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# Conceptual Framework for the Definition and Regulation of Virtual Currencies: International and Russian practices

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## Abstract

This paper analyzes possible definitions of virtual currencies in legislation and economics. Views of the European Central Bank, Financial Crimes Enforcement Network, and Financial Action Task Force regarding virtual currencies are studied. The analysis also covers the draft legislation to ban money surrogates in the Russian Federation. The author suggests two reasonable approaches to defining virtual currencies in law and economics. The Austrian School representatives' arguments on the existence of private money are reviewed. The author proposes the introduction of some changes in the legislation of the Russian Federation in order to give legal status to virtual currencies.

**Keywords:** virtual currency, Bitcoin, electronic money, private money, money surrogates

## 1 Introduction

Virtual currencies gained extraordinary popularity between 2011 and 2014 for a variety of reasons. One of the main factors was the distrust of market participants in the global financial system and so-called fiat currency; this distrust was heightened during the global financial crisis and the Cypriot financial crisis. In addition, the rapid development of an Internet-based economy generated inevitable interest among users in electronic money and currencies as well as new payment technology.

Bitcoin is the most widely recognized example among such virtual currencies. Bitcoin investors are mostly attracted by its high volatility. Although the original target audience of Bitcoin was young people drawn to computer technology, currently Bitcoin, along with securities and derivatives, is generating interest among speculative investors. Yet Bitcoin lost some of its popularity during the sharp fall of the exchange rate, Bitcoin thefts, and the collapse of the Mt. Gox exchange and regulators' continuing concerns about the role of virtual currency on the illegal market. Nevertheless, Bitcoin has always been and remains a news-maker. For instance, at the end of 2014, Bitcoin became the ninth most popular payment method during sales on Black Friday and Cyber Monday; and at the end of January, the first regulated Bitcoin exchange licensed to operate in 24 states of the United States was opened.

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Currently, no country has created and adopted a legislative basis to regulate the issuance and circulation of virtual currencies and Bitcoins. Grinberg (2011, p. 207) stated that Bitcoin operates in a legal grey area. The problem still remains unsolved. In fact, there is an acute problem of providing licensing and oversight for activities of the so-called Bitcoin exchanges, their integration into the global financial system, as well as the protection of clients from hackers.

At present, no international consensus exists on virtual currencies either on the part of regulators or the leading representatives of economic and legal sciences. The approaches to defining virtual currency are rather diverse. They vary from considering the concept synonymous with a pyramid scheme to identifying virtual currency with a commodity or gold equivalent.

With this in mind, the objective of this paper is to differentiate approaches to defining virtual currencies in economics and law through the following tasks:

- conducting a comparative analysis of financial regulators' views on virtual currencies;
- detecting various approaches to defining virtual currencies and determining the most relevant ones;
- examining Russian legislation related to virtual currencies regulation and making recommendations for improvement; and
- determining prospects for the development of virtual currencies and areas for further investigation.

The first part of this paper considers financial regulators' viewpoints on virtual currencies, including the viewpoints of the European Central Bank, Financial Crimes Enforcement Network, and Financial Action Task Force. The second part introduces features of the Russian legislation concerning money surrogates, currencies, electronic money, existing problems, and possible ways to define virtual currencies. Finally, the third part discloses prospects of virtual currencies, identifying two relevant ways for defining virtual currencies and issuing a call for further discussion.

## 2 Financial Regulators on Virtual Currencies and Bitcoin

The stances of financial market regulators in relation to Bitcoin may be conditionally divided into three groups: loyal, neutral, and categorical. Logically, the group of loyal countries comprises those not limiting the circulation of Bitcoins or expressing concern over their speculative nature, anonymity, and other properties. A few of the countries in this group, such as Australia, Germany, and Norway, impose taxes on Bitcoin transactions.

Countries holding a neutral stance on Bitcoins warn their citizens against using them due to their risky and speculative nature; however, they do not prohibit direct transactions. The speculative nature and risks inherent to virtual currencies cause concern among regulators. According to Glaser, Zimmerman, Haferkorn, Weber, and Sterling (2014), new users tend to trade virtual currencies on a speculative investment intention basis and have a low intention to rely on the underlying network as means for paying goods or services. Böhme, Christin, Edelman, and Moore (2015, p. 226) concluded that the distinctive risks inherent to Bitcoin differ from other payment methods and stores of value, including market risk, the problem of a shallow market, counterparty risks, transaction risks, operational risks, privacy-related risks, and legal and regulatory risks.

