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MADEENATHUL ULOOM ARABIC COLLEGE & RESEARCH CENTRE

PULIKKAL- 673637, Malappuram Dt, Kerala, India Ph: 0091 483 2791048

E-mail: muacollege@gmail.com, Web: www.muacollege.ac.in

Website: www.jetir.org

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ISLAMIC IMPLICATIONS OF CRYPTO CURRENCY AND BITCOIN: AN INTERPRETATION OF BLOCKCHAIN TECHNOLOGY

Muhmmed Jamsheer.P[1] **Muhsina PV**[2]

Abstract

This paper examines the operation of crypto currency and bitcoin in perception of Islam. The aim of the study is to assessdigital currency framework whether it is meet the Islamic finance rule (sharia complaint). The world is going digital. Everything is changing at rapid speed, and so must our way of payments. Crypto currencies' acceptance has poured during the last few years.Bitcoin is a world-shattering invention of the last decade. Its essential meaning is money digitization. It became the first decentralized peer-to-peer payment network for using without any central authority or middlemen.A transaction typically references previous transaction outputs as new transaction inputs and dedicates all input Bitcoin values to new outputs. This crypto currency has no physical form and exists only in the network. Bitcoin also has no intrinsic value in that it is not redeemable for another commodity, namely gold. Then, this study evaluates the framework according to Islamic Finance rule.

Keywords: *Crypto currency, Bitcoin, Transaction framework, Islamic finance, Blockchaintechnology.*

Introduction

"Bitcoin is exciting because it shows how cheap it can be. Bitcoin is better than currency in that you don't have to be physically in the same place and, of course, for large transactions, currency can get pretty inconvenient."

Bill Gates

Founder, Microsoft

Islam as a complete system provides guidelines for human behaviour throughout life. It does that through a set of principles. These beliefs consolidate the relationship between the individual and Allah, the individual and other human beings, as well as the individual and the environment. The evolution of the Islamic finance industry was astonishing in last few decades. Islamic finance is a financial system that operates according to sharia. Just like conventional financial systems, Islamic finance features banks, capital markets, fund managers, investment firms and insurance companies.

However, these entities are directed by both Islamic laws and by the finance industry rules and regulations that apply to their conventional counterparts. The success of Islamic finance is linked to growing population of Muslims who readily deposit their funds with sharia-complaints, both local and international. Islamic finance today has its own distinct infrastructure spanning bankers, lawyers, regulators and scholars. The last decade has witnessed many events and developments in the financial world such as the global financial crisis, the economic reforms in China, the slump in oil prices and the global drift towards a cashless economy.

Bitcoin is being touted as the alternative to fiat currencies and the manifestation of Keynes' idea of an international currency not belonging to any single nation. However, the nature of Bitcoin is obscure due to an absence of legislation and regulatory framework. The Securities and Exchange Commission in New York has warned market participants regarding the digital assets that they are subject to the requirements of the federal securities law. The Bank of England maintains that digital currencies remain very different from standard currencies such as sterling and the dollar because they "act as money only to a limited extent and only for relatively few people". The Financial Conduct Authority plan to report findings on the impact of digital currencies later this year. The crux of the problem is that authorities are considering that digital currencies are behaving more like an investment than a simple payment method. However, bitcoin is becoming a more acceptable and popular form of payment: consumers can buy Dell computers with Bitcoin in the US as well as gift cards. Theatre tickets can be bought with Bitcoin in the London West End shows. Peach Aviation, a low-cost Japanese airline allows payment in Bitcoin. Furthermore, Bitcoins are being directly bought and sold on websites like eBay (Inman, 2017).

Literature Review

There are very limited studies, which are directly relevant to the present study. They have been taken from journals, Articles, online and published research work. The reviews of some the important studies are described below.

1. **Assistant Professor, Department of Economics with Islamic Finance, M.U.A college, Pulikkal, Malappuram, Kerala**
2. **Assistant Professor, Department of Arabic,M.U.A College, Pulikkal, Kerala.**

Crypto currency is defined as a digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank. A crypto currency is a digital asset designed to work as a medium of exchange using cryptography to secure the transactions and to control the creation of additional units of the currency. A crypto currency is a virtual currency that uses cryptography for security. A crypto-currency is difficult to counterfeit because of this security feature. A defining feature of a crypto currency, and arguably its most endearing allure, is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation (Bohme, et al., 2015).

