



The Essentiality of Ethereum Digital Transactions in the Islamic Economy (*Iqtishad Washathi*)

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Abstract

One of the technological advances found in the economic field is the emergence of *crypto* currency or also known as *cryptocurrency*, one type of which is *ethereum*. The progressivity of these transactions makes transaction activities more efficient because they can be applied virtually. When viewed in terms of profit obtained, *ethereum* can provide significant returns, but on the other hand also has a very high potential risk in terms of investment. The extreme volatility of *ethereum* digital transactions allows for spikes in price increases and decreases very quickly. The high volatility in question is a reflection of the level of risk faced by investors. This research was conducted to review the essentiality of *ethereum* digital transactions in the perspective of Islamic economics, because these transactions are still experiencing debate both in terms of legality and regulation, especially from the perspective of Islamic economics.

Keywords: *Tranwitness Digital; E Thereum; Ekonomi Syariah*

Introduction

The essence of internet technology is an effort to assemble communication needs in one integrated network, ranging from social, business, cultural, economic, political, military, to the development of science and technology academically (Mustofa, 2017). Today, there are many assumptions that raise pros and cons for *ethereum* digital transactions because according to Islamic teachings these transactions do not have a physical form or *backing* of the commodity. Because basically, the important point in digital transactions is to ensure halal and agreement between related parties regarding prices and payment methods. One of the arguments that supports the running of *ethereum* digital transactions is that *ethereum* can be a very profitable investment alternative for Muslims, with the potential progressivity value of selling or exchanging *ethereum* as long as it is implemented using sharia principles (Jati, 2021). But in another assessment, *ethereum* digital transactions are assumed to be speculative instruments that have no basis in the real economy, besides that there is a risk of abuse in the form of *money laundry* and terrorism financing that makes some groups hesitant to carry out these digital transactions. In this case, it is very important to be able to maintain integrity and commitment to sharia principles.

Alternative *ethereum* digital transactions when viewed from the perspective of Islamic economics is one of the applications of the *wakalah* contract. That is an agreement where another party authorizes to make transactions on its behalf, in a simpler context users who want to buy or sell the *asset* can use *ethereum's* digital transaction services. But in this case, there are important points that need to be noted again regarding Ethereum digital transactions, namely legality, value certainty, transparency, social responsibility, and education. In FEKDI 2023, it was conveyed that Indonesia's digital economy and finance can be optimized to become a new source of economic growth. Its market share is very large, reaching around 40% of ASEAN's total digital economy transactions. Meanwhile, according to the Chairman of Sharia Banking of the National Sharia Council of the Indonesian Ulema Council, Mr. Kanny, digital transactions in Islam are included in a manual transaction, so the transaction is a contract in Islam. So that all forms of digital transactions as long as the transaction is in accordance with the pillars and methods in Islam, then the transaction becomes valid.

The fact that *ethereum* digital transactions or other virtual currencies are basically not allowed to be traded or rupiah at banking units in Indonesia is evidence that the movement of virtual money is not regulated by the government. This is because the virtual currency is decentralized, which shows that there is no need for banking activities, this is one of the reasons why physical banking units are not needed (Anisa, 2023). Based on this, it needs to be discussed again and understood more deeply how the essentiality of *ethereum* digital transactions in the Islamic economy, where many scholars still categorize these transactions as haram because they contain elements of *gharar*, but some parties have become users of these transactions as investments that are considered to provide large *profits*.

Methodology

This research was conducted to review *ethereum* digital transactions used for transactions, especially investment with an Islamic economic review. This research is qualitative research, the data technique used is descriptive analytical with a normative juridical approach to Islamic economics. The source of this research data is taken from the Qur'an, hadith, tafsir, and other research journals or references. The data that has been obtained will be analyzed by reducing the data by grouping and selecting data that is relevant to the research material, then developed by reviewing *ethereum* digital transactions that are widely used and how views in the Islamic economy in interpreting these transactions.

