



---

## Role Of Islamic Finance In The Face Of The Digital Currency Revolution

**Amal Essam AbdulKareem<sup>1</sup>, Hasnaa Attia Hamed Mohamed<sup>2</sup>, Karima Hassan Mohamed Soliman<sup>3</sup>, Mona Aboul Atta Halim<sup>4</sup>, Walaa Magdy Esmeil Rezk<sup>5</sup>, Chayma Mostapha Kraiem<sup>6</sup>**

<sup>1,6</sup>College of Applied Studies and Community Service 'Imam Abdulrahman bin Faisal University, Dammam - Saudi Arabia, Department of General Courses

<sup>2,3</sup>College of Applied Studies and Community Service 'Imam Abdulrahman bin Faisal University, Dammam - Saudi Arabia, Department of Accounting

<sup>4,5</sup> College of Applied 'Imam Abdulrahman Bin Faisal University, Dammam- Saudi Arabia, Department of Financial Sciences

---

**Abstract:** For the past few years, there has been a significant increase in people's interest in digital currencies. Councils and conferences have been organized to bat the nature and feasibility of digital currencies. Some argue that it's good to have the liberty to the current directive deep pocket system in which the predominant part is played by banks while the digital currency doesn't necessitate any bank account, imposition payment and auditing. Some others dissent with these arguments and claim that any mode of payment other than traditionally known instruments parallel as cash payment, TT, cheques etc. will open the door to avoid impost and auditing, which in turn will make serious trouble to government budget and the overall falloff in GDP. This probation uses theoretical, descriptive, and sound systems of probation and so focuses on defining the place of digital currency in the fiscal system by determining the extent of its influence, reviewing the literature on the motif, comparing the characteristics of paper have and crypto currencies (using the bitcoins as a prototype), Unveiling the Shariah Perspective of Digital currency and the reality of digital currency trading in Islamic countries.

**Keywords:** Digital Currency, Digital Finance, Sharia's View, Bitcoin, Islamic Banking, Finance and Blockchain Management Systems.

### Introduction

With the emergence of Bitcoin compromising the traditional currencies, the world saw governments replying to it in multi forms. Some like Dubai legalized it and utilized its emerging technology, 'the Blockchain' to establish plans for a smart megacity through some even familiarized their own digital currencies like Venezuela. For Muslims, another problem of the "Halal or Haram" perspective is available which must be managed for progress in the Muslim world. In many cases, multiplex experimenters have considered

Bitcoin as Haram on the accounts of vagueness and intolerable menace included, others have expressed it as Halal publicizing it be even cleaner than the debt- rested ruling currencies we use in present (Li et al., 2019; Böhme et al., 2015).

It should be noted that ‘Bitcoin’ usually means the system, while ‘bitcoin’ or BTC generally means currency unit. Bitcoin encompasses an electronic, virtual currency with no physical depiction including banknotes or coins (Bank, 2012; He et al., 2016; Shoshan et al., 2021). The ecosystem of bitcoin encompasses a network comprising users in communication with each other with the usage of the bitcoin protocol through the internet as shown in Figure 1. This protocol is accessible as an open-source software application, and it enables users to keep and hand over bitcoins to buy and sell goods, or to swap bitcoins for other currencies. Bitcoins are produced within the network during the handling of transactions in a bitcoin mining process.