It is argued as well that the current monetary policies are based on conventional monetary theory that have several flaws because it includes secular reasoning where the other Islamic analysis model is based on Shari'ah and not man's reasoning alone (Abdullah, 2016). Hence, it is important to look for alternatives that serve the Islamic functions of money better than the fiat money such as what is known as alternative currencies. Alternative currencies can be found in several regions and with unique features depending on the environment and purpose it serves. The highlight of these currencies can be seen as digital currencies. it is claimed that bitcoin (and blockchain based currencies) promise capacity to solve many concerns such regulatory institutions influence and interpersonal trust (Maurer, Nelms & Swartz, 2013).

The security of crypto currency ledgers is based on the assumption that the majority of miners are honestly trying to maintain the ledger, having financial incentive to do so. Most crypto currencies are designed to gradually decrease production of currency, placing an ultimate cap on the total amount of currency that will ever be in circulation, mimicking precious metals (Barber, et al., 2012).

The underlying concept of digital currencies known as block chain can be described as follows "block chain consists of three main, complementary parts: a shared state, a set of rules for updating state via blocks and a trust model for time stamping." (Williamson, 2015). From what is tracked, block chain is a type of mutual distributed ledgers and its function allows user to track, record and verify all the transactions in network to ensure its validity and security. It is hence a decentralized database. In the case of block chainof Bitcoin, it is a cryptographic ledger shared among all the users on the network to verify transactions and add them to a block of other chained transactions to ensure the integrity of transac - tions and avoiding issues such as double spending (Mainelli & Smith, 2015).

Cryptocurrency & Bitcoin

Bitcoin is a digital currency with no central issuing authority or physical form. Morespecifically, Bitcoin is a crypto currency that uses cryptography techniques to guideencryption protocols which identify ownership and verify transactions details. Digital cash and payment through electronic money has gained popularity after the computer system is adopted by mainstream banking industry. However, this system relies on payment network, the infrastructure required to manage payments and avoid multiple spending using the same funds has always been costly and managed through a centralized banking network. A central server, therefore, ensures that funds are spent only once. In this system, the people have to transact based on regulated and controlled precepts that may be used to manipulate the value of currencies and the wealth of individuals.

Working of Bitcoin

From a user perspective, bitcoin is nothing more than a mobile app or computer Program that provides a personal bitcoin wallet and allows a user to send and receive bitcoins with them.

The Bitcoin network keeps a public ledger called the "block chain". This ledger holds each transaction ever processed, letting a user's computer to authenticate the validity of each transaction.The authenticity of each transaction is protected by digital signatures conformingto the sending addresses, allowing all users to have full control over sending Bitcoins from their own Bitcoin wallets

In addition, anyone can process transactions using the computing power of specialized hardware and earn a reward in bitcoins for this service. This is often called "mining". The mining process is intended in the following way: Every ten minutes, the system provides a new amount of bitcoin units. In order to attain them, network supporters, i.e. miners, compete to solve mathematical problems with a random component. These problems are tough to solve, but the exactness of the solution is easy to verify. In each of these contests, the competitors coming up with the first correct solution receive the newly issued amount of bitcoin units. They broadcast their solutions to the whole network, where they are automatically verified by other members. The software provides for a fixed amount of currency units (about BTC 21 million).

Bitcoins are stored in unknown addresses in the form of strings comprising numbers and letters, provided with two corresponding keys, one public and one private. The public key can be compared to the account number of a bank account, and the private key to the PIN to access such account. For example, If John wants to send a payment to Yoosuf, John needs Yoosuf's public key and encrypts a certain sum of bitcoins with Yoosuf's public key and John's private key, so that only Yoosuf can decrypt the payment and make use of the sum. To transfer the payment and, at the same time, to guarantee that John has not spent the same electronic string of numbers on another occasion (double spending), the transaction partners rely on the network. It performs the functions that payment intermediaries fulfill in conventional payment processes.