Results and Discussion

The Essentiality of Ethereum Digital Transactions

Digital transactions are one type of non-cash payment or also called *cashless* which is done virtually through applications or websites. *Ethereum* is a leading *blockchain platform*, the crypto project has successfully developed easy-to-use features that host many tredecentralized applications, and is currently the only cryptocurrency that competes with bitcoin. *Ethereum* is a Crypto Asset token that is almost the same as bitcoin because it can be used in peer-to-peer transactions, or traded on exchanges with speculative values. *Ethereum* itself has many applications beyond its use as a token or virtual currency. *ethereum* was created by Vitalik Buterin, who previously worked at Bitcoin Magazine. *Ethereum project* funds are obtained from a *crowdsale* that sells shares in the form of *ether*, the process is also called *Initial Coin Offering*. *Ethereum* was first launched in 2015, *ethereum* allows all users to be able to make online transactions and payments globally, is one way to benefit from *ethereum* is to use and store *Non Fungible Tokens*. Quoting from *ethereum.org*, *ethereum* has about two thousand more projects, wallet accounts with 71 million ETH balances. *Ethereum* has a *native cryptocurrency* called *ether* (ETH). These assets can be used for the following, namely:

1. *Ether (ETH)* for transaction fees, i.e. every activity on the *ethereum* network, starting from payments and the use of DApps, is subject to a number of fees which are paid in the form of ETH.
2. *Ether (ETH)* for payments, namely *ethereum* can also be used for payments, users can send *ether* to other users just like cash, the payment does not require a third party to verify the desired transaction.
3. *Ether (ETH)* supports DApps, i.e. *ether* is required to use *decentralized applications* built on *ethereum*, ranging from *staking* ERC-20 tokens for *yield farming* to completing functions such as voting on network governance.

Ethereum is not controlled by any government or company as a decentralized and transparent asset, the following are functions of *ethereum's* uses, namely:

1. *Ethereum as banking for all users, that is, not everyone has direct access to various financial services, but with ethereum* all users can access all financial services that the *platform* belongs to, ranging from *staking*, global payments, investment, and others.
2. *Ethereum* has a peer-to-peer network, which allows all users to be able to move money or make agreements directly with others without going through intermediary companies.
3. *Ethereum-based smart contracts*, which are programs that run on the *ethereum blockchain*. They cannot be controlled by their users, and are developed using *Solidity* or *ethereum's* native language.
4. *Ethereum as DApps*, which allows users to be able to create consolidated applications also called *decentralized applications*.
5. *Ethereum as DAO*, i.e. *ethereum* allows users to create *decentralized autonomous organizations* in democratic decision making.
6. *Ethereum* is capable of creating new crypto assets through the use of the ERC-2- token standard.
7. *Ethereum* is a *blockchain* that also utilizes *non-fungible tokens* through the ERC-721 token standard. *Non fungible token* is a digital *platform* that only has one owner, the work can be in the form of pictures, photos, songs, paintings, and so on. Which, if the work is sold to investors, ownership of the work will transfer rights and ownership (Hugo, 2021). *Non fungible tokens* are the only *digital assets* that can be traded like goods in the real world, but not in real form. The ownership certificate of the *non-fungible* token is in the form of a digital token, which is in the form of *ethereum*.

In *ethereum.org* explained about how *ethereum* works, using the concept of *decentralized applications*, *ethereum* works as a *platform* where all users can upload code called *smart contracts*. In this case, all users can issue *smart contracts* or send transactions and the entire code can run on the *blockchain*. *Ethereum* is interconnected so the more users who join, the wider the network. *Blockchain* technology is intended to verify transactions. User activity is recorded on a transparent *public ledger*. In conclusion, *ethereum* can be used as a digital currency in financial transactions or as an investment.

Ethereum digital transactions refer to actions initiated by accounts with external ownership, i.e. accounts managed by humans rather than contracts. For example, if Jessica sends 1 ETH to Alex, Jessica's account must be debited and Alex's account must be credited. This use that changes *the state* occurs in a transaction, along with a simple *ethereum* digital transaction scheme without *gas fees*.

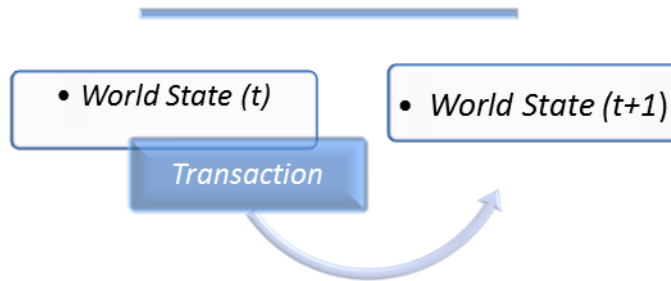


Figure 1.1 Ethereum can be viewed as a transaction-based state machine.
[Source: Adapted from Ethereum EVM]

Gas is a computational reference required to be able to process transactions by users, for which users must pay a certain amount of fees for the computation. please note that *ethereum* is the second largest cryptocurrency after Bitcoin, its capacity reaches USD 200 billion with the number of transactions touching 1.5 million times per day on the blockchain system (Nurhadi, 2022). In *ethereum.org* explained that transactions that change the *state* of evm need to be broadcast to the entire network. Such transactions cost fees and must be mined to be valid. A transaction sent includes the following information:

1. *Recipient*, which is the receiving address. If the account is with external ownership, the transaction transfers value. If the account is a contract, the transaction will execute the contract code.
2. *Signature*, which is the identification of the sender. It is generated when the sender's private key signs a transaction and confirms that the sender has authorized the transaction.
3. *Value*, which is the amount of ETH transferred from sender to receiver. In WEI, the denomination of ETH.
4. *Data*, which is an additional field for entering arbitrary data.
5. *Gas Limit*, which is the maximum number of gas units that can be used in a transaction. Gas units indicate computational steps.
6. *Max Fee per Gas*, which is the maximum amount of gas you want to pay for the transaction, this includes base fee per gas *and max priority fee per gas*.

Ethereum to be the largest layer for the non-fungible token market in 2023 As of April, *Ethereum's non-fungible token* trading volume is \$514 million, accounting for about 70% of the overall market trading volume, followed by Solana at \$90 million (12%), Polygon (70%), and other *platforms* at less than 5%. Here is a graph of the proportion of market share:



Diagram 1.1 Proportion of Market Share of non fungible tokens
According to blockchain in April 2023.
[Source: Adapted from CryptoSlam]

The distribution analysis implies that when the trading volume of a project reaches one thousand ETH, it is likely to be ahead of other projects in terms of resilience and occupy a certain market share.

Therefore, trading volume can serve as a leading indicator to measure the strength of a project. So it can be interpreted that *ethereum* digital transactions basically have a reference in the movement of the exchange rate, if the user is able to read the graph of the market price movement which is not empirically predictable but the user has full authority over the *asset* that has the ETH exchange rate. Ethereum ownership will not move if the user does not make a transaction, but the exchange rate can rise or fall at any time according to the proportion of market share. If *ethereum* digital transactions are applied to *non-fungible token trading* in rupiah, which is 1 ETH equivalent to 28 million, the price on August 14, 2023 tends to increase significantly. If users can sell artwork in the form of *nonfungible tokens* at an average price range of 0.01 ETH then one such work is valued at the equivalent of 280,000 rupiah exchange rate. This makes *ethereum* digital transactions can provide investment opportunities for today's users.

Sharia Economic Interpretation

Economics has an assumption that it can directly affect human life in all its dimensions and aspects, a strong economy is a symbol of progress, strength, greatness, and sovereignty of a nation. In contrast to the capitalist economic system and the socialist economic system, the Islamic economic system implements all systems and rules in Islam, whether political, social, or financial. Because, Islam is an integral and inherent unity. Islamic economics at the main level is based on a common framework consisting of *qidah*, morals, and a comprehensive understanding of life. (Az-Zuhaili, 2011: 59).

Sharia economics according to Mohammad Akram Khan (1994) that sharia economics is a study that focuses on human welfare which can be achieved by organizing all resources on the basis of cooperation and participation, while according to Syed Nawab Naqvi (1994) affirms that sharia economics is the study of the representation of Muslim behavior in certain Muslim societies. In this case, Islamic economics provides derivative principles on the characteristics of the Islamic economic system, namely:

1. *Multiple Ownership*, namely the value of *tawhid* and *'adl* gave birth to the concept. this principle explains that the primary owner of heaven and earth is God, while mankind is given the mandate to be able to manage it. Thus, humanity as a secondary owner, hereby in the Islamic economy private or private property is recognized, and in order to ensure justice so that no party is wronged or exploited, then production must include the livelihoods of many people. Thus, ownership and nationalization also have a place in the Islamic economy, namely a complex system of ownership, both private-state and domestic-foreign.
2. *Freedom to Act*, which can be explained about economic actors who make pulses and apostles as role models in implementing their activities will provide professional and prestigious personal results in their fields. The four values of *nubuwwah*, namely *siddiq*, *amanah*, *tabligh*, and *fatamah*, when related to the values of justice and *good government*, can give birth to the principle of *freedom to act*, which is to create a market mechanism with no potential for distortion. This potential can be reduced by applying the values of justice. In this case, the state has the duty to be able to eliminate *market distortion* and act as a supervisor of economic actors to be able to ensure the absence of deviation from sharia principles, so that a healthy economic system can be born.
3. *Social Justice*, which interprets the combination of *khilafah* and *ma'ad* values that give birth to the principles of social justice, in Islam, the government has the responsibility to be able to ensure the fulfillment of the basic needs of its people and can avoid the emergence of social inequality. Basically, all economic systems have the same goal, which is to create a fair economic system, history provides evidence that capitalist and socialist systems cannot realize justice, and the Islamic economic system provides rational answers to realize justice in the economy (Syaparudin, 2010).