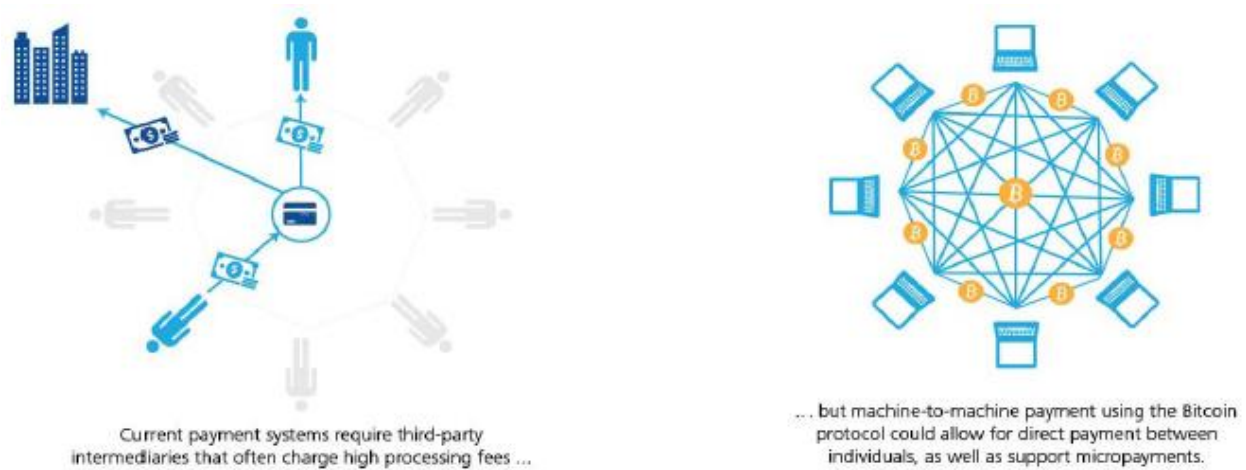


Figure 1: How bitcoins work (Shoshan et al., 2021).

Anyone connected to the internet can produce bitcoins using free software available for all operating platforms, as the production of this digital currency requires a certain amount of work to produce a certain amount of money, and this amount is modified by the main network site, so that it is not over-produced and without prediction.

Bitcoin is also traded through a decentralized network consisting of a large group of nodes and direct links, these nodes represent the group of users participating in the Bitcoin network, as in Figure (2).



Figure 2: Bitcoin is a decentralized network made up of a number of nodes(Shoshan et al., 2021).

Bitcoin can only buy goods and services from the Internet (by people or sites that accept it and deal with it), and it can also be converted into traditional currencies by specialized sites or by people who want to get it and exchange it for traditional currencies(Grinberg, 2012; Socol, 2020).

Notwithstanding, moving beyond Bitcoin, no significant literature is available to guide Muslim investors in terms of the other digital currencies and reminders that subsist like Ethereum, Litecoin, and Golem. Bitcoin or virtual currencies aren't physical plutocrats which aren't controlled by banks, where the virtual currencies depend on the focal break and the quashing of the purpose of banks as an interposer between the vendor and the purchaser (Bakar & Rosbi, 2018; Dyhrberg, 2016). A virtual currency is a digital representation of value that can be digitally switched and works as an instrumentality of trade, a unit of account as well as a store of value, notwithstanding doesn't have legal tender status in any regimen. It isn't issued or insured by any parliament and satisfies these capacities just by understanding inside the network of junkies of the currency. It's particular from ruling currency or "real currency", which is the physical plutocrat that makes up a country's legal tender and particular from e plutocrat, which is a digital representation of ruling currency. Virtual currencies are managed by their junkies as per the guideline of distribution (Campbell-Verduyn, 2018; Urquhart, 2016). Virtual currencies are portrayed by security, usability, what is further, the people who produce and switch them help humanity what is further since they're creating their own currency (Kaur, 2019; Yermack, 2017; Mettler, 2016). The most renowned pecuniary currencies are Bitcoin, which comprises a digital address related to an electronic holdall. The holdall is an electronic play when an individual necessity to convert the specific value from a Bit of coin to someone else; he utilizes the alleged digital hand. This hand contains three paraphernalia, the first is conversion letter when the Bitcoin is converted to another envelope and the transfigurations go to the Bitcoin network and enter the declaration

procedure and are saved in the Chain blocks which are called Blockchain (Cong & He, 2019; Gandal et al., 2018).