Finally, countries exploiting the categorical stance directly prohibit Bitcoin transactions. Russia and China are among them. Interestingly, the People's Bank of China changed its stance on Bitcoin. At the beginning of December 2013, the People's Bank of China banned the country's financial institutions from conducting transactions with virtual currencies, although transactions with Bitcoins by individuals were permitted. However, at the end of March 2014, the People's Bank ordered that any Bitcoin transactions must cease by April 15. It is noteworthy that Chinese investors were particularly active in the Bitcoin market, resulting in 15 Bitcoin exchanges being established in the country.

### 2.1 The Stance of the European Central Bank (ECB)

The ECB expressed its viewpoint on virtual currency in general and Bitcoin in particular in 2012 in the guidance document entitled "Virtual Currency Schemes." The ECB defines virtual currency as "a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community" (European Central Bank, 2012, p. 13). In the same document, the ECB recognized that the definition may need adapting in the future if fundamental characteristics change.

With this in mind, the ECB significantly modified the definition of virtual currency in 2015. According to the modified version, virtual currency is now defined as a digital representation of value "not issued by a central bank, credit institution or e-money institution, which, in some circumstances, can be used as an alternative to money" (European Central Bank, 2015, p. 25). Changes made to the original ECB's definition of virtual currency included:

- the elimination of a virtual currency–money analogy as it has become clear that virtual currencies do not have the nature of a highly liquid asset and have not reached the level of acceptance commonly associated with money;

- the abandonment of the term “unregulated” due to the fact that, in some jurisdictions, legislation and regulation have caught up with this innovation and addresses some of its aspects; and
- the removal of the text fragment “used and accepted among the members of a specific virtual community” in order to avoid misunderstanding.

It is necessary to note that the current ECB definition of virtual currency comprises the term “digital representation of value,” previously unknown to the economic science, whereas the original definition was based on the concept of “electronic money.” This proves that the ECB changed its view on virtual currency.

In the relevant guidance document, the ECB also defined “virtual currency schemes” as a mechanism that covers both the virtual currencies and their own dedicated retail payment systems. The ECB simultaneously introduced the division of virtual currency schemes into three types: closed virtual currency schemes, virtual currency schemes with unidirectional flow, and virtual currency schemes with bidirectional flow.

Closed virtual currency schemes have almost no link to the real economy and are connected with computer games. Sometimes they are called “in-game only” schemes. The virtual currency in this case can only be spent by purchasing virtual goods and services offered within the virtual community and cannot be traded outside the virtual community. A well-known example of closed virtual currency schemes is World of Warcraft gold.

Virtual currencies with unidirectional flow can be purchased directly using real currency at a specific exchange rate, but they cannot be exchanged back to the original currency. The scheme owner establishes the conversion conditions. These schemes allow the currency to be used to purchase virtual goods and services. Sometimes the scheme owner might also allow the virtual currency to be used to purchase real goods and services. Examples of virtual currency schemes with unidirectional flow include Facebook credits, Nintendo points and airlines’ frequent flyer miles.

Virtual currencies with bidirectional flow can be bought and sold according to the exchange rates to real currency. The virtual currency seems to be similar to any other convertible currency with regard to its interoperability with the real world. Virtual currency schemes with bidirectional flow allow for the purchase of both virtual and real goods and services. One of examples of these schemes is Linden dollars.

As for Bitcoin, the ECB considers it a virtual currency scheme with bidirectional flow, albeit with certain innovations that make its use more similar to conventional money.

## 2.2 The Stance of the Financial Crimes Enforcement Network (FinCEN)

When defining the concept of Bitcoin within the financial system, it is necessary to note the opinion of FinCEN in particular, which introduced the term “virtual currency” and has been making every effort to develop the legislative regulation of Bitcoin.

