CHAPTER 7

Characterizing Cryptocurrencies and Why It Matters

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Introduction

The unprecedented hype of cryptocurrency over the past few years coupled with an increasing prominence of digital economy should not go unnoticed. For sure, the rapid emergence of such phenomenon has considerably altered the landscape of financial transactions and the methods by which the global economy would grow. More importantly, it will potentially change the way economic agents interact in a great deal. Islamic finance as a growing and niche industry must timely respond to this. Various attempts have been made by different enthusiasts and advocates of Islamic finance to address this topical issue. One central question being constantly discussed is whether investing in cryptocurrency through blockchain technology is *Shari'ah* compliant. To be able to answer this question, the

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fundamental aspect to dig out is to ensure "the nature of cryptocurrency." Why it matters? Because this will determine whether an investment in cryptocurrency is justified from Shari'ah point of view. As many advocates of Islamic finance would unanimously agree, the structure by which a contractual agreement is assembled and the type of items being transacted can determine the validity and permissibility of any financial transactions. On this, *Shari'ah* through its abundant *fiqh* interpretations provides guiding principles and a variety of avenues for Shari'ah compliant financial activities. In case of currencies, such methodology would be misleading since what is discussed is not a transaction but medium of exchange to carry out transactions. Hence, the permissibility of cryptocurrencies should better be evaluated from the money creation process perspective in cryptocurrencies. With respect to investing in cryptocurrency, there hasn't been any undivided answer until now, but there are characteristically four opinions:

- Opinion 1: Cryptocurrency cannot be considered as *mal* (wealth); it is purely speculative; hence, it is not Shari'ah compliant
- Opinion 2: Cryptocurrency is money/currency
- Opinion 3: Cryptocurrency is an asset
- Opinion 4: Cryptocurrency is a security.

This study, therefore, is an attempt to investigate the possible DNA of cryptocurrency. The word "possible" is used deliberately since the analysis or opinion articulated in this article could in no way be considered as a verdict. Rather, it is an endeavor to further stimulate the discussion on this emerging topic and provide insight for Shari'ah scholars. The authoritative bodies to come up with a verdict, in the authors' opinion, would be OIC Islamic Fiqh Academy.

The analysis of this article is structured as follows: The second section following the introduction discusses briefly about cryptocurrencies, the third up to sixth section attempt to analyze whether cryptocurrencies could qualify as being wealth (*mal*), currency, asset, or security. The last section deliberates upon the finding of the possible new DNA of cryptocurrency and its potential interconnection with Islamic finance, followed by a conclusion.

Central Idea of Cryptocurrencies

Cryptocurrencies are digital or virtual currencies that are encrypted (secured) using cryptography. Cryptography refers to the use of encryption techniques to secure and verify the transfer of transactions. Bitcoin represents the first decentralized cryptocurrency, which is powered by a public ledger that records and validates all transactions chronologically, called the blockchain. Bitcoin transactions are carried out on trading platforms akin to forex trading and brokerage platforms (Pieters and Vivanco 2017).

Physical tokens have been and still being used as a means of payment (e.g., shells, gold coins, and bank notes). In such setting, a direct exchange of sellers' goods and buyers' tokens allows them to achieve an immediate and final settlement. This option is unavailable, however, when the two parties are not present in the same location, supposedly necessitating the usage of digital tokens. In such case, traditional banking system makes settlements by mere debit and credit of accounts. Since the system is based on long-lasting tradition in which accounts kept by regulated banks and central banks, the traditional system of settlement, which evolved over centuries, is much more robust. In a digital currency system, however, the means of payment are simply a string of bits. This poses a problem, as these strings of bits as any other digital record can easily be copied and reused for payment. Essentially, the digital token can be counterfeited by using it twice which is the so-called double-spending problem.