It's known in dollars-and-cents aspects that there must be three conditions to be known as a currency; the chief condition is to be a broker adequate for exchange with the aim that the broker acknowledges it for their products. after the condition is to be a measure by which the value of the commodity can be resolved. The third condition is to be an inventory of wealth (Ahmed, 2018; Corbet, 2018; Fry & Cheah, 2016). Either bitcoin and approximate digital forms of deep pocket fulfil the deep pocket related employments of deep pocket- going about as mode of exchange, unit of record, and store of noteworthy worth-and gain status as Islamic cash by being "standard cash". Shariah notices standard cash as being whatever increases deep pocket related status through wide avowal in the open eye or by government order (Meera, 2018; Corbet et al., 2019). In Germany, digital currency is supposed as legal cash and as correspondent qualifies as bitcoin Islam cash in Germany. In countries, for exemplification, the US, Bitcoin needs authorized legal fiscal status yet is feted for the portion at a variety of merchandisers, and accordingly qualifies as bitcoin Islam standard cash. A portion of the purposes behind the rise of price are enterprises in this currency (Pike, 2018; Luther, 2016). Multiplex nations have begun to embrace it in the authorized spin, expanding new services areas by embracing them as airlines, notwithstanding electronic shops what is else, deep pocket changers that exchange currency, for illustration, bones to Bitcoin and can buy some of them from websites. Most governments on the globe haven't yet embraced the Bitcoin currenciesforms as a currency of exchange, yet not really multifold countries, for illustration, Germany and Japan have routinely permitted Bitcoin to be switched and affirmed as a tack of payment. These countries have interests in permitting the currency to switch and surmise, in the guideline of switching and controlling the movement of this currency (Muedini, 2018; Haddad &Hornuf, 2019; Pieters &Vivanco, 2017). Further, Bitcoin has turned into an eatery, lodges, andshops around the world.

### **The Main Characteristics of Digital Currencies**

The following are the main characteristics of digital currencies (using bitcoin as an example):

- Decentralized exodus.
- Absence of the control.
- The primary distribution of bitcoins among dopeheads is carried out grounded on competition whose criterion is a successful answer for sophisticated close equations/ conundrums.
- They aren't backed by any asset.
- The maximum measure of exodus is limited (21million), the terms and volumes of the current exodus are known to all actors of the system.
- It's insoluble to recover lost or stolen bankroll.
- It has a high degree of the facelessness of the dopeheads.
- They operate with full and transparent information for all dopeheads.
- They've like high deal speed.

- There's no forced commission for Moneytransfer.
- Their deals presently are academic in nature in last cases.
- They're incapable to bar the social hierarchy.

### **The Risks and Drawbacks of Digital Currencies**

This currency has threats and minuses, including the accompanying The price of Bitcoin is dependent upon oscillation because of reasons, for representative, attacks, serious antivenoms and the this of large stores that vend in Bitcoin (Hrnjic& Tomczak, 2020; Peters et al., 2015; Beck et al., 2018). Likewise, in light of the fact that Bitcoin is customizing with refined algorithms, which influences the programming with the impacts we cited, which can't be dealt with by people who complain to any party in light of the fact that there's no particular substance liable for protests and claims in this currency. This currency is managed by a network of junkies and programmers around the world who have made a network for them and are working in this currency. Despite the fact that Bitcoin is an open network that any programmers can propose or bring or change on the program that the dealers work for and the products they have, and this should be pains and professional (Rehman, 2020; Gandal&Halaburda, 2016). Most importantly, the Islamic unmistakably known as Shariah relies upon the Quran and denies certain exercises, for illustration, the claim of specific distinction which is perceived as usury (Reba).

The International Monetary Fund's officeholder board holding the first since everlastingly exchange on Islamic Banking. Regardless of the way that distinction, adventure, and proposition in Bitcoin and digital Money have continued taking off overhead, there remains to create complication among Muslims concerning whether Bitcoin and cryptographic types of Money fit in with Shariah law (DePietro, 2018; Gandal&Halaburda, 2016; Makarov &Schoar, 2020).

Shariah law is an arrangement of principles sought after by Muslims according to Quran and the Prophet Muhammad, and Islamic foundations stick to Shariah law-clear grasp of digital Money and blockchain continue creating in criticalness as specialists forcibly perceive that blockchain will change similarly the web changed media and dispersing (Singhal &Rafiuddin, 2014; Walch, 2015; Lines, 2016). Either it's meat-and-potatoes to comprehend the essential distinctness between a digital currency and a remembrance so as to know what bone is investing in. Digital currencies are coins that are explicitly made to be harnessed as digital currencies, as a medium of exchange (Schilling & Uhlig, 2019; Hockett &Omarova, 2016). Actually, remembrances serve as a gathering fundraising tool applied by alpha-ups associated with the digital sphere instead of conventional finance raising ways, for specimen, throw capital. Souvenirs are discharged to the public through a Virgin Coin Offering (ICO) likewise as shares are given by a Public Limited Company (PLC) through a Virgin Public Offering (IPO).

