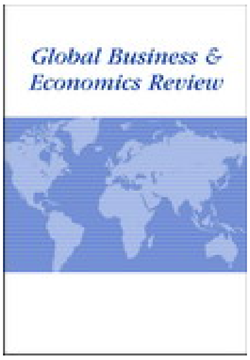



**Global Business and Economics Review**

ISSN online: 1745-1329 - ISSN print: 1097-4954
https://www.inderscience.com/gber

# Imposing zakat on cryptocurrency (Bitcoin): a Shariah appraisal

Muhammad Ikhlas Rosele, Abdul Muneem, Azizi Bin Che Seman, Luqman Haji Abdullah, Noor Naemah Abdul Rahman, Mohd Edil Abd Sukor, Abdul Karim Ali

**DOI:** 10.1504/GBER.2023.10045774

**Article History:**

| | |
|---|---|
| Received: | 29 September 2021 |
| Accepted: | 02 February 2022 |
| Published online: | 08 December 2022 |

# Imposing zakat on cryptocurrency (Bitcoin): a Shariah appraisal

Muhammad Ikhlas Rosele and
Abdul Muneem*

Department of Fiqh and Usul,
Academy of Islamic Studies,
University of Malaya,
Kuala Lumpur, 50603, Malaysia
Email: ikhlas@um.edu.my
Email: a.muneem@yahoo.com
*Corresponding author

Azizi Bin Che Seman

Department of Shariah and Economics,
Academy of Islamic Studies,
University of Malaya,
Kuala Lumpur, 50603, Malaysia
Email: azizi@um.edu.my

Luqman Haji Abdullah and
Noor Naemah Abdul Rahman

Department of Fiqh and Usul,
Academy of Islamic Studies,
University of Malaya,
Kuala Lumpur, 50603, Malaysia
Email: luqmanabdullah@um.edu.my
Email: naemah@um.edu.my

Mohd Edil Abd Sukor

Department of Finance,
Faculty of Business and Economics,
University of Malaya,
Kuala Lumpur, 50603, Malaysia
Email: mohdedil@um.edu.my

Abdul Karim Ali

Department of Fiqh and Usul,
Academy of Islamic Studies,
University of Malaya,
Kuala Lumpur, 50603, Malaysia
Email: abdkarim@um.edu.my

**Abstract:** This research aims to study whether zakat is due on cryptocurrency (Bitcoin) and to address the issues related to imposing zakat upon it. This study is conducted based on the qualitative research method following the inductive method and explanatory research approach. The findings show that Bitcoin is recognised as a digital asset in many countries and the tax is imposed accordingly. As such, Bitcoin is among the zakatable assets since it meets the conditions of zakat on assets. Moreover, Bitcoin as a digital currency would also be zakatable if a country recognises it as currency, as would any regulated digital currency issued by a government. Imposing zakat on Bitcoin would boost the total amount of zakat collectible, which would be beneficial for needy people. Further research is recommended to provide the zakat model for Bitcoin and other cryptocurrencies.

**Keywords:** cryptocurrency; Bitcoin; digital asset; zakat; Shariah.

**Reference** to this paper should be made as follows: Rosele, M.I., Muneem, A., Seman, A.B.C., Abdullah, L.H., Abdul Rahman, N.N., Abd Sukor, M.E. and Ali, A.K. (2023) 'Imposing zakat on cryptocurrency (Bitcoin): a Shariah appraisal', *Global Business and Economics Review*, Vol. 28, No. 1, pp.91–111.

**Biographical notes:** Muhammad Ikhlas Rosele is currently a Senior Lecturer in the Department of Fiqh and Usul, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. He obtained his Bachelor's in Fiqh and Usul from the University of Malaya. He then pursued his academic journey and successfully completed his Doctor of Philosophy at the same university. His research interest includes *usul al-fiqh*, Islamic law of property, zakat, *fiqh* of *ḥalāl* and *ḥarām*.

Abdul Muneem is a PhD candidate in the Department of Fiqh and Usul, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. His current research focuses on Islamic financial technologies (fintech), Islamic banking and takaful. He has also published several research papers on Islamic banking and takaful.

Azizi Bin Che Seman is a Senior Lecturer in the Department of Shariah and Economics, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. He is also the Chairman of the Shariah Committee of Bank Muamalat Malaysia, Agrobank Malaysia and Association of Islamic Banking and Financial Institutions Malaysia (AIBIM), and Shariah board member of Sun Life Takaful Malaysia. He specialises in fiqh muamalat, Islamic capital market and Islamic economics.

Luqman Haji Abdullah serves as a Senior Lecturer in the Department of Fiqh and Usul, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. Currently, he holds a position of Mufti of Federal Territory, Malaysia. He obtained his Doctorate degree from the University of Edinburgh, Scotland. His research interest includes *usul al-fiqh*, Islamic law of property (zakat and waqf) and Islamic traditional teaching. He has a significant contribution to the academia and public through his research works, conferences, seminars and public talks.

Noor Naemah Abdul Rahman is currently an Associate Professor in the Department of Fiqh and Usul, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. She specialises in Islamic jurisprudence, fatwa and Islamic legal maxim. She is also serving as a Shariah Advisor of the AmBank Islamic and AmMetLife Takaful.

Mohd Edil Abd Sukor serves as an Associate Professor in the Department of Finance, Faculty of Business and Economics, at the University of Malaya (UM), Malaysia. His areas of expertise include stock return seasonalities (investment) and Islamic finance. He has authored/co-authored over 25 research publications in peer-reviewed, reputed journals, book chapters and international conference proceedings.

Abdul Karim Ali serves as an Associate Professor in the Department of Fiqh and Usul, Academy of Islamic Studies, at the University of Malaya (UM), Malaysia. He is an active member of several research committees at the University of Malaya. He holds a PhD from the University of Edinburgh, Scotland. His areas of specialisation are principles of Islamic jurisprudence, *fiqh* textual studies, history of Islamic law and sciences of *ḥadīth*.

## 1 Introduction

Islam encourages support and assistance to humanity in many ways (Al-Qarḍāwī, 2000). In this respect, Islam obligates zakat on the believers to establish social solidarity among the poor and needy and the wealthy members of the community. Zakat ensures brotherhood among the believers and fulfils the basic needs of poor people in the society. It also purifies the wealth of believers and helps them establish the command of Allah (Al-Mamun and Haque, 2015; Jedidia and Guerbouj, 2020). The word zakat connotes cleanliness, purification, growth, development and increase (ISRA, 2010; Asfarina et al., 2019). Technically, it refers to an act of monetary worship by a believer (Muslim) who holds a certain threshold (*niṣāb*) for a year (*ḥawl*); he allocates and frees from his ownership a certain portion of his wealth, after fulfilling his basic needs and debts, for categories (*aṣnāf*) of people that are prescribed in the holy Qur'ān (Al-Zuḥailī, 1985; Al-Qarḍāwī, 2000). The zakatable assets are gold, silver, *rikāz* (treasure trove) and *ma'ādin* (minerals), agricultural products, livestock, commercial goods, monetary savings, investments, salaries and wages, stocks, shares and so on (Al-Zuḥailī, 1985; Al-Qarḍāwī, 2000; Ibrahim, 2014; Asfarina et al., 2019). The Qur'ān details the eligible recipients (*aṣnāf*) of zakat:

> "Alms are for the poor and the needy, and those employed to administer the (funds); for those whose hearts have been (recently) reconciled (to truth); for those in bondage and in debt; in the cause of God; and for the wayfarer: (thus is it) ordained by God, and God is full of knowledge and wisdom." (al-Qur'ān 09:60) (translated by Alī, 2006)

Zakat is regarded as a social welfare system that establishes justice and fairness among mankind and structures a humane and cohesive society. Scholars unanimously agree that it is an obligatory duty upon those people who are eligible to pay zakat and that denying such obligation would result in being considered an unbeliever (Al-Nawawī, 2003; Ibn Qudāmah, 1997; Al-Shawkānī, 2004).