In its guidance dated March 18, 2013, FinCEN handled such concepts as currency (“real” currency) and virtual currency. FinCEN defined “real” currency as “the coin and paper money of the United States or of any other country that is designated as legal tender and that circulates and is customarily used and accepted as a medium of exchange in the country of issuance” (United States Department of the Treasury, FinCEN, 2013, p. 1). Virtual, as opposed to real, currency was defined as “a medium of exchange that operates like a currency in some environments, but does not have all the attributes of real currency” (United States Department of the Treasury, FinCEN, 2013, p. 1). FinCEN emphasized the fact that virtual currency does not have legal tender status in any jurisdiction. FinCEN’s management addressed convertible virtual currency, which has an equivalent value in real currency or acts as a substitute for real currency.

FinCEN classified participants in the virtual currency exchange as users, exchangers, and administrators. The last two are money transmitters under FinCEN’s regulations and the regulations implementing the BSA. Regarding the types of virtual currencies themselves, FinCEN identified both centralized and decentralized virtual currency. Bitcoin belongs to the latter group.

In January 2014, FinCEN issued a new guidance document regarding virtual currency exchange operations in general and transactions with Bitcoins in particular. The guidance focused in particular on defining the segments of bodies, including both citizens and organizations using Bitcoin for personal purposes. This category of Bitcoin investors (users) is not related to money services business under FinCEN’s and BSA regulations (United States Department of the Treasury, FinCEN, 2014).

## 2.3 The Stance of the Financial Action Task Force (FATF)

In its June 2014 report entitled “Virtual Currencies, Key Definitions and Potential AML/CFT Risks,” FATF introduced a glossary of terms related to virtual currency and their classifications. Virtual currency, according to the FATF, is “a digital representation of value that can be digitally traded and functions as a medium of exchange; and/or a unit of account; and/or a store of value, but does not have

legal tender status in any jurisdiction” (Financial Action Task Force, 2014, p. 4). Thus, FATF identified convertible (or open) and non-convertible (or closed) virtual currencies, as well as centralized and decentralized virtual currencies.

Convertible virtual currency has an equivalent value in real currency and can be exchanged for real currency. The examples of this type of currency include Bitcoin, e-Gold (defunct), Liberty Reserve (also defunct), Second Life Linden dollars, and WebMoney. Non-convertible virtual currency is intended to be specific to a particular virtual domain or world, such as a massively multiplayer online role-playing game or Amazon.com. According to the rules governing its use, it cannot be exchanged for fiat currency. Examples include Project Entropia dollars, Q coins, and World of Warcraft gold.

Centralized virtual currencies have a single administrating authority—namely, an administrator that controls the system. The administrator has several functions: issuing the currency, establishing the rules for its use, maintaining a central payment ledger, and redeeming the currency. FATF considers E-gold (defunct), Liberty Reserve dollars/euros (defunct), Second Life Linden dollars, WebMoney’s WM units, and World of Warcraft gold to be the currency of this type. Decentralized virtual currencies are distributed, open-source, math-based, peer-to-peer virtual currencies that have no central administrating authority and no central monitoring or oversight. The most obvious examples are Bitcoin, Litecoin, and Ripple.

FATF also listed known cases of criminal activities using virtual currency (Liberty Reserve, Silk Road, and Western Express International), expressing some concerns over this while clearly defining Bitcoin’s prospects.

Thus, we can distinguish three different viewpoints on virtual currency. The ECB considers virtual currency as the concept of money, FinCEN refers to it as to a kind of currency, and FATF defines virtual currency as a digital representation of value. FATF’s definition appears to be terminologically challenging. Nevertheless, its view on virtual currency is closer to that of FinCEN and is probably based on it, especially if we take into account the course of events. Ultimately, the views of financial market regulators regarding virtual currencies are based upon the concepts of virtual currency and electronic money.

### 3 Regulation of Virtual Currency and Bitcoin in the Russian Federation

In a letter dated January 27, 2014, the Bank of Russia warned citizens and businesses against using various virtual currencies, including Bitcoin. Yet Bitcoin transactions in

Russia are not prohibited. Moreover, there has been no liability (either criminal or administrative) for transactional activities with Bitcoin. The letter identified five features of Bitcoins that should cause concern among regulators (Bank of Russia, 2014):

- Bitcoin is an unsecured instrument;
- No entity is responsible for Bitcoin (issuer);
- Operations with Bitcoins are of a speculative nature;
- Bitcoin domain and payments have an anonymous nature; and
- Bitcoin could possibly be used for illegal activities, even involuntarily.