Cryptocurrencies such as Bitcoin go a step further and remove trusted third party, as proponents suppose unneeded. Instead, they rely on a decentralized network of (possibly anonymous) validators to maintain and update copies of the ledger. This necessitates that consensus between the validators is maintained about the correct record of transactions so that the users can be sure to receive and keep ownership of balances. But such a consensus ultimately requires that (i) users do not double spend the currency and (ii) that users can trust the validators to accurately update the ledger. Nevertheless, in a case of conflict there is no legal framework to protect the rights of investors living in different jurisdictions across several countries. This would make those invest their hard-earned money in cryptocurrencies vulnerable and open to deceit.

How do cryptocurrencies such as Bitcoin tackle these challenges? Trust in the currency is supposedly based on a blockchain which ensures the distributed verification, updating and storage of the record of transaction histories. This is done by forming a so-called blockchain. A block is a set of transactions that have been conducted between the users of the cryptocurrency. A chain is created from these blocks containing the history of past transactions that allows one to create a ledger where one can publicly verify the amount of balances or currency a user owns. Hence, a blockchain is like a book containing the ledger of all past transactions with a block being a new page recording all the current transactions. To ensure consensus but not legal right, validators compete for the right to update the chain with a new block. This competition can take various forms. In Bitcoin, it happens through a process called *mining*. Miners (i.e., transaction validators) compete to solve a computationally costly problem which is called proof of work (Franco 2014). The winner of this mining process has the right to update the chain with a new block. The consensus protocol prescribes then that the longest history will be accepted, again without any legal right, as the trusted record. The history of money, however, proved that trust and consensus cannot work until there is a legal order. Throughout the history, crooks have used emotional manipulation of trust to take advantage of vulnerable, yet, greedy people. More importantly, the way money is created is quite speculative (*Maysir*) and uncertain (*Gharar*) in cryptocurrencies. It is deceitful to call such casino computer way of operating as mining to convince people as if it is gold mining, and it is akin to traditional money. Casino machines also work based on such powerful computers with high capacity formula solving skills.

Why Cryptocurrency Is Deemed Speculative; Is It a *Mal* (Wealth) After All?

It is key to understand the difference between money and commodity. The proponents of this view opine that cryptocurrencies, such as Bitcoins, are just numbers with digital entries on a cryptic blockchain. They have no intrinsic function. There is no real substance or underlying asset in money creation; it is just speculation on the fluctuation of numbers. This can result in cryptocurrencies being non-compliant and a form of *maysir* and prohibited speculation.

It is important to note that for something to be the subject of a contract, it must be *mutaqawwam*, Nazih Hammad, a contemporary jurist in his article in 2007 argues that the entire community of Islamic jurists—Shafi'ites, Malikites, Hanafites, and Hanbalites—are of the opinion that there are three elements of wealth. That is, three elements which, when present, will lead to the conclusion that the obligation has value and, from Shari'ah perspective, can be exchanged for a countervalue. Those three elements are: (1) that the obligation be an intended usufruct or contain the same; (2) that the usufruct has a monetary value in commercial practice or custom; and (3) that the usufruct be lawful from a Shari'ah perspective. Based on this proposition, although there is no issue in cryptocurrencies being *mutaqawwam*, it cannot be classified as *mal*, as inherently it does not have usufruct to be benefited by contracting parties. Its value can only materialize when it is cashed in using fiat money that backs it up.

Is Cryptocurrency a Currency?

In the literature of classic jurisprudence, what the modern society calls now as money was at that time termed as *nuqud* or *'umlah*. While *nuqud* refers to money being widely accepted by a large society, the specific meaning of *'umlah* is a type of currency that is only valid in a certain jurisdiction and may not be widely accepted.[1]

The principles of monetary economics theory on money suggest that anything to be considered as money or currency should fulfill the following primary functions: (1) unit of account, medium of exchange, and store of value. While at the outset, different types of cryptocurrency, such as Bitcoin and Ethereum, may fulfill these functions; such currency lacks of the fourth fundamental customary condition, namely being a legal tender issued by government or financial authority such as a central bank. This fourth condition coincidentally is also put forward by Muhammad Rawas Qal'ah Ji in his "*al Mu'amalat al-Maliyah al Mu'ashirah fi Dhau' al Fiqh wa al-Shar'iyyah*".[2]

