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#### TAX TRANSFORMATION VECTOR IN DIGITALIZATION ENVIRONMENT

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#### *Abstract*

The article discusses various theoretical aspects of the definition “digital economy” and its form of development at various stages, taking into account the modern functioning of the Russian economy, which is particularly relevant today to pursue a source of economic growth. A retrospective analysis is carried out, highlighting the main stages that brought about a major alteration to the revolutionary transformation of relations in the economy, and a further boost to productivity in various sectors of the economy at different periods of time, with some key factors to be delineated. The crucial prerequisites for the development of the digital economy within the modern Russian economy are outlined based on the analysis of the practical experience of international companies as well as new decentralized payment systems and their role in the digital economy. The article emphasizes insufficient transformations and backwardness in the development of the taxation system as globalization proceeds, and modernization of market relations responding to revolutionary technologies in the digital economy where this imbalance is most clearly presented. In this regard, a particular emphasis is being put on the transformation of the tax and monetary systems of the State, based on the advent of cryptocurrency in the sphere of its circulation and investments. The essence and content of digital money, features of their emission and circulation based on blockchain technology are revealed. It is shown that the cryptocurrency market of modern monetary circulation requires certain transformations in the current tax system of the State, in its basic principles. There is a lack of elasticity of modifications in tax legislation in the current conditions of globalization. It is proposed to define a new vector of the tax system for a structural change in the digital economy in Russia.

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**Keywords:** Blockchain technology, cryptocurrency, taxes, tax system, digital technology, digital economy.



## 1. Introduction

The digital economy is becoming more commonplace in everyday life of a modern man and society at large. Along with material and labor capital, digital capital is on the agenda with all ensuing consequences for government, business and the population. The digital economy is characterized by the management system based on digital platforms, it is an economy based on the use of computing technologies, when business strongly relies on the use of the worldwide system of integrated computers (the Internet) (Tsakayev & Saidov, 2018). This circumstance necessitates the transformation of the existing tax system in modern states. The relevance of tax transformation vector in the conditions of digitalization of economic relations formed the basis for a special study with the need to present the findings within this article.

One of the first references to the term “digital economy” dates back to 1995 by Tapscott’s (1997) *The Digital Economy: A Promise and Danger in the Age of Network Intelligence* that examines the way new technologies and the Internet transform not only business processes, business activities, economics, etc., but also the production and sale of products and services. Subsequently, Mesenbourg in 2001 in his book *Changes in the Digital Economy* outlined three main components of the concept of the digital economy, namely: ensuring the infrastructure for business processes (software and hardware support for business processes); integrating business processes (organization of business processes through computer networks); e-business (creation and sale of goods through computer networks).

Now it is possible to supplement this concept with a payment system (cryptocurrency) based on the blockchain technology, a new component that will ensure their interaction, since money remains a necessary alternative exchange medium in the digital economy, it is its form and emission technique that change over time (Tsakayev, Khadzhiev, & Batukayeva, 2018).

This transformation is attributed to the fact that scientific progress and technical advances contribute to increased productivity in all sectors of the economy. In the history of mankind, such transformations are quite rare. It is conditionally possible to distinguish three of them that led to the revolutionary transformation of economic relations, namely: information revolution (printing press); use of steam power (steam engine); electricity applications (Electricity Generator).

By their nature, technological revolutions have a strong destructive effect. Thus, the Luddites in the early 19<sup>th</sup> century resisted and destroyed machinery that replaced people in the industry, increasing technological unemployment, despite the fact that machinery created new jobs and new competences for people (Vodopianov, 2018).

These changes are possible provided that new technologies are sufficiently flexible and large-scale; in this case, an important role is not so much the adoption of technologies, but the adaptation to technologies. Car rental companies like YandexTaxi, Uber to employ drivers (taxis) using digital technologies can serve as an example of advanced high-quality service that provides opportunities for the economically active public to live up to its potential.

The main component of revolutionary technology is that it anyway should first be adopted before society adapts to it. If in the past electricity used to depend on generators, then the current technological revolution primarily depends on computers, the Internet, digital platforms, and the growth of blockchain technology. As a rule, in the early stages of this type of revolution, innovations tend to be considered, and only much later the idea itself starts to be implemented. It is therefore not surprising that the digital economy

was not widely embodied in production (a personal computer appeared relatively recently, about 40-50 years ago). However, the fact that the revolution in the digital economy is in full swing is already noticeable now, in addition to the transformation of jobs and new competencies to arise, the digital economy is transforming entire industries, such as retail, publishing, and on the horizon there are major changes in freight traffic, banking and financial sector. Thus, in the first nine months of 2016, the number of online purchases (online transactions) increased by 39.5% as contrary to 2015 (Alikina, 2016). This is due to the improved level of technology, financial literacy and the increasing role of the Internet in many areas of human lives and endeavors. A Chinese e-commerce giant Alibaba owns a bank and uses resources to provide loans to Chinese consumers (Kostarev & Pavlov, 2018). An American e-commerce company is advancing in the same direction (Kalyukov, 2018).