The Ministry of Finance of the Russian Federation later pointed out the issues related to Bitcoin, such as the lack of a single issuance regulator and possible violations of the rights of the owners due to the lack of protection in judicial and administrative proceedings.

In our opinion, the biggest concerns for regulators are the lack of a responsible entity and the anonymous nature of Bitcoin domain and payments. Marian (2015, p. 67) expressed the same opinion and decoupled virtual currencies into two unique components: anonymity and decentralization. The other three points made by the Bank of Russia are inherent to many world currencies and financial instruments and were listed in the letter for purely notational reasons. Belomytseva (2014, p. 27) considered the outlined issues in detail.

In its 2015 autumn session, the State Duma of the Russian Federation will consider a draft federal law “On Amendments being made to certain legislative acts of the Russian Federation” developed by the Ministry of Finance, introducing administrative liability for the issuance and circulation of Bitcoins. This document is designed to define the concept of money surrogates, to which Bitcoin has been relegated by legislators. The draft defined money surrogates as objects of property rights, including electronic ones, used as a means of payment and/or exchange and not prescribed by the federal law directly. From our standpoint, the definition of money surrogates in the draft is quite consistent, but it does not serve its purpose—namely, the prosecution of Bitcoin users. In this sense, the definition of money surrogates covers all kinds of bonuses and bonus points as well as gift certificates, fuel cards, frequent flyer programs, online game currencies, and other similar instruments. A more detailed review of the draft law was presented by Belomytseva (2015, p. 55).

The draft also provided for the establishment of a mechanism for blocking information resources, which spread information conducive to the release of money surrogates and transactions involving them. The Russian Ministry of Communications is expected to block suspicious sites based on the decisions of the Bank of Russia.

The draft identified four categories of administrative violations in the Russian Federation related to the issuance and circulation of money surrogates: emission of money surrogates; creation and distribution of software to issue money surrogates; deliberate dissemination of information conducive to the release of money surrogates and transactions involving them; and the turnover of money surrogates. Penalties for these violations range from five to fifty thousand rubles for citizens, from twenty to one hundred thousand rubles for officials, and from ten thousand to one million rubles for legal entities. It should be noted that it would be rather difficult to evidenciate the offense of Bitcoins' issuance due to juridical uncertainty.

Russia's stance on Bitcoins is unique. In our opinion, it is too categorical and does not take into account the prospects for the development of virtual currency and payment systems. There is even the likelihood that the draft federal law on money surrogates will not be passed by the Duma in 2015, creating the need for an immediate solution to the problem related to the definition of virtual currencies in the Russian legislation.

However, some controversial changes related to the regulation and issuance of virtual currencies occurred in the Russian Federation in September 2015. First, in late September, the Russian payment system QIWI declared the intention to issue its own virtual currency called "BitRuble" (i.e., a Bitcoin analogue) in 2016. Second, the Bank of Russia announced that a special working team focused on studying the blockchain technology had been created. The Ministry of Finance of the Russian Federation then made it clear that it would be necessary to introduce criminal responsibility for the virtual currency-ruble exchange. The draft law is expected to be submitted to the State Duma of the Russian Federation before the end of the 2015 autumn session. Thus, in Russia we can observe a strong interest in virtual currencies demonstrated by market players. Nevertheless, the market regulators' actions can still be characterized as inconsistent and uncoordinated. For countries with a loyal or neutral stance on virtual currencies, this issue has always been and remains on the agenda.

Thus, in our view, there are two reasonable approaches to defining Bitcoin in legislation. The first is based on the concept of currency and makes it possible to suggest the term "virtual currency" for Bitcoin. The other, which is based on the concept of electronic money, assumes the existence of non-fiat currencies and introduces the term "private electronic money." In this case, the first approach is certainly easier, has been approved worldwide, and is likely to cause less controversy, although the alternative is also interesting.