The current digitalisation era has introduced many types of financial services and facilities through online platforms and tools such as electronic money (e-money), smart contracts and digital assets like cryptocurrencies. Bitcoin, Ethereum, Litecoin, and Ripple are some of the cryptocurrencies that are attracting the attention of many technophiles around the world (Meegan et al., 2021; Li et al., 2021; Kim et al., 2020). Bitcoin is a cryptocurrency that works in a decentralised way; it is managed through a blockchain peer-to-peer system without any central authority to control the transaction. Bitcoin is mined by solving some mathematical puzzles. Bitcoin is stored in a digital wallet that allows the owner to use it for transactions and safekeeping (Narayanan et al., 2016; Rainero and Modarelli, 2020; Nian and Chuen, 2015). It should be highlighted that, despite the volatile nature of cryptocurrencies, the number of cryptocurrency users is increasing massively in many countries. Many countries consider those cryptocurrencies, especially Bitcoin, as digital assets/digital commodities and allow people to exchange and invest in Bitcoin and other cryptocurrencies whereas some countries do not allow cryptocurrencies. In addition, a few countries and cities offer regulated cryptocurrencies and allow people to conduct transactions with them as digital currency (Cvetkova, 2018; LLC, 2018a, 2018b; Dewey, 2019; Parveen and Alajmi, 2019).

Although Sharī'ah scholars have various opinions on the permissibility of Bitcoin (cryptocurrency) and its uses (Selcuk and Kaya, 2021; Yuneline, 2019), public interest in it among Muslims continues to grow. Since many countries consider cryptocurrencies as digital assets and allow the public to transact with them, it is necessary for scholars to reconsider their opinions on the permissibility of Bitcoin and other cryptocurrencies. Moreover, excluding an increasingly important class of assets from zakat payment is likely to result in reducing the amount of zakat collected. Thus, the growth of cryptocurrencies in society and their financial use among the people motivate the researchers to study the concept of cryptocurrency and the possibility of imposing zakat on it so that a huge portfolio is not missed from the zakat collection. At the same time, considering it (cryptocurrency) as a zakatable asset will benefit a country to grow its economy and social status. Particularly, it will assist the country to alleviate poverty through the collection of zakat from cryptocurrency as an additional zakatable asset. In this regard, it seems that only a few studies have been conducted (Yusof et al., 2021; Beik et al., 2019). Therefore, the primary objective of this research is to study whether Bitcoin – as one of the famous cryptocurrencies – is among the zakatable assets or not. The second is to address issues that would arise if zakat is imposed on Bitcoin and related to its classification as either a digital currency or digital asset.

## 2 Literature review

### *2.1 The concept of zakat in Islam*

#### *2.1.1 Objectives of zakat*

The obligation of zakat as financial worship has many rationales. Generally, zakat seems to be beneficial for the poor, needy, and other vulnerable people in the community. However, there are many other specific and remarkable objectives of zakat as follows:

- Paying zakat is an act that purifies one's soul of bad habits like selfishness, greed for wealth, and arrogance. Thus, the zakat payer becomes closer to Allah by following his commands (Abu Bakar and Rahman, 2007; Billah, 2016).
- It is an act by the zakat payer to establish social security for the poor and needy people among the community for their financial and material difficulties. In other words, it promotes the spirit of brotherhood in sustaining and strengthening social solidarity. It improves the purchasing power of basic needs and services by the needy people fulfilling their consumption demands (Kahf, 2013; Ibrahim, 2014; Billah, 2016). It can fulfil the needs of education, health and medical facilities, and other social welfare and human development that improves the life and productivity of needy people (Kahf, 2013; Imtiazi et al., 2000; Abu Bakar and Rahman, 2007; Billah, 2016).
- Zakat helps to develop the growth of a balanced economic system in society. In that, it greatly opposes the capitalist ideology of unfettered accumulation of wealth. Instead, wealth is circulated among the people by removing the gap between the poor and the rich in their living standards, and wealth is not hoarded by certain rich people in the society (Billah, 2016; Kahf, 2013).

### *2.1.2 Conditions of zakat*

Although paying zakat is an obligatory act, there are certain conditions which must be fulfilled for it to be obligatory on a Muslim. Some conditions are related to the payer and others are related to the wealth that is subject to zakat. The essential conditions are:

- Zakat is obligatory only upon Muslims.
- The person should have complete ownership of the wealth (*al-milk al-tām*).
- The wealth is from one of the categories upon which zakat is obligatory.
- The wealth should reach a minimum threshold (*niṣāb*) before zakat is applicable.
- The possession of such wealth should pass one year (*ḥawl*) after the possession.
- The wealth should exceed the necessities of a person and his/her dependents.
- The wealth should be among the productive and growing assets (*al-mal al-nāmī*).

There are some other conditions for the obligation of zakat, such as being mentally sound (*ʻāqil*) and reaching the maturity level (*bāligh*); however, scholars are not in agreement on these latter conditions. The majority of scholars consider zakat to be obligatory on the wealth of a child and an insane person if the wealth meets the other conditions of zakat such as *niṣāb* and *ḥawl* and there is a guardian administering the wealth on their behalf. On the other hand, Ḥanafī scholars consider zakat to not be obligatory on a child or an insane person. Moreover, some scholars consider zakat obligatory on all property of a child or insane person whereas another group of them considers it to be obligatory only on certain types of their property (Al-Kāsānī, 1974; Al-Nawawī, n.d.; Al-Ḥaṭṭāb, 2003; Ibn Qudāmah, 1997; Al-Qarḍāwī, 2000). In addition, scholars also disagree whether or not zakat is obligatory on the wealth that a person has loaned to others while it is still an outstanding debt (Al-Qarḍāwī, 2000).

### *2.1.3 Zakatable assets*

Based on the conditions mentioned earlier, there are some zakatable assets which are listed by the Qur'ān, Sunnah and the classical scholars such as gold, silver, *rikāz* (treasure-trove), *ma'ādin* (minerals), agricultural products, livestock and commercial goods. Once the listed wealth meets the above-mentioned conditions, it is obligatory for the wealth's owner to pay zakat. Business and assets have evolved tremendously over time, and many modern types were not discussed by classical scholars. However, contemporary scholars consider many of those types of assets and businesses as zakatable assets based on analogy (*qiyās*).

According to contemporary scholars, the modern zakatable assets are all sorts of monetary savings, investments, salaries and wages, stocks and shares, rental properties, banking business; modern agricultural products such as paddy, palm oil, and cocoa; and mineral wealth obtained through mining such as tin, petroleum, natural gas and so on. The wealth or goods that are utilised for personal use or for one's family, such as clothes, household utensils, animals, or vehicles, are all excluded from the obligation of zakat (Asfarina et al., 2019; Billah, 2016; Ibrahim, 2014). This is based on the statement of the Prophet (PBUH): "Zakat is not obligatory upon a Muslim regarding his slave or horse" (Al-Bukhārī, 2015). The hadith indicates that wealth owned for personal use is excluded from zakat.

### *2.1.4 Productive assets (al-Amwāl al-Nāmiah)*

One important condition that makes wealth zakatable is its productivity or capacity for growth (*namā'*). The growth of wealth is either achieved through its natural producing power or profits or benefits that are realised through trade. Thus, any wealth which does not lead to any kind of growth or production is not considered a zakatable asset. Moreover, once a productive asset is possessed by an owner for their personal use, it is not zakatable as it is transferred from growth to personal use, and it is not growing anymore (Bouheraoua, 2012; Mahmud et al., 2015).

## *2.2 Digital assets*

The digitalisation era and the internet of things (IoT) are transforming useful substances into an electronic form. Financial institutions and markets have also adopted the digitalisation of facilities and services in order to make them more accessible and easier for customers to use. These include digital forms of banking, financing, investment, money, wallets, currency and so on. Having something in a digital form makes it easier to consider as a digital asset in a comprehensive manner such as digital multimedia, documents, and other electronic stuff (Dong, 2020). Big data, digital commodities, social media accounts are also among the digital assets that have value in the digital era. Cryptocurrencies such as Bitcoin (BTC), Litecoin (LTC), Ethereum (ETH), Ripple (XRP), Stellar (XLM), and many more (Le Tran and Leirvik, 2020; Cagli, 2019) are among the most important digital assets that attract the attention of many people around the world.

