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Digital Quasi-Money by Payment Systems

Igor Varyash

ABSTRACT

Aim. The article substantiates the assumption of the emergence of a new form of money – digital quasi-money, as a means of payments and settlements. **Method**. The author discussed the role of the currency of the payment system as a national payment unit that has the property of conversion in national and international payment systems. It reveals specific examples of its appearance by multiplying private currencies (cryptocurrencies) and their mutual conversion with the national digital currency at a fixed rate. **Results**. The author presented a theoretical explanation of the two-tier monetary system. **Conclusion**. Particularly, the author concluded that it leads to additional emission of money into intra-economic circulation, mobilizing the transformation of inventories and personal savings into investments, and makes it possible to strengthen protection from external funding restrictions.

Keywords: finance; monetary policy; cryptocurrency; electronic payments and settlement

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ОРИГИНАЛЬНАЯ СТАТЬЯ

Платежные системы и цифровые квазиденьги

Игорь Варьяш

АННОТАЦИЯ

Цель. В статье обосновывается тезис о появлении новой денежной формы — цифровых квазиденег как платежно-расчетного средства. Рассматривая роль валюты как национальной платежной единицы, обладающей свойством конвертации в национальных и международных платежных системах, **методом** компаративного, автор выявил и сопоставил конкретные примеры ее появления путем умножения частных валют (криптовалют) и их взаимной конвертации с национальной цифровой валютой по фиксированному курсу. В **результате** дано теоретическое объяснение возникновению двухуровневой денежной системы. **Выводы**. Наличие двухуровневой денежной системы приводит к дополнительной эмиссии денег во внутрихозяйственный оборот, мобилизации превращения товарно-материальных запасов и личных сбережений в инвестиции, позволяет усилить защиту от ограничений внешнего финансирования.

Ключевые слова: финансы; денежно-кредитная политика; криптовалюта; электронные платежи и расчеты

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1. FX in payment systems

To overcome the systemic global crisis, the IMF proposes a reboot of the global financial system by means of zeroing debts in exchange for the adoption of a common global digital currency, which will not belong to any one country but will be universal. This approach assumes that national currencies with their burdensome hedging will not be needed for mutual settlements in foreign economic relations. But this project is unlikely to be viable since the world follows the opposite path of expanding monetary systems (according to [2]).

In addition to the fact that digital payment systems are now being tested in several American states, their projects are beginning to be imple-

mented in China, the EU, Switzerland, Austria and are being discussed in Russia. Moreover, cryptocurrencies are becoming more widespread, revealing the properties of world money, the emission of which depends on global business activity.

It has always been believed that a two-tier monetary system is an evil that must be liquidated as soon as possible in order to gain national independence. An example is a dollarization, which is considered as giving up national sovereignty.

Perhaps this was relevant before the digital economy. Today, the globalization of business and financial markets has so widely penetrated the world economy that economic sovereignty has turned out to be relative. The United States managed to somewhat shake the faith of the world community in this mechanism of a market economy as a result of the unbridled use of sanctions, but not to destroy it. Now its relevance is increasing in new conditions and in new circumstances, as a mechanism of a two-tier monetary system – national currencies and private national currencies that play the role of world money.

Glazyev S.Y. has noted: "On the international financial market, there are signs of manipulation of currency quotes, which negatively affect the economies of the EAEU countries [22]. Additional problems are created by unequal monetary and economic exchange, which is associated with different prices of money in different markets and concerns capital flows and pricing. It also applies to the internal economic structures in the Russian Federation, in which territorial-administrative entities have virtually different monetary conditions.

The primary issue of introducing digital currency is the formation of its social base. The personification of cryptocurrency is possible only in relation to organized groups of several (1 + n) individuals and/or organizations, as it happens on social networks.

Money turnover is an important part of business activity, which, in its turn, is a kind of social capital of the economy, which is reflected by business reputation, trademarks, produced intellectual property, reflected in intangible assets. Until recently, software and the organization of digitalization of money circulation did not stand out from this circle, although financial interaction cooperation, obviously, is a component of social capital.

