

# Comparative of the Supply Chain and Block Chains to Increase the Country Revenues via Virtual Tax Transactions and Replacing Future of Money

Rico Nur Ilham<sup>1</sup>, Erlina<sup>1</sup>, Khairah Amalia Fachrudin<sup>1</sup>, Amlys Syahputra Silalahi<sup>1</sup>, Jumadil Saputra<sup>2\*</sup>

<sup>1</sup>*Faculty of Economics and Business, Universitas Sumatera Utara, Indonesia.*

<sup>2</sup>*Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, Malaysia*

*\*Corresponding author: jumadil.saputra@umt.edu.my*

**Abstract**— As a consensus network, Bitcoin enables new payment systems and money that are entirely digital or can be interpreted as a virtual currency that uses open source user-to-peer network systems. It offers easier way of payment without the need for a bank account, credit card or intermediary. Bitcoin is cash stored in a computer that can be used to replace cash in an online sale transaction. Therefore, this study aims to investigate how to maximize the opportunities that allow Bitcoin in contributing for Indonesia tax revenue and also, the respond to the growing issues of virtual money transactions in the world. This study uses Literature study method based on some previous research and scientific journals that discuss about Bitcoin as a means of payment in sale and purchase transactions. The results of this study Bitcoin transaction tax still needs to be addressed is the absence of Legal Basis and legislation on legality of Bitcoin as a recognized payment instrument in Indonesia. This study can helps the Indonesian governments for creating a guidelines to adjust the regulation of virtual transactions, which have already been created and implemented in other countries and have a positive impact on the country's economy in addition to being one of the sources of increasing state tax revenues.

**Keywords**— Tax revenue, Bitcoin, supply chain, block chain, tax transaction, virtual payment instruments.

## 1. Introduction

The concept of forming Bitcoin is a cryptographic (crypto-currency) virtual currency which is very possible to continue to develop in the future [1-5]. In this crypto-currency concept, it is truly identical with the legal terms of the exchange, which is unique, not easily damaged, and agreed upon together. So, it can be a medium of exchange in the international community [3]. However, the legality of Bitcoin as a virtual currency is still a debate in various countries, including Indonesia [6-8]. In 2014, through a Bank Indonesia press release, it

was stated that Bitcoin and other virtual currencies were not legal currencies or payment instruments in Indonesia. This statement does not explicitly prohibit the use of Bitcoin. Only all risks related to the ownership or use of Bitcoin become their own responsibility because they do not get legal protection from the state.

Bank Indonesia as the agent of the payment system authority divides 2 types of payment system instruments namely cash and non-cash. The instrument of cash payment in the form of banknotes as a payment transaction tool has many limitations so that it can no longer meet the needs of today's society [9, 10]. At present the tendency of transactions using non-cash payment instruments has become an urgent need for the community. The role of a teller in a bank has begun to be replaced by machines such as ATMs and EDCs. Bank Indonesia divides 5 types of non-cash payment instruments, namely cards, checks, demand deposits, debit notes and electronic money. Of course from the five types of payment instruments, electronic money is the most needed option at this time. However, electronic money which is currently circulating is issued by each publishing institution using different infrastructure, according to the characteristics of its consumers.

On the other side, the development of e-commerce has also encouraged the development of payment tools from those originally cash based instruments (cash payment instruments) to which new payment instruments are being added which are known to be non-cash based instruments where non cash based instruments have developed so that it was no longer paper based but also paperless [11]. One of the paperless payment tools that developed recently is virtual money.

## 2. Money and Its Development as Financial Transactions

Money in traditional economics is defined as a generally acceptable medium of exchange, the medium of exchange itself can be anything as long as it is generally accepted or the community is in the process of exchanging goods and services [12-22].

### 2.1 Electronic Money

Anderloni, & Carluccio, defines the electronic money is a payment instrument that meets the following elements: (i) published on the basis of the value of money deposited in advance by the holder to the issuer. (ii) The value of money is stored electronically in a media such as a server or chip; (iii) used as a means of payment to traders who are not issuers of the electronic money. (iv) the value of electronic money deposited by the holder and managed by the issuer is not a deposit as referred to in the law governing banking [2].