### *2.2.1 Cryptocurrency and Bitcoin*

A blockchain-based cryptocurrency is a digital form of money that generates digital money without the regulation of a certain authority like a central bank or government. Moreover, transactions are conducted through the blockchain system without the authorisation of central banks. The cryptographic technology in the blockchain system provides the security of the transaction and helps to maintain the upcoming units of cryptocurrencies (Dong, 2020). Based on its unique nature, it is called digital currency, virtual commodity, virtual assets, or digital assets in various jurisdictions (LLC, 2018a). Over 63 million people are using cryptocurrency, and Bitcoin in particular counts more than 7 million active users around the world (SoFi Learn, 2021).

In 2008, Satoshi Nakamoto (Narayanan et al., 2016; Hassan et al., 2020) introduced the idea of Bitcoin, the first and most famous cryptocurrency. The management, creation, and other activities of Bitcoin are done through a blockchain system. Bitcoin can be acquired through mining, purchasing, or in exchange for goods and services. It is possible to store Bitcoins in an electronic external storage device, called a wallet, for safekeeping. The Bitcoin wallet also allows a user to send Bitcoins to others or receive them from others. Thus, Bitcoin represents a currency in a digital format that is based fully online (Nian and Chuen, 2015). However, the acceptance of Bitcoin as digital currency, including its uses, investment, and other benefits, is still unresolved and ambiguous. Some countries like Australia, the USA, Canada, Japan, Malaysia, and Singapore allow trading of cryptocurrencies whereas other countries such as Algeria, Egypt, Morocco, Pakistan, and Vietnam do not allow any kind of exchange with cryptocurrencies. Still others, including Bangladesh, Iran, Thailand, China, and Colombia, restrict the use of cryptocurrencies while not banning them directly. It should be highlighted that the majority of the countries are yet to regard cryptocurrency as legal tender and a few countries are trying to issue cryptocurrencies that are regulated by the central banks (LLC, 2018a, 2018b; ComplyAdvantage, n.d.).

## 3 Methodology

The study adopts a qualitative research approach. The qualitative method is helpful for research where it studies a subject matter with rigorous consideration of various aspects and it interprets the subject matter with a broader and clearer understanding (Aspers and Corte, 2019; Kumar, 2018). Qualitative research is ideal for this study since the objectives of this study are to explore the potential of zakat in cryptocurrency, its related issues and to explain them with a better understanding and new findings. Regarding the data collection of this study, the researchers gather most of the data from several resources such as classical and modern books that describe zakat, fatwas (verdicts), journals, conference papers and proceedings, reports, and websites related to the subject matter. The subject matter of this research requires rigorous library-based data study since they are available and accessible by the researchers to conduct this study. In qualitative research, the collection of data through library research is one of the methods that have been used by the social sciences (Flick, 2018; Merriam and Grenier, 2019). Moreover, in order to analyse the data obtained from several resources and to achieve the objectives of this study, it employs the inductive reasoning method and also explanatory research approach. The inductive method is referred to "as a bottom-up approach to knowing in which the researcher uses observations to build an abstraction or to describe a picture of the phenomenon that is being studied" [Lodico et al., (2010), p.10]. In this study, the researchers closely observe the concept of zakat, its importance, and the assets that are subject to zakat in Islam while looking at the emergence of digital assets and their massive acceptance by the crowd. The inception of digital assets in the financial markets requires a conclusion based on the theory or the concept that Islam draws for assets to be zakatable and how digital assets go with the concept of zakat. The study also includes fatwas (verdicts) and other resolutions on the concept of cryptocurrency (Bitcoin), compares the differences of opinions of scholars, and explores the preferable opinion among them with logical and practical arguments. Moreover, the explanatory research approach is also helpful for this research since the method allows the researchers to have a broad understanding of the subject matter (Cooper and Schindler, 2001; Jonker and Pennink, 2010) and subsequently the researchers can refine the issues related to the imposing of zakat on cryptocurrency and its potential from the Sharīʻah perspective. More importantly, it leads the researchers to discuss something that was less explored with some new findings and understandings.

## 4 Results and discussion

The literature shows that cryptocurrency (Bitcoin) has attracted the attention of many people around the world, and many issues and challenges of cryptocurrency (Bitcoin) have already been discussed. This study highlights some issues of cryptocurrency from Sharīʻah and practical perspectives, and it also deliberates whether cryptocurrency fulfils the obligation requirements of zakat, and thus, whether cryptocurrency is zakatable or not.

### *4.1 Dispute of Sharīʻah scholars on cryptocurrency (Bitcoin)*

To date, scholars have various opinions on the permissibility of cryptocurrency (Bitcoin). Many fatwas and Islamic financial institutions' resolutions have been shared in this regard. A large group of scholars opposes the permissibility of cryptocurrency; on the other hand, some scholars consider it part of the evolution of money; hence, it is permissible. Scholars like Abū Ghuddah (2018), Al-Qarahdāghī (2018) and Dār Al-Iftā Al-Miṣriyyah (Egypt Fatwa Board) (2017) oppose the use of cryptocurrency based on some requirements that money must fulfil to be considered as legal tender. For example, a currency must be issued by the central bank of a country, and the central bank must control it. Since cryptocurrencies are not issued or controlled by the government or central bank of any country, they fail to meet the requirements of currency/legal tender. Moreover, once a currency is regulated by a central bank, it has less potential to involve *gharar* (uncertainty) and speculative activities. Investments in a cryptocurrency depend heavily on speculation about the price movement, and they involve *gharar* since the issuer is unknown and its control is also anonymous. In addition, current currency/legal tender is controlled by central banks, which secure and guarantee the financial transactions of people, whereas cryptocurrency does not have any specific authority with control over it. Hence, it leads to an unsecured and unguaranteed transaction which may result in a big loss to the users.

On the other hand, scholars such as ‘Alī Elgarī (Justin, 2019), Adam (2018) and Bakar (n.d.) allow cryptocurrency. Some of these consider cryptocurrency as currency while others consider it merely a digital asset. According to the proponents of cryptocurrency, money has evolved through various stages from barter until e-money. Cryptocurrency is part of this evolution; it is different from the current form of currency; however, it has the features of money in that it can be used as a medium of exchange, can be stored, and transferred from one to another. Moreover, it has a blockchain-based distributed ledger system that allows and supports cryptocurrency to be secured. The miners collectively authorise transactions to proceed, and this is similar to the authorisation of central banks for normal transactions involving money. In addition, it provides security and protection to the cryptocurrency owners and investors, enabling them to be worry-free about their transactions and cryptocurrency. However, some scholars (Bakar, n.d.) opine that since cryptocurrency is not issued or authorised by the government, it might not be at the same level as currency, but it still qualifies as a digital asset/commodity. Therefore, cryptocurrency has yet to achieve the majority of scholars’ support to be a currency, but many of them consider it as a digital asset. Table 1 provides the summary of the scholars’ fatwas and resolutions on cryptocurrency.

Although the opponents of cryptocurrency have their arguments to claim cryptocurrency as impermissible, the researchers think that the issue should be discussed based on the root of money from a Sharī‘ah perspective. It has been discussed by many researchers (Mohamad and Sifat, 2017; Jaffar et al., 2017) that Islam did not introduce any new currency or money since the era of Prophet (PBUH); rather, it recognised the customary practices of the Arabs of that time using gold and silver coins (dinars and dirhams). The Qur’ān mentions dinars and dirhams in some verses without any indication of any particular ‘Islamic’ currency. Moreover, the Prophet (PBUH) and his companions (RA) used dinars and dirhams during their time without questioning their use. In addition, many hadiths prove that the Prophet (PBUH) mentioned dinars and dirhams in discussing *ribā*, zakat and punishment for theft.

In this regard, the opinion of Anas (1994) is relevant. He said if people were to accept using camel skin as a medium of exchange, he would abhor exchanging it for gold or silver with deferred settlement. This shows two important points; one is to consider leather as a medium of exchange like gold and silver, based on people’s acceptance of it as such; the second is that the rules of *ribā* would apply to it; thus, exchanges of it for other forms of money would require spot settlement. This means that he understood that there is no specific form of currency or money in Islam; rather, it depends on general public acceptance of something as their medium of exchange. According to Ibn Taymiyyah (2004), there is no Sharī‘ah standard for dinars and dirhams; rather, reference is to be made to people’s custom and what they agree upon. This is because dinars and dirhams are not sought for any direct benefit to be obtained from them; rather, people seek them because everyone else will accept them for the goods and services they wish to acquire. Moreover, dinars and dirhams provide a criterion for measuring the value of all goods and services. It is their acceptance as a medium for transactions which causes them to be considered as money. And that objective could be achieved through any means regardless of its form or substance.

