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Analysis of the Potential of Digital Youth Entrepreneurship Development in Russia

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Abstract—**This study provides the analysis of the potential of digital youth entrepreneurship development in Russia. Research rationale is associated with increased global competition relating to the approaching recession and the active use by world leaders of non-market methods of struggle that violate the free trade principles of the World Trade Organization. The use of non-market methods is facilitated by periodical recession that occurs almost every decade, and the next one can happen at any time. During periods of cyclical recession in global economy, the problem of increased youth unemployment is growing. The growth of youth unemployment is especially significant in developing countries, including Russia. Results of the analysis of the potential of digital youth entrepreneurship development in Russia revealed favorable conditions for the implementation of Blockchain and Smart Contracts technologies – high rates of urbanization; significant differences in the growth rate of cash in circulation (outside the Bank of Russia) from the exchange turnover on transactions with real commodity; unused information and communication technology funds; growing support for both established and nascent formal and informal development institutions. Growing global competition and escalated trade war between the United States of America and China stimulate the accelerated development of digital entrepreneurship including that in the area of youth entrepreneurship that is of great current interest for the International Labor Organization and the United Nations. World trade slowdown and increased global competition, in presence of sanctions against Russia and trade war between China and the USA, create conditions for the technological crypto union of Russia and China. The technological crypto union of Russia and China will contribute to: the creation of global Blockchain blocks, new structures to ensure the functioning of cryptocurrency platforms, mining; sale to investors of a fixed number of new units of cryptocurrencies; using the potential of creative youth intellectually capable of quickly mastering new information and communication technologies.**

Keywords—*economy globalization, cryptocurrency, currency manipulation, world trade currency, non-market methods of struggle, recession, digital youth entrepreneurship.*

I. INTRODUCTION

The global financial crisis (world recession) 2008 when the number of unemployed youth increased to approximately 73.4 million people, what is 12.6% of the total number of young people, i.e. with an increase of 3.4 million people in period 2007-2013, is a retrospective reference point for the development of youth entrepreneurship. The proportion of young people not engaged in education or training has increased significantly reaching almost 16% in OECD countries and 20% in Latin America [1].

Recessions occur almost every decade (1975, 1982, 1991 and 2009), and the next one can happen at any time. The possibility that global economic growth in 2019 will be below 2% is estimated at 21%. Citigroup economists assess global economic growth below 2% as a "global recession" (in 2008, global growth was 1.8%) [2].

Experts from Stolypin Institute for Growth Economics state that a technical recession in the Russian economy could be registered as early as 2019. According to the results of Q1 and Q2 2019, the number of employees of small and medium enterprises (SMEs) decreased by 1.6% year-on-year (by more than 257 thousand workers), the number of SMEs decreased by 7-8% year-on-year (by 18.2 thousand small enterprises and 1.5 thousand of medium ones) [3].

To solve the problem of increased youth unemployment during periods of cyclical recession in the global economy, international programs to increase their employment were developed. International Labor Organization leads the work of the United Nations to support youth employment around the world known as the Global Initiative on Decent Jobs for Youth. This initiative brings global resources together to maximize the effectiveness of investments in youth employment and to help states for sustainable development until 2030.

In Europe, a steady decline in youth employment has led to a significant shift towards entrepreneurship that is part of Euro 2020 strategy [4]. EU emphasizes the role of entrepreneurship in the youth employment package which includes a youth guarantee to improve support services for start-up young entrepreneurs. Many of the national youth guarantee implementation plans submitted by EU Member States include incentives to support young entrepreneurs.

The most important function of entrepreneurship is to contribute to economic growth through the implementation of a policy of reindustrialization, infrastructure development and application of innovations, support for global business and free trade. Entrepreneurs and innovators play a key role in sustainable development. This includes taking into account the cyclical nature of R&D and innovations in technological development supported by affordable Internet and a focus on the development of digital economy.

World trade slowdown and increased global competition, as well as existing tariff and currency wars, aggravate the importance of the problem of supporting entrepreneurship. The introduction by the United States of sanctions against Russia and their trade war with China prompted the latter to use alternative to US dollars in trade relations, including also cryptocurrency – Bitcoin and Altcoins (Ethereum, Ripple, Litecoin, Stellar, Nem, Dash and Monero) [5] using Blockchain and Smart Contracts technologies [6].