A cryptocurrency can be officially registered under the condition of real collateral, estimated in the national currency, and in this case, itself becomes an "unproduced intangible" asset (according to the SNA) of the group's social capital. Therefore, the digitalization of monetary payments, which significantly expands the boundaries of monetary interaction, can be conditionally called the currency of social capital (capital of social money, MSC[1]), which, from the point of view of monetary theory, is a derivative financial instrument – along with monetary surrogates and quasi-money – securities, warehouse receipts, futures, and other instruments.

The release of cryptocurrency must be carried out by authorized financial institutions that open accounts of personal investment capital [4, Varyash, Denisov, et al.]) in the corresponding digital currency. The profit from the issue of cryptocurrency in the form of the difference between, on the one hand, the cost of issuing and maintaining electronic records databases and, on the other hand, their denomination, goes to the state treasury.

This currency will have the right to exist if it becomes accepted as highly liquid collateral for provisioning against bank lending risks, provisioning in non-credit financial institutions, hedging and refinancing, reflected in management accounting, balance sheet and profit and loss statements. To ensure the liquidity of the currency of social capital, it is necessary to organize its circulation in the foreign exchange market. Unfortunately, this issue is not considered by the initiators of the "digital currency" at all, although this is an indispensable condition for its institutionalization.

In fact, MSC extends the practice of bank deposits to the entire national financial system. The institution of the social reservation will increase the security of primary financial systems in the economy as a tool to improve the efficiency of risk

[1] Social capital is a relatively new definition in economics, introduced into scientific circulation by P. Bourdieu, as a resource of social ties that can be a source of income [1]. J. Coleman supplemented the definition with the term "exchange" [2], and R. Putnam operationalized social capital as social norms, social connections and trust [3]. In the cognitive economy, the core of social capital is goodwill, databases, business relationships, etc. At present, in the financial market, supply is formed in addition to traditional instruments through corporate pension savings schemes, initiative budgeting in territorial entities, which can also be attributed to social capital.

management in the face of increasingly destructive effects of financial and economic crises.

The most important fundamental issue of using the circulation of cryptocurrencies is the protection of property rights to money and the freedom of their owners in choosing a target placement. For the first time, there is an opportunity to legislate the right of citizens and organizations to have their funds transferred to the management of financial intermediaries.

On the one hand, it is impossible to restrict people's ownership of their money. This will cause a tsunami of public outrage. On the other hand, it is also impossible not to restrict the movement of funds in the direction of the shadow economy and financing of war, terrorism, and fraud. The law should clearly indicate the boundaries of the mandatory personification of the movement of cryptocurrency within the boundaries of investments in projects (programs, initiatives) with state participation. Everything else is at the request of the owner of the funds.

The increase in the number of currencies and, in a sense, the expansion of their impact on the economy is an alternative to these methods [6]. But this direction requires significant investments and awakening the activity of the whole society, trust in political and monetary authorities. In fact, this is a new social agreement, which outlines comprehensive measures to protect the interests of the contracting parties, primarily property rights and financial security.

The program for the formation of the institution of the currency of social capital requires a considerable amount of time, which is by no means infinite. Of course, the currency of social capital cannot and will not save humanity from the dangers of destruction, but it will make it possible to resist external financial and economic restrictions on development more effectively than today.

2. The place and role of currencies of payment systems in Russian monetary policy

Digital currency is a hidden form of additional monetary emission that stretches the lag of impact on the economy and makes its impact on price increases less visible. This circumstance requires a study of the transmission mechanism of the impact of cryptocurrency on the economy. Unsubstantiated arguments about strengthening the financial stability of the economy in the introduction of a poorly controlled additional source of monetary emission, which is not associated with the monetization of the economy, will only exacerbate financial crises that will put an additional burden on budgets. This consideration partly explains why the central bank deals with the national cryptocurrency, and not the Ministry of Finance, which needs fiat money and not a reserve cryptocurrency. But it explains only partially since it is the budgetary risks that should have intensified the participation of the budgets of the state budget system in solving the problem of additional emission.

A national digital unit is a form of payment. The Bank of Russia report on the prospects for the introduction of the crypto-ruble states: "Citizens will be able to credit digital rubles to their electronic wallets and use them using mobile devices and other media, both online and in the absence of access to the Internet and mobile communications (that is, in offline mode)" [2]. Such a monetary surrogate can only be a settlement one for conversion between a fiat ruble and a corporate, territorial, cluster, network cryptocurrency. In retail – instead of bonuses, gifts, discounts, etc., in production – instead of self-supporting rubles, in the household – for records of income and expenses of all family members.