**Table 1** Scholars' fatwas and resolutions on cryptocurrency

| | *Name of scholar/institution* | *Sharīʿah rule* | *Short remarks* |
|---|---|---|---|
| 1 | Abdul Sattar Abu Ghuddah | Restricted | • Not directly impermissible (*ḥarām*) but restricted (*man'*).<br>• Not centralised by the government or central bank.<br>• *Khatar* (risk) of losing property. |
| 2 | Alī Muḥyī al-Dīn Al-Qarahdāghī | Impermissible | • Not directly impermissible (*ḥarām li ghairih*) but because of the medium (*wasāʾil*) it goes through such as speculation, loss of wealth. |
| 3 | Munzer Kahf | Impermissible | • Not centralised by the government or central bank.<br>• Does not fulfil the requirements of money. |
| 4 | Abdullah bin Muhammad al-Mutlaq | Impermissible | • Not centralised by the government or central bank.<br>• The issuer is unknown. |
| 5 | Dār al-Iftā al-Miṣriyyah | Impermissible | • Not centralised by the government or central bank.<br>• It contains *gharar* (uncertainty) and *khatar* (risk). |
| 6 | High Council of Religious Affairs of Turkey | Impermissible | • Not centralised by the government or central bank. |
| 7 | Dār al-Iftā al-Filistiniyyah | Impermissible | • The issuer is unknown.<br>• It contains *gharar* and speculation. |
| 8 | General Authority of Islamic Affairs & Endowments, UAE | Impermissible | • Not centralised by the government or central bank. |
| 9 | Islamic Affairs and Charitable Activities Department, Dubai | Impermissible | |
| 10 | Mohamed Ali Elgari | Permissible | • It is a stage in the evolution of currency from metal to paper and paper to cryptocurrency.<br>• It is considered a currency like other currencies. |
| 11 | Faraz Adam | Permissible | • It is a currency based on *taʿāmul* (common usage) and *istilāḥ* (social concurrence). |
| 12 | Mohd Daud Bakar | Permissible | • It is neither a commodity nor a medium of exchange.<br>• Can be currency once the government/central bank recognises it. |
| 13 | Muntadā al-Iqtiṣād al-Islāmī | Permissible | • The legal maxim is the permissibility of something until prohibition is proved.<br>• *Māl mutaqawwim:* can be exchanged with something else.<br>• No Sharīʿah rules to prohibit it. |

*Source:* Authors summarised

Moreover, the legal maxim which states that the principle of Sharīʻah in every matter is permissibility unless there is evidence of prohibition (Al-Suyūṭī, 1997; Ismail and Rahman, 2013) indicates the permissibility of accepting the evolution of money into a digital form as long as there is no explicit prohibition on the matter. Based on the requirements of money as mentioned by some scholars (Zahara, 2020; Alshubaily, 2019; Adam, 2018), having public acceptance as a medium of exchange can be sufficient to call something currency. This can be clearly seen in the opinion of Imām Mālik and Ibn Taymiyyah. Moreover, since many other classical scholars did not stipulate that centralised issuance of money is a requirement for money to be recognised in Islam, cryptocurrency can be considered as currency. Furthermore, backing cryptocurrency with other assets such as gold, silver, or fiat money, would lead to the loss of its original nature as a stand-alone currency that is already backed by a blockchain system, and that may prevent the use of cryptocurrency as it was originally intended.

### *4.2 Centralisation of money by governments/central banks*

One of the main reasons that many scholars (Abū Ghuddah, 2018; Al-Qarahdāghī, 2018; Dār Al-Iftā Al-Miṣriyyah, 2017) reject cryptocurrency is that cryptocurrency does not follow the rules of any government or central bank. According to them, the decentralised nature of cryptocurrency leads to many issues of insecurity and potential loss of wealth for cryptocurrency owners and traders. People might lose their wealth without having any channels for recovering it. They might not be able to report the losses to the authorities or courts since the central banks do not control them. The protection of peoples' wealth and financial affairs is secured under a centralised system by the government or central banks, and many central banks warn their people to be careful about dealing with cryptocurrencies. However, the blockchain-based cryptocurrency is also secured through the publicly distributed ledger system, which requires a minimum number of people to authorise a transaction to proceed (Chuen et al., 2017; Hasan and Salah, 2018; Kabir et al., 2018; Sotiropoulou and Ligot, 2019). Thus, the authorisation from other users acts like the central bank's authorisation for normal financial transactions in other currencies. Moreover, the decentralised currency provides more flexibility for global transactions and hastens the transfer process regardless of borders and central banks' authorisation (European Central Bank, 2015; Seetharaman et al., 2017; Aziz, 2019).

### *4.3 Volatility*

The volatility of cryptocurrency is also among the issues that many are worried about (Baur and Dimpfl, 2021). It has been noticed that cryptocurrency's price against other currencies like the dollar fluctuates markedly and its dramatic shift in terms of appreciation and depreciation is quite worrisome for those technophiles. In terms of cryptocurrency investment, this kind of fluctuation might not encourage investors to keep their money in such a portfolio. Moreover, it might lead to a huge loss for an investor in the event of depreciation since the rate of cryptocurrency sometimes drops quite low against other currencies. At the same time, when cryptocurrency appreciates, the investor gains higher profit over the deal. Thus, it leads to an extra risk to the investors either a higher profit or a big loss (Antonakakis et al., 2019; Perkins, 2018).

Based on this highly volatile nature of cryptocurrency, many scholars (High Council of Religious Affairs of Turkey (2017 as cited in Selcuk and Kaya, 2021; Dār al-Iftā al-Miṣriyyah, 2017; Abū Ghuddah, 2018) do not allow cryptocurrency, considering the preservation of wealth (*ḥifẓ al-māl*) as one of the *maqāṣid al-sharī'ah* (objectives of Sharī'ah). According to Abū Ghuddah (2018), being involved in cryptocurrency is like someone willingly destroying their wealth, which is not permissible in Sharī'ah.

A study by Nian and Chuen (2015) shows that there are several reasons for such fluctuation in cryptocurrency's price in the market; one of them is when a massive number of investors jump into a cryptocurrency after media coverage of positive sides of cryptocurrency. In addition, since cryptocurrency is a free market that is not under a central bank, it is normal to have such fluctuation (Acheson, 2021). According to Nian and Chuen (2015) and Cryptopedia (2021), it is possible that the price of cryptocurrencies may reach the normal volatility level once they are mature and more familiar to people. Another study (Alzubaidi and Abdullah, 2017) suggests that gold can be a physical backup for a cryptocurrency, which would solve the issue of its high volatility.

## *4.4 Legal status of cryptocurrency*

Based on several reports and studies (LLC, 2018a, 2018b; Dewey, 2019; Chainalysis, 2020; Ezquer, 2020), it seems that cryptocurrency has various legal statuses in various countries. These can be categorised into three:

a some countries allow cryptocurrency

b some countries restrict cryptocurrency

c some countries totally ban cryptocurrency.

The first group of countries includes Australia, Canada, Cyprus, Hong Kong, France, the USA, Singapore, Japan, the UK, Switzerland, Malaysia and Mexico. These countries mostly allow cryptocurrency to be part of the financial activities in the country either in terms of investing in cryptocurrency or just owning them through purchase or any other possible means. In Canada, although the cryptocurrency is called a digital currency, it does not have the status of the legal tender of the country, and it is treated as barter trading when it is used in any transaction (LLC, 2018a). The second group of countries, including Bangladesh, Iran, India, Thailand, Lithuania, Lesotho, Colombia, and Nigeria, does not explicitly ban the use of cryptocurrency for the people residing there; however, strict policies have been imposed by the governments for transactions involving cryptocurrency. The third group of the countries, including Algeria, Bolivia, Egypt, Indonesia, Ecuador, Morocco, Nepal, Pakistan, and Vietnam, declares cryptocurrency illegal to trade in the country (Cvetkova, 2018; LLC, 2018a).

