



The Compatibility of Cryptocurrency and Islamic Finance Law

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Article Info	Abstract
<p>Article history: Received June 7, 2023 Revised July 1, 2023 Accepted August 27, 2023 Available online September 15, 2023</p> <p>*Corresponding author email: 2110211320019@mhs.ulm.ac.id</p> <p>Keywords: Blockchain, Cryptocurrency, Bitcoin, Islamic Perspective, Sharia Compliance.</p> <p>Page: 264-271</p>	<p>Cryptocurrency, often known as crypto, is any type of digital or virtual currency that employs encryption to prevent fraudulent transactions. In terms of the Islamic stance on cryptocurrencies, Muslim scholars and Shari'ah specialists have evolved differing viewpoints, resulting in some believing it is halal and others believing it is haram. With the goal to determine the perceptions of the system, this paper conducted a qualitative research technique that included thorough observation and literature reviews. According to the results, there is insufficient clarity of Islamic law on the essential requirements for using cryptocurrencies as a transaction tool. Therefore, an Islamic digital currency framework is required to implement Islamic law for cryptocurrency use.</p> <p>AICIE with CC BY license. Copyright © 2023, the author(s)</p>

INTRODUCTION

With the evolution of technology for communication and information in the modern era, Bitcoin and cryptocurrencies became popular as what is generally referred to as digital currency. In terms of the Islamic stance on cryptocurrencies, Muslim scholars and Shari'ah specialists have evolved differing viewpoints, resulting in some believing it is halal and others believing it is haram.

Cryptocurrency is an online virtual trading system that generates and distributes tokens using encryption. It is built on an encrypted peer-to-peer network that allows for digital bartering. Bitcoin, the first and most prominent cryptocurrency, is seen as a new technology that is undermining long-established reputable financial payment networks.

Cryptocurrencies have the potential to transform the digital trade markets by enabling free-flowing trading without the need for banking fees. Users can trade money digitally without the intervention of a third party by utilizing a cryptocurrency. Cryptocurrency is based on the

principle of solving encryption algorithms to generate unique hashes with a finite number of possibilities. Users can trade hashes as if they were transferring physical currency when combined with a network of computers that verify transactions.

Cryptocurrencies have developed as significant financial software systems based on an encrypted distributed ledger data structure. Mining is an essential component of such systems because it adds records of previous transactions to the distributed ledger known as blockchain and enables users to establish consensus for each transaction. Miners are required to validate any cryptocurrency transaction. The essential need for consideration in the Shari'ah context is that it may be characterized as capital (mal). As a result, before delving into the legal position of cryptocurrencies under Islamic law, it is necessary to first examine the idea of capital in Shar'iah. According to the Lisan al-'Arab dictionary, 'mal' refers to something that may be possessed.

In terms of the Islamic viewpoint on cryptocurrencies, Muslim academics and Shari'ah specialists have evolved differing views, with some believing it halal and others stated that it's haram. Those who believe it is legally permissible put out their arguments, with some claiming that it violates the constitutions of their own governments. On the other hand, some Muslim experts believe that cryptocurrency is permitted in theory. Some academics believe that cryptocurrencies and bitcoin are permitted in theory. This viewpoint is backed by the legal maxim 'alasl fi l-mu'amalat al-ibahah,' which states that the permissibility of any financial or economic transaction is the basis for it. In other words, unless it is obviously against to Shari'ah principles, anything is acceptable.

In Addition, numerous contradictions about the adoption of digital currency have been highlighted by many academics and pointed out in the pertinent fatwas. The purpose of this research is to investigate the perception regarding cryptocurrency system implementation from an Islamic perspective. Everything is permissible unless it is found evidently contrary to Shari'ah principles. Thus, cryptocurrency is permissible under this principle. More research on digital currencies must be conducted, especially with the proliferation of other digital currencies.

METHOD

With the goal to determine the perceptions of the system, this paper conducted a qualitative research technique that included thorough literature reviews. The objective of literature review is to gather crucial yet recent research on this topic and construct it into an organized overview of existing knowledge regarding this topic.

Thus, literature review will prepare me for making my own argument on this topic, or for conducting my own original research. According to the results, there is insufficient clarity of Islamic law on the essential requirements for using cryptocurrencies as a transaction tool.

