

Based on these harmful risks, there are pros and cons of countries in the world towards the existence of cryptocurrency. Some countries recognize cryptocurrency as legal currency, but some countries consider it to be illegal currency. Some countries that recognize cryptocurrency as legal tender currencies include Japan, Singapore, Spain, Switzerland, England, Belgium, Brunei Darussalam, and several other countries. Meanwhile, countries that recognize cryptocurrency as a commodity include Brazil, France, the Netherlands, New Zealand, Norway, Sweden, Thailand, Turkey, and Zimbabwe. Cryptocurrency is also recognized legally as property by a number of countries, including Australia, Poland, the USA, Austria, Canada, Germany, and the Philippines.⁷

On the other hand, a number of countries consider cryptocurrencies to be illegal currencies, such as Afghanistan and Pakistan. But some countries have also designated it as limited currency, such as Iran limited as a commodity; China and Egypt determined as property as defined by India. The existence of prohibitions and restrictions on the use of digital currency to function legally as money and to provide limited alternatives as a commodity or property cannot be separated from the consideration that the value of cryptocurrency is very volatile. Furthermore, this restriction also aims to prevent the currency from being manipulated, causing significant loss for investors.⁸

In Indonesia, cryptocurrency is still valid as a commodity and has not been recognized as a legal currency. BI (*Bank Indonesia*) and OJK (*Otoritas Jasa Keuangan*) still prohibit the use of cryptocurrency as a medium of exchange. BI coordinates with OJK, Bapebti (*Badan Pengawas Perdagangan Berjangka Komoditi*), and other agencies to ensure the prohibition of using cryptocurrency in all financial transactions in Indonesia. Head of the Center for the Transformation Program of BI, Onny Widjanarko, emphasized that BI prohibits the

⁷ Muhammad Afdi Nizar, "Kontroversi Mata Uang Digital," in *Bunga Rampai Disruptive Mindset Sektor Jasa Keuangan* (Bogor: IPB Press, 2018), 173.

⁸ *Ibid.*, 174.

use of cryptocurrency in the payment system to prevent its adverse effects on financial system stability. In addition, this prohibition provides and ensures protection for consumers in Indonesia. Moreover, cryptocurrency is also vulnerable to be used in money laundering and terrorism financing.⁹

However, cryptocurrency as a commodity is allowed and has received a clear legal umbrella from the Ministry of Trade (Kemendag) through the Commodity Futures Trading Supervisory Agency (Bappebti). It means that buying and selling cryptocurrency can be officially traded in Indonesia through the Indonesian futures exchange. There are four Bappebti Regulations that legalize digital commodity trading of crypto assets. These regulations serve as the legal umbrella for the legality of trading cryptocurrency as a commodity that can be traded on a futures exchange.

Meanwhile, Oni Sahroni, one of the *muamalah* jurisprudence experts in Indonesia, expressed his opinion about cryptocurrency in a focus group discussion held by Republikaat the Double Tree Hotel Jakarta on 25 January 2018. Oni concluded two things about cryptocurrency. First, cryptocurrency is not currency. Because, if you look at the definition, a currency must be accepted by the public and recognized by the authorities. Hence the provision *sharf* (payment) does not apply there because cryptocurrency is not a currency. Second, there is an element of obscurity (*gharar*) in cryptocurrency. Personally, Oni sees cryptocurrency as a non-existent underlying asset and the price is out of control and unclear.¹⁰

Cryptocurrency is a virtual money product innovation in the current digital era. As a new product, the pros and cons of the existence of cryptocurrencies from various circles have indeed surfaced. Academics have also conducted many studies and research on cryptocurrencies from several different points of view and focus of study. Among these academics are Peter D. DeVries,¹¹ Nurfia

⁹ Addi M. Idhom, "BI Ajak OJK-Bappebti Perluas Jangkauan Larangan Transaksi Bitcoin," January 15, 2018, <https://tirto.id/bi-ajak-ijk-bappebti-perluas-jangkauan-larangan-transaksi-bitcoin-cDix>.

¹⁰ Ahmad Fikri Noor and Fuji Pratiwi, "Pro Kontra Uang Digital: Kasus Bitcoin," January 26, 2018, <https://www.republika.co.id/berita/nasional/news-analysis/18/01/27/p35hum440-pro-kontra-uang-digital-kasus-bitcoin>.

¹¹ Peter D. DeVries, "An Analysis of Cryptocurrency, Bitcoin, and the Future," *International Journal of Business Management and Commerce* 1, no. 2 (2016).

Oktaviani Syamsiah,¹² Ionela-Gabriela Matei and Erik Wouter Baks,¹³ and many other researchers.