Interestingly, traditional jurists state that for anything to qualify as money or currency, it must have a *thamaniyyah* component that covers dual functions, namely an independent standard of value and unit of account. On this note, some argue that the current phenomenon of cryptocurrency demonstrates that it does not serve as an independent measure of value. Rather, it is the value of fiat currencies that is being used to determine the value of any form of cryptocurrency. Hence, cryptocurrency does not fulfill a *thamaniyyah* condition that requires a currency to have an independent reference of value.

[1] See a detailed discussion on this distinction by Hasan Mahmud al Shafii in "*al umlah wa Tarikhuha*" on page 197.

[2] See on page 23.

Is It an Asset?

An asset may be divided into fungible (*mithliyyat*) and non-fungibles (*qimiyyat*), and into movables and immovable. Asset is owned as either *'ayn* or *dayn*. *'Ayn* is a specific existing thing, considered as a unique object and not merely as a member of a certain category. *Dayn* is any property, not an *'ayn*, that a debtor owes, either now or in the future, or it can refer to such property only when due in the future. Some would argue that *mithliyyat* product possesses a certain degree of *thamaniyyah* component due to its nature in potentially creating debt (*dayn*') when being transacted on a deferred method. This is a unique feature that *qimiyyat* product does not possess. Consequently, a subtle characterization of *mithliyyat* comes along, i.e., it cannot be leased-out since the nature of its material is perishable or consumable.

Having described what constitutes an asset, one would immediately notice that a profound feature of an asset is that it should possess an intrinsic value from which people can directly benefit. And cryptocurrency in any of its forms fails to fulfill this condition.

Can It Be Considered as a Security?

While no court or government agency has yet opined on whether cryptocurrency is a security, based on an analysis of case law applying the definition of "security" under the Securities Act in the USA, it appears that cryptocurrency is not a security. Let us take an example of Bitcoin; Bitcoin does not fall within the definition of any common type of security. In addition, Bitcoin does not appear to fall within the broad definition of "investment contract." A sale of Bitcoin is not an investment contract because a purchase of Bitcoin is not an investment in a common enterprise and purchasers should not expect to receive profits from their purchase based on the efforts of the seller. In a nutshell, a cryptocurrency transaction does not reflect an ownership right that can be enforced, over which future economic benefits may flow to the owner. From *fiqh muamalah* point of view, a technical detailed analysis in what constitutes financial securities, commercial paper and investment contracts, provided in AAOIFI Shari'ah Standards Nos. 16 and 17.

Money from the Theory of Economics

The function of money as a medium of exchange is closely related to that of a standard of value. It is most likely that, as barter transactions grew more complicated, people formed the habit of assessing prices in terms of a standard article, and this standard also came to enjoy preferential treatment as a medium of exchange. Nowadays, there are some Muslim organizations which strongly recommend the implementation of gold standard. It seems that those organizations attempt to set up a coinization of gold money, rather than monetarization of gold money, which means using commodity money as implemented in the period of the Holy *Prophet Muhammad (saw)* and his companions (r). Monetarization of gold money, by which most of contemporary economists are now associated with, is defined as using gold standard in order to maintain equality between the value of the domestic monetary unit and a specified amount of gold.

This sort of money is defined as a medium of exchange which has a commodity value as distinct from the value which it has acquired by being generally acceptable in exchange for good and services. Its commodity value is that which it would have if it were not used as money. From the earliest time, gold and silver have served their major roles as a medium of exchange throughout the world. Dinar (gold money) is categorized as full bodied money, as well as dirham (silver money). On the other hand, some variants of gold standards which were used by UK and USA during 1879–1914 and 1925–1931 can be classified as a representative commodity money, instead of full bodied money, as gold coins and silver coins were not in circulation for transaction. From this explanation, we may differentiate between coinization and monetarization of gold; while coinization of gold standard refers to the use of full bodied money, monetarization of gold standard is attributed to the implementation of representative commodity money.