The national electronic currency can solve the problem of different values of money depending on territorial and sectoral characteristics. It is long overdue to unify the national currency in the territories of one jurisdiction, which requires a mechanism for converting the local cryptocurrency into the national one. The same applies to interstate settlements – a converter is needed that allows you to transfer cryptocurrencies one into another, bypassing cross rates to world currencies, primarily to the dollar, which is becoming more and more volatile due to fluctuations in sociopolitical tension in the country – the issuer and requiring everything more hedging.

In Russia, the electronic ruble can also be useful in the household for comparing the income and expenses of individual family members in accordance with the changing conditions and circumstances of their life. Thus, electronic money acquires use-value while remaining at the same

time an abstract measure of value, being comparable (convertible) with fiat money.

The development of the national cryptocurrency depends on three conditions: 1) the formation of the institution of national cryptocurrency rubles, 2) the possibility of converting one cryptocurrency into another in national jurisdictions and in foreign jurisdictions, 3) the provision of cryptocurrencies with basic assets – gold and foreign exchange reserves (international reserves), financing of state programs, social capital (except for financial pyramids), etc.

It is necessary to provide for the relationship of ruble cryptocurrencies with debt policy; banks can create reserves for risks together with organizations and households in their cryptocurrency, which will allow more fully than now, to take into account the peculiarities of borrowers.

It can be even more in demand when placing bonded loans on the open market due to the personification of the relationship between investors and borrowers. In banking, cryptocurrency provides a technical opportunity to get away from the problem of impersonal investors, which is especially important in the formation of the institution of personal investment capital [4] and in compliance control.

Cryptocurrency cannot come from anywhere; this is a national infrastructure project that will require very significant funds. The introduction of new mechanisms, schemes and instruments of payments and settlements requires a long time, a social contract with the authorities, economic development, ensuring the creation and development of the necessary production base, energy sources, financial competence in organizations and among the population, the formation of new specialities and the mass graduation of specialists in middle and the highest level, the implementation of fundamental scientific research, applied scientific and technical and scientific and methodological developments. Securing the crypt alone will cost a significant amount of funds.

There is also a need to attract organizations and people to invest in this project. So far, they are in no hurry to part with their funds for the sake of government programs, considering 40 per cent of tax and social payments to the budget sufficient. It is also pointless to ask society whether it needs such revelations before the authorities as to the exposure of the financial condition – it is clear that they are not needed. For the electronic ruble, it is necessary to form the demand for technological clusters. To find out the need for them can be done through surveys, as is widespread in marketing; after all, one must understand who the "stakeholders" are.

It is assumed that all three forms of the Russian ruble will be absolutely equal – in the sense that just as now, 1 ruble in cash is equivalent to 1 non-cash ruble, so one digital ruble should be equivalent to each of the indicated ones. In fact, in the North of Russia, the digital ruble will be easier for consumers than in the South, in Moscow, it is easier than in Tmutarakan, in oil and gas fields, it is easier than in rural areas, in the defence industry, it is easier than in local industry, it is easier for young people than for the elderly, for the incompetent it is easier than for the educated and experienced, etc.

In fact, the idea of the digital ruble of the Bank of Russia is not fundamentally new: "in addition to cash and funds in bank accounts, the options available to citizens for making payments and settlements in digital form will expand" [5], in addition to making it easier to control the blockchain. It means that only one function of money is taken into account – a means of payments and settlements, and not at all measures of value and not savings (world money and thesaurus are not yet mentioned). The Central Bank itself believes that "cryptocurrencies" are not money. Since they cannot fully fulfil all the functions of money, they cannot be used as a measure of value and a store of value, given the volatility of value expressed in official monetary units.

It is naive to expect that the proliferation of digital payments will lead to lower transaction costs. On the contrary, the payment and settlement infrastructure development requires significant funds. Thus, during the transition to cash euro in 2002, unexpectedly for the ECB, an issue of about half a trillion euros was required in addition to the cash already issued.

The preference for operations with portfolios of currency pairs speaks in favour of cryptocurrencies, for which the electronic ruble can be the base currency in currency pairs [7]. A significant result of the introduction of this system will be to reduce the burden on the budgets of budgetary systems in case exceeding the upper limit of transaction costs of countercyclical policy (3% of GDP).