The ultimate is precisely controlled while ICOs have been abused to pull off hustles anteriorly. In nastiness of the fact that this is changing with nations, for representative, America placing regulations on how these are directed, the fraud can without monumental of a stretch be maintained a strategic distance from by due invariability, therefore it does not conflict with Islam's morals. The value of a token relies upon how the council who issued it, in any case, is holding requests and performing. This can be viewed as having a

share in a council, notwithstanding, with less right, for instance, no value, no state in the inception-up's choices and no state toward the path the genesis-up takes. This further complies with the Islamic principles of an investor knowing regarding what they're buying with no trickiness included. So, cryptocurrencies are digital currencies while a keepsake is an asset much like a share (MacDonald et al., 2016; Dierksmeier&Seele, 2018). Above all, digital currencies and souvenirs in themselves are Halal and others dig into sequestering the Shariah-tractable and non-Shariah tractable types. Everything being equal, it's preposterous to anticipate to assess each and every digital currency or memorial notwithstanding by assaying the protocols that oversee every currency, the intended use exemplifications of each currency and seeing whether the digital currency or memorial being bored to cataract into certain areas, for illustration, Riba, this paper dives into the angles that would make a cryptocurrency or token haram alongside its accessories, for sample, volitions and futures contracts.

### **Digital Currencies from an Islamic Perspective**

It can be stated presently that while academicians dispute whether digital currency is a secure currency or not, Muslim scholars view it from a different perspective, i.e. the extent to which digital currencies compose with Shari'ah principles. Multicolored opinions of noted experts of Islamic finance, both proponents and opponents of digital currencies, are available on the internet. The ensuing experts express their support for digital currencies and that they believe in compliance of digital currency with the Shari'ah law.

Dr. Adnan Al-Zahrani, ex-chairman of the Shari'ah Supervisory Board of Al-Jazeera Bank says " Digital currency is one of the types of currencies/ deep pocket that arose as a result of the process of creating and developing deep pocket. In other words, at first, it was an ordinary exchange, either gold and silverware coins, and either paper deep pocket and virtual deep pocket, which are digital currencies. And this is normal". Dr MonzerKahf, an expert on Islamic economics and finance, Professor at the Qatar Faculty of Islamic Studies believes that bitcoin like any other currency is a deep pocket within its community and shifting it with other currencies is clearly subject to the same conditions of shifting currencies which are:

- 1) Exchange should be on the spot without credits and futures.
- 2) No crashshots on currencies, i.e. exchange must have a real cause to buy or to deal other than the idea of currency for currency.

Even though he accepts bitcoin as money due to his confidence in its minimal not until it's traded in the open market – like other currencies – the chances of manipulation are high. Mufti Abdul Qadir Barkatullah, a member of the Sharia Committee in Al-Ryan Bank, formerly the Islamic Bank of Great Britain says, " I'm convinced that digital currencies can be an effective tool for the additional development of Islamic finance". In addition, he recalls the rule among Muslim scholars that any commodity that's perceived by society as a means that can play the function of means of payment must be perceived as Money. On the other hand, there are experts who oppose digital currencies. For example, Sheikh Imran Hussain, one of the hot and famed Muslim scholars, believes that any currency that doesn't have essential value cannot be considered as valid Money. Therefore-in his opinion-only gold or flatware Money can meet the criteria of the Shari'ah. Professor Ahmed Kamel Midin

Meera, the former elder of the Institute of Islamic Banking and Finance at the International Islamic University of Malaysia, and the author of the book *Islamic Golden Dinar*, believes that in order for the digital currency to be accepted in the Islamic monetary industriousness, it must have a measure of value, which has to be a fiscal commodity. According to him there must be a standard weight on paper notes or electronic currencies to be accepted, and it has to be remediable with a standard weight like gold. Otherwise, it isn't fair and it's edict have.<sup>12</sup> Queries, in the format of Q&A about immorality of digital currencies from Shari'ah perspective can also be introduce online in the "question- answer" format at the following link <http://www.islamweb.net/>.<sup>13</sup> We reproduce below two material questions with their corresponding answers.