### 2.2 Cryptocurrency

This type of digital payment (virtual currency) consists of 2 types, the first virtual currency in the form of digital money such as money used in video game applications, Telkomsel cash, XL cash, Indosat Dompetku, and several other digital payment instruments. This type of virtual currency is centralized, regulated and managed by an institution or company [6, 11, 12, 22]. The second is virtual currency that uses cryptographic technology or known as cryptocurrency where for each data transaction will be encoded using certain cryptographic algorithms [13]. For now, Bitcoin is the first cryptocurrency that has been widely applied and widely used, even now there are many other types of cryptocurrency that have developed from the Bitcoin protocol.

### 2.3 Bitcoin Technology

The basic concept of Bitcoin is to make a decentralized authority transaction system without any third party that can verify by using the concept of digital signatures in each transaction. Electronic coins are a transact-able nominal value, where digital coins are a connected digital signature circuit. For each banking transaction in general, access to customer information is certainly limited. Whereas when using Bitcoin technology, every transaction can be seen by all people who are members of the Bitcoin network, this information access is still anonymous because it is not known who the owner is [12].

## 3. Research Methodology

This research includes the type of literature study research by looking for references to theories and scientific journals that are relevant to the case or problem found. The theoretical references obtained by the study of literature studies serve as the basic foundation and the main tool in conducting research. This study uses the literature study analysis based on several previous studies and scientific journals that discuss Bitcoin as a payment instrument in buying and selling transactions. This study aims to see the potential of tax revenue from Bitcoin transactions, because in various countries that have applied tax levies on Virtual currency has been proven to be able to increase the country's income and to respond to growing issues regarding virtual money transactions in the world.

## 4. Results and Discussion

### 4.1 Potential Tax Revenue from Bitcoin Transactions

Bitcoin experienced rapid development since it was first discovered by an individual or a mysterious group named Satoshi Nakamoto. The background to the preparation of bitcoin is to eliminate the need for a central control party that controls the entire financial system. The use of bitcoin in commercial transactions continues to increase. There are around 200,000 (two hundred thousand) users of virtual currencies in Indonesia with a total transaction of Rp. 4,000,000,000 (four billion rupiahs) per day in Indonesia [14]. Recognition of the use of bitcoin directly can provide convenience and benefits for Indonesia, other feedback that may be obtained by the Indonesian government when recognizing bitcoin as a legitimate means of payment is that Indonesia can collect taxes on bitcoin service provider companies where tax is one income largest country.

As explained above, the existence of bitcoin does not only occur in Indonesia but also occurs in Singapore. The Singapore Government has given recognition of the use of bitcoin in its country through the Monetary Authority of Singapore (MAS) in March 2014 which states that virtual payment instruments will be considered as service providers that will be subject to GST (Goods and Services Tax). The regulation states that: "Businesses that choose to accept virtual currencies as Bitcoins for their remuneration or revenue are subject to normal income tax rules. They will be taxed on the income derived from or received in Singapore. Tax deductions will be allowed, where permissible, under our tax laws." [6]. From the

statement above it can be seen that all forms of trading that receive virtual money such as Bitcoin as a payment instrument will be taxed on income earned or obtained in Singapore as stipulated in the Singapore Tax Law All physical goods supplied through the Internet and carried out in Singapore subject to a GST or 7% transaction tax on the benefits of the item. The Singapore government has given recognition to bitcoin which this also directly gives an impact in the form of legal protection obtained by bitcoin users and bitcoin exchange service providers in Singapore. Correspondingly, the Singapore government can also control bitcoin users and can minimize any risks that might occur outside the bitcoin protocol.

#### **4.2 Bitcoins as a legal payment instrument in Indonesia**

Bitcoin has grown rapidly since it was created in 2009 by an individual or a mysterious group with the pseudonym Satoshi Nakamoto, the bitcoin exchange rate also surged up as the demand was high. Bitcoin emerged due to the effects of the Great Recession and the financial crisis that occurred in 2008, bitcoin is a reaction to the financial revolution that has occurred over the past 20 years. As is known bitcoin is a payment tool that uses peer-to-peer networks that are commonly used by programmers. Bitcoin uses a peer-to-peer network or file-sharing service because we can share bitcoin files with fellow users with computer network media.