The uncontrollably used methods of quantitative easing and additional taxation, incommensurate with the real growth rates of the economy, only reduce the potential for economic growth.

The increase in currencies and the expansion of their functions are, to a certain extent, an alternative to the indicated methods. But this direction requires significant investments and awakening the activity of the whole society, trust in political and monetary authorities. In fact, this is a new social agreement, which outlines comprehensive measures to protect the interests of the contracting parties, primarily property rights and financial security.

3. Digital currency unions

The EAEU and China can carry out settlements either in national currencies or in their own supranational currency to avoid losses associated with exchange rate volatility and not be dependent on international sanctions. It is the conclusion reached by the participants of the forum "Conjugation of the Eurasian Economic Union and the Chinese initiative "One Belt, One Road".

To overcome the systemic global crisis, the IMF proposes a reboot of the global financial system employing zeroing debts in exchange for adopting a common global digital currency, which will not belong to any one country but will be universal [9]. This approach assumes that national currencies with burdensome hedging of their conversion will not be needed for mutual settlements in foreign economic relations.

But this project is unlikely to be viable since the world follows the opposite path of expanding monetary systems (according to F. Hayek [6]). In addition to the fact that digital payment systems are now being tested in some American states, their projects are beginning to be implemented in China, the EU, Switzerland, Austria and are being discussed in Russia. Moreover, cryptocurrencies are becoming more widespread, revealing the properties of world money, the emission of which depends on global business activity.

According to the Bank of Russia, in February 2020, the Central Banking website (Great Britain) published the results of a survey on the possibilities of using digital currency by the central bank (Central Banking Digital Currency Survey), in which 46 central banks took part (Central Banking 2020a) [5]. According to the survey, 65% of the surveyed central banks, most of which belong to Western Europe, conduct research in the field of digital currencies, which is explained, among other things, by the transition to non-cash payments in the countries of this region.

The Central Bank of Switzerland and the Bank for International Settlements (BIS) planned to jointly test the central bank's digital currency (CBDC) by the end of 2020 [12]. It was announced by the head of the innovation department of BIS Benoit Kere during the summit in Shanghai, reports the Chinese edition of The Paper. Kere clarified that in the next two months, the project should enter the stage of "proof of concept" this will allow beginning research on the suitability of digital currency for retail users. He noted that within the testing framework, the possibility of establishing a link between CBDC and existing payment systems would be studied, and a check for compliance with legislation would be carried out. BIS expressed hope that financial regulators of Hong Kong, Thailand, and other countries will join the initiative in the future. It will allow us to move on to testing.

In the United States, the federal reserve banks of Cleveland, Boston (together with the University of Massachusetts), and New York (together with BIS) are developing software and conducting technological experiments on the use of cryptocurrencies [15]. The Federal Reserve Bank of Boston is working with researchers at the Massachusetts Institute of Technology (MIT) to develop a hypothetical central bank digital currency. Powell concluded that the Fed has yet to decide to issue a digital currency. In the United States, legislation is envisaged to allow the opening of accounts for individuals with the Fed, which would be the obligations of federal banks with the FRS for emergency payments. The US authorities are paying attention to the potential benefits of the emergence of a digital currency and the possible risks. Powell mentioned the need to protect the digital currency from cyber attacks, counterfeiting and fraud. The question is how it will affect monetary policy and financial stability and how it can prevent illegal activity while maintaining the privacy and security of users. He said that one of the experiments is being conducted by the Federal Reserve Board in Washington. The regulator is exploring the prospects for introducing a crypto

dollar in partnership with other central banks and the Bank for International Settlements (BIS).

In Japan, the decision to launch the digital yen will depend on public support, said Kazushige Kamiyama, head of the Payment Systems Department of the Bank of Japan, who is responsible for exploring the possibility of issuing a digital currency. [13] If a digital currency were to emerge, it would aim to strengthen the transactions ecosystem and complement cash and non-cash payments, not replace them. "We made it clear that cash and digital currency will coexist," Kamiyama said. Cash remains the main means of payment in Japan. The Bank of Japan is considering launching the digital yen to improve the efficiency of Japan's payment system, rather than expanding the money supply. Fintech companies could play the role of intermediaries to expand access to the new currency, and the regulator is now discussing whether they should have a special license.