Meanwhile, there was not much research on cryptocurrency with an Islamic approach. This certainly provides room for academic study. Several researchers who have studied on cryptocurrencies through an Islamic perspective, include Luqman Nurhisam,¹⁴ Ahmad Kameel Mydin Meera,¹⁵ Nashirah Abu Bakar,¹⁶ and Asep Zaenal Ausop and Elsa Silvia Nur Aulia.¹⁷ Some of the existing studies analyzed cryptocurrency as a currency through an approach to Islamic law and sharia transactions. Some of these studies concluded that cryptocurrencies are not in line with sharia because they contain elements of maysir and gharar. However, some of these studies have not fully portrayed cryptocurrency as a new technology and innovation in the financial system. Cryptocurrency is indeed a digital currency. However, in practice, cryptocurrencies often also function as digital commodities. Therefore, this study portrays cryptocurrencies, both as currencies and commodities, through a larger approach, namely Islamic finance and *maqasid al-shari'ah*.

CRYPTOCURRENCY: ITS ESTABLISHMENT AND OPERATIONAL MECHANISM

It is not easy to define a cryptocurrency because its types vary greatly from one to another. But in general, cryptocurrency is a set of cryptography-based technologies and algorithms that would mathematically compose various codes and ciphers for printing virtual currency.¹⁸ Cryptocurrencies have the following components:

¹² Nurfia Oktaviani Syamsiah, "Kajian Atas Cryptocurrency Sebagai Alat Pembayaran Di Indonesia," *Indonesian Journal on Networking and Security* 6, no. 1 (2017).

¹³ Ionela_Gabriela Matei and Erik Wouter Baks, "Regulating Bitcoin – The Challenges Ahead," *Acta Universitatis Danubius* 15, no. 3 (2019).

¹⁴ Nurhisam, "Bitcoin."

¹⁵ Meera, "Cryptocurrencies from Islamic Perspectives."

¹⁶ Bakar, Rosbi, and Uzaki, "Cryptocurrency Framework Diagnostics from Islamic Finance Perspective: A New Insight of Bitcoin System Transaction."

¹⁷ Asep Zaenal Ausop and Elsa Silvia Nur Aulia, "Teknologi Cryptocurrency Bitcoin Untuk Investasi Dan Transaksi Bisnis Menurut Syariat Islam," *Jurnal Sositologi* 17, no. 1 (n.d.): 2018.

¹⁸ Lam Pak Nian and David Lee Kuo Chuen, "Introduction to Bitcoin," in *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data* (London: Elsevier, 2015), 8, doi:10.1016/B978-0-12-802117-0.00001-1.

1) A distributed database that looks like a blockchain or something similar; 2) The type of consensus that reflects the degree of decentralization of the system of assets (coins or tokens) in the system can be transferred from one entity to another; 3) Readable transaction data (in a certain portion the data can be hidden); 4) The protocol runs the system without the help of certain parties to resolve disputes that may occur; 5) The open system allows anyone to join the system and leave it whenever desired; and 6) User anonymity by not using real identity in a transparent system.¹⁹

Successfully being included in the coinmarketcap.com list is not enough for an asset or system to be called a cryptocurrency because, currently, some products are indicated as scams even though there are on the list of 100 cryptocurrencies with the highest market value in the world. More in-depth analysis is needed to determine the eligibility of a product to be called a cryptocurrency.

Today there are many cryptocurrency products. Some of them are Bitcoin, Dogecoin, Litecoin, Ethereum, and many other cryptocurrency products. Cryptocurrency security is very guaranteed from the aspect of whether or not this currency product is easily imitated. Cryptographic technology ensures that a cryptocurrency is difficult or even not counterfeit. In other words, cryptocurrencies that have been circulating are virtually real money that has no duplication.²⁰

Cryptocurrencies have several functions that attract many users. Among these functions, cryptocurrencies can be traded, stored as investment tools, or used to obtain certain utilities offered by the system. First, trade function. In trading, cryptocurrencies can be considered commodities.²¹ This commodity can be bought and sold. The difference between the selling price and the buying price is an advantage for traders.

Second, Investment Function. Apart from trading, another function of cryptocurrency that has attracted many people's interest

¹⁹ Evan Duffield and Kyle Hagan, "Darkcoin: Peer to Peer Cryptocurrency with Anonymous Blockchain Transactions and an Improved Proof of Work System," *Bitpaper. Info*, 2014.

²⁰ Ibrahim Nubika, *Bitcoin Mengenal Cara Baru Berinvestasi Generasi Milenial* (Yogyakarta: Genesis Learning, 2018), 107.

²¹ Jeffrey H. Matsuura, *Digital Currency: An International Legal and Regulatory Compliance Guide* (Sharjah: Bentham Science Publishers Ltd., 2016), 45.

is its function as an investment.²² Cryptocurrency prices almost always increase over time. The cryptocurrency Bitcoin, for example, has increased many times since it was first introduced in 2009. Following Bitcoin, various types of cryptocurrencies that emerged later experienced an enormous increase in value. Judging from this history, this is why many users invest their money in cryptocurrency as digital assets to expand their traditional investment portfolios, such as property, securities, and gold.

Third, Payment Functions and Exchange Instruments. In some developed countries that have legalized cryptocurrencies, people can pay bills using cryptocurrency.²³ One of them is paying tuition fees or other payments. In addition, many outlets, merchants, and websites have accepted cryptocurrency as a means of payment when shopping.

