

CRYPTOCURRENCIES AND NEW CHALLENGES OF FINANCIAL GLOBALIZATION

Levan Dgebuadze
Ivane Javakhishvili Tbilisi State University

ABSTRACT. This thesis analyzes the opinions of different countries and experts on the virtual currency industry (in particular, cryptocurrencies). The global economy reviews the issues related to the fact as to what future the bank (the major financial mediator) is likely to have. Macroeconomics does not clearly predict the future of the cryptocurrencies and their possible development tendencies. The first phase of globalization was the Internet, but nowadays the decentralized Blockchain system is the second phase of globalization, where the boundless universe becomes more and more successful. From today's perspective, the virtual currency really goes beyond traditional economics with a high perspective to have a place in the nontraditional economics.

KEYWORDS: Virtual currency, cryptocurrency, blockchain, financial stability, monetary policy.

Introduction

Technologies in the modern world are changing very rapidly; the leading financial institutions are constantly trying to align with the development and assimilation of new financial technologies.

New technologies - run the process of transformation change in the global economy, including the process of exchanging goods, services and assets. An important development in this process was the creation of a virtual currency.

The virtual currency industry is in the begining stage of development. The related legislative and supervisory framework varies according to countries and mostly is still in the process of study. Virtual currency is defined as any type of digital unit that is used as an exchange and account unit. Cryptocurrency is one type of virtual currency.

The activities connected to cryptocurrencies in terms of both earning and trading is increasing worldwide and Georgia in this regard is not an exception either. In addition, the Georgian legislation does not regulate the activities related to the virtual currency and the cryptocurrency is not a legal way of payment. It is characterized with high price fluctuations; hence the probability that the consumers may suffer financial losses is high.

Cryptocurrency is a growing category of digital money that is based on a cryptographic algorithm. Cryptocurrency is created digitally through "mining" the open to everyone principle.

Currently famous cryptocurrency Bitcoin and various other cryptocurrencies change the world daily. All of this may seem unrealistic without having the relevant practical knowledge.

The worldwide largest corporations, governments and just people are actively adopting these new technologies that allow them to lead up their own financial welfare to the new level.

The global economy reviews the issues related to the fact as to what future the bank (the major financial mediator) is likely to have.

Virtual currencies offer a lot of potential benefits in terms of speed and efficiency of payments and transfers (especially abroad). The system is absolutely decentralized and transparent. At the same time, virtual currencies bear significant risks related to money laundering, terrorism financing, tax evasion and fraud.

What is a cryptocurrency?

In the world of cryptocurrency coins, the crypto asset is a term that deals with any cryptocurrency. The term cryptocurrency is used to describe digital currencies that use cryptography.

The term "cryptography" derives from the Greek word "cryptos" and "grafo" that are literally translated as "hidden, secret" and "writing."

Bitcoin, Ethereum, Litecoin, Dash, Monero, Ripple and Steem – all of them are deemed to be cryptocurrencies.

The cryptocurrency Bitcoin, for example, can be used to purchase water and purchase other crypto coins. The Bitcoin system keeps each transaction in a huge common registry - in a chain of blocks (hereinafter referred to as the Blockchain). The data of the current balance and transaction is kept in the public database, but the owner's identity remains anonymous.

Bitcoin is obtained by using a special mathematical equation.

Usman W. Chohan [10] the professor of Southwestern University explains that the crypto asset exists in a dimension that is not physical and exists only in digital form. Its value is derived from the supply and demand forces without external interference.

After bringing the Bretton Woods system to an end, the high financial inflation in the 1970s revived the skepticism toward granting the monetary power to central banks on currency exchange. It should be noted that Friedman and Schwartz (Friedman ... 1986) and Fischer (Fischer, 1986) denounced Hayek's proposal for denationalization of money (Hayek, 1976).

The American economist and Nobel laureate in economics Milton Friedman predicted the digital currency [11] even in 1999. He said: "The only thing we do not have, but will soon have is reliable electronic money. The method when you buy online, you can transfer funds from 'A' to 'B', so that you do not know 'B' or to 'B' if you know 'A'. This is the way by which I can give you 20 dollars, so that you do not know who I am. Such thing will be developed on the Internet."

Virtual currencies and the associated technologies (namely, based on Blockchain) are rapidly developing and to predict their future landscape is difficult.