The digital economy that provides added value gains should be fully embraced by taxes and taxation. If taxation of human capital (in the form of living labor) is carried out through taxes on the income of an individual, and real capital through property taxes, the question comes up as to what taxes to apply to conduct the taxation of the use of digital capital? What should be the vector of taxation transformation of a modern economy based on the digitalization of social relations?

## **2. Problem Statement**

As a result of the threats posed by the actively developing market of decentralized payment systems, cryptocurrency, etc., the question arises of revising the existing taxation conditions and the related issues of tax system transformation due to the need to transfer economic relations to a qualitatively new technological level of relations between the state, economic entities and citizens. In addition, at present Russia is at a critical phase of its development, when there is an urgent need to change a raw material vector of economic development for an innovative model, where the main element of effective economic development is the tax potential, consisting of a set of taxes, methods, forms and principles to form the basis for tax system, since the efficiency of taxation is one of the most important economic mainsprings of state impact on economic growth.

## **3. Research Questions**

The subject of the present study is specific tax relationships arising in the process of generating cash income in a cryptocurrency environment, based on the effect of modern forms of decentralized payment systems (cryptocurrency) relying on blockchain technology on the evolutionary transformation of taxation and specification of the place and role of cryptocurrency in the tax system as an object of taxation. This is due to the addition and clarification of the concept of “cryptocurrency” in the framework of decentralized payment systems based on blockchain technology, as well as the impact of risks associated with the use of this technology in the current tax environment.

## **4. Purpose of the Study**

The purpose of the study is to develop and substantiate theoretical and methodological tools for the transformation of the national tax system in the conditions of cryptocurrency monetization of the national

economy. It aims to identify transformations in the basic principles of taxation in a cryptocurrency environment, as well as outline the new tax paradigm in a cryptocurrency environment.

## 5. Research Methods

Methodological approaches and methods were used enabling to analyze the dependence of the change in the state income level on the type of taxation object and determine the required tax rate when changing the taxation object from income received to expenses and purchasing property with differentiation of objects. There were also used marginal analysis, i.e. analysis of the impact in the context of indirect and direct tax revenues on the dynamics of GDP based on the principle of equity and taxation efficiency criterion; analysis of three approaches to taxation of decentralized payment systems (cryptocurrency) based on blockchain technology; methods of functional analysis, i.e. analysis of generalization of various advanced positions on taxation of decentralized payment facilities (cryptocurrencies) based on blockchain technology in foreign countries; and simulation modeling, i.e. model building to describe the processes occurring over time based on the Monte Carlo method for estimating the dependence of GDP growth on the level of taxation during the final emission of money supply.

## 6. Findings

Today, the digital revolution gives Russia a unique chance to take a worthy, if not leading, place among its leaders. According to the McKinsey Global Institute (MGI), for 2017, by the number of Internet users, Russia ranks first in Europe and sixth in the world. As early as 2017, the number of active users of the state and municipal online services reached 40 million, and in comparison with 2016 the number of users has doubled (Alikina, 2016).

According to the Federal State Statistics Service (RosStat, 2018), the share of Russian organizations using information and communication technologies showed a steady growth from 2005 to 2013, followed by a slight decrease in 2014-2017 from 94% to 92.1%. However, other indicators including the use of e-mail, the Internet significantly went up from 2005 to 2017, more than twice.

Based on the proportion of organizations that access global information networks, the frequent use and stable growth is observed in the field of higher professional education, due to the awareness of the opportunities provided by the latter and ease of use for professional scientific growth. A noteworthy feature is the positive dynamics in the use of global networks in the areas of health and social services that almost doubled their growth rate from 2005 to 2016. In general, over the past 10 years, organizations in various spheres of economic and social life showed a positive trend and approached the leader in using global information networks. This suggests that economic actors realized the importance and benefits derived from their use.

Considering the share of organizations that used the Internet by the type of economic activity, a similar pattern can be seen. The top three are the organizations in the sphere of higher education, the financial sector and the primary sector of the economy with a consistently high proportion of Internet usage from early 2005 to 2016. Unlike the leaders, if in other areas of activity, the use of the Internet at the

beginning of the analyzed period was not so high, over a short period of time, however, there was an increased use of the Internet and in 2016 it came closer to the leaders.

Considering the proportion of organizations that had their own website at the beginning of the analyzed period, there is a significant increase in all sectors. The leader is higher professional education, and financial sector is in the second place. It is also worth noting that this indicator has greatly increased in the field of healthcare and the provision of social services.

The use of information and computer technologies occupies an important place in the development of innovative transformations in various spheres of society: state and municipal government, financial sector, educational process, health care and medicine, security and law and order, culture and art. Information and computer technologies are a key link in the interaction of production processes and technical means for the collection, processing, storage and dissemination of innovative information in the public environment. In order to improve the situation of the country and determine the role and place in the digital economy, it is necessary to analyze information and communication activities.