RESULT AND DISCUSSION

The tricky part regarding cryptocurrency is that there is plethora of varieties; several are used as currency while others are used as an instrument of trading. In Indonesia, the highest Islamic religious authority clerical body in Indonesia, the Indonesian Ulema Council (MUI) issued a fatwa declaring that the use or various activities that use cryptocurrencies are haram. This is due to uncertainty and the potential for gambling in its use. According to MUI's official website, the use of digital coin as legal tender is prohibited since it contains gharar and dharar.

Aforementioned by the following statement, Cryptocurrency as a digital commodity/asset is illegal to be traded because it contains gharar, dharar, qimar and does not meet the syar'i requirements of sil'ah, namely: there is a physical form, has value, the amount is known with certainty, property rights and can be handed over to the buyer. This demonstrates that it is not beneficial to recognize cryptocurrencies as an instrument of trading.

The reason for this is that regular currency is likewise not backed by the government. Cryptocurrency is presently surviving due to the balance between demand and supply. If there is no supply, demand will plummet. The key element that will enable people to endorse this type of technology is trust. Moreover, there is also the possibility of getting involved in money laundering.

Cryptocurrency utilizes decentralized network, indicating that there is no authoritative record-keeping system through which governments or financial institutions can restrict or track where money flows. Due to various issues known for normal legitimate Islamic financial dealings, such as tangible evidence of cash and item, cryptocurrency becomes haram." It is also constrained by the requirement to separate it from any kind of gambling, which is strictly prohibited in Islam.

The method of calculating the intrinsic worth of crypto determined by a set of algorithms is similar to gambling since it implies that there is no true intrinsic worth for the digital coin until it is decided in this manner. People typically invest in digital currency due to their trust in advancement of technology. However, there is tremendous risk linked to it; the intrinsic worth of digital currencies can vary considerably in a matter of hours, resulting in a financial loss upon any type of investment.

For instance, Bitcoin's intrinsic worth plummeted by over 10% in January 2018, approaching \$8,000 for the first time. The value declined below \$8,000 in February, sold as \$7,574.20. Currently, the price has fallen to \$6,554 in October 2018. As a result, while cryptocurrencies may be a useful instrument for trading regarding goods and services, it's fraught with peril when it comes to investing. An investment that is valued at thousands of dollars right now may be worth fewer than hundreds of dollars tomorrow. There is no certainty that the value will increase again after it declined.

Furthermore, there are no authorities responsible if hackers derive accessibility to one's account or losing a wallet private key. This could potentially be an adverse outcome. Unless and until the password is retrieved, there is no way to get into the wallet, and the currency is gone

permanently. All of these factors create uncertainty for cryptocurrencies. The value transferred from one account to another in the transaction is transparent, but who owns the account is the key issue that generated the cause for gharar; we don't know who is/are participating in the transaction inside the system.

On top of that, payments made in digital currencies are not legally protected. If something goes awry with oneself credit or debit card, that person is legally protected. For instance, if there's a need to dispute a transaction, the credit card company will assist you in getting the money returned. Cryptocurrencies do not offer such security. Additionally, transactions made using crypto are often referred as anonymous. However the truth is more complicated.

Typically, cryptocurrency transactions will be recorded on a public ledger known as a "blockchain." This is a public record of every transaction, both on the payment and receiving sides. On the configuration of the blockchain, the information uploaded to the blockchain might include data such as the transaction value as well as the wallet addresses of the sender and receiver. It is occasionally feasible to identify the persons engaged in a given transaction using transaction and wallet information. When someone buy anything from a vendor that gathers additional information, such as mailing address, that information can also be used to identify someone afterwards.

The following explanation describes the study's substantial result. Cryptocurrency is used as an instrument of trading and currency as well. Balances are maintained using public and private keys, composed of lengthy strings of numbers and characters connected by the mathematical encryption method that created them. The public key (similar to a bank account number) acts as the address that is made public and to which others can transfer bitcoins. The private key (similar to an ATM PIN) is designed to be kept private and is only used to approve Bitcoin transactions. Bitcoin's suggested system is appropriate for a certain group. However, in order to implement in all areas of the economy, authority is required to authenticate the transaction's authenticity.