The People's Bank of China has launched the digital yuan in test mode for farmers in four pilot regions. The population's demand for digital currency is growing, so its launch needs to be accelerated, said the head of the PBC I Gan [14]. He is confident that the digital yuan will play an important role in the development of the country's economy, writes 8btc with reference to the People's Daily. According to the head of the PBC, using the new currency will improve the security of retail payments, making them more convenient and efficient. He spoke about this at the Third China Digital Summit with the participation of Tencent, Baidu and Alibaba. In October, the digital yuan was tested in China, the drawing of the national cryptocurrency of the PRC was held on 12 October, and users who received it made 62.79 thousand transactions for $ 1.3 million. During the week, users spent 88 per cent of the funds provided; some participants bought another 900 thousand digital yuan. The digital yuan is being tested in major cities, including Shenzhen and Xiong'an. It is supposed to use the national cryptocurrency at the Winter Olympics, which are planned to be held in Beijing in 2022.

The EU working group on 20 October, 2020 published proposals to introduce a digital euro to ensure the financial security of European companies in the United States [8]. According to the European Central Bank (ECB) report on cryptocurrency for the euro zone, Europe should be ready to issue a digital euro if the need arises, published on 2 October [16]. The new asset can be useful in the absence of cash and in emergency situations, such as the coronavirus pandemic, the authors of the document say. The ECB stressed that no specific decisions have yet been made on the issue of the digital euro. The regulator said that it will not become an alternative or substitute for cash but will supplement it. The central bank representative stressed that the cryptocurrency would aim to provide citizens with free access to simple, universal, secure and reliable means of payment. "The digital euro would also symbolize Europe's readiness to embrace change and lead in supporting the digitalization of the European economy," the ECB said in a report.

Its authors named four scenarios in which a digital euro can be issued:

increased demand for electronic payments,

a significant drop in the demand for cash,

launch of private digital currencies,

massive digital issuance of national currencies by other central banks.

If talking about the first scenario, then, of course, the demand for digital currencies is increasing, including due to the spread of coronavirus infection, says Roman Yankovsky, IP/IT practice advisor at Tomashevskaya & Partners, lecturer at Moscow Digital School. However, electronic payments themselves do not require the introduction of any new digital currencies; there is already an existing acquisition. Therefore, this option will not lead to the transition of people to electronic currencies, the expert believes. The head of the analytical department of AMarkets Artem Deev is of the opposite opinion. According to him, the launch of the digital euro is due, among other things, to the massive and widespread transition to non-cash payments and the gradual abandonment of cash – this is the near future of the whole world. A. Levashenko, member of the Commission on Legal Support of the Digital Economy of the Moscow Branch of the Russian Lawyers' Association, added that the launch of the digital euro would reduce the costs of issuing money, utilizing and transporting cash, limiting the shadow economy, with due observance of the requirements for combating the laundering of proceeds from crime.

The European Commission has presented the rules for the regulation of cryptocurrencies and

stablecoins, as reported by its vice-chairman Valdis Dombrovskis in an official press release [17]. He explained that the field of digital assets has become widespread. Therefore, it is essential to give companies the opportunity to take advantage of its advantages and reduce risks for investors and maintain the financial system's stability. Also, the European Commission plans to launch a regulatory sandbox where firms can test smart contracts and blockchain-based products. Improved regulations will help develop better financial products and open up new funding channels. "The Commission seeks to stimulate innovation in the EU financial sector, especially for high-tech digital startups, while mitigating any potential risks," Dombrovskis said. He stressed that more stringent requirements would be imposed on stablecoins, such as Facebook's Libra project. It is due to the potentially huge scale that such cryptocurrencies can achieve in terms of user reach, it can threaten financial stability.

For this reason, it is important to implement reliable security measures, including against fraud and money laundering. Dombrovskis added that the future of finance lies with digital technologies. The process of digitalization of the economy accelerated, as during the quarantine, people began to use banking and other financial services via the Internet, and the share of contactless payments increased. In December 2019, the European Union did not allow the use of stablecoins such as Libra on its territory. The EU Council explained that the legalization of the circulation of such cryptocurrencies is possible only after the identification and elimination of all legal and supervisory risks.