Fourth, Other Utilities. Many cryptocurrencies are built for more than just transferring digital assets from one person to another.²⁴ The technology promoted by cryptocurrencies makes it possible to create features that were never known before. Some of the other functions of cryptocurrencies are smart contracts, the internet of things, and other utilities.

A smart contract is a computer code that is run by the system. A smart contract's impact is that the execution of orders is considered fairer because it does not require human intervention in executing the order. By using a smart contract, users do not need to trust the application owner because they can try it themselves or even analyze the code written.²⁵

²² David Kuo Chuen Lee, Li Guo, and Yu Wang, "Cryptocurrency: A New Investment Opportunity?," *Journal of Alternative Investments* 20, no. 3 (2018): 16–40, doi:10.3905/jai.2018.20.3.016; A Can Inci and Rachel Lagasse, "Cryptocurrencies: Applications and Investment Opportunities," *Journal of Capital Markets Studies* 3, no. 2 (2019): 98–112, doi:https://doi.org/10.1108/JCMS-05-2019-0032; Hermann Elendner et al., "The Cross-Section of Crypto-Currencies as Financial Assets: An Overview," in *Handbook of Blockchain, Digital Finance, and Inclusion*, vol. 1 (Academic Press, 2016), 145–73.

²³ Valeria Ferrari, "The Regulation of Crypto-Assets in the EU – Investment and Payment Tokens under the Radar," *Maastricht Journal of European and Comparative Law* 27, no. 3 (2020): 325–42, doi:10.1177/1023263X20911538.

²⁴ Ibid.

²⁵ Marcelo Corrales, Mark Frenwick, and Helena Haapio, "Digital Technologies, Legal Design and the Future of the Legal Profession," in *Legal Tech, Smart Contracts*

Apart from smart contracts, cryptocurrencies can also be useful as the Internet of Things (IoT). IoT technology is currently being intensified to increase the capabilities of household devices that are common in homes, such as televisions, refrigerators, doors, and fence gates. This “smart” device is equipped with various sensors connected to a central control that collects information from these sensors and makes decisions.

Currently, of these three functions, cryptocurrency is more dominant as a digital asset with investment objectives than currency. This is because the legality of using cryptocurrency as a currency is still collided in many countries. Cryptocurrency as an asset means storing wealth in a digital form that can be transferred very straightforwardly. This digital asset is a new thing that has not existed before. However, cryptocurrencies also carry a high level of risk because the value of these digital assets is very volatile, and it is difficult to predict whether it will increase, decrease, or even disappear.

Cryptocurrency that is used as an asset means that ownership of the cryptocurrency must be declared on the annual income tax return and recognized as an asset. The profit from the difference between the purchase and sale is a tax object that must be paid taxes that contribute to the state for development.

The legality of cryptocurrencies is still being debated today. Countries around the world have different regulations regarding cryptocurrencies. Discussions on international regulations regarding cryptocurrencies have been carried out at the G-20 meeting in December 2017. Before that, this issue has also been an in-depth study at the OECD (Organization for Economic Co-operation and Development) meeting, a cross-border organization whose members implement a free economic system. However, international regulatory agreements on cryptocurrencies have yet to come to light. That way, cryptocurrency regulations are returned to individual countries. Some countries legalize cryptocurrencies, and some prohibit their

and Blockchain, ed. Marcelo Corrales (Singapore: Springer Nature Singapore, 2019), 2.

use. Some countries recognize cryptocurrencies as assets but not currencies.²⁶

Some countries that legalize cryptocurrencies include Japan, the United States, Canada, Mexico, South Korea, Singapore, England, Germany, Switzerland, ntries.²⁷ The United States is one of the countries that regulates cryptocurrency and related businesses very closely. The cryptocurrency market is treated like a financial service subject to a special license from the regulator. The cryptocurrency market must also implement KYC / AML (Know Your Customer/ Anti Money Laundering) regulations for each of their consumers. Cryptocurrency ownership must also be reported on the taxpayer's annual report.²⁸

Another country where cryptocurrencies are legal is Japan. Japan is one of the friendliest countries with cryptocurrencies. Bitcoin has now become a legal tender in the country since 1 April 2017. The regulation is expected to boost the Japanese economy and make the country one of the largest Bitcoin markets in the world.²⁹ Consumption tax is not imposed on the purchase of Bitcoin in Japan which makes investors interested in shopping for Bitcoin in that country.

Meanwhile, several countries that prohibit cryptocurrency are China, Bangladesh, Kyrgyzstan, Morocco, Russia, and several other countries. The Chinese government has now issued a ban on every cryptocurrency market in the country. Therefore, residents of China are no longer able to buy cryptocurrencies due to this prohibition. Although the cryptocurrency market in China was once the largest market, it is not happening anymore.

The history of cryptocurrencies cannot be separated from a character who calls himself Satoshi Nakamoto. Although no one has been able to confirm the real identity behind this name, it is worth knowing about his work which initiated a new form of currency called

²⁶ Gustavo Rodrigues and Lahis Kurtz, *Cryptocurrencies and Anti-Money Laundering Regulation in The G20* (Institute for Research on Internet and Society, 2019); Ferrari, "The Regulation of Crypto-Assets in the EU – Investment and Payment Tokens under the Radar"; Stéphane Blemus, "Law and Blockchain: A Legal Perspective on Current Regulatory Trends Worldwide," *SSRN Electronic Journal*, 2018, 1–15, doi:10.2139/ssrn.3080639.