	Traditional digital currency transaction	Bitcoin (Cryptocurrency) transaction
Definition	Money in any form in actual use or circulation as a medium of exchange, especially circulating banknotes and coins. Money is government-issued currencies.	Digital currency in which encryption techniques are used to regulate the generation of units of currency. Type of currency that is non-physical, of which no banknotes and coins exist, and which can only be transmitted via electronic means, typically allowing for instantaneous transactions and borderless transfer of ownership.
Example	Two monetary systems: fiat money and commodity money	Virtual currencies and cryptocurrencies
Verification	The transaction using code from financial institution	A transaction using a digital signature that represented by a code that is generated by the algorithm.
Transaction path	The transaction path is monitored by trusted third part	Ledgers in blockchain monitor the transaction path. This ledger is open for public access and maintained by users.
Transaction cost	There is transaction cost	Minimal transaction cost that lower compared to traditional money transfer method
Volatility	Price of exchange rate fluctuates according to economic condition.	Price of Bitcoin is based on supply and demand. The exchange rate of cryptocurrency fluctuates widely depending on the news.

The table compares the transaction processes of traditional digital money with cryptocurrency. Current fiat money is defined as money in any form that is in usage or flows as an instrument of trading, particularly circulating banknotes and coins. Government-issued currencies are examples of this form of money. In comparison to cryptocurrency, Bitcoin is a digital currency which means that encryption techniques are employed to control the formation of currency units. Cryptocurrency is a sort of non-physical currency that lacks banknotes and coins. Bitcoin transactions can only be completed electronically, allowing for quick transactions and borderless ownership transfer.

For instance, the process begins when user A transfers money to user B. This transaction will be processed using the platform offered by the financial provider, that belongs to the banking sector. This transaction utilizes the features of the financial institution's centralized management system. The financial institution monitors and evaluates the exchange's security. In the vast majority of cases, a central bank has an exclusive right to produce coins and banknotes (fiat money) for its area of distribution (a nation or set of countries); through monetary policy, it oversees the generation of currency by banks (credit). The intrinsic worth of the currency in this transaction is determined by the exchange rate value. An exchange rate is the value at which two currencies may be exchanged.

To be traded in favor of one another. This is used to facilitate trading across the two currency zones. Exchange rates are categorized as floating or fixed. The market determines day-to-day fluctuations in exchange rates in the former; in the latter, governments interfere in the market to purchase or sell their currency for the purpose of balancing both supply and demand at a fixed exchange rate.

Issues	Analysis from Islamic finance perspective
An unknown individual under the pseudonym Satoshi Nakamoto who revealed little about himself and left the project in late 2010 published the first Bitcoin specification and proof of concept in 2009.	The inventor of Bitcoin is still unknown. This element is associated with uncertainty (<i>gharar</i>) element.
Bitcoin system is the first decentralized peer-to-peer payment network powered by its users with no central authority or intermediaries.	The proposed system of Bitcoin is suitable for a certain community of internet users. However, to implement in all sectors of the economy, authority is needed to confirm the validity of the transactions. There is a possibility of a fraud case if there is no central authority that validates and monitoring transaction system. This element is associated with uncertainty (<i>gharar</i>).
The system is relying on the cryptographic hash function. A cryptographic hash function is a special class of hash function that has certain properties that make it suitable for use in cryptography. It is a mathematical algorithm that maps data of arbitrary size to a bit string of a fixed size (a hash function) which is designed to also be a one-way function, that is, a function that is infeasible to invert.	This system is vulnerable to hacking activity. This element is associated with uncertainty (<i>gharar</i>). In addition, this cryptocurrency has no physical form and exists only in the network. Bitcoin also has no intrinsic value in that it is not redeemable for another commodity, namely gold.
Government regulation or law does not support Bitcoin.	The value of Bitcoin is not tied to a tangible asset or government regulation or law. Therefore, Bitcoin validity in a current economic system is still in uncertainty status. This element brings questionable (<i>gharar</i>) status.
Bitcoin is high volatility cryptocurrency because of the following factors (Jonathan,2017): <ol style="list-style-type: none"> 1. Bad press hampers rate of adoption. 2. News about security breaches makes investors react: Bitcoin can also become volatile when the Bitcoin community exposes security vulnerabilities in an effort to produce massive open source responses in the form of security fixes. 3. Too much variance in perceptions of Bitcoin's store of value and method of value. 4. Bitcoin is much more volatile versus the USD than the high inflation country. 	The value of Bitcoin is unstable because of high volatility. Therefore, the operation of Bitcoin is classified as uncertainty (<i>gharar</i>) in Islamic Finance perspective.
Bitcoin volatility is also stretched to an extent driven by holders of large proportions of the total outstanding float of the currency. For Bitcoin investors with current holdings above around \$10M, it is not clear how they would liquidate a position that large into a fiat position without severely moving the market. Since Bitcoin's volume resembles a small cap stock, the currency has not hit the mass-market adoption rates that would be necessary to provide option value to large holders of the currency.	Bitcoin offers little option value to large holders of the currency. In this operation, there is an undefined operation to provide option value to large holders of the currency. Therefore, the system of Bitcoin has uncertainty (<i>gharar</i>) elements.
Bitcoin purchases are discrete. Unless a user voluntarily publishes his Bitcoin transactions, his purchases are never associated with his identity, much like cash-only purchases, and cannot be traced back to him. In fact, the anonymous Bitcoin address that is generated for user purchases changes with each transaction (Androulaki, et al., 2013).	The bitcoin account holder is anonymous. Therefore, it is difficult to track the real account holder if any suspicious activity occurs. This creates uncertainty (<i>gharar</i>) condition.