The society first learned about the Blockchain of financial technology in 2008 when on October 31, 2008 Satoshi Nakamoto published online article entitled: Bitcoin - Peer-to-Peer Electronic Money System. Satoshi Nakamoto is a pseudonym of a person or a group of people who have developed protocol of cryptocurrency Bitcoin. The article explains how to exchange virtual (electronic) money without intermediate financial institutions. The so called problem of Double Spending was also solved. The work itself was perceived as a currency transaction without any interruption, for example the first cryptocurrency Bitcoin was created, which was exchanged through the Blockchain platform. Another example of using the same platform was the creation of Smart Contracts [12], which implies writing the contracting terms directly in the program and thus making it possible to use the Blockchain technology in many other areas due to its main features: it is a completely decentralized base, and it is virtually impossible to remove or change data in it. The possibility of creation of Smart Contracts, the idea of which belongs to Nick Shazbo [13], occurred before Blockchain much earlier in the 1990s. Hence, hundreds of startup companies (including Georgian companies) were founded in connection with the Blockchain, which are using it in different areas such as insurance, transfers, real estate registration.

Georgia is not an exception in this regard, the Golden Fleece project on the eastern coast of the Black Sea, aims to construct [14] the data center of cryptocurrency production (mining).

As of 2018, 1600 types of cryptocurrencies are produced and traded (according to <https://www.worldcoinindex.com>). In May 2018, Bitcoin's capitalization amounted to 125.5 billion dollars (<https://coinmarketcap.com/all/views/all/>). The market capitalization (Market Cap) implies the price of a cryptocurrency volume released into circulation by the Platform to US Dollar Course.

According to the Bitcoin protocol, the number of ever "earned" Bitcoins can never exceed 21 million, but one coin is dividable into smaller units: Centbitcoin - 0.01, Molly Bitcoin - 0.001, Microbitcoin 0.000001 and "Satosh" - the smallest part of Bitcoin, its one-hundred-millionth.

Bitcoin exchange also takes place in Georgia. E-money Georgian customers can buy Bitcoin through electronic balance.

One of the leading banks (Liberty Bank) offers customers the Bitcoin, Litecoin and Ripple Platform.

The government's attitude towards the Blockchain is also remarkable; the Georgian State Registry uses the Blockchain service provided by the Bitfury.

Although virtual currencies differ greatly from the national currency, the monetary system and the legal concept of money has evolved over time and will keep changing in the future. Thus, the virtual currencies should not be considered only based on their current characteristics or based on how the existing monetary regimes are in line with them.

Factors contributing to the globalization of cryptocurrency

The first phase of globalization was the Internet, but nowadays the decentralized Blockchain system is the second phase of globalization, where the boundless universe becomes more and more successful.

Key factors contributing to acceleration of the cryptocurrency globalization is as follows:

- Transfer and payment worldwide without paper documentation;
- Instant transfers;
- Decentralized values of crypto assets;
- Registration of a wide range of users.

The Nobel Prize laureate, economist Joseph E. Stiglitz [15], believes that the cryptocurrency Bitcoin should be prohibited. In his opinion: "Bitcoin is successful because it has the potential to deceive and due to absence of supervision over it. It must be declared illegal; it has no socially useful function".

It should be noted that no country has called for the creation of a state cryptocurrency. For example, Venezuela and Marshall Islands are the first countries in the world having created their own cryptocurrencies [16].

The Nobel Prize laureate, American economist Paul Krugman [17] believes that any cryptocurrency is similar to air bubble and very unstable.

It is also noteworthy that in 2017, Christine Lagarde the Director of International Monetary Fund (IMF) delivering a speech in London, asked the audience to quickly imagine what the Central Bank's world would be like in 2040. She was very optimistic about the future of virtual currencies and compared [18] the new future environment of the National Bank to Aldous Huxley's "Brave New World".