The concept behind bitcoin is to cut the costs used to pay brokers needed in conventional sale and purchase transactions, so that by cutting the cost of these brokers the seller can offer the goods cheaper. The main core of bitcoin is a general ledger (global ledger) or balance sheet (balance sheet), called blockchain. This general ledger records all transactions carried out using bitcoin, since bitcoin is mined all transactions are recorded, so this is what makes bitcoin not easily falsified. Bitcoin elements are the presence of peer-to-peer networks, blocks, blockchain and miners. The peer-to-peer network in bitcoin allows users to transfer a number of bitcoin values, these transactions are stored in files called blocks, these blocks will intertwine with each other to form block chains called blockchain, and miners solve complex mathematical formulas to prove ownership of bitcoin.

#### **4.3 Development of electronic payment systems in Indonesia**

Electronic payment systems have a great variety of

terms such as: digital currency, digital money, digital cash, virtual currency, virtual money, virtual cash, e-money, e-cash, cryptocurrency [17-19, 24]. The absence of standardization of terms results in a lot of errors in interpreting. But basically a fundamental conclusion can be drawn that relates to an understanding of the concept of electronic money, first electronic money that has characteristics as access to accounts at banks and third party service providers, electronic money services are thus known as access products [4]. And electronic money that has the characteristics as a store value, the type of store value electronic money is like a currency or money used daily by the public. The discussion on the research will be more focused on electronic payment instruments in this case namely electronic money as mentioned by Bank Indonesia, the amount of electronic money has become more and more diverse, not only the banking sector that issued electronic money products, so cellular players also took out the product electronic money. As can be seen in the table below, various electronic money products that are quite widely used in Indonesia.

### **5. Conclusion**

The position of Bitcoin that is still in the gray area causes the Indonesian Government to provide legal certainty to the phenomenon of Bitcoin that occurs in the community, which there are two options related to actions that can be carried out by the government. The first option is to give recognition, and the other option is to give a statement that the use of Bitcoin in Indonesia is illegal. As explained above, the existence of Bitcoin does not only occur in Indonesia but also occurs in Singapore in other developed countries. Recognition of the use of Bitcoin directly can provide convenience and benefits for Indonesia, other feedback that may be obtained by the Indonesian government when recognizing Bitcoin as a legitimate means of payment is that Indonesia can collect taxes on Bitcoin service provider companies where tax is one income largest country [9, 15]. As a new financial transaction system, crypto-currency using Bitcoin is a relatively new technology and needs further study. There are still many aspects in the banking world that need to be studied, the banking system is a complicated system with lots of financial control parameters. The absence of standardized payment system protocols in Indonesia, making third parties (banks and non-banks) make their respective payment infrastructure. After reviewing several electronic money in Indonesia, the results of the comparison between electronic money technology that uses

store value and access product concepts with electronic money are obtained using the Bitcoin protocol standard.