A very small number of countries and jurisdictions – for instance, Japan (Cvetkova, 2018), El Salvador (Aleman, 2021), and the Isle of Man (LLC, 2018a) – are considering cryptocurrency as legal tender. China (Areddy, 2021) recently introduced a digital currency which is centralised by the People's Bank of China (PBOC) and it is non-anonymous. This type of currency is called a central bank digital currency (CBDC) (Kharpal, 2021). Moreover, those countries that allow cryptocurrency in the country warn cryptocurrency users, owners, and investors about the risks involved, and they may not get any legal support in some countries since the governments/central banks do not control cryptocurrency (Shovkhalov and Idrisov, 2021; Sotiropoulou and Ligot, 2019; Dewey, 2019). The majority of countries prefer to call cryptocurrency a digital asset, virtual asset, virtual commodity, crypto-token, and payment token, and they impose taxes accordingly. Therefore, cryptocurrency still has a legal battle to win before it can become a full-fledged alternative to the current money/currency.

### *4.5 Cryptocurrency (Bitcoin) as zakatable asset*

It is well known that cryptocurrencies, with their unique features of decentralisation and blockchain, are among the digital assets that are currently booming all around the world. Certain things must be discussed in order to determine whether cryptocurrencies are subject to zakat from the Sharī'ah perspective, such as whether cryptocurrency has *thamaniyyah* or not, and whether cryptocurrency is a productive (*nāmī*) asset or not. Based on these two conditions in cryptocurrency can be considered as zakatable or not besides taking consideration of other conditions as well such as passing a year (*ḥawl*) and being under a certain threshold (*niṣāb*).

### *4.6 Thamaniyyah (value) of asset*

One of the most important criteria for an asset is that it has value (*thaman*). The *thaman* of something is necessary for an item to be considered wealth (*māl*) in Sharī'ah (Al-Suyūṭī, 1997; Al-Shāṭibī, 1997; Al-Buhūtī, 2000). The *thaman* of something can be intrinsic, such as gold, or it can be simply because people consider it to have value such as fiat money (Yuneline, 2019; Borio, 2019). Before an asset is considered zakatable, it must fulfil the criteria that the Sharī'ah sets for something to be considered as an asset. Hence, it is noticeable that zakatable items are things which have value among people. When something is well accepted by people as wealth, it fulfils the requirement of *thamaniyyah* and becomes among the zakatable assets.

Cryptocurrency is considered as either a digital asset or a digital currency. In both cases, it has a value which it achieves from the people. The value of cryptocurrency (Bitcoin) comes from the owners and investors based on the decentralised network and blockchain system (Sigalos, 2021). It is similar to paper currencies in that the value (*thaman*) comes from societal acceptance, which, in the case of paper currencies, is based on the trust people have in the governments that issue them and the central banks that regulate them. In this regard, the Islamic Fiqh Academy (1986) states: "The paper currency that exists today has become a store of value and has replaced gold and silver as a means of payment because the community has accepted it as a store of value and as means of payment even if its value lies not in the paper but the trust that is placed in it in commercial dealings." Thus, comparing cryptocurrency with paper money, which receives its value (*thamaniyyah*) status from community trust of it, the value of cryptocurrency will be the same as well since the current technophile community accepts its value and the community that has trust in its value is growing day by day.

### *4.7 'Illah (reason) in zakat and namā' (productivity) of the asset*

The reason (*'illah*) behind the obligation of zakat on wealth is the wealth's productivity or capacity for growth. The productivity of wealth determines whether the wealth is zakatable or not. A productive good can become unproductive or inactive when it is intended for personal use (Ibn Nujaim, 1997; Al-Dusūqī, n.d.; Al-Māwardī, 1994). Imposing zakat on unproductive wealth would be an injustice to a person as it would lead to losing his wealth unnecessarily. The productivity of wealth is necessary for something to be zakatable. It may be naturally productive, or it may need some human effort to produce an increase from it (Al-Qarḍāwī, 2000; Bouheraoua, 2012).

Regarding cryptocurrency (Bitcoin) in this context, it is similar to gold, which can only increase in its owner's possession by investing it or trading it. Moreover, many countries have already imposed taxes on cryptocurrencies since they regard them as virtual assets or commodities possessing value, which can be traded for other assets in transactions comparable to barter (LLC, 2018b; Dewey, 2019).

### *4.8 Fatwas on zakat on cryptocurrencies*

Several fatwas have been issued by scholars regarding zakat and cryptocurrency on online platforms confirming the zakat-ability of cryptocurrency as *māl* (wealth) and currency from the Sharī'ah perspective. In this regard, Adam (n.d.a) states:

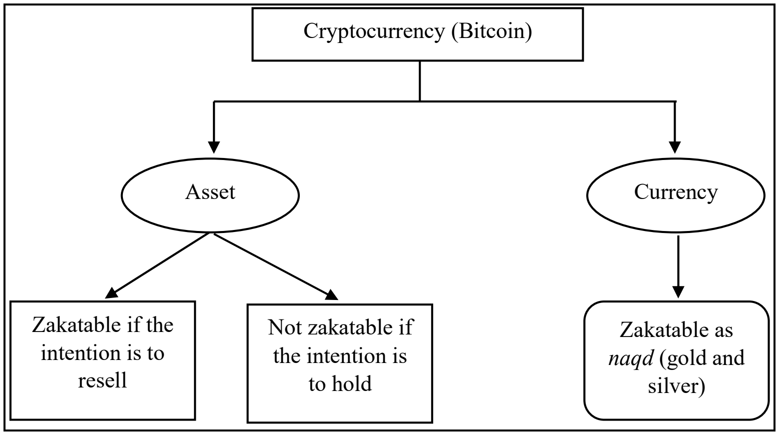
> "Any cryptocurrency or token purchased to resell will always be zakatable. Zakat is due on the market value on one's zakat anniversary. The cryptocurrency value should be converted into one's local currency at the time of calculation. If a cryptocurrency is not purchased to resell, a coin currency such as Bitcoin, Litecoin, Ripple, etc. will still be zakatable because of their utility as currencies within their ecosystem. Zakat on tokens not purchased to resell will depend on the nature of the token and what it represents."

Similarly, the Zakat Foundation of America (ZFA) also issued a resolution on the obligation of zakat on cryptocurrency. It (ZFA, n.d.) stated, "Cryptocurrencies are zakat-eligible wealth that zakat comes due on if its value reaches the threshold (*niṣāb*) of zakat on money and one has possession of it at its *niṣāb* for a lunar year (*ḥawl*)." The ZFA resolution indicates that cryptocurrency is zakatable due to its nature as currency in that it has value, acceptance, and the characteristics of money. Thus, ZFA considers zakat to be due on cryptocurrency as a currency, not an asset. According to Adam (n.d.b), zakat is imposed on cryptocurrency either because it is considered as *māl* since it has the feature of *taqawwum* – i.e., Islam recognises its value – or it can be considered as currency since it has *thamaniyyah* (value). Thus, cryptocurrency as an asset is zakatable if the owner holds it to resell and it is zakatable as currency regardless of the intention to resell or hold.

Khan (2021) also supports the above views of imposing zakat on cryptocurrency and payment tokens as currency. He excludes the platform and governance tokens from zakat-ability if the owner intends to just hold and not to resell them. Figure 1 shows the consideration of cryptocurrency (Bitcoin) as either digital assets or digital currency and the rule of zakat in both scenarios.

Looking at the current trend of increasing issuance and use of cryptocurrency all over the world, it is worthy to highlight that a vast amount of money is spent and invested in cryptocurrency, and it is accepted as digital assets or digital currency in different jurisdictions. Cryptocurrency as a digital asset has value in many countries; and based on this, governments impose taxes on it. Consequently, zakat could be imposed on cryptocurrency as an asset since it has achieved the status of digital commodity/digital asset in many countries.

**Figure 1** Imposing zakat in cryptocurrency (Bitcoin)




On the other hand, if cryptocurrency is considered as digital currency in a country, a Muslim should pay his/her zakat on the cryptocurrency as money like other currencies. This is because once a cryptocurrency is considered as currency of that country, it will embrace the Sharīʻah rules for currency exchange (*bai'al-ṣarf*), zakat, *ribā*, and other financial matters as apply to the dollar, ringgit and riyal. Regarding zakat on cryptocurrency investment, if cryptocurrency is considered an asset, investment will be permissible, and the zakat will be applicable on the entire holding of the cryptocurrency at a rate of 2.5% (Mirza and Sabur, 2021).