There are almost no research materials available for virtual currencies. I think it is worth mentioning the IMF officials' discussion, which was published in January, 2016 [19]. Although their discussions and conclusions do not represent the official position of the IMF, I think it would be very valuable to consider the comments and conclusions of the officials. The special attention should be paid to the issues related to ***consumer protection, taxation, financial stability and monetary policy.***

Consumer rights protection

Virtual currency regulation uncertainty constitutes the basis for the consumer rights vulnerability:

- *Risks* may be related to both the technology and the market. For example, the gap can cause paralysis in a virtual currency protocol. Existing virtual currencies are characterized by a large fluctuation in prices, which are most likely impacted by speculative expectations. Thus, due to the volatility of virtual currency prices, their customers will face potential financial losses.
- *Risk related to service providers.* Including and not limited to the virtual currency platform, the payment system and the brokers. Since they are not regulated to a great extent, the virtual currency consumers face the risk to be disadvantaged. A significant part of trading with virtual currencies is made through exchange platforms and digital wallets that are created in different countries and their legal status in some cases is uncertain. Consequently, those who use such platforms to perform various operations may face both legal and financial risks. In addition, such platforms represent potential targets of cyber attacks.
- *Risks related to fraud.* These risks are linked to stealing the currency of customer providers, hack, fraud in the supply, etc. For example, Bitstamp (Bitcoin's largest European exchanger), its use was suspended as a result of a security breach in 2015 involving the loss of 19,000 Bitcoins.
- *Risks related to impossibility of transaction correction.* The virtual currency decentralized system is not able to correct the transaction, unlike the centralized system where the National Bank bears the relevant risk.

The goal of the country's policy should be the provision of information to customers and investors, as well as at the relevant legislative level. In many countries measures were taken against virtual currencies when the legislation was violated.

According to the declaration [20] made by the National Bank of Georgia, the Bank urges citizens to exercise caution when using virtual currencies because virtual currency in Georgia is not a legal way of payment. The activities associated with it are not regulated by the Georgian legislation and, therefore, the virtual currency does not fall within the regulation frames of the National Bank.

Taxation

Virtual currencies have a great potential to avoid taxes. This is especially related to cryptocurrencies when participants should not disclose their identity.

Virtual currency anonymity/pseudo-anonymity makes it attractive for illegal activities, including money laundering.

As long as the virtual currencies bear the function of richness accumulation and exchange, they generate tax-related issues. Although some countries (for example, the US) have achieved success in taxation issues [21], this issue is not regulated in many countries.

In determining the tax regimes, the main question remains open as to what the virtual currency actually is: **Intangible Asset or Currency (money)**. In many countries, virtual currency is regarded as the commodity for the tax purposes (e.g., US, Canada). Australia considers it as a barter operation; France does not consider it to be a currency; Germany – as a private currency or a foreign country currency and early they started to regard it as a product and the Bitcoin realization for them means taxable operation).

On October 22, 2015 the European Court established [22] that the transactions related to the exchange of Bitcoin money are exempt from the added value tax (hereinafter VAT). The court decision specifies that VAT taxation is subject to supply and delivery of goods and services. Bitcoin-related transactions were assigned to payment operations such as currency, coin and banknote; hence it is not a subject to VAT taxation. The Court has recommended the EU Member States to exclude the criteria from the list of assets that are subject to VAT taxation.

In Great Britain, Germany, Spain and the Netherlands the decision to release from VAT taxation has been made and is already in force. In a number of European cities there are "Bitcoin Boulevards", where you can buy various goods, enjoy a restaurant or a beauty salon service by paying with cryptocurrency.

Registration of data for tax purposes may harm the attractiveness of virtual currencies. In the US, for instance, it is mandatory to provide revenue and expenditure information on each sold-out Bitcoin.

It should be noted that Israel tax authorities have recently announced that cryptocurrencies are tax assets and the sellers will have to pay a profit in a capital in the amount of 25 percent [23].

Financial stability

Today, virtual currency is not a serious risk for the financial system, due to a small scale and limited connections. In comparison with traditional and major financial systems, virtual currencies have limited value and volume of transactions. Financial institutions do not participate in virtual currency operations.

Wide use of virtual currency and communication with other financial instruments are associated with the origin of systemic risk over time. One of these sources can be a reduction in banking revenues. The risk of losing revenue for banks is related to the fact that virtual currencies can create an alternative payment system that is more attractive for customers.

The use of virtual currencies and trade in financial institutions in a number of countries is prohibited.

In terms of financial stability, cyber security related risks and IT risks are also important, as these technologies are hardly manipulated, but still manipulated. If everything in the future is done by cryptosystems, more cyber security will be needed than it is today.