### 3.1 Bitcoin as Virtual Currency in Russia?

When discussing the opportunity for virtual currency to be defined in Russian legislation, we encounter some difficulties. Namely, we need a systemic interpretation of article 75 of the Constitution of the Russian Federation (1993), article 140 of the Civil Code of the Russian Federation (1994), article 27 of the federal law "On the Central Bank of the Russian Federation (Bank of Russia)" (2002), and article 1 of the federal law "On Currency Regulation and Currency Control" (2003). The Constitution of the Russian Federation (1993) and the federal law "On the Central Bank" (2002) define ruble as the currency of the Russian Federation while the Civil Code of the Russian Federation (1994) identifies currency with money, not giving a definition for either of them. Only the federal law "On Currency Regulation and Currency Control" (2003) specifically defines currency, acting as a basic legal act in the field of currency legislation. This document defines the types of currency (currency of the Russian Federation and foreign currency) and a limited list of instruments (currency in the form of banknotes, coins, and facilities on bank accounts and deposits), which are the currency of the Russian Federation and foreign currency, respectively. In this case, the legislation lacks an actual definition of currency that would determine which features should satisfy currency or its alternative in order to be considered as such.

Due to this conflict of laws, defining virtual currency within the existing currency legislation is impossible and requires specification of the concept of currency in the federal law "On Currency Regulation and Currency Control" (2003).

## 4 Bitcoin and Electronic Money

The first electronic money was issued in the 1990s, while the concept itself emerged in the 1980s. The EU first attempted to regulate electronic money in 2001. The European Commission provided a brief definition of electronic money: "a digital equivalent of cash, stored on an electronic device or remotely at a server" (European Commission, 2010). According to a more detailed definition from Directive 2009/110/EC of the European Parliament and of the Council (2009), electronic money is:

electronically, including magnetically, stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions ..., and which is accepted by a natural or legal person other than the electronic money issuer.

The definition of electronic money in the Russian Federation is slightly different from that accepted in Europe. It appeared in the legislation of the Russian Federation quite recently—namely, in 2011—with the adoption of the federal law “On the National Payment System” (2011), while Yandex.Money, a popular system in Russia, was launched as early as 2002. According to the federal law from 2011, electronic money is transferred by one entity to another entity that keeps accounts of the information provided about the amount of money without opening a bank account in order to fulfill the monetary obligations of the entity that transferred the funds to third parties. Depositing a client’s funds with an operator in a particular currency usually precedes the generation of electronic money. The involvement of a single emission and processing center is also possible. Payments in electronic money systems are carried out in well-known world currencies. Thus, electronic money is a digital means of expressing fiat currency. Only its form of existence, which is similar to that of Bitcoin, can be considered new. Consequently, electronic money cannot claim the status of an independent currency.

In the context of Bitcoin, the definition of electronic money can appear necessary if we concede that private money exists. Private money can be defined as non-state fiduciary money issued into circulation by private organizations and can be compared to Bitcoin based on its non-state status. The idea that private entities should issue and regulate currencies has been repeatedly expressed in economics, particularly by representatives of the Austrian School M. Rothbard, F. Hayek, and M. Friedman in separate proceedings. According to Rothbard (2010), money must be issued by private organizations on a competitive basis along with all other goods. Hayek (1990), in his work *Denationalisation of Money*, assumed that it was possible to denationalize money and keep the state from issuing money and taking control of the banking sector. Milton Friedman and Anna Schwartz (1986) claimed that “leaving monetary and banking arrangements to the market would have produced a more satisfactory outcome than was actually achieved through governmental involvement” (p. 59).

In our opinion, Bitcoin can be defined as a unique hybrid of private and electronic money, where both existed for a long time apart from each other. This interpretation implies that changes need to be made to the Russian federal law “On the National Payment System” (2011).