3) Question What's the Shari'ah's view on buying bitcoins? Answer despite the fact that there are a lot of unintended compartment around electronic deep pocket, correspondent as volatility and enterprise, we cannot unequivocally enjoin the use of this deep pocket, as the foregoing negative indexes in outside cases are before present in the demands.<sup>14</sup> - Question What's the opinion of the Shari'ah on the purchase and trade of electronic deep pockets (bitcoins) and also mining? Answer" Anyone who has acquired an electronic deep pocket in a legal way can use it, this is admissible. We before said in one of the foregoing fatwas that the digital or electronic currency is different from paper deep pocket or ordinary coins. Therefore, the purchase of these electronic Money is regarded as an ordinary currency exchange".<sup>15</sup> Notwithstanding, despite the consequence of fatwas and expert opinions, they cannot be considered as good as the scientific study

Currency in Islamic shari'ah ordinarily should be touchable, which implies one can view it as a plutocrat (Mal), it must be variable, and either it must be licit. Investigators of shari'ah have three suppositions the first opinion, Bitcoin isn't (Mal) and the venture has not complained of Islamic shari'ah on the grounds that it's simply academic. The same opinion, Bitcoin is not real Money yet it's digital means. The third opinion says the Bitcoin is currency. Bitcoin in Islamic shari'ah so as to be (mal) it must have two gear (i) desirableness and (ii) storability (Adam, 2017). All together for the Money to perform, the coexistent conditions must be met so as to be open acknowledgement, as opposed to the unique, to meet the debts and fiscal arrears. The most significant of these conditions are as following:

- That the Money admitted general acceptance
- Simplicity of the unit of Money and its concinnity
- Relative stability in value
- Indivisibility
- Easy to carry and feathery
- Their incapability to damage fast

Bitcoin like other currencies has many highlights or characters, it isn't palpable, it doesn't have an impulse rather than estimate, dependably doesn't related to anybody to issue it, it cannot save. So as to fund any game, you should know the prerequisite of Islamic finance. There are many prerequisites that every entity that manages Islamic banks or Islamic financial institutions should place into advisement which are as the following:

1. Prohibition of interest rate: Interest must be banned on obligation and ought not to be approached to pay, to admit or promise to pay.

2. Giving a wrong idea or stamp (misdirecting): "Specialists shouldn't misdirect their exchange abettors. Exchange abettors are capable of comprehending what they buy, additional exchange abettors must have the option to take their own calls in chance".
3. Real substance: Offering products and services should be through real or true existent, not a virtual existent.
4. Islamic law (Shari'ah) is barred and prohibits Gambling.
5. Imperative to give a sum of Money to a charity or destitute people as a donation.

There are some principles that consider Bitcoin (halal) while others consider it (haram). So far it has been demonstrated that there are few perspectives and highlights of Bitcoin that are allowed of (halal). According to all the information over the study presume that:

1. Trading in Bitcoin is free of interest rate (without riba) which is considered as Islamic finance (halal), yet it's not physical material as Money (mal) can address, accordingly it's not decent.
2. Islamic shari'ah does not agree to Bitcoin as a currency employed in deals, dollars-and-cents transfer, trade, or business in light of the fact that Bitcoin is a fake currency not real so it's (haram).
3. Most of the countries with the exception of Germany and Japan declined applying Bitcoin as a currency since it's not authorized by any formal association on the world, perhaps in the future under central banks responsibility and will be allowed (halal) to use in Islamic banks.
4. It's opened the lobby for Money laundering or terrorist to transfer, change Money without knowing whom the holder of it.
5. Its control of the (ghurar) the craving of the dealer to make a quick profit, which gives the impress or addition the status of gambling, and that impress is banned (haram) in Islamic shari'ah.
6. Also, it's Not allowed (halal) in view of no security or Guarantee, its unknown currency, and it has high vitality and hazards.
7. It doesn't have commanded the alphabet of Money (mal).