The European Banking Authority [24] has recommended the European Union countries to make banking and credit institutions not to buy and sell virtual currency in order to "secure" regulated financial institutions.

The European Securities and Markets Authority, the European Banking Authority and the European Insurance and Pension System jointly warn users about the risk of procurement and storage of cryptocurrencies. European banking management calls on consumers to refrain from investing in cryptocurrencies, as they explain that the activities associated with the cryptocurrencies are equivalent to gambling [25].

Virtual currency policies and regulation issues have been identified both at national and international levels. The national level related questions include:

- 1) Whether virtual currencies can perform the function of the bank, and
- 2) Can a virtual currency portfolio be considered as deposits that are similar to the deposit insurance system?

On the international level, without virtual currency borders, based on the nature of electronic network, the basic question relates to who should supervise (control) the virtual currency market.

Monetary policy

Virtual currency today does not have significant impact on the monetary policy. But in case it is widely used, it is likely to have. The rigid rules of virtual currency provision are characteristic for many cryptocurrencies, including Bitcoin - generally, they have a limited inflation risk [Buiter, 2014].

Nevertheless, modern systems of virtual currency are deprived of other critical features that the stable monetary regimes should be characterized with. The loss is at least in risk-free capacities in terms of protection from 3 major monetary stability risks: the risk of structural deflation; the responsive flexibility to temporary shocks and the ability to ensure healthy business cycles and the capability to function as a Lender of Last Resort - the central bank's function of issuing loans under the financial crisis environment).

Fixed supply of virtual currencies generates structural deflation, similar to the Golden Standard. As a rule, money demand increases in line with the growth of economy. When the money supply is fixed, the growing demand for money generates structural deflation. Consequently, international reserve systems based on Golden Standard and pound sterling or US dollar, were developed with limited resources (Redish, 1993, and Bordo, 1981). Contemporary monetary regimes are characterized with the flexibility of money supply unlike the virtual currencies. However, it is possible to design virtual currencies so as to make possible to expand the money supply mass, for example, according to the amount of transactions, by which it would be possible to overcome the tendency of deflation in the conditions of growing economy.

Generally, in the economy where the share of virtual currencies is very large, the ability of monetary credit policy to manage the business cycle can be reduced. These problems will be similar in relation to countries that are characterized by growing dollarization. The existing virtual currencies do not allow the growth of monetary money during the shock of negative money supply. This will have a tendency to increase the recessive process and result into the deflation spiral similar to the Great Depression at the time of Golden Standard.

For virtual currencies it is not easy to replace the Central Bank's function as of the Lender of Last Resort (the so called LOLR). The global financial crisis still underlines the importance of the

role of institutions that provide the liquidity. Even at the flexible cash flow it is difficult to understand how the decentralized virtual currencies system can ensure the liquidity management during the financial crisis.

Experience and economic theory considers that there is a need for the state institution that ensures offering resistance to externalities and crisis.

In the absence of regulations and interventions, virtual currencies will be widely used in countries where the cash-credit system is less reliable. In general, the advantage of the use of a single currency is important, but transformation costs from one network to another will be large-scale. These are the network expenses that create the trend for one currency. As of today, virtual currency fails to overcome this problem (Dowd, 2014). Virtual currency can be attractive for countries where monetary credit policy is less credible, but the price stability regulation will be stimulating to reduce (limit) their consumption. In addition, the variability of virtual currency was so strong that even for the countries where the credibility of the monetary system is very low, American dollar is more attractive than the virtual currency.

In terms of the monetary policy, one of the most important issues is that in case of cryptocurrencies introduction, the central bank will have the opportunity to set negative interest rates. Today, when cash funds exist - this is impossible, because the cash rate cannot be charged.

The possibility of negative rates became especially needed when there was a financial crisis when it needed to be more stimulating than the Zero Rate, the so called liquidity trap [26].

Conclusion

It emerged that the cryptocurrencies represent an infinite, decentralized system and can replace the money in any transaction. Without any physical infrastructure, Bitcoin invaded the world economy due to its easy use. Bitcoin is the most innovative invention of the Internet. It is internet money and digital currency; it can be interrupted only if the internet disappears. Such is the power of Bitcoin.

Venezuela and Marshall Islands are the first countries in the world who have created their cryptocurrencies. Despite the fact that many countries are skeptical about the cryptocurrencies, still number of them consideres the criptocurrencies as a payment method [16].