The United States, being the world emissive center of US dollars, broadly imposes sanctions on developing countries restricting their access to global trade, thereby slowing GDP growth. Governments of countries that want to get around US sanctions are turning to cryptocurrencies.

In 2018, the Venezuelan government and President Nicolas Maduro launched the state-sponsored cryptocurrency named Petro. The scheme is transparent; it was an attempt to evade US sanctions. But it did not succeed. Now the Venezuelan government has turned to Bitcoin. Venezuelan users of LocalBitcoins p2p platform exchanged Bitcoin for 68 billion bolivars from 29 AUG 2019 to 02 AUG 2019 – a record value that was registered during the freezing of the assets of the Venezuelan government according to the order of U.S. President Donald Trump. To get around US sanctions, fees are converted to Bitcoin and transferred abroad – to Russia, China and Hungary [7].

Venezuelan leaders are not the only ones who think that Blockchain technology can become the foundation of a new financial system that works out of reach of the United States. Iran, Russia and China can join it.

Modern cryptocurrency infrastructure is too slow and inefficient to be a legitimate competitor to the American system. Cryptocurrency has a number of significant weaknesses that increase trading risks:

- Bitcoin cannot be a safe haven – it is volatile, less liquid and more expensive to complete transactions than other assets (including gold which is traditional haven) even in normal market conditions [8];

- volatility in trade relations is enhanced when choosing different cryptocurrencies due to increased mutual influence [9].

However, if Russia, China, Iran and Venezuela can find ways to overcome these technical obstacles, things could change. Russia gives priority to the advancement of Blockchain technology as a long-term goal of economic and national security in order to reduce the impact of US sanctions and diversify its foreign exchange reserves. In 2018, the largest Russian development banks joined colleagues from Brazil, India, China and South Africa as part of an agreement on the study of distributed ledger technology.

II. METHODS

For analyzing the development of digital youth entrepreneurship potential in Russia, we used descriptive statistics methods. Descriptive statistics deals with the processing of empirical data, their systematization, visual presentation in the form of graphs and tables, as well as their quantitative description through basic statistical parameters.

Descriptive statistics allows processing an unlimited array of data and get information about it according to a number of

statistical criteria: median; mode; variance; average; standard deviation; standard error; asymmetry.

For a specific case, median and variance will be applied. Selected criteria will allow sufficient determining the possibilities for the development of digital youth entrepreneurship in Russia.

Statistical analysis was used for this study – a method of collecting, studying and presenting large amounts of data to identify basic patterns and trends for a particular phenomenon [10]. Several methods are distinguished: statistical observation – systematic collection of data followed by mathematical processing; sampling –using a certain part of data for certain characteristics (stratified, cluster, quota); correlation and regression analysis reveals the relationships between data and the reasons why the data depend on each other; dynamic analysis allows you to track the strength, intensity and frequency of changes in objects and phenomena [11].

III. RESULTS

Analysis of the potential of digital youth entrepreneurship development in Russia includes an assessment of the following [12, 13]:
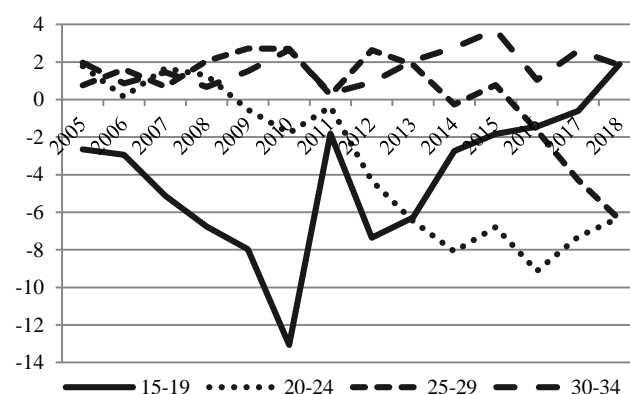
- *human potential* – Rates of Gain (RG) of the number of young people by structure and age groups;

- *environmental potential* – RG of exchange turnover on transactions with real commodities, industrial production, agricultural products, cash in circulation (outside the Bank of Russia);

- *tools* – RG of the proportion of organizations (in % of the total number of organizations surveyed) that used broadband Internet access and special software [14].