## **Conclusion**

The reality of digital currency trading in Islamic countries can be summarized as; Bahrain, UAE and Sudan are the countries that allow digital currency to be traded legally and these countries; Egypt, Saudi Arabia, Jordan, Syrian Arab Republic, Oman and Palestine are the countries that have legally prohibited digital currencies but not legal treatment and these countries allow the trading of digital currencies legally, but Sharia prohibits the circulation of these currencies (and suspended the prohibition until further study, which may indicate the possibility of its approval later and that the circumvention is not conclusive). Qatar, Algeria, Morocco, Kuwait and Libya are the countries that legally prohibit the circulation of digital currencies and these countries legally prohibit the trading of digital currencies. Finally, Somalia, Mauritania, Djibouti, Comoros and Tunisia are the countries that have not yet decided on digital currency trading and these countries are neutral and have not yet



taken a decision regarding the trading of digital currencies legally or illegally, and the matter is still under study, yet currencies are traded in them.

## References

Adam, M.F. (2017). Bitcoin: Shariah compliant. Amanah Finance Consultancy 2017: 1-54.

Adhami, S., Giudici, G. & Martinazzi, S. (2018). Why do businesses go crypto? An empirical analysis of initial coin offerings. *Journal of Economics and Business*, 100: 64-75.

Bakar, N.A. & Rosbi, S. (2018). Robust framework diagnostics of blockchain for bitcoin transaction system: A technical analysis from Islamic Financial Technology (i-FinTech) perspective. *International Journal of Business and Management*, 2(3): 22-29.

Bank, E. C. (2012). Virtual currency schemes. *Virtual currency schemes*, 1-55.

Beck, R., Müller-Bloch, C. & King, J.L. (2018). Governance in the blockchain economy: A framework and research agenda. *Journal of the Association for Information Systems*, 19(10): 1.

Böhme, R., Christin, N., Edelman, B. & Moore, T. (2015). Bitcoin: Economics, technology, and governance. *Journal of Economic Perspectives* 29(2): 213-238.

Campbell-Verduyn., M. (2018). Bitcoin, crypto-coins and global anti-money laundering governance. *Crime, Law and Social Change*, 69(2): 283-305.

Cong, L.W. & He, Z. (2019). Blockchain disruption and smart contracts. *The Review of Financial Studies*, 32(5): 1754-1797.

Corbet, S., Lucey, B. & Yarovaya, L. (2018). Datestamping the Bitcoin and Ethereum bubbles. *Finance Research Letters*, 26: 81-88.

Corbet, S., Lucey, B., Urquhart, A. & Yarovaya, L. (2019). Cryptocurrencies as a financial asset: A systematic analysis. *International Review of Financial Analysis*, 62: 182-199.

DePietro, A. (2018). 'Blockchain And Islamic Banking Are Working Together, And Everyone Stands to Benefit', *Forbe*. Accessed on: May 22, 2020. Available online at: <https://www.forbes.com/sites/andrewdepietro/2018/07/11/blockchain-islamic-bankingbenefits/#3c935923af2b>

Dierksmeier, C. & Seele, P. (2018). Cryptocurrencies and business ethics. *Journal of Business Ethics*, 152(1): 1-14.

Dyhrberg, A.H. (2016). Bitcoin, gold and the dollar-A GARCH volatility analysis. *Finance Research Letters*, 16: 85-92.

Fry, J. & Cheah, E.T. (2016). Negative bubbles and shocks in cryptocurrency markets. *International Review of Financial Analysis* 47: 343-352.

Gandal, N. &Halaburda, H. (2016). Can we predict the winner in a market with network effects? Competition in cryptocurrency market. *Games* 7(3): 16.

Gandal, N., Hamrick, J.T., Moore, T. &Oberman, T. (2018). Price manipulation in the Bitcoin ecosystem. *Journal of Monetary Economics*, 95: 86-96.

Grinberg, R. (2012). Bitcoin: An innovative alternative digital currency. *Hastings Sci. & Tech. LJ*, 4, 159.

Haddad, C. &Hornuf, L. (2019). The emergence of the global fintech market: Economic and technological determinants. *Small Business Economics*, 53(1): 81-105.