National banks of the Kingdom of the Netherlands and Scandinavian countries have created their own cryptocurrencies for experimental purposes in order better to understand their working principles.

From today's perspective, the virtual currency really goes beyond traditional economics with a high perspective to have a place in the Nontraditional Economics (V. Papava, 2011) by the Georgian economist Vladimir Papava.

Virtual currencies are rapidly developing and therefore, the future landscape contours are hard to predict. It can be said that the majority of countries are only in the stage of observation.

REFERENCES:

1. V. Papava, Nontraditional Economics, Tbilisi, 2011
2. Satoshi Nakamoto. Bitcoin: A Peer-to-Peer Electronic Cash System. 2008. <https://bitcoin.org/bitcoin.pdf>
3. Bordo, M.D., 1981, "The Classical Gold Standard: Some Lessons for Today," Federal Reserve Bank of St. Louis Review, (May), pp. 2–17.
4. Dong He, Karl Habermeier, Ross Leckow, Vikram Haksar, Yasmin Almeida, Mikari Kashima, Nadim Kyriakos-Saad, Hiroko Oura, Tahsin Saadi Sedik, Natalia Stetsenko, and Concepcion Verdugo-Yepes, IMF STAFF NOTE, Virtual Currencies and Beyond: Initial Consideration, 2016.
5. Dowd, K., 2014, "New Private Monies: A Bit-Part Player?" Institute of Economic Affairs, Cobden Centre Hobart Paper No. 174. London: Institute of Economic Affairs.
6. Fischer, S., 1986, "Friedman Versus Hayek on Private Money: Review Essay," Journal of Monetary Economics: 17 (3), (May 1986), 433–440.
7. Friedman, M. and A.J. Schwartz, 1986, "Has Government any Role in Money?" Journal of Monetary Economics: 17(1), pp. 37–62.
8. Hayek, F.A., 1976, Denationalization of Money (London: Institute of Economic Affairs).
9. Redish, A., 1993, "Anchors Aweigh: The Transition from Commodity Money to Fiat Money in Western Economies," Canadian Journal of Economics: pp. 777–795.
10. <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf>
11. <https://bitcoincrush.md/лауреат-нобелевской-премии-милтон-ф/>
12. https://www.bbva.com/wp-content/uploads/en/2016/11/Digital_Economy_Outlook_Oct15_Cap1.pdf
13. <https://www.entrepreneur.com/article/233143>
14. <http://goldenfleece.co>
15. <https://anycoin.news/2017/11/29/stiglitz-bitcoin/>
16. <https://www.rt.com/business/420419-marshall-islands-sovereign-cryptocurrency/>
17. <https://inosmi.ru/politic/20171004/240430052.html>
18. <http://www.imf.org/en/News/Articles/2017/09/28/sp092917-central-banking-and-fintech-a-brave-new-world?cid=em-COM-123-35955>
19. <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf>
20. <https://news.ge/erovnuli-bankis-gafrtxilebi/>
21. <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>

22. <https://bits.media/news/evropeyskiy-sud-spravedlivosti-priravnyal-bitkoin-k-valyutam-i-osvobodil-ot-nds/>
23. <https://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf>
24. https://www.esma.europa.eu/sites/default/files/library/esma50-164-1284_joint_esas_warning_on_virtual_currenciesl.pdf
25. <https://news.ge/kriptovalutebtan-dakavsitebit-erovnul-banksi-sexvedra-gaimarta/>
26. <https://econ.economicshelp.org/2009/10/liquidity-trap-explained.html>
27. <https://www.kaspersky.com/blog/cryptocurrencies-intended-risks/20034/>
28. <http://www.worldbank.org/en/news/press-release/2018/05/08/countries-in-europe-and-central-asia-can-provide-better-opportunities-and-services-for-citizens-by-leveraging-blockchain-technologies>
29. <http://spotcoins.com>
30. <https://www.bixtrim.com/en/>
31. <https://spotcoin.com>
32. <http://time.com/money/5186316/this-is-the-first-country-to-adopt-a-cryptocurrency-as-its-official-currency/>
33. <https://www.swissinfo.ch/eng/what-the-world-s-central-banks-are-saying-about-cryptocurrencies/44020300>