Bank of Russia Governor Elvira Nabiullina at the Russia Calling! VTB Capital Forum spoke about the alleged impact of the digital ruble on banks' business model [22]. "The introduction of the digital ruble may affect banks' business models. We understand this and want to hear how banks see it. Yes, liquidity management may become somewhat more complicated, but here the Central Bank is ready to adjust its instruments so that banks do not have concerns. The structure of income will change. The costs of individual operations will fall, but the convenience will lead to a higher volume of such operations. The most important thing is that we want to make this system open, so that all financial market participants (not only banks, payment systems, and so on) develop their services based on the digital ruble, and offer new services." The regulator emphasizes that now it is necessary to "actively study" the issue from an economic and technological point of view. The Central Bank intends to evaluate the effectiveness of the digital ruble "in close contact with society, experts and financial market participants." The Bank of Russia accepts feedback on the report until 31 December 2020. The collection of opinions on the report will start on 12 October. In parallel, the regulator will begin to conduct experiments in cooperation with "all stakeholders". The ECB assured that the regulator would liaise with the relevant institutions and authorities to assess the digital euro's legal, economic, and financial requirements.

JPM Coin, a cryptocurrency issued by JPMorgan Chase, will be used commercially for the first time [18]. The head of the company's payment division, Takis Georgakopoulos, said that the first user of the new currency was a large technology company, the name of which was not specified, CNBC reports. JPMorgan also announced the creation of a new Onyx division dedicated to digital currencies and blockchain. Onyx has over 100 employees and the division, according to Georgakopoulos, was created in connection with the transition from design work to real business. JPMorgan is considering creating dedicated payment channels for central banks interested in issuing their own digital currencies.

Toyota Systems, the IT arm of Toyota, will release and pilot its digital currency. [19] The token will be created using the DeCurret blockchain platform. Toyota Systems said that digital currency testing would be conducted among 2,500 employees of the company. They will be able to receive tokens as a reward, store them in their personal blockchain wallets and exchange them for prizes. Thus, the possibilities of using blockchain solutions in the company's business model will be investigated. If testing is successful, digital currency could be used in the supply chain or for payments between enterprises in the future. "Toyota Systems will test the feasibility of digital currencies in supply chain and inter-enterprise transactions based on the results of this pilot. Payment and settlement mechanisms will be investigated," the press release says.

The financial group Mitsubishi UFJ also plans to release its token. In July, the president of the

company, Hironori Kamezawa, announced that it would launch the MUFG token in the second half of 2020 [20]. Initially, the digital currency was supposed to appear for the Summer Olympic Games in Tokyo, but in the second half of 2019, due to banking legislation restrictions, the release date was delayed.

A. Greenspan believed that the Fed could counteract the overvaluation of assets. Apparently, one of the ways could be strengthening the stability of the national currency up to limiting the floating rate and capital movement. Today, the globalization of business and financial markets has so widely penetrated the world economy that economic sovereignty has turned out to be relative. The United States managed to somewhat shake the faith of the world community in this mechanism of a market economy as a result of the unbridled use of sanctions, but not to destroy it. Now the relevance of the two-tier monetary system is increasing in new conditions and in new circumstances as a mechanism for the cryptocurrency to play the role of world money, national currencies and private national currencies.

Thus, a two-tier EU monetary system would mean the introduction of a cashless digital euro and the resumption of the issuance of national currencies in digital format. The same could be for the CIS / EurAsEC, where interstate non-cash digital currency and national digital currencies can be issued. (One could call the CIS / EurAsEC currency "tar" in memory of Great Tartary). The issue of a supranational crypt can be carried out by all states belonging to the corresponding monetary union.

EU projects hydrogen euro instead of the petrodollar. The idea, if not premature, is undoubtedly very long-term. To create a hydrogen euro as a global means of payment, it is necessary to occupy a significant share of the world market for hydrogen production. However, today there is a share and the market itself; hydrogen is produced in negligible, by the standards of industry, sizes. In addition, it should be borne in mind that for its production in industrial quantities, energy is needed, which is already lacking. It turns out to be a vicious circle: new energy needs so much old that it turns out to be unprofitable. A new technological revolution is needed.