He, M. D., Habermeier, M. K. F., Leckow, M. R. B., Haksar, M. V., Almeida, M. Y., Kashima, M. M., Kyriakos-Saad, M. N., Oura, M. H., Sedik, T. S., & Stetsenko, N. (2016). Virtual currencies and beyond: initial considerations. International Monetary Fund.

Hockett, R.C. &Omarova, S.T. (2016). The finance franchises. *Cornell L. Rev.* 102: 1143.

Hrnjic, E. & Tomczak, N. (2020). 'Prospects of cryptocurrencies in Islamic finance'. The Jakarta Post. Accessed on: May 18, 2020. Available online at: <https://www.thejakartapost.com/academia/2020/02/24/prospects-of-cryptocurrencies-inislamic-finance.html>

Kaur, D. (2019). 'Could there be a halal cryptocurrency?'. The Malaysian Reserved. Accessed on: May 18, 2020. Available online at: <https://themalaysianreserve.com/2019/12/23/couldthere-be-a-halal-cryptocurrency/>

Li, Z.Z., Tao, R., Su, C.W. &Lobonç, O.R. (2019). Does bitcoin bubble burst? *Quality & Quantity*, 53(1): 91-105.

Illes, S. (2016). Beyond bitcoin enabling smart government using blockchain technology. *International Conference on Electronic Government*, pp: 253-264.

Luther, W.J. (2016). Cryptocurrencies, network effects and switching costs. *Contemporary Economic Policy*, 34(3): 553-571.

Makarov, I. and Schoar, A. (2020). Trading and arbitrage in cryptocurrency markets. *Journal of Financial Economics*, 135(2): 293-319.

Meera, A.K.M. (2018). Cryptocurrencies from islamic perspectives: The case of bitcoin. *BuletinEkonomiMoneter Dan Perbankan*, 20(4): 475-492.

Mettler, M. (2016). Blockchain technology in healthcare: The revolution starts here. 2016 IEEE 18th International Conference on E-Health Networking, Applications and Services (Healthcom), pp: 1-3.

Muedini, F. (2018). The compatibility of cryptocurrencies and Islamic finance. *European Journal of Islamic Finance*, (10).

- Peters, G., Panayi, E. & Chapelle, A. (2015). Trends in cryptocurrencies and blockchain technologies: A monetary theory and regulation perspective. *Journal of Financial Perspectives* 3(3).
- Pieters, G., & Vivanco, S. (2017). Financial regulations and price inconsistencies across Bitcoin markets. *Information Economics and Policy*, 39: 1-14.
- Pike, C. (2018). Islam and cryptocurrency, halal or not halal? Aljazeera. Accessed on: April 22, 2020. Available online at: <https://www.aljazeera.com/news/2018/04/islam-cryptocurrencyhalal-halal-180408145004684.html>
- Rabbit, G. (2017, March). A Cryptocurrency for the Islamic Financial Markets. Retrieved on 27/07/ 2017, <https://cryptoinsider.com/cryptocurrency-islamic-financial-markets/>
- Rehman, M.U., Asghar, N. & Kang, S.H. (2020). Do Islamic indices provide diversification to bitcoin? A time-varying copulas and value at risk application. *Pacific-Basin Finance Journal*, 101326.
- Schilling, L. & Uhlig, H. (2019). Some simple bitcoin economics. *Journal of Monetary Economics*, 106: 16-26.
- Shoshan, H., Metwally, A. B., & Rezk, E. K. (2021). Virtual Money: Concept, Types And Economic Effects. *Elementary Education Online*, 20(6).
- Singhal, A. & Rafiuddin, A. (2014). Role of bitcoin on economy. *Proceedings of the World Congress on Engineering and Computer Science* 2.
- Socol, A. (2020). CRYPTOCURRENCIES BETWEEN UTOPIA AND REALITY. *Annals of Constantin Brancusi' University of Targu-Jiu. Economy Series*, 20(5).
- Urquhart, A. (2016). The inefficiency of Bitcoin. *Economics Letters*, 148: 80-82.
- Walch, A. (2015). The bitcoin blockchain as financial market infrastructure: A consideration of operational risk. *NYUJ Legis& Pub Pol'y* 18: 837.
- Yermack, D. (2017). Corporate governance and blockchains. *Review of Finance*, 21(1): 7-31.