In presenting the main values in Islamic economics Yusuf al-Qardhawi divided them into four, namely:

1. *Iqtishad rabbani*, namely Islamic economics is a divine economy because it starts from Allah and its purpose is to gain the pleasure of Allah.
2. *Iqtishad akhlaqi*, which is the meaning of moral economics is that a Muslim cannot be free to do whatever he wants, or only what is profitable.
3. *Human Iqtishad*, which is a human economy that creates a better life for people and has two elements, namely material and spiritual elements.
4. *Iqtishad washathi*, i.e. Islam puts the economy in a middle and balanced position, the balance can be applied to capital and business, production and consumption, producers and consumers, between individuals and society.

Sharia economics has a goal that is inseparable from the guidance of human life, namely achieving happiness. Universally, the implementation of Islamic economics has several objectives, namely:

1. Grounding Islamic sharia in the economic system kaffah.
2. Liberate Muslims from the framework of capitalist and communist economic systems.
3. Apply Islamic values in economic activities and save the Ummah from *materialism-hedonism*.
4. Upholding an economy that embodies the unity and solidarity of the Islamic treatise.
5. Realizing *the fallah* of Muslims in general.

Universal values in the Islamic economy are used to realize a Sharia-based economy, the following is a general description of how the Islamic economy can provide comprehensive views and attitudes.

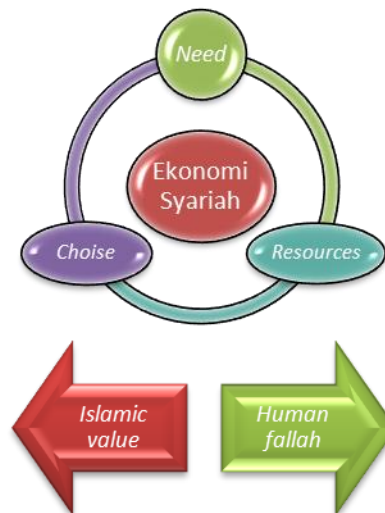


Figure 1.2 Sharia Economic System
[Source: Data processed by author]

According to Islamic economics, all transactions that occur must be consensual, must be transparent and clear, information between parties must be balanced and there is no element of coercion, where neither party is wronged, does not contain elements of usury, *gharar*, and *maisir*. The goal is to control the ummah from activities that are harmful or harmful (Pardiansyah, 2017). The transaction itself is an engagement between *ijab* and *qabul* which is justified by sharia and establishes the legal effect on the object of the contract. *Ijab* itself is a statement from the first party regarding the content of the desired engagement, while *qabul* is a statement from the second party who receives (Basyir, 2000). The agreement in question will end if the objectives desired by the parties have been achieved. The Islamic economic system implies that it is not allowed to diversify the market because it is not in accordance with

the *maqasyid sharia* which can cause market damage so that it harms and causes tyranny against others (Fauzia, 2014). In this case there are three forms of market distortion in the Islamic economic system, namely (Karim, 2012); False *supply* is known as *IHTIKAR* and *False Demand* is known as *Bay Najasy*; Fraud or *tadlis* is due to incomplete information that includes quantity, quality, price, and time of *value*; *uncertainty* or *tagrir* is *unknown to both parties* because *incomplete* information includes the number of goods, quality of goods, *price*, and time. These distortions are often carried out by economic actors to seek quick *profits* by harming others. This creates injustice and imbalance in the economy (Hakim, 2017).

Islamic economics views that markets, states, and individuals are in *iqtishad*, and there should be no *subordinate*. The economy is guaranteed freedom in Islam by determining the mode of production and prices at which there must be no interference that results in the destruction of justice or economic balance. Thus, the Islamic economic mechanism guarantees justice for economic actors, with the existence of *an inter-adhin* basis and the absence of *dhulm*. But in reality it is very difficult to find an economic system that can run fairly, this must always be anticipated and continue to run the mechanism in a sharia manner. The normative foundation of Islamic economic ethics derived from the Qur'an and Hadith is divided into four categories, namely (Muslich, 2010):

1. Foundation of monotheism
2. Foundation of balance
3. Foundations of free will
4. Foundation of accountability.

While the economy in the Islamic economy aims to achieve four categories, namely (Yusanto, 2002):