**Table 2** The conditions of zakat

| | *Conditions to be fulfilled* | *Cryptocurrency (Bitcoin) as assets/currency* | |
|---|---|---|---|
| | | *Yes* | *No* |
| 1 | The asset/good should be productive (*nāmī*). | √ | - |
| 2 | The owner should have *milk tām* (full ownership) of the assets/goods. | √ | - |
| 3 | The asset/good should meet the relevant threshold (*nisāb*). | √ | - |
| 4 | The asset/good should pass one lunar year (*ḥawl*). | √ | - |
| 5 | The asset/good should be more than necessity of the owner. | √ | - |

Moreover, the researchers think that not imposing zakat on cryptocurrency might lead to a substantial amount of money going uncounted from the obligation of zakat. Some investors may take it as a means to justify skipping their religious duty of paying zakat, which would deprive the *aṣnāf* of their rights that they are supposed to receive from zakat payers. If the money were not invested in cryptocurrency, it might be invested in any other portfolio, in which case the investors would be obliged to pay zakat on it if it reaches the relevant *niṣāb*. Therefore, the study advises imposing zakat on Bitcoin and other cryptocurrencies, regardless of whether they are considered currencies or assets, once they fulfil the conditions of zakat such as *niṣāb* and *ḥawl*. Table 2 shows the conditions of zakat that cryptocurrency must fulfill to be zakatable assets, failing which they might not be zakatable.

## 5 Conclusions

Zakat is one of the main pillars of Islam which focuses on monetary worship by the believers. Zakat is not obligatory on all types of assets that a believer owns but, rather, certain assets that fulfil the relevant conditions. The era of digitalisation has introduced many things in a digital form to human beings including digital assets. The inclination of people from all around the world, including Muslims, towards cryptocurrencies, calls for further deliberation of the Sharī‘ah rules regarding them. It is obligatory for Muslims who fulfil the conditions of zakat to pay it on their assets annually. Thus, it is necessary to study cryptocurrency whether it falls into the list of zakatable assets or not. This study focuses on the conditions of zakat that must be present in an asset for it to be zakatable. First of all, a zakatable asset has to pass the criteria of being an asset from a Sharī‘ah perspective, and the majority of scholars stipulate *thamaniyyah* (value) as a characteristic that asset must have to be *mutaqawwim*; i.e., Islam recognises its value. Thus, *thamaniyyah* is an important characteristic that cryptocurrency must have to be considered as an asset from the Sharī‘ah perspective. In this regard, this study finds that cryptocurrency has achieved the *thamaniyyah* criteria since its value comes from the people who use it, exchange it, and accept it for their transactions. Thus, cryptocurrency fulfils the criteria of being an asset from the Sharī‘ah perspective by meeting the *thamaniyyah* criteria.

A further filter is the *‘illah* (reason) that makes assets zakatable. This must be found in an asset that has *thamaniyyah*; when it is present in an asset, it can be regarded as zakatable. *Namā’* (productivity) is the main *‘illah* in an asset to be zakatable; *namā’* can be found in an asset inherently or based on its utilisation. It would be an injustice to annually impose zakat on assets without *namā’*; consequently, the owner might end up losing the asset he needs for his personal use. As for cryptocurrency, it has been recognised by many countries as a digital asset, and governments impose taxes on it, considering it as an asset. In addition, it is owned and purchased by a huge number of people around the world while knowing its value. The trading of cryptocurrency as assets is permissible in Sharī‘ah, which allows its use in Sharī‘ah-compliant ways to get profits from it. This is how it proves the meaning of productivity in cryptocurrency. If cryptocurrency is considered a currency, it would always take the rule of other currencies in terms of imposing zakat on it regardless of the intention of holding or reselling. On the other hand, if cryptocurrency is considered an asset, it is zakatable if it is owned with the intention of reselling or investment whereas it is not zakatable if there is no intention to resell.

The contribution of this research lies in exploring a deeper understanding of cryptocurrency as zakatable assets including its types (digital currency/digital assets). The research strives to discuss the conditions of zakat and their possibility of fulfilling in cryptocurrency considering both types. Moreover, it advances the knowledge and understanding of the subject matter and provides the Sharī‘ah scholars and other researchers some room to discuss further the legality and imposing zakat on cryptocurrency while expanding the literature on cryptocurrency and its zakat from the Sharī‘ah perspective. The findings of this study can be considered as a reference for zakat institutions to increase the annual zakat collection while having a new zakat asset with other portfolios. Potential avenues for future research in this regard can include the zakat model and Sharī‘ah parameters of Bitcoin and other cryptocurrencies.

## Acknowledgements

The authors greatly acknowledge the financial support received from the Malaysian Ministry of Higher Education (MOHE) under the Fundamental Research Grant Scheme (Grant No. FRGS/1/2020/SSI0/UM/02/19) entitled Model Zakat Aset Digital Berpandukan Kerangka Hukum Islam for the completion of the present work.

## References

Abu Bakar, N.B. and Rahman, A.R.A. (2007) 'A comparative study of zakah and modern taxation', *J.KAU: Islamic Economics*, Vol. 20, No. 1, pp.25–40.

Abū Ghuddah, A.S. (2018) 'Al-Nuqūd al-raqmiyyah al-ru'yah al-shar'iyyah wa al-'āthār al-iqtiṣādiyyah', Paper presented at *Mu'tamar al-Dūḥah al-Rābi' Lil Māl al-Islāmī*, Dūḥah, Qatar, 9 January.

Acheson, N. (2021) *Crypto Long & Short: Crypto Markets are Volatile Because They're Free* [online] https://www.coindesk.com/crypto-markets-bitcoin-volatile-freedom (accessed 3 February 2022).

Adam, F. (2018) *The Shariah Factor in Cryptocurrencies and Tokens* [online] https://shariyah.com/wp-content/uploads/2019/05/The-Shariah-factors-in-Cryptocurrencies-and-Tokens.pdf (accessed 3 February 2022).

Adam, F. (n.d.a) *Do We Pay Zakat on Cryptocurrencies?* [online] https://nzf.org.uk/knowledge/zakat-on-cryptocurrencies/ (accessed 3 February 2022).

Adam, F. (n.d.b) *Is There a Zakat Levy on One's Bitcoin Holdings?* [online] https://darulfiqh.com/knowledgebase/is-there-a-zakat-levy-on-ones-bitcoin-holdings/ (accessed 3 February 2022).

Al-Buhūtī, M.I.Y. (2000) *Sharḥ Munthaā al-Irādāt*, Mu'assasah al-Risālah Nāshirūn, Beirut.

Al-Bukhārī, M.I.I. (2015) *Ṣaḥīḥ al-Bukhārī*, Dār al-Ḥaḍārah, Riyad.

Al-Dusūqī, S.a-D. (n.d.) *Ḥāshiyah al-Dusūqī 'alā al-Sharḥ al-Kabīr*, 'Īsā al-Bābī al-Ḥalabī wa Shurakā'uh, Al-Qāhirah.

Aleman, M. (2021) 'El Salvador makes Bitcoin legal tender', *AP* [online] https://apnews.com/article/caribbean-el-salvador-bitcoin-technology-business-ed51894baf9d47ec1093005602883fd9 (accessed 3 February 2022).

Al-Ḥaṭṭāb, M.I.M. (2003) *Mawāhib al-Jalīl Li Sharḥ Mukhtaṣar Khalīl*, Dār 'Ālam al-Kutub, Riyāḍ.

Alī, A.Y. (2006) *The Meaning of The Holy Qur'an*, Islamic Book Trust, Kuala Lumpur.

Al-Kāsānī, A.D. (1974) *Badā'i' al-Ṣanā'i'*, Dār al-Kitāb al-'Arabī, Beirut.

Al-Mamun, A. and Haque, A. (2015) 'Tax deduction through zakat: an empirical investigation on Muslim in Malaysia', *Share: Jurnal Ekonomi dan Keuangan Islam*, Vol. 4, No. 2, pp.105–132.

Al-Māwardī, A.Ḥ. (1994) *Al-Ḥāwī al-Kabīr*, Dār al-Kutub al-'Ilmiyyah, Beirut.