²⁷ Nubika, *Bitcoin Mengenal Cara Baru Berinvestasi Generasi Milenial*, 148.

²⁸ Wijaya and Darmawan, *Blockchain Dari Bitcoin Untuk Dunia*.

²⁹ Yuzo Kano, "Japan: The New Heart of Bitcoin," 2018, <https://www.coindesk.com/japan-new-heart-bitcoin/>.

Bitcoin. In 2008, Satoshi published a whitepaper entitled "Bitcoin: A Peer-To-Peer Electronic Cash System".³⁰

Before Bitcoin was born in this world through Satoshi Nakamoto, the idea of using cryptography to solve currency problems had been around since David Chaum first proposed his idea.³¹ The focus of the type of currency made by Chaum is a currency that the government or banks cannot track, or often referred to as anonymous currency. Chaum's idea, which began in the 1980s, made other thinkers solve the same problem, including Wei Day with b-money.³²

The value of Bitcoin, which has continued to increase sharply in the last few years, has prompted many software development teams to enter the cryptocurrency industry. In the past, only a few types of cryptocurrencies were known besides Bitcoin, including Litecoin, Dogecoin, and Ethereum. But now, based on coinmarketcap.com site, there are more than 2,305 types with a market cap of \$302,737,569,231. This data does not include many other cryptocurrencies that are not yet listed on the site.³³

Currently, there are various types of cryptocurrencies offered in the market. Each product can be seen from the features offered. Based on these features, cryptocurrency can, at least, be divided into several types. It includes asset transfer, smart contracts, privacy-preserving

³⁰ Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System" Satoshi Nakamoto Institute, 2008-10-31, 2008. but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone." "note": "container-title: 2008-10-31", "title": "Bitcoin: A Peer-to-Peer Electronic Cash System Satoshi Nakamoto Institute", "author": [{"family": "Nakamoto", "given": "Satoshi"}], "issued": {"date-parts": [{"2008"}]}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"

³¹ David Chaum, "Blind Signatures for Untraceable Payments," in *Advances in Cryptology*, ed. David Chaum, Ronald L. Rivest, and Alan T. Sherman (Boston: Springer, 1983).

³² Wei Day, "B-Money," 1998, <http://www.weidai.com/bmoney.txt>.

³³ "All Cryptocurrencies."

cryptocurrency, utility coin, and token. Cryptocurrency, which is an asset transfer type, usually only provides a simple facility to transfer virtual assets (in the form of cryptocurrency coins) from one address to another. Meanwhile, other features are not widely available. This type is usually a long-standing cryptocurrency, such as Bitcoin, Litecoin, and Dogecoin.

The smart contract cryptocurrency is considered the second version of blockchain technology after the Bitcoin era. The pioneers of this kind are Ethereum.³⁴ If there are only assets in the form of coins in the first version, then in the smart contract, the developer can embed the application on the blockchain. This application is run by the smart contract ecosystem automatically every time it receives input from users.³⁵

Privacy-preserving cryptocurrencies offer extra features to protect user information. Many different technologies are implemented by each cryptocurrency, for example Monero implements CryptoNote modified by the linkable ring signature,³⁶ while Zcash opted for the zk-SNARK implementation.³⁷

Meanwhile, this type of utility coin offers special services on the developed blockchain system, apart from being used to transfer assets. These specialized services vary widely, ranging from data storage, decentralized databases, big data, Artificial Intelligence (AI), Internet of Things (IoT), and others. These are unique features that are expected to attract new users to invest their funds in the offered system while using the system in their business processes.

MONEY IN ISLAM

Conventional economics defines money in terms of interchangeability. In conventional economics, money is considered as a medium of exchange and as capital (commodity). So that money can be traded with advantages both on the spot and on the futures. Furthermore,

³⁴ Vitalik Buterin, "A Next-Generation Smart Contract and Decentralized Application Platform," *Ethereum*, 2014.

³⁵ Melanie Swan, *Blockchain: Blueprint for a New Economy, Climate Change 2013 - The Physical Science Basis* (California: O'Reilly Media, 2015), 16.

³⁶ Nicolas Van Saberhagen, "CryptoNote v 2.0," *Self-Published*, 2013.