For several months in a row, there has been a net inflow of capital into the "gold" ETF-funds, whose shares are backed by a precious physical metal [10]. Since the beginning of 2020, $ 55 billion has been invested in such funds. This fact suggests that the liquidity of the cryptocurrency, the underlying asset of which is physical gold, has great prospects. The largest ETF in the world remains the American SPDR Gold Shares (GLD), which accounts for 33 per cent of the market, and has 1,268.5 tons of gold in its reserves (as of September 2020). The iShares Gold Trust is in second place with 518.1 tonnes of gold in reserves and a 13 per cent market share. The German ETC-fund Xetra-Gold has 222.4 tons of gold in its reserves, ranking it in fifth place in the world. Since the beginning of 2020, investors have invested $ 969.8 million in its shares. In total, all German "gold" funds were able to attract $ 1115.1 million, as a result of which they were in third place in terms of capital inflows after the United States and Great Britain. The restructuring of the National Welfare Fund in Russia with the prospect of allocating a share of precious metals in it is discussed.

A cryptocurrency can be exchanged for gold if it is accepted by gold miners and processors who can issue the corresponding cryptocurrency together. The advantage of gold cryptocurrency is the transfer of gold liquidity to the electronic record that represents it, which is vital for modern production. But this is also a disadvantage since the gold cryptocurrency requires more hedging than in other segments – the price change on it reaches more than 10 per cent.

And yet, the gold cryptocurrency can solve the problem of its use not only to move away from the dollar in payments using alternative technological platforms in relation to SWIFT but also as a single settlement measure, although for this it is necessary to form a gold cartel by analogy with OPEC +.

Conclusion

The idea of a single common human language ("Esperanto") was embodied with the help of a programming language that all computer scientists in the world use. So it is with the single world currency – it will be an electronic record secured by the assets of the cognitive economy, including monetary gold.

It would seem that the introduction of a new currency is very controversial, if not hopeless. However, modern foreign exchange market research reveals higher profitability of transactions

with arbitrage of currency pairs than with individual currencies due to the maximization of the used volatility strategy. The same study leads to the conclusion that the market is reversing to expand the pluralism of currencies.

A significant aspect of introducing ruble-denominated cryptocurrencies into circulation is its obvious opposite of the devaluation of the national currency to maintain stable ruble income in export-oriented areas of economic activity. Export targeting has been at the forefront of monetary policy over the past decades, despite the high volatility of hydrocarbon prices, including the extremely high politicization of their markets.

But since the establishment of the OPEC+ regime and the relief of direct pressure from the United States, as well as the development of segments of the export of food, military equipment and manufacturing products, including precious metals, the need to follow export targeting has become less and less urgent, as evidenced by the turn of the Russian government to move away from containment of inflation by "quantitative tightening".

Due to the increasing diversity of social capital is expressed in an expanding monetary system, one of the most dynamically developing segments of which are cryptocurrencies. The expansion of monetary systems is aided by digitalization by increasing the transaction costs of the cognitive economy. It seems that they will increasingly manifest themselves as a link between the banking and non-financial sectors of the cognitive economy.

The advantage of cryptocurrencies over credit/fiat money lies in virtually unlimited diversity due to social differentiation by groups of market participants – international, jurisdictions, territorial, as well as industrial, trade and social networks. The marginal cost of hedging limits the expansion of the range of currencies.

Based on monitoring the expectations of foreign exchange markets, a forecast index of the ratio of credit/fiat currencies to the specified cryptocurrencies can be calculated by analogy with the dollar index. It is especially important for Russia to plan cooperation in international monetary and monetary, and financial relations between the EurAsEC, SCHOS, BRICS countries. The valuation of the national currency by its ratio with local cryptocurrencies, expressed by the market's expected values of the national currency index, is necessary for participants in commodity markets in the analysis of monetary factors in the formation of market conditions.

A significant result of introducing this system will be to reduce the burden on the budgets of budgetary systems, which have exceeded the upper limit of transaction costs of countercyclical policies (3% of GDP). Just like the straightforward methods of quantitative easing and additional taxation, which are incommensurate with the real growth rates of the economy, the artificial limitation of the monetization of the economy reduces the potential for economic growth.

Instead of transferring ownership of money during the transition to the digital ruble, it is proposed to "move the digital code from the database (electronic wallet) of one" user "to the database (electronic wallet) of another" user ". Thus, it is assumed that electronic money is kept in the ownership of the Bank of Russia, and not the government and not the depositors of fiat funds, although the Bank of Russia, when forming "wallets", only technically performs transmission, but does not transfer ownership.