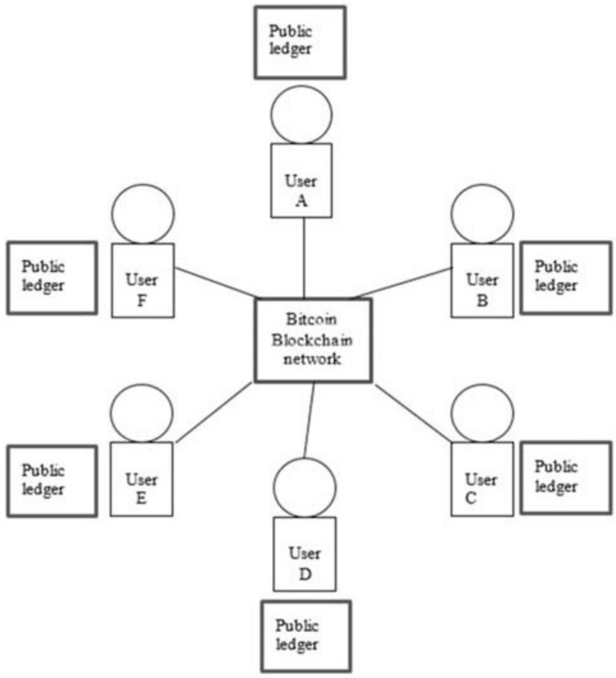
Anyone can send Bitcoins to any address, but only the person with the private key can spend the Bitcoins inside that wallet. While Bitcoin addresses are public, it's not automatically possible to know which address belongs to which person; in this way, Bitcoin addresses are pseudonymous.

Blockchain

The basis of the Bitcoin platform is a technology called blockchain. The blockchainturned out to be the golden goose of the Bitcoin platform. Blockchain is a newinnovative technology that will change how financial institutions transact business inthe financial services system.

A ledger is the principal book or computer file for recording and totaling economic transactions measured in terms of a monetary unit of account-by-account type, with debits and credits in separate columns and a beginning monetary balance and ending monetary balance for each account (Ron and Shamir, 2013). A blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way (Reid and Harrigan, 2013).

All Bitcoin transactions that have ever been executed are stored in a public ledger called blockchain. The size of the blockchain is constantly growing as 'completed' blocks are added to it with a new set of recordings. The blocks are added to the blockchain in a linear, chronological order. Each user who is connected to the Bitcoin network and performs the task of validating and relaying transactions gets the copy of the blockchain. It has complete information about the address and their balances right from the genesis block to the most recent completed block. Since it stands as proof of all the transactions on the network it is seen as a main technological innovation of Bitcoin.



The above Figure shows the distributed open ledger networks as a peer-to-peer crypto currency platform. This platform acting as the host, essential and tool for constant innovation, designed for high-speed transactions, allowing users to trade assets in near-real time, securely and with ultra-low fees. Operation procedure of Bitcoin is the block chain it uses to store an online ledger of all the transactions that conducted using bitcoins, providing a data structure for this ledger that is exposed to a limited threat from hackers and can be copied across all computers running Bitcoin software.

Islamic implications

The issue of bitcoin Is a recent one, which means that it is not found and old discussed by scholars in the past and unfortunately with such new events evolving some of them are to some crystal clear and some to others may require the collaboration of scholars, Economists and peoples involved in such issues to deliberate and come up with conclusions. Basically, Bitcoin is something that, recent new, and there are a lot of serious concerns when it comes to dealing with it. Whether it is from the origin where it came from, whether from the aspect of sustainability of Security. It is known that it was founded in 2008, by someone that is unknown. They say that his name is Sathoshi Nakamoto.

الاصلفيالمعاملاتالاباحة Bitcoin is permissible in Islam because there is a famous legal maxim explained by jurists. This means that original rule is permissibility in financial and business transactions.in other words, everything is permissible unless we found it clearly contradictory to sharia principles.

According to this principle, cryptocurrency is permissible principally. Likewise,anything can be considered as money if it has these attributes:

1. treated as valuable thing among the people,
2. Accepted as medium of exchange by all or substantial group of people,
3. It is a measure of value,
4. It serves as unit of accounts

Therefore, any crypto currency which fulfills these conditions (such as Bitcoin) is acceptable as money. The fatwa center of South African Islamic seminary, Darul Uloom Zakariyya, has taken the position that Bitcoin fulfills the conditions of mal and therefore it is permissible for trade. However, they note that to be qualified as currency, it should be approved by relevant government authorities.

Conclusion

Bitcoin is a new currency that was founded in 2009 by an unknown person using the alias Satoshi Nakamoto. Transactions are made with no middlemen – meaning, no banks! There are no transaction cost and no need to give your real name. It is a revolutionary invention of the last decade. Its fundamental meaning is money digitization. It became the first decentralized peer-to-peer payment network for using without any central authority or middlemen. In a nutshell, bitcoin is the money for Internet. Its original purpose is providing all people with universal currency for different operations. Bitcoin can also be described as the most prominent triple entry bookkeeping system in existence.

Bitcoins can be used to buy merchandise anonymously. In addition, international payments are easy and cheap because bitcoins are not tied to any country or subject to regulation. Small businesses may like them because there are no credit card fees. Some people just buy bitcoins as an investment, hoping that they'll go up in value.

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