³⁷ Eli Ben-Sasson et al., "Succinct Non-Interactive Zero Knowledge for a von Neumann Architecture," in *Proceedings of the 23rd USENIX Security Symposium*, 2014.

money can also be leased (leasing) in this perspective. When money is treated as a commodity, then comes what is called a money market. The formation of this money market resulted in a unique dynamic in the conventional economy, especially in the monetary sector. Then this money market developed with the emergence of the derivatives market, which is a derivative of the money market. This derivatives market uses interest instruments as the price of its products. Its transactions are not based on fully real transaction motives, even most of them contain speculative elements.³⁸

On the other hand, money in Islamic economics is very clear that money is money. Money is not capital (commodities)³⁹ that can be traded with excess either on the spot or not. One important phenomenon of the characteristics of money is that it is not needed for itself. Money is needed to buy other goods so that human needs can be fulfilled. According to Ibn Taimiyah, money in Islam is a medium of exchange and a means of measuring value.⁴⁰ Money is intended as a measuring tool for the value of an item. Through money, the value of an item will be known and they do not use it for themselves or be consumed. The same thing was also stated by his student, Ibn Qayyim, that money and coins were not intended for the object itself, but were intended to obtain goods (as a medium of exchange). In relation to the concept of money, al-Ghazali said: "money is like glass. Glass has no color, but it can reflect all colors. Money has no price, but it can reflect all prices".⁴¹

From the definitions and theories regarding money above, money in Islam in general is defined as a medium of exchange and measuring the value of goods and services to facilitate economic transactions. Thus, money is not a commodity. Therefore, the motive for holding money in Islam is for transactions and precautionary measures, not for speculation.⁴² Because activities that lead to speculative motives

³⁸ Nurul Huda and Mohammad Heykal, *Lembaga Keuangan Islam: Tinjauan Teoritis Dan Praktis* (Jakarta: Kencana Prenada Media, 2010), 12–13.

³⁹ Adiwarman Karim, *Ekonomi Makro Islami* (Jakarta: RajaGrafindo Persada, 2007), 77.

⁴⁰ Abdul Azim Islahi, *Economic Concepts of Ibn Taimiyah* (London: The Islamic Foundation, 1988), 140.

⁴¹ Muhammad, *Dasar-Dasar Keuangan Islami* (Yogyakarta: Ekonisia, 2004), 6.

⁴² Ascarya, *Akad Dan Produk Bank Syariah* (Jakarta: RajaGrafindo Persada, 2007), 22–23.

are prohibited in Islam, the existing monetary instruments are avoided from the use of variables that lead to speculative motives. The existence of instruments to substitute interest rates is directed to use money that has an important and urgent purpose as well as productive and efficient investment.⁴³

In Islam, capital is private goods, while money is public goods. Money that when flowing is public goods (flow concept) then settles into someone's ownership (stock concept). In such conditions, the money becomes private property (private goods).

CRYPTOCURRENCY FROM AN ISLAMIC FINANCIAL PERSPECTIVE

Cryptocurrency is currently being considered by the public and has also begun to be studied by academics and monetary policymakers. As a new currency model, debate about cryptocurrency is inevitable. Pros and cons color the course of cryptocurrency practice in society. Cryptocurrency offers many benefits and conveniences, as well as the many risks that go with it. So far, cryptocurrencies in the community can function as a medium of exchange like money, as a commodity that can be used as an object of investment and buying and selling, as well as often used for other utilities.

There are differences in the function of money with conventional economic concepts in the Islamic economic-financial system. According to Islamic economics, money is money, not a commodity.⁴⁴ Meanwhile, in the Islamic economy pioneered by al-Ghazali, Ibn Khaldun, and Ibn Taymiyah and continued by contemporary Muslim economists, the function of money is only known as a medium of exchange for transactions and a unit of account.⁴⁵

According to Ibn Khaldun, money is a medium of exchange and a means of measuring the value of something. Gold and silver can be the standard of value for money. However, money does not have

⁴³ Karim, *Ekonomi Makro Islami*, 186.

⁴⁴ M.A. Mannan, *Teori Dan Praktek Ekonomi Islam* (Yogyakarta: Dana Bhakti Prima Yasa, 1997), 162; Euis Amalia, *Sejarah Pemikiran Ekonomi Islam* (Depok: Gramata Publishing, 2010), 168.

⁴⁵ Adiwarmarman Karim, *Ekonomi Islam Suatu Kajian Ekonomi Makro* (Jakarta: IIT Indonesia, 2002), 22.

to contain gold and silver.⁴⁶ According to al-Ghazali, money is the standard price of goods and has no intrinsic value. Money serves as a means of obtaining other goods. Al-Ghazali likened money to a mirror that does not have its own color but can reflect all types of colors. So money has no price, but it can reflect all prices. Money is not a commodity, so it cannot be traded.⁴⁷

Based on the function of money in the Islamic financial system, cryptocurrency can be accepted in the Islamic financial system if it carries out two roles as a medium of exchange for transactions and a unit of account. Cryptocurrency is compatible with the Islamic financial system when it performs trading functions and means of payment and a unit of value. However, if cryptocurrency is used as an investment, that function is incompatible with the Islamic financial system. This means that if cryptocurrency is used as an investment, it will function as a commodity, not as money. This is what is rejected in the Islamic financial system.

In Islamic finance, the concept of money is of two kinds, namely money as a flow concept and as public goods.⁴⁸ As a flow concept, money is analogous to water. Running water will tend to be clean and healthy. In the flow concept, the faster cash rotates in society, the greater the benefits and welfare that the community gets. The faster the circulation of money in society means the more transactions and economic activities the community carries out and the more economic benefits felt by the community. Meanwhile, the position of money as public goods shows that anyone can own money in ways that are allowed without being prevented by others. Therefore, hoarding money is prohibited in Islam, because money is a public good. People can save assets as private goods, but they are not allowed to hoard money.