Fiduciary Money

Token Money

In the early development of bank, the goldsmith (officer in money changer) and bankers found it profitable to borrow commodity currency and to issue receipts which began to circulate as a means of payment and it was a profitable occupation (Zineldin 1990: 101). The goldsmiths began to pay interest for deposits of gold and silver coins, since it was profitable, either to melt down the coin or to sell it as bullion when its purchasing power as coin fell as well as to export it when its external value exceeded domestic value. The more the receipts of the goldsmiths circulated among their depositors, the more they were able to lend out part of the gold or silver which was deposited with them. This is the first example in English monetary history of token money resulting from the activities of financial institutions. The receipts for deposits, or bank notes, later were called tokens, as these were just simply papers, without having intrinsic value.

Fiat Money

The continued expansion of commerce and the scale of business soon made people think another type of money which is more efficient for large transactions. The idea of fiat money was actually coming up to overcome some difficulties in using full bodied money, such as liquidity in transaction, particularly when it comes to a huge amount of transactions. Even though it is harder to control the growth of money, as it easy to print/mint this type of money without bearing a high cost of production, however it will harm the economy when the growth of money is not absorbed by the equal amount of transaction in the real sector. Example of fiat money is the currency which is now widely used throughout the world.

Bank Money (Deposit Money)

Basically, bank money is not actually money. However, some economists call it quasi-money (near money), as it can be used for transaction. In the monetary theory, we may find bank money (deposit money) in the classification of base money (currency) as M0, Demand Deposit (M1), Time Deposit (M2). In this example, M1 and M2 can be classified as bank money.

Better the Devil You Know Than the Devil You Don't Know

Once the cryptocurrencies are accepted by governments for settlement of trade transactions and tax payment, they could be classified as money. However, this alone would not make them Shari'ah compliant. Neither present fiat currency should be deemed Shari'ah compliant. The issue of cryptocurrencies should be evaluated based on its money creation process. In this regard, some would argue that it is worse than fiat currency which is created through monetization of interest-based debt securities. However, unlike cryptocurrencies, both interest-based debt securities and legal dispute concerning settlement of monetary transactions are regulated based on legal tradition evolved throughout the centuries.

The prime example of this is Bitcoin. When we own Bitcoin, we do not own any claims on anything that belongs in the non-digital world. There is no collateral behind each Bitcoin, we cannot redeem them for an underlying asset, and it does not give us any right to claim anything against it. Yes, we may be able to use Bitcoin to purchase a cup of coffee, but the merchant accepts your Bitcoins at their own discretion since they have no legal obligation to take our Bitcoin and give us coffee. Bitcoin, therefore, is a soft token as it is confined to its own chain and has no rights outside the blockchain. Saying that, it is important to emphasize role of regulatory bodies in monetary transactions. Traditional settlement mechanism of banking sector by debit and credit entry is much more robust, with central bank surveillance, than blockchain. With the way current cryptocurrencies is structured right now coupled with the exuberance in investing in them, this novelty would worsen the debt creation culture and casino business of Wall Street that has already taken global economy hostage.

Conclusion

As the digital economy era is increasingly embraced by larger societies, what if cryptocurrencies are also gaining its momentum and eventually are accepted to become means of payment? Could we in the future consider cryptocurrencies as a currency; the answer is: It is possible of course. Nonetheless, its trading should be guided by the rules of *Sarf*. What about trading in cryptocurrencies with a main objective of solely taking advantage of their price differences? It is clearly tantamount to speculation, hence gambling.

So, what is the essence of a cryptocurrency? In our view, cryptocurrency is nothing but a token; it is created through a process called tokenization. So, essentially cryptocurrency is none other than a platform. Tokens have no representation of an asset, either physical or intangible, and are by definition confined to the chain in which they exist.

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