Human potential. Evaluation of the RG of young people by structure (total, urban, rural) and age groups (15-19, 20-24, 25-29, 30-34 years) revealed the following.
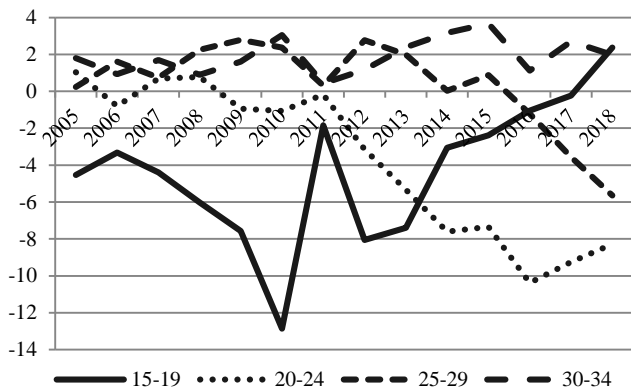
According to the dynamics of the *total number of young people* 2005-2018 (Figure 1), the group 30-34 has the highest positive median RG value (Me = 1.67%) with the smallest variance ($\sigma^2 = 0.91$). Negative median RG value in two groups of 15-19 (Me = -2.84%) and 20-24 (Me = -3.05%) with dispersion ($\sigma^2 = 14.57$) and ($\sigma^2 = 15.91$), respectively.

Source: calculated and built according to the Federal State Statistics Service of the Russian Federation. http://www.gks.ru

Fig. 1. Rates of gain of the number of all young people by age groups (as of January 1, %).

In regards to the dynamics of *urban* youth 2005-2018. (Figure 2), the group30-34 had the highest positive median RG value (Me = 1.74%) with the smallest variance (σ^2 = 0.95).
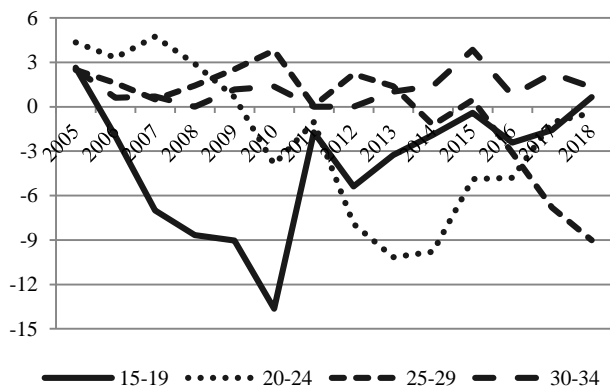
Fig. 2. Rates of gain of the number of urban youth by age groups (as of January 1, %).

Negative median RG value in two groups of 15-19 (Me = -3.86%) and 20-24 (Me = -2.11%) with variance (σ^2 = 14.97) and (σ^2 = 17.31), respectively.

According to the dynamics of rural youth 2005-2018 (Figure 3), the group 30-34 had the highest positive median RG value (Me = 1.1%) with the smallest variance (σ^2 = 1.16).

Fig. 3. Rates of gain of the number of rural youth by age groups (January 1, %).

Negative median RG value in two groups of 15-19 (Me = -2.2%) and 20-24 (Me = -1.04%) with variance (σ^2 = 19.34) and (σ^2 = 25.47), respectively.

Consequently, consistently high RG values of young people were in the group 30-35, to a greater extent, due to the RG of urban youth. RG 15-19 and 20-24 failed, with high variance and negative median values.
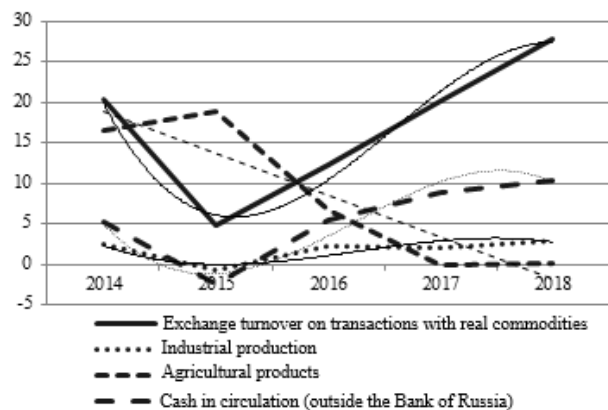
At the same time, the general trend of RG of the number of young people shows entering the positive zone after 2017 - 15-19; the negative one – 20-24 (2011) and 25-29 (2015). While the RG of urban youth correlate with the total RG of youth, then the RG of rural youth are insignificant, but they differ by age group 15-19 – a positive zone in 2005 (RG of general and urban youths had no positive period until 2017).