Capital is private goods, while money is public goods. Money, when it flows, is public goods (flow concept) then settles into someone's ownership (stock concept), and the money becomes personal property (private goods). On the other hand, money has

⁴⁶ Nur Chamid, *Jejak Langkah Sejarah Pemikiran Ekonomi Islam* (Yogyakarta: Pustaka Pelajar, 2010), 249.

⁴⁷ *Ibid.*, 220–22.

⁴⁸ Muhammad, *Dasar-Dasar Keuangan Islami* (Yogyakarta: Ekonisia, 2004), 71; Karim, *Ekonomi Makro Islami*, 89.

several conditions that must be met as a standard price. These requirements are 1) General acceptability (widely accepted); 2) Stability of value (value stability); 3) Protability (in simple form); 4) Durability (long lasting); 5) Difficult to imitate (difficult to fake); 6) Divisible to small units (easily divided into small parts); 7) The supply is elastic; 8) Continuity; and 9) Easy to store. Although gold and silver are the best materials for money, according to al-Ghazali, currency can be made of other than gold or silver. In such conditions, the Government must maintain and control the stability of its value.⁴⁹

In terms of these standards, most of these conditions are met by cryptocurrencies at some level. Some that are not yet fully compliant with the standard for money, among them are widely accepted. Cryptocurrencies are starting to have a lot of users. However, cryptocurrencies are still limited to their users. In addition, many countries prohibit the use of cryptocurrencies as a means of transaction and payment.

Value stability standards are another factor that prevents cryptocurrencies from qualifying as money. From existing data, the value of cryptocurrencies does fluctuate, even the changes are quite extreme. In a certain period of time, a cryptocurrency can increase many times, but at other times a cryptocurrency can drop drastically in value.

In the perspective of Islamic finance, financial technology innovation must still get appreciation. However, these innovations must remain in line with the objectives of the Islamic economic system which fights for justice and the welfare of society. Thus, it is hoped that happiness in the world and the hereafter (*falah*) will be realized through a good life system (*hayah tayyibah*) as the basis and main goal of Islamic law (*masalih al-'ibad*).

It is undeniable that cryptocurrencies provide benefits along with several advantages over conventional money. Some of these advantages include cryptocurrencies that do not require the services of a third party, thus providing convenience, speed, and cheapness in transactions. Another advantage of cryptocurrencies is that the decentralized system and cryptographic technology make cryptocurrencies difficult to counterfeit, hack or duplicate.

⁴⁹ Ahmad Dimiyati, *Teori Keuangan Islam: Rekonstruksi Metodologis Terhadap Keuangan Al-Ghazali* (Yogyakarta: UII Press, 2008), 64–66.

In addition, cryptocurrencies can also be used globally and are not affected by regional geopolitics.

However, in addition to these advantages and benefits, cryptocurrencies also have weaknesses and risks that are large enough that many countries still do not accept cryptocurrencies as legal tender in that country. Some of the weaknesses of cryptocurrencies include the absence of a guarantor authority or institution, so that any form of loss or damage to the device is the personal responsibility of the owner. There is no authority or institution that has the authority and guarantees in overcoming this problem. In addition, because transactions using cryptocurrencies are carried out peer-to-peer or directly between users without intermediaries, as a result, the ongoing transaction process cannot be stopped or canceled. So this will be a risk that must be borne by the user.

In addition, another weakness of cryptocurrencies is that they are prone to being used for illegal transactions. Cryptocurrencies are obvious. However, the identity of cryptocurrency users and their transactions is either anonymous (without a name) or pseudonymous (a pseudonym). The confidentiality of this user identity becomes a weak point for crypto currencies and becomes a loophole for abuse or cybercrime, such as theft, illegal trading, money laundering, and several other illegal activities. This is because transactions in cryptocurrencies are difficult to trace in the digital world. Because it is anonymous or pseudonymous.

With these advantages and disadvantages, cryptocurrencies have *maslahah* value on the one hand, and contain elements of *madharat* on the other. More specifically, from the point of view of property protection, cryptocurrencies violate several principles of property protection that should be safeguarded or realized. The absence of a cryptocurrency guarantor authority is one of the factors that violates the principle of property protection, besides this currency is prone to be used for illegal transactions. These two weaknesses can be said to be the evil elements of cryptocurrencies. These two weaknesses violate the principle of property protection in *maqasid al-shari'ah*, namely the determination of property (*thabat al-amwal*), related to property ownership and legal certainty with the position of property and justice in assets (*al -'adl fi al-amwal*), distribution justice and prohibition of fraud and usury transactions. Another principle of

property protection that is violated is the provision regarding the prohibition of the use of property in vanity (*man' akl al-amwal bi al-batil*) and keeping property away from danger (*ib'ad al-darar*).

In addition, the current use of cryptocurrencies functions more as an investment. Users, such as Bitcoin users for example, are using cryptocurrencies more and more to benefit from increasing their value. So, cryptocurrencies in the perspective of Islamic finance are more functioned as commodities and not functioned as money.