Al-Nawawī, A.Z.Y.I.S. (2003) *Rawḍah al-Ṭālibīn*, Dār Ālam al-Kutub, Riyāḍ.

Al-Nawawī, A.Z.Y.I.S. (n.d.) *Al-Majmū' Sharh al-Muhadhdhab*, Maktabah al-Irshād, Jeddah.

Al-Qarahdāghī, A.M.D. (2018) *Bitkoin laisa muḥarraman bi dhātih* [online] https://alqaradaghi.com/10425/ (accessed 22 February 2022).

Al-Qarḍāwī, Y. (2000) *Fiqh al Zakah*, Scientific Publishing Centre, Jeddah.

Al-Shāṭibī, I.I.M. (1997) *Al-Muwāfaqāt*, Dār Ibn 'Affān, Al-Qāhirah.

Al-Shawkānī, M.I. (2004) *Nayl al-Awṭār*, Bait al-Afkār al-Duwaliyyah, Lubnān.

Alshubaily, N. (2019) *Paper Money: What Constitutes Currency in Shariah?* [online] https://islamicmarkets.com/articles/paper-money-what-constitutes-currency-in-shariah (accessed 3 February 2022).

Al-Suyūṭī, J.A.D. (1997) *Al-Ashbāh wa al-Naẓā'ir fī Qawā'id wa Furū' Fiqh al-Shafi'iyyah*, Maktabah Nazzār Muṣṭafā al-Bāz, Riyad.

Alzubaidi, I.B. and Abdullah, A. (2017) 'Developing a digital currency from an Islamic perspective: case of blockchain technology', *International Business Research*, Vol. 10, No. 11, pp.79–87.

Al-Zuḥailī, W. (1985) *Al-Fiqh al-Islāmī wa Adillatuh*, Dār al-Fikr, Dimashq.

Anas, M.I. (1994) *Al-Mudawwanah al-Kubrā*, Dār al-Kutub al-'Ilmiyyah, Beirut.

Antonakakis, N., Chatziantoniou, I. and Gabauer, D. (2019) 'Cryptocurrency market contagion: market uncertainty, market complexity, and dynamic portfolios', *Journal of International Financial Markets, Institutions and Money*, Vol. 61, pp.37–51.

Areddy, J.T. (2021) *China Creates its Own Digital Currency, a First for Major Economy* [online] https://www.wsj.com/articles/china-creates-its-own-digital-currency-a-first-for-major-economy-11617634118 (accessed 3 February 2022).

Asfarina, M., Ascarya, A. and Beik, I.S. (2019) 'Classical and contemporary fiqh approaches to re-estimating the zakat potential in Indonesia', *Journal of Islamic Monetary Economics and Finance*, Vol. 5, No. 2, pp.387–418.

Aspers, P. and Corte, U. (2019) 'What is qualitative in qualitative research', *Qualitative Sociology*, Vol. 42, No. 2, pp.139–160.

Aziz, A. (2019) 'Cryptocurrency: evolution & legal dimension', *International Journal of Business, Economics and Law*, Vol. 18, No. 4, pp.31–33.

Bakar, M.D. (n.d.) *Cryptocurrency: An Holistic and Contemporary Syariah Analysis (Part V)* [online] https://coin.my/op-ed/cryptocurrency-an-holistic-and-contemporary-syariah-analysis-part-v/ (accessed 3 February 2022).

Baur, D.G. and Dimpfl, T. (2021) 'The volatility of Bitcoin and its role as a medium of exchange and a store of value', *Empirical Economics*, Vol. 61, No. 5, pp. 2663–2683.

Beik, I.S., Nurzaman, M.S. and Sari, A.P. (2019) 'Zakat standard framework of halal cryptocurrency', in Billah, M.M.S. (Ed.): *Halal Cryptocurrency Management*, pp.275–284, Palgrave Macmillan, Cham, Switzerland.

Billah, M.M.S. (2016) 'Creating an eco-sustainable community: the role of zakat', *International Journal of Zakat*, Vol. 1, No. 1, pp.1–16.

Borio, C. (2019) 'On money, debt, trust, and central banking', *Cato Journal*, Vol. 39, No. 2, pp.267–302.

Bouheraoua, S. (2012) *Zakāh Obligations on Islamic Financial Institutions*, ISRA Research Paper No. 34/2012, International Shari'ah Research Academy for Islamic Finance (ISRA), Kuala Lumpur, Malaysia.

Cagli, E.C. (2019) 'Explosive behavior in the prices of Bitcoin and altcoins', *Finance Research Letters*, Vol. 29, pp.398–403.

Chainalysis (2020) *The 2020 Geography of Cryprocurrency Report* [online] https://go.chainalysis.com/2020-geography-of-crypto-report.html (accessed 3 February 2022).

Chuen, D.L.K., Guo, L. and Wang, Y. (2017) 'Cryptocurrency: a new investment opportunity?', *The Journal of Alternative Investments*, Vol. 20, No. 3, pp.16–40.

ComplyAdvantage (n.d.) *Cryptocurrency Regulations Around the World* [online] https://complyadvantage.com/blog/cryptocurrency-regulations-around-world/ (accessed 3 February 2022).

Cooper, D.R. and Schindler, P.S. (2001) *Business Research Methods*, McGraw-Hill, New York.

Cryptopedia (2021) *Healthy Volatility and its Implications for Crypto Markets* [online] https://www.gemini.com/cryptopedia/volatility-index-crypto-market-price (accessed 3 February 2022).

Cvetkova, I. (2018) 'Cryptocurrencies legal regulation', *BRICS Law Journal*, Vol. 5, No. 2, pp.128–153.

Dār Al-Iftā Al-Miṣriyyah (Egypt Fatwa Board) (2017) *Al-Fatāwā: Tadāwul 'Umlah al-Bitkoin wa al-Ta'āmul Bihā* [online] https://www.dar-alifta.org/ar/ViewFatwa.aspx?sec=fatwa&ID=14139&تداول_عملة_البيتكوين_والتعامل_بها_-_الأستاذ_الدكتور_/_شوقي_إبراهيم_علام_ (accessed 3 February 2022).

Dewey, J. (Eds.) (2019) *Global Legal Insights – Blockchain & Cryptocurrency Regulation*, Global Legal Group Ltd., London, UK.

Dong, X. (2020) *Know Your Tokens: Defining "Digital Assets"* [online] https://www.techerati.com/features-hub/opinions/know-your-tokens-defining-digital-assets-btw20-blockchain-technology-world-2020/ (accessed 3 February 2022).

European Central Bank (2015) *Virtual Currency Schemes – A Further Analysis* [online] https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf (accessed 3 February 2022).

Ezquer, E. (2020) *Bitcoin Regulations by Country*, April [online] https://www.bitcoinmarketjournal.com/bitcoin-regulation-by-country/ (accessed 3 February 2022).

Flick, U. (2018) *An Introduction to Qualitative Research*, Sage Publications Ltd., London.

Hasan, H.R. and Salah, K. (2018) 'Proof of delivery of digital assets using blockchain and smart contracts', *IEEE Access*, Vol. 6, pp.65439–65448.

Hassan, M.K., Karim, M.S. and Muneeza, A. (2020) 'A conventional and Sharī'ah analysis of Bitcoin', *Arab Law Quarterly*, Vol. 35, Nos. 1–2, pp.155–189.

Ibn Nujaim, Z.D. (1997) *Al-Baḥr al-rā'iq*, Dār al-Kutub 'Ilmiyyah, Beirut.

Ibn Qudāmah, M.D. (1997) *Al-Mughnī*, Dār 'Ālam al-Kutub, Riyāḍ.

Ibn Taymiyyah, A.I. (2004) *Majmū' Fatāwā Shayekh al-Islām Aḥmad Ibn Taymiyyah*, Maktabah al-Malik Fahd, KSA.

Ibrahim, S.M. (2014) 'Towards accommodating the contemporary wealth into the zakat folds', *South East Asia Journal of Contemporary Business, Economics and Law*, Vol. 5, No. 3, pp.24–29.

Imtiazi, I.A., Mannan, M.A., Niaz, M.A. and Deria, A.H. (Eds.) (2000) *Management of Zakat in Modern Muslim Society, Riyad*, Islamic Research and Training Institute (IRT), IDB.