By increasing currency diversity, the Bank of Russia would need to get rid of the unusual functions of the institutional regulator of the financial sector, as well as transfer the functions of regulating the securities market (bonds and shares, precious metals, derivatives, electronic payments and settlements, non-credit financial intermediation services) to a specialized organization of the type how commodity markets are regulated, while retaining the institutional regulation of the interbank market and bank lending for the Central Bank.

REFERENCES

1. Bourdieu P. Forms of capital. Translated from English by M.S. Dobryakova. *Economic Sociology*. 2002;3(5):60–74.
2. Coleman, James. Social Capital in the Creation of Human Capital. American Journal of Sociology. 1988;94:95–120. DOI:10.1086/228943
3. Putnam Robert D. Bowling Alone: The Collapse and Revival of American Community. New York: Simon and Schuster; 2000. 541 p.

4. Varyash I.Y., Denisov A.Y., Khmelev D.A., Panasenko K.K. Measuring retirement potential. *Banking*. 2019;(4):26–29.
5. Digital ruble. Public Consultation Report. Bank of Russia, October 2020. Moscow; 2020. URL: https://cbr.ru/analytics/d_ok/dig_ruble/
6. Hayek F. The Pure Theory of Capital. London; 1940; Chicago: University of Chicago Press; 1941. 413 p.
7. Kuznetsov J.A. Transaction costs and the FX carry trade. Dissertation Cover Sheet ID: 1997179. IB 93F0.
8. Koch M. Die EU schlägt zurück: Wie sich die Staatengemeinschaft gegen Sanktionen wehren will. *Handelsblatt*; 21.10.2020.
9. Georgieva K. A New Bretton Woods Moment By, IMF Managing Director Washington, DC. 15 October 2020. URL: https://www.imf.org/en/News/Articles/2020/10/15/sp101520-a-new-bretton-woods-moment.
10. WGC: reserves of "gold" funds increased to 3880 tons. 12 October 2020. URL: https://gold.ru/news/wgc-rezervy-zolotyh-fondov-vyrosli-do-3880-tonn-zolota.html.
11. Hayek F.A. Denationalisation of Money: An Analysis of the Theory and Practice of Concurrent Currencies. London: Institute of Economic Affairs; 1976.
12. Central Bank of Switzerland and Bank for International Settlements will test digital currency. URL: https://www.rbc.ru/crypto/news/5f96ea249a79474fd5723bd9
13. Bank of Japan announces condition for digital yen issue. URL: https://www.rbc.ru/crypto/news/5f92bc909a79475023b443a7
14. The head of the Central Bank of China called for accelerating the launch of the digital yuan. URL: https://www.rbc.ru/crypto/news/5f8ff9739a79471b60dfd6d6
15. The head of the Fed spoke about the risks of the introduction of the digital dollar. URL: https://www.rbc.ru/crypto/news/5f8da5629a7947aa90941bfe
16. ECB report on the development of the digital euro. 4 conditions for launching a cryptocurrency. URL: https://www.rbc.ru/crypto/news/5f770c519a79470c9f50b798
17. The European Commission presented the rules for regulating the cryptocurrency market. URL: https://www.rbc.ru/crypto/news/5f6cc6fe9a79470f9eb8a854
18. JPMorgan cryptocurrency to be used commercially for the first time. URL: https://www.rbc.ru/crypto/news/5f9825339a79474d2dd0a50d
19. Toyota will release its digital currency. URL: https://www.rbc.ru/crypto/news/5f96cdd39a79474113c3ca62.
20. Japan's largest financial company plans to release its stablecoin by the end of the year. URL: https://ttrcoin.com/krupneyshaya-finansovaya-kompaniya-yaponii-planiruet-vypustit-svoy-steyblkoin-do-konca-goda.11202/
21. URL: https://www.vtbcapital.ru/events/2016/moscow/news/685877/
22. Glazyev S.Y. A report on the root causes of the growing chaos and measures to overcome the economic crisis. URL: http://www.fa.ru/Documents/Glaziev_Chaos.pdf
23. URL: https://www.vedomosti.ru/economics/articles/2020/10/26/844640-eaes-kitai

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