Regardless of the conclusion, cryptocurrency as a financial technology innovation should be appreciated. It is very important in the future to develop conventional currencies by adopting cryptocurrency technology with various advantages and eliminating various weaknesses. Thus, cryptocurrencies can function as real currencies that can be accepted globally, including by the Islamic financial system.

CONCLUSION

In the perspective of Islamic finance, cryptocurrency is not in accordance with the function of money which should be the medium of exchange and the unit of account. Cryptocurrency currently performs a store of value function which is not recognized and prohibited by the Islamic financial system. Cryptocurrency is used as a commodity and according to the Islamic financial system, money cannot be used as a commodity. In fact, cryptocurrency values the benefits in it. However, the value of *madharat* in it is also not small. Therefore, cryptocurrency can be accepted by the Islamic financial system if it can eliminate this *madharat* and indeed provides useful value according to its function as money.

Based on this research results, cryptocurrency technology can be further developed so that it can eliminate the opportunity for illegal practices related to its use. One of the most significant risks of cryptocurrencies is that they are very possible to be misused, because they are anonymous or pseudonymous. Furthermore, monetary authorities can be more innovative in developing cryptocurrency technology because they will be more attractive to users with various advantages in the future. Note that cryptocurrencies still function as money, not as commodities.

REFERENCES

- Aditiasari, Dana. "IMF Ungkap Bahaya Cryptocurrency," 2018. <https://finance.detik.com/moneter/d-3979293/imf-ungkap-bahaya-cryptocurrency>.
- "All Cryptocurrencies," August 7, 2019. <https://coinmarketcap.com/all/views/all/>.
- Amalia, Euis. *Sejarah Pemikiran Ekonomi Islam*. Depok: Gramata Publishing, 2010.
- Ascarya. *Akad Dan Produk Bank Syariah*. Jakarta: RajaGrafindo Persada, 2007.
- Ausop, Asep Zaenal, and Elsa Silvia Nur Aulia. "Teknologi Cryptocurrency Bitcoin Untuk Investasi Dan Transaksi Bisnis Menurut Syariat Islam." *Jurnal Sositologi* 17, no. 1 (n.d.): 2018.
- Bakar, Nashirah Abu, Sofian Rosbi, and Kiyotaka Uzaki. "Cryptocurrency Framework Diagnostics from Islamic Finance Perspective: A New Insight of Bitcoin System Transaction." *International Journal of Management Science and Business Administration* 4, no. 1 (2017): 19–28.
- Ben-Sasson, Eli, Alessandro Chiesa, Eran Tromer, and Madars Virza. "Succinct Non-Interactive Zero Knowledge for a von Neumann Architecture." In *Proceedings of the 23rd USENIX Security Symposium*, 2014.
- Blemus, Stéphane. "Law and Blockchain: A Legal Perspective on Current Regulatory Trends Worldwide." *SSRN Electronic Journal*, 2018, 1–15. doi:10.2139/ssrn.3080639.
- Buterin, Vitalik. "A Next-Generation Smart Contract and Decentralized Application Platform." *Etherum*, 2014.
- Chaum, David. "Blind Signatures for Untraceable Payments." In *Advances in Cryptology*, edited by David Chaum, Ronald L. Rivest, and Alan T. Sherman. Boston: Springer, 1983.
- Corrales, Marcelo, Mark Frenwick, and Helena Haapio. "Digital Technologies, Legal Design and the Future of the Legal

Profession.” In *Legal Tech, Smart Contracts and Blockchain*, edited by Marcelo Corrales. Singapore: Springer Nature Singapore, 2019.

Day, Wei. “B-Money,” 1998. <http://www.weidai.com/bmoney.txt>.

DeVries, Peter D. “An Analysis of Cryptocurrency, Bitcoin, and the Future.” *International Journal of Business Management and Commerce* 1, no. 2 (2016).

Dimiyati, Ahmad. *Teori Keuangan Islam: Rekonstruksi Metodologis Terhadap Keuangan Al-Ghazali*. Yogyakarta: UII Press, 2008.

Duffield, Evan, and Kyle Hagan. “Darkcoin: Peer to Peer Cryptocurrency with Anonymous Blockchain Transactions and an Improved Proof of Work System.” *Bitpaper. Info*, 2014.

Elendner, Hermann, Simon Trimborn, Bobby Ong, and Teik Ming. “The Cross-Section of Crypto-Currencies as Financial Assets: An Overview.” In *Handbook of Blockchain, Digital Finance, and Inclusion*, 1:145–73. Academic Press, 2016.

Ferrari, Valeria. “The Regulation of Crypto-Assets in the EU – Investment and Payment Tokens under the Radar.” *Maastricht Journal of European and Comparative Law* 27, no. 3 (2020): 325–42. doi:10.1177/1023263X20911538.

Huda, Nurul, and Mohammad Heykal. *Lembaga Keuangan Islam: Tinjauan Teoritis Dan Praktis*. Jakarta: Kencana Prenada Media, 2010.