International Shariah Research Academy for Islamic Finance (ISRA) (2010) *Compendium for Islamic Financial Terms*, ISRA, Kuala Lumpur, Malaysia.

Islamic Fiqh Academy (1986) *Al-Qarār al-Sādis Ḥawla al-'Umlah al-Waraqiyyah*, Islamic Fiqh Academy, Makkah al-Mukarramah.

Ismail, A. and Rahman, M.H. (2013) *Islamic Legal Maxims Essential and Applications*, Islamic Banking and Finance Institute Malaysia (IBFIM), Kuala Lumpur.

Jaffar, S., Abdullah, A. and Meera, A.K M. (2017) 'Fiat money: from the current Islamic finance scholars' perspective', *Humanomics*, Vol. 33, No. 3, pp.274–299.

Jedidia, K.B. and Guerbouj, K. (2020) 'Effects of zakat on the economic growth in selected Islamic countries: empirical evidence', *International Journal of Development Issues*, Vol. 20, No. 1, pp.126–142.

Jonker, J. and Pennink, B. (2010) *The Essence of Research Methodology*, Springer, Heidelberg.

Justin, B. (2019) *Professor of Islamic Economics: Bitcoin is a Natural Evolution of Money*, February [online] https://www.cryptovibes.com/blog/2019/02/13/professor-of-islamic-economics-bitcoin-is-a-natural-evolution-of-money/ (accessed 3 February 2022).

Kabir, S.M.H., Chowdhury, M.A.M., Aktaruzzaman, M. and Rahman, M.M. (2018) 'The role of Islamic crypto currency in supporting economic growth of Malaysia', *International Journal of Latest Engineering and Management Research (IJLEMR)*, Vol. 3, No. 11, pp.57–62.

Kahf, M. (2013) 'Zakat: unresolved issue in the contemporary fiqh', *International Journal of Economics, Management and Accounting*, Vol. 2, No. 1, pp.1–22.

Khan, I. (2021) *Calculate Zakat on Crypto – Bitcoin – Cryptocurrency* [online] https://www.islamicfinanceguru.com/investment/calculate-zakat-on-crypto-bitcoin-cryptocurrency/ (accessed 3 February 2022).

Kharpal, A. (2021) *China Has Given Away Millions in its Digital Yuan Trials*, CNBC [online] https://www.cnbc.com/2021/03/05/chinas-digital-yuan-what-is-it-and-how-does-it-work.html (accessed 3 February 2022).

Kim, M.J., Canh, N.P. and Park, S.Y. (2020) 'Causal relationship among cryptocurrencies: a conditional quantile approach', *Finance Research Letters*, Vol. 101879, pp.1–8.

Kumar, R. (2018) *Research Methodology: A Step-by-step Guide for Beginners*, Sage Publications, London.

Le Tran, V. and Leirvik, T. (2020) 'Efficiency in the markets of crypto-currencies', *Finance Research Letters*, Vol. 35, pp.1–8.

Li, R., Li, S., Yuan, D. and Zhu, H. (2021) 'Investor attention and cryptocurrency: evidence from wavelet-based quantile Granger causality analysis', *Research in International Business and Finance*, Vol. 56, No. 101389, pp.1–29.

Lodico, M.G., Spaulding, D.T. and Voegtle, K.H. (2010) *Methods in Educational Research: From Theory to Practice*, John Wiley & Sons, New Jersey, USA.

Mahmud, K.T., Hassan, M.K., Sohag, M. and Alam, F. (2015) 'Impact of zakat in alleviating rural poverty: a case study of Masjid Council for Community Advancement (MACCA) in Bangladesh', in El-Karanshawy, H.A. and Al, E. (Eds.): *Access to Finance and Human Development – Essays on Zakah, Awqaf and Microfinance*, pp.23–31, Bloomsbury Qatar Foundation, Doha, Qatar.

Meegan, A., Corbet, S., Larkin, C. and Lucey, B. (2021) 'Does cryptocurrency pricing response to regulatory intervention depend on underlying blockchain architecture?', *Journal of International Financial Markets, Institutions and Money*, Vol. 70, No. 101280, pp.1–23.

Merriam, S.B. and Grenier, R.S. (2019) *Qualitative Research in Practice: Examples for Discussion and Analysis*, John Wiley & Sons, San Francisco.

Mirza, R. and Sabur, S. (2021) *Crypto Gains and the Zakat Benefits* [online] https://www.capco.com/Intelligence/Capco-Intelligence/Crypto-Gains-And-The-Zakat-Benefits (accessed 3 February 2022).

Mohamad, A. and Sifat, I.M. (2017) 'Gold vis-à-vis money in Islam: the case against Dinarist Movement', *International Journal of Law and Management*, Vol. 59, No. 6, pp.977–992.

Narayanan, A., Bonneau, J., Felten, E., Miller, A. and Goldfeder, S. (2016) *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*, Princeton University Press, New Jersey.

Nian, L.P. and Chuen, D.L.K. (2015) 'Introduction to Bitcoin', in Chuen, D.L.K. (Ed.): *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data*, pp.6–29, Elsevier, London.

Parveen, R. and Alajmi, A. (2019) 'An overview of Bitcoin's legal and technical challenges', *Journal of Legal, Ethical and Regulatory Issues*, Vol. 22, No. special issue 1, pp.1–8.

Perkins, D.W. (2018) *Cryptocurrency: The Economics of Money and Selected Policy Issues*, US Congressional Research Service, R45427, Congressional Research Service, Washington DC, USA [online] https://fas.org/sgp/crs/misc/R45427.pdf (accessed 19 February 2022).

Rainero, C. and Modarelli, G. (2020) 'Bitcoin-blockchain phenomenon: an investigation on news titles influence', *European Journal of Islamic Finance*, special issue for *EJIF Workshop*, Vol. 1, pp.1–12.

Seetharaman, A., Saravanan, A., Patwa, N. and Mehta, J. (2017) 'Impact of Bitcoin as a world currency', *Accounting and Finance Research*, Vol. 6, No. 2, pp.230–246.

Selcuk, M. and Kaya, S. (2021) 'A critical analysis of cryptocurrencies from an Islamic jurisprudence perspective', *Turkish Journal of Islamic Economics*, Vol. 8, No. 1, pp.137–152.

Shovkhalov, S. and Idrisov, H. (2021) 'Economic and legal analysis of cryptocurrency: scientific views from Russia and the Muslim world', *Laws*, Vol. 10, No. 2, pp.1–17.

Sigalos, M. (2021) *Bitcoin's Wild Price Moves Stem from its Design – You'll Need Strong Nerves to Trade It* [online] https://www.cnbc.com/2021/05/19/why-is-bitcoin-so-volatile.html (accessed 3 February 2022).

Sofi Learn (2021) *Understanding the Different Types of Cryptocurrency* [online] https://www.sofi.com/learn/content/understanding-the-different-types-of-cryptocurrency/ (accessed 3 February 2022).

Sotiropoulou, A. and Ligot, S. (2019) 'Legal challenges of cryptocurrencies: isn't it time to regulate the intermediaries?', *European Company and Financial Law Review*, Vol. 16, No. 5, pp.652–676.

The Law Library of Congress (LLC) (2018a) *Regulation of Cryptocurrency Around the World*, Global Legal Research Center, Washington DC.

The Law Library of Congress (LLC) (2018b) *Regulation of Cryptocurrency in selected Jurisdictions*, Global Legal Research Center, Washington DC.

Yuneline, M.H. (2019) 'Analysis of cryptocurrency's characteristics in four perspectives', *Journal of Asian Business and Economic Studies*, Vol. 26, No. 2, pp.206–219.

Yusof, M.F., Ab. Rasid, L. and Masri, R. (2021) 'Implementation of zakat payment platform for cryptocurrencies', *AZKA International Journal of Zakat and Social Finance*, Vol. 2, No. 1, pp.17–31.

Zahara, F. (2020) 'The analysis of Maqashid Syariah on the use of fiat money and dinar dirham', *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, Vol. 3, No. 2, pp.1216–1226.

Zakat Foundation of America (ZFA) (n.d.) *How to Calculate Zakat on Cryptocurrency?* [online] https://www.zakat.org/calculate-zakat-cryptocurrency (accessed 3 February 2022).