## 5 Prospects for Bitcoin

In February 2015, the research company Juniper Research released the study “The Future of Cryptocurrency: Bitcoin &

Altcoin Impact & Opportunities, 2015–2019.” The company estimated that the volume of transactions using virtual currency will decline by more than half—from \$71 billion (in 2014) to \$30 billion from (in 2015) (Juniper Research, 2015)—due to the problems related to virtual currency exchanges, Bitcoin theft, and regulators’ concerns about the use of virtual currency in the illegal market. Moreover, according to Juniper Research, the growth in Altcoin (a virtual currency alternative to Bitcoin) transactions in 2014 emerged mainly due to a brief burst of activity in Dogecoin, Litecoin, and Auroracoin in the first quarter of 2014, which then came to nothing. By the end of the year, the volume of such transactions in dollars was less than 5% of the volume at the beginning of the year.

Juniper Research emphasized the role of the developments and progress related to virtual currency as well as the field of online payments on the whole. Ripple Labs (the developer of Ripple protocol for international financial transfers) has already focused on further work, and we will be able to see the evolution of other players in the virtual currency market over the medium term.

According to Vigna and Casey (2015, p. 295), decentralized virtual currencies do have a future and can solve some major problems. For instance, they dispel much of the enormous cost that a bank-centric model of payments imposes on the global economy. In addition, virtual currencies could bring millions of people excluded from that payment system into the global economy. Finally, they promise to hold whole classes of middlemen, centralized institutions, and government agencies accountable as never before.

Hileman (2015, p. 92) proposed the need to calculate and estimate the Bitcoin Market Potential Index as a new composite indicator that conceptualizes and ranks the potential utility of Bitcoin across 178 countries to show which countries have the greatest potential to see Bitcoin adoption. Today, only Argentina occupies the leading position within this ranking.

## 6 Conclusion and Discussion

This analysis of the major regulators’ viewpoints on virtual currencies has shown no undivided opinion or clear-cut definition of virtual currencies and Bitcoin. The issue of whether Bitcoin can be considered money is still widely disputed. The author supports the viewpoint of Bal (2014, pp. 67–68), who stated that Bitcoin can be regarded as money in the economic sense but does not meet the definition of money in the legal sense. This approach is consistent and reflects the actual status of virtual currency.

It is possible to determine two well-founded approaches to defining Bitcoin in legislation. One is based on the concept of currency and enables us to associate Bitcoin with virtual currency. The other is based on the concept of electronic money and introduces the term “private electronic money,” which is applied to Bitcoin.

Reviewing Russian legislation has revealed the absence of a definition of virtual currency and a conflict in the laws, making the definition of virtual currency as well as Bitcoin next to impossible. Solving this problem requires specifying the concept of currency in the federal law “On Currency Regulation and Currency Control.”

Yet Bitcoin is likely to have significant potential for development in the next decade. The major problem now is precisely its legalization and lack of new legislation defining

the concept of virtual currency or “private e-money,” especially in Russia. In the short term, Bitcoin or its equivalent is unlikely to rival the ruble, but can be used, for instance, as a parallel currency. The legalization of virtual currencies should be followed by changes in the tax system. As virtual currencies bear some features of a tax haven (namely, there is no jurisdiction in which they operate and the accounts are anonymous; Marian, 2013, p. 42), it is essential to determine the basic principles of taxation on incomes derived from operations involving virtual currencies and integrate these principles into Russia’s tax system. This requires further research.

The issue of fraud counteraction and protection of investors’ rights still induces much discussion and is likely to become the focus area of interdisciplinary studies in the next few years.

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# Konceptualni okvir za definicijo in regulacijo virtualnih valut: mednarodne in ruske prakse

## Izveček

V prispevku analiziramo možne definicije virtualnih valut v zakonodaji in ekonomiji. Proučujemo vidike Evropske centralne banke, urada Financial Crimes Enforcement Network in organizacije Financial Action Task Force o virtualnih valutah. Analizirali smo tudi osnutek zakonodaje o prepovedi denarnih surogatov v Ruski federaciji. Avtorica prispevka predlaga dva sprejemljiva pristopa za definiranje virtualnih valut v pravo in ekonomiji. Podajamo tudi pregled argumentov predstavnikov avstrijske šole o obstoju zasebnega denarja. Avtorica prispevka predlaga uvedbo nekaterih sprememb v zakonodaji Ruske federacije, da bi virtualnim valutam podelili legalni status.

**Ključne besede:** virtualna valuta, bitcoin, elektronski denar, zasebni denar, denarni surogati