Idhom, Addi M. “BI Ajak OJK-Bappebti Perluas Jangkauan Larangan Transaksi Bitcoin,” January 15, 2018. <https://tirto.id/bi-ajak-ijk-bappebti-perluas-jangkauan-larangan-transaksi-bitcoin-cDix>.

Inci, A Can, and Rachel Lagasse. “Cryptocurrencies: Applications and Investment Opportunities.” *Journal of Capital Markets Studies* 3, no. 2 (2019): 98–112. doi:<https://doi.org/10.1108/JCMS-05-2019-0032>.

Islahi, Abdul Azim. *Economic Concepts of Ibn Taimiyah*. London: The Islamic Foundation, 1988.

- Kano, Yuzo. "Japan: The New Heart of Bitcoin," 2018. <https://www.coindesk.com/japan-new-heart-bitcoin/>.
- Karim, Adiwarman. *Ekonomi Islam Suatu Kajian Ekonomi Makro*. Jakarta: IIT Indonesia, 2002.
- . *Ekonomi Makro Islami*. Jakarta: RajaGrafindo Persada, 2007.
- Lee, David Kuo Chuen, Li Guo, and Yu Wang. "Cryptocurrency: A New Investment Opportunity?" *Journal of Alternative Investments* 20, no. 3 (2018): 16–40. doi:10.3905/jai.2018.20.3.016.
- M.A. Mannan. *Teori Dan Praktek Ekonomi Islam*. Yogyakarta: Dana Bhakti Prima Yasa, 1997.
- Matei, Ionela_Gabriela, and Erik Wouter Baks. "Regulating Bitcoin – The Challenges Ahead." *Acta Universitatis Danubius* 15, no. 3 (2019).
- Matsuura, Jeffrey H. *Digital Currency: An International Legal and Regulatory Compliance Guide*. Sharjah: Bentham Science Publishers Ltd., 2016.
- Meera, Ahmad Kameel Mydin. "Cryptocurrencies from Islamic Perspectives: The Case of Bitcoin." *Buletin Ekonomi Moneter Dan Perbankan* 20, no. 4 (2018): 475–92.
- Muhammad. *Dasar-Dasar Keuangan Islami*. Yogyakarta: Ekonisia, 2004.
- . *Dasar-Dasar Keuangan Islami*. Yogyakarta: Ekonisia, 2004.
- Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System Satoshi Nakamoto Institute." 2008-10-31, 2008.
- Nian, Lam Pak, and David Lee Kuo Chuen. "Introduction to Bitcoin." In *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data*. London: Elsevier, 2015. doi:10.1016/B978-0-12-802117-0.00001-1.

- Nizar, Muhammad Afdi. "Kontroversi Mata Uang Digital." In *Bunga Rampai Disruptive Mindset Sektor Jasa Keuangan*. Bogor: IPB Press, 2018.
- Noor, Ahmad Fikri, and Fuji Pratiwi. "Pro Kontra Uang Digital: Kasus Bitcoin," January 26, 2018. <https://www.republika.co.id/berita/nasional/news-analysis/18/01/27/p35hum440-pro-kontra-uang-digital-kasus-bitcoin>.
- Nubika, Ibrahim. *Bitcoin Mengenal Cara Baru Berinvestasi Generasi Milenial*. Yogyakarta: Genesis Learning, 2018.
- Nur Chamid. *Jejak Langkah Sejarah Pemikiran Ekonomi Islam*. Yogyakarta: Pustaka Pelajar, 2010.
- Nurhisam, Luqman. "Bitcoin: Islamic Law Perspective." *QIJIS (Qudus International Journal of Islamic Studies)* 5, no. 2 (August 26, 2017). doi:10.21043/qijis.v5i2.2413.
- Oziev, Gapur, and Magomet Yandiev. "Cryptocurrency from Shari'ah Perspective." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, December 29, 2017. doi:10.2139/ssrn.3101981.
- Rodrigues, Gustavo, and Lahis Kurtz. *Cryptocurrencies and Anti-Money Laundering Regulation in The G20*. Institute for Research on Internet and Society, 2019.
- Saberhagen, Nicolas Van. "CryptoNote v 2.0." *Self-Published*, 2013.
- Swan, Melanie. *Blockchain: Blueprint for a New Economy. Climate Change 2013 - The Physical Science Basis*. California: O'Reilly Media, 2015.
- Syamsiah, Nurfia Oktaviani. "Kajian Atas Cryptocurrency Sebagai Alat Pembayaran Di Indonesia." *Indonesian Journal on Networking and Security* 6, no. 1 (2017).
- Wijaya, Dimaz Ankaa. *Bitcoin Mining Dan Cryptocurrency Lainnya*. Jasakom, 2018.
- Wijaya, Dimaz Ankaa, and Oscar Darmawan. *Blockchain Dari Bitcoin Untuk Dunia*. Jakarta: Jasakom, 2017.

Zain, Muhammad Fuad. "Mining-Trading Cryptocurrency Dalam Hukum Islam." *Al-Manahij: Jurnal Kajian Hukum Islam* 12, no. 1 (June 22, 2018): 119–32. doi:10.24090/mnh.v12i1.1303.