CONCLUSION

The benefits of cryptocurrencies include lower transaction fees and no third-party disruption. Fees and currency expenses are often associated with regular wire transfers and international purchases. Because cryptocurrency transactions do not involve any intermediate organizations or governments, transaction costs are kept to a minimum. One of the most well reported advantages of Bitcoin is that governments, banks, and other financial institutions do not have the ability to halt user transactions or freeze Bitcoin accounts.

The system is entirely peer-to-peer, giving users more freedom than national currencies. This study examines the operation of the cryptocurrency system from the standpoint of Islamic finance. The goal of this research is to determine if the cryptocurrency architecture complies with Islamic finance rules.

This study looked at how cryptocurrencies are now perceived in Islam. Qualitative research methods, like literature reviews, are used to carry out the study. The main problem is the emergence of blockchain-based financial software systems. Bitcoin is an excellent example because its transactions are based on a peer-to-peer network that is encrypted and has cryptocurrency as its backbone. This is solely a form of electronic money for transactions. Unfortunately, this type of cryptocurrency-based transaction is still viewed from an Islamic standpoint as either haram.

This caused numerous implementation-related uncertainties. Because of this, research is crucial in this field. Consequently, the present work presents a qualitative study into Islamic perspectives of that system hacks or technological errors are the most tenuous of causes for the value of cryptocurrencies to change. It is also known as gharar, which means doubt. The ummah must also be able to trust it as a legitimate form of commerce without being concerned about the danger of loss.

Likewise, a transaction is a crypto value transfer that is transmitted to the network and gathered into blocks. A transaction often refers to prior transaction outputs as new transaction inputs, and all input values are dedicated to new outputs. Because transactions are not encrypted, every transaction ever aggregated into a block may be browsed and viewed. Transactions can be regarded as irreversible after they are buried by enough confirmations. This system is susceptible to hacking. This element is related with gharar (uncertainty). Furthermore, this coin has no physical form and simply lives in a network. Crypto has no intrinsic value since it cannot be redeemed for another commodity, especially gold.

Thus, the value fluctuation of crypto is also exacerbated to some extent by significant holders of the currency's entire outstanding float. It is unclear how Bitcoin investors with current holdings of more than \$10 million might sell such a substantial investment into a fiat position without significantly affecting the market. Because Bitcoin's volume mimics that of a tiny cap stock, the currency has yet to achieve the mass-market acceptance rates required to give option value to big holders of the currency. Large Bitcoin holders have little option value in the currency.

There is an ambiguous operation in this operation to offer option value to significant holders of the currency. As a result, the Bitcoin system's architecture is connected with uncertainty (gharar).

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