1. Target results include material *profit* and *non-material benefits*
2. *Growth*
3. *Continuity*
4. *Blessing*.

Basically, the Qur'an encourages Muslims to be able to master and utilize several sectors and economic activities on a broad and comprehensive scale, aimed at mutual benefit and interests as stated in QS. al-Hashr verse 7 which means: "*Whatever spoils (fai-i) Allah gave to His Messenger (from property) that came from the inhabitants of the cities Then it is for Allah, for the apostles, relatives, orphans, the poor and those who are on the way, so that the treasure should not circulate among the rich among you. what the Apostle gives you, Then receive. and what he forbids you, Then leave it. and be fearful of Allah. Surely Allah is very harshly punished*". In carrying out economic activities, the Qur'an prohibits Muslims from using illegitimate methods such as conducting transactions containing *usury*, committing fraud, playing with donations, *maisir*, carrying out bribery practices, or other bathil methods. Because the essence of sharia economics is the fulfillment of human needs based on Islamic values in order to achieve the goals of *fallah*.

Within the scope of sharia economics there are several challenges, namely one of the obstacles to sharia economic development because there are no empirical examples to be practiced ideally, because at present there is no comprehensive sharia economic practice. The task of Islamic economics is greater when compared to conventional economics. The first task of Islamic economics is to study the actual behavior of individual or group economic actors. The second is to show the type of behavioral assumptions needed to be able to realize the goals of Islamic economic development, because basically moral values are goal-oriented, so the Islamic economy needs to consider the value of these achievements. The third is the difference between actual behavior and ideal behavior, so Islamic economics must explain why economic actors do not act according to the proper rules. The fourth is that the main purpose of seeking knowledge is to help improve the welfare of the people, so Islamic

economics must show ways so that it can bring behavior as economic actors that can affect the allocation and distribution of economic resources (Anto, 2003).

Sharia economics when viewed again with a holistic lens to be able to achieve the goals of the Islamic economic system can actually start from any direction, here there are five points that can be chosen by economic behavior as the terminal for the departure of the Islamic economic system, namely sharia itself, political power, society, wealth or maal, development and justice. This is stated in the book *the future of economics: an Islamic perspective* (Baron, 2013). If the process is achieved, other aspects should not be ignored by leading to *progress* and justice. The following are the benefits of the implementation of the Islamic economy, namely:

1. Sharia economics can realize the integrity of a *kaffah* Muslim, so that his faith can be perfect. If there is still a Muslim who applies conventional economics, it shows that there is no readiness to become a better people.
2. Applying Islamic economic principles through Islamic financial institutions with a *ratio* system, where economic actors can be free from the element of *riba* forbidden by the Qur'an.
3. Sharia economics if practiced properly so that it contains the value of worship, because it has practiced Islamic law.
4. Practicing sharia economy by *saving* or *investing* is a support for efforts to empower the people's economy, because these funds will be collected and distributed through the real trade sector.
5. Implementing the Islamic economy through Islamic financial institutions is tantamount to supporting technological advances in the economy of the Ummah.
6. Running a sharia economy is akin to supporting *amar ma'ruf nahi munkar*. Because the funds collected are distributed to business sectors that do not contain elements of *usury*, *gharar*, and *maisir*.

In this case, the Islamic economic system must have a useful foundation as a foundation and be able to support all forms of economic activities in order to achieve *goals* that include micro or macro aspects.

Conclusion

The Indonesian Ulema Council has determined the use of digital transactions of *cryptocurrencies* such as *ethereum* is haram. One of the underlying reasons is that this type of currency does not have a physical form that can be handed over to the buyer which creates uncertainty in the transaction. However, the author can take a separate analysis that *ethereum* digital transactions are universal and relatively safe because basically the technology is present to answer the times. When it comes to *savety*, *Ethereum* digital transactions are based on *smart contracts*, which are programs that run on the *blockchain* that can actually minimize security gaps by providing a layered system.

Evaluation of the suitability of *ethereum* digital transactions with Islamic economic values shows that there are still some problems in use such as the value is very fluctuating and has an impact on speculative transactions which are prohibited in Islam, but *ethereum* digital transactions basically have a reference in exchange rate movements, if users are able to read charts of market price movements that are unpredictable empirically, but the user has full authority over the *assets* that have the ETH exchange rate. Basically, *Ethereum* digital transactions apply *blockchain* technology intended to verify transactions. User activity is recorded on a transparent *public ledger*. In conclusion, *ethereum* can be used as a digital currency in financial transactions or as an investment.

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