In the modern world, a high level of digitalization is associated with the growth prospects and competition of companies, industries and national economies. Currently, the level of digitalization of private companies lags behind the state-owned corporations in leading countries, as private sector does not actively and extensively use the advantages and achievements of digital technologies to increase the productive efficiency and create new products and services.

As of 2017, when assessing the volume of investments in the digitalization increase, according to the McKinsey Global Institute (MGI) in Russia, it amounts to 2.2% of GDP, while in the United States it makes up 5%, in Western Europe – 3.9 %, and in Brazil – 3.6% (Aptekman et al., 2017). As a result, the competitiveness of Russian companies is lower not only internationally, which is due to the relatively low volume of high-tech exports, but also domestically due to the displacement of domestic companies with foreign in the areas of e-commerce, social media and web search engines. In addition, the growth of Russian companies that produce and implement digital technologies is influenced by a low level of investment from consumers.

Digital transformation is quite active in the financial sector with the participation of banks and insurance companies that offer both products and services related to customer treatment. The digital revolution has necessitated radical reforms for conventional representatives of financial sector, and most Russian banks are already trying to carry out digital transformations. Digital transformation allows them to expand financial access, introduce new retail and media options for transporting business products and services, and provide more high quality services to their customers (Kalyukov & Khrisanfova, 2018, Tetkin, 2018).

Even today, representatives of the financial sector can identify the main benefits of digital transformation of key processes, namely: reducing the costs incurred for launching products; simplifying interaction with customers; establishing partnerships; providing access to new market segments; reducing time for the sale of products; increasing the speed of financial services; reducing time for preparation and submission of documents. The costs associated with the main processes in a traditional bank can be reduced by 40–60% due to digitalization (Aleshkina, 2017).

Despite the steady growth of users of remote banking services, Russia still lags behind the developed countries of Northern Europe, Australia, the USA and Japan by 4-6 years. Nearly 60% of the clients in these countries use remote banking, whereas in Russia – about 30%, despite a 40% growth of users of remote banking over the past year and a half (Aptekman et al., 2017).

The existing taxation system in Russia does not fully cover the digital economy, including Business-to-Business (B2B), Business-to-Consumer Internet (B2C), Consumer-to-Consumer transactions (C2C), E-banking, E-insurance, E-marketing, and Cryptocurrency. It is important that a significant contribution to the development of the digital economy was made by decentralized payment systems, the advent of which was predicted in 1999 in an interview with the Nobel Prize winner Friedman (1999).

Meanwhile, the advent of blockchain digital payment technologies, like bitcoin and an array of rapidly expanding altcoins, pose challenges for money laundering control, tax evasion control and other illegal activities. On the one hand, it makes these benefits attractive, and, on the other hand, it makes them potentially dangerous.

Thus, the basic blockchain technology for cryptocurrency has changed the concept of finances, providing new transaction opportunities, speed, security, and low cost (Ivanova, 2018). However, the crucial problem is the opportunities provided by cryptocurrencies for tax evasion, as illegal transactions are carried out mainly by using conventional means of payment.

## **7. Conclusion**

The world economy is being currently transformed through the deployment of technological innovations nearly in all areas except for taxation. With the market globalizing and modernizing, taxation lags noticeably behind. In the observed digital transformation of economic relations, imbalances are noticeable, which need leveling through the appropriate alteration in tax relations, specifically, by means of changes and amendments to the assessment of tax bases that rely on the development of the digital economy.

Digital transformation of economic relations forces the state governance of tax revenues to rethink the work in place, taking into account the developing new economic trends and the opportunities available. The global innovation revolution driven by the advanced digital technology highlights, even to a greater extent, the need for a digital transformation of global tax rules using a unified approach.

The first challenge for digital taxation is the principle of ‘residency’. The second one is the inferiority of the conceptual tax apparatus of the Russian Federation in terms of regulating Internet sales, the lack of classification criteria for assigning objects of digital transactions. The third challenge is related to the development of decentralized payment systems that allow for the anonymity status of buyers and sellers, and their location.

There are prerequisites for the development of the digital economy in Russia and their further development will inevitably call for structural changes in various areas of the Russian economy. Firstly, it is important that digital technologies influence the development and revision of business and state relations. Today, however, the lack of their coordinated actions with the scientific community is the constraint. Secondly, the development of the digital economy implies the need for the digital industry to produce and maintain high-quality products. In order to ensure the development of the digital industry, it is necessary to

determine academic priorities in the field of engineering and construction technologies, mathematics, and physics, and to increase incentives for citizens and businesses to use digital technologies. Thirdly, it is necessary to develop unified methodologies for measuring the performance of the digital economy in line with the objectives and goals. Fourthly, to ensure consideration of the possibility to introduce changes in tax legislation regarding the specification of taxation objects and the tax base with respect to Internet transactions and the development of unified legislation in the field of taxation of the digital economy. Fifthly, to determine the role of the residency status in the taxation of digital commercial activities, identifying the economic presence of a subject of taxation as a priority. Sixthly, to ensure the construction of a taxation framework based on mutual trust between the state, business and society by changing the very philosophy of participatory tax relationships.

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