## References

- [1] Allen, F., McAndrews, J., & Strahan, P. (2002). E-finance: an introduction. *Journal of Financial Services Research*, 22(1-2), 5-27.
- [2] Anderloni, L., & Carluccio, E. M. (2007). Access to bank accounts and payment services. In *New frontiers in banking services* (pp. 5-105). Springer, Berlin, Heidelberg.
- [3] Böhme, R., Christin, N., Edelman, B., & Moore, T. (2015). Bitcoin: Economics, technology, and governance. *Journal of Economic Perspectives*, 29(2), 213-38.
- [4] Camera, G. (2017). A perspective on electronic alternatives to traditional currencies. *Sveriges Riksbank economic review*, 1, 126-148.
- [5] Carroll, J. M., & Bellotti, V. (2015, February). Creating value together: The emerging design space of peer-to-peer currency and exchange. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 1500-1510). ACM.
- [6] Kord, H., Noushiravani, Y., Bahadori, M. D., & Jahantigh, M. (2017). Review and Analysis of Telework Perspective in the Administrative Systems. *Dutch Journal of Finance and Management*, 1(2), 44. <https://doi.org/10.29333/djfm/5820>
- [7] Monteiro, S. C. (2017). Brachial Plexus Blocker Prototype. *Journal of Information Systems Engineering & Management*, 2(3), 14. <https://doi.org/10.20897/jisem.201714>
- [8] Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. Consulted, 1-9. <http://doi.org/10.1007/s10838-008-9062-0>
- [9] Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). *Bitcoin and cryptocurrency technologies: a comprehensive introduction*. Princeton University Press.
- [10] Paganelli, M. P. (2012). What is money, Canada. Retrieved from [http://www.bankofcanada.ca/wp-content/uploads/2010/11/what\\_is\\_money.pdf](http://www.bankofcanada.ca/wp-content/uploads/2010/11/what_is_money.pdf).
- [11] Daneshfard, K., & Soheili Rad, S. (2017). The relationship between strategic human resource management on employee development and organizational learning mediator role in the export of bank branches in Golestan Province. *UCT Journal of Management and Accounting Studies*, 5(1), 17-23.
- [12] Rashid, F. A. N., Suriani, N. S., & Nazari, A. (2018). Kinect-Based Physiotherapy and Assessment: A Comprehensive. *Indonesian Journal of Electrical Engineering and Computer Science*, 11(3), 1176-1187.
- [13] Shabbir MS, Kassim NM, Faisal M, Abbas M, Sabti YM. Poverty reduction through Islamic modes of finance; The way forward. *J Soc Sci Res*. 2018;2018(Special Issue 4):58-65.
- [14] Shabbir MS, Shariff MNM, Bin Yusof MS, Salman R, Hafeez S. Corporate social responsibility and customer loyalty in Islamic banks of Pakistan: A mediating role of brand image. *Acad Account Financ Stud J*. 2018;22(Specialissue):2011-4.
- [15] Shabbir MS, Shariff MNM, Alshaibani YH, Faisal M, Salman R. Entrepreneurship and skills development for socioeconomic growth; Present landscape and future agenda for Pakistan. *Acad Entrep J*. 2018;24(3):1-12.
- [16] Faisal M, Shabbir MS, Javed S, Shabbir MF. Measuring Service Quality and customer satisfaction in Pakistan: Evidence Based on Carter Model. Vol. 10, *International Business Management*. 2016. p. 5011-6.
- [17] Ramli A, Shabbir MS, Bakar MS Bin, Shariff MNM, Yusof MS, Ahmad I. Mediating role of E-learning resources in developing entrepreneurial inclinations amongst undergraduate students at Universiti Utara Malaysia. *Int J Eng Technol*. 2018;7(4):51-6.
- [18] Hussain S, Fangwei Z, Siddiqi AF, Ali Z, Shabbir MS. Structural Equation Model for evaluating factors affecting quality of social infrastructure projects. *Sustain*. 2018;10(5):1-25.
- [19] Shabbir MS. Supportive Learning Environment - a Basic Ingredient of Learning Organization. *Comp Islam Conv Bank PAKISTAN Abdul*. 2009;2009(2000):1-36.
- [20] Imran M, Binti Aziz A, Binti Abdul Hamid SN, Shabbir MS, Salman R, Jian Z. The mediating role of total quality management between entrepreneurial orientation and SMEs export performance. *Manag Sci Lett*. 2018;8(6):519-32.
- [21] Shabbir MS, Asad M, Faisal M, Salman R. The relationship between product nature and supply chain strategy: An empirical evidence. *Int J Supply Chain Manag*. 2019;8(2):654-8.
- [22] Jabarullah NH, Shabbir MS, Abbas M, Siddiqi AF, Berti S. Using random inquiry optimization method for provision of heat and cooling demand in hub systems for smart buildings. *Sustain Cities Soc [Internet]*. 2019;47(July 2018):101475. Available from: <https://doi.org/10.1016/j.scs.2019.101475>