RG of urban youth maintain high values due to the influx of rural youth – and not so much for the period of education but for full assimilation as an urban population (consistently high median RG values 30-34). High urbanization contributes to the development of digital youth entrepreneurship in Russia.

Potential of environment. An assessment of exchange turnover RG on transactions with real commodities, industrial production, agricultural products, cash in circulation (outside the Bank of Russia) revealed the following (Figure 4):

- volatile high median RG values of exchange turnover on transactions with real commodities (σ^2 = 76.41; Me = 20.02%);

- median RG values of agricultural production (Me = 6.63%) are higher than RG of industrial production (Me = 2.2%), but they have volatility - σ^2 = 79.89 and σ^2 = 2.18, respectively;

Fig. 4. Rates of gain of exchange turnover on transactions with real commodities, industrial production, agricultural products, cash in circulation (outside the Bank of Russia), %.

- median RG of cash in circulation (outside the Bank of Russia) (Me = 5.39%; σ^2 = 24.86) is almost four times less than the RG of exchange turnover on transactions with real commodities;
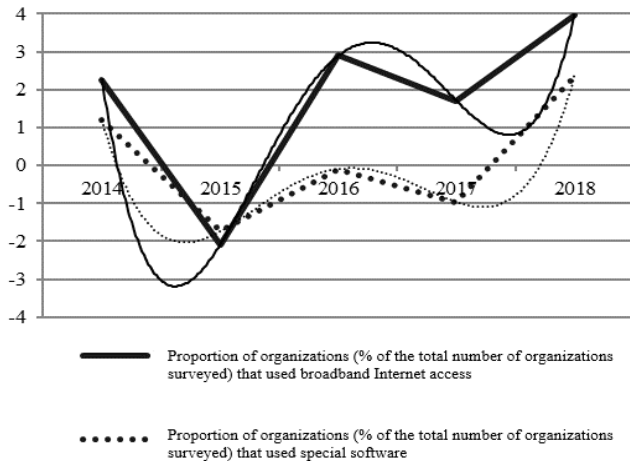
- the trend of RG of agricultural products (y = -5.1718x + 23.971, R^2 = 0.837) stands out from comparable RG trends of exchange turnover on transactions with real commodities (y = -1.9259x3 + 20.649x2 - 62.335x + 63.545, R^2 = 0.9754), industrial production (y = -0.45x3 + 4.4143x2 - 12.436x + 10.78, R^2 = 0.7054), cash in circulation (outside the Bank of Russia) (y = -1.465x3 + 14.208 x2 - 38.551x + 30.796, R^2 = 0.9269).

Consequently, RG of exchange turnover on transactions with real commodities is determining the potential of environment; the excess of it more than four times RG of cash in circulation (outside the Bank of Russia) indicates a lack of cash in the economy. Decreasing RG of agricultural production, with the trend different from that of RG of industrial production, indicate a decrease in the weight of agricultural products for sale on commodity exchange.

High RG of exchange turnover on transactions with real commodities and their significant excess over RG of cash in circulation (outside the Bank of Russia) indicate that it is necessary to use Bitcoin and Altcoin based on a peer-to-peer payment system (p2p platform) for further growth. Using of a

peer-to-peer payment system stimulates the development of digital youth entrepreneurship in Russia.

Tools. Evaluation of RG of the proportion of organizations (% of the total number of organizations surveyed) that used broadband Internet access and special software revealed (Figure 5) ideally $R^2 = 1$ comparable polynomial trends $y = 1,0467x4 - 13,053x3 + 56,823x2 - 99,161x + 56,611$ and $y = 0.5743x4 - 6.9233x3 + 29.468x2 - 51.485x + 29.556$, respectively.

Source: calculated and built according to the Federal State Statistics Service of the Russian Federation. http://www.gks.ru

Fig. 5. Rates of gain of the number of rural youth by age groups (January 1, %).

It should be noted that the RG of using broadband Internet access according to median values (Me = 2.27%; $Ƃ^2 = 4.30$) significantly exceeds the RG of using special software tools (Me = -0.10%; $Ƃ^2 = 2.17$).

Consequently, ICT funds remain not fully used [15]. They can be actively used for mining, forging (minting) and ICO cryptocurrencies [16].

Thus, the results of RG assessment of human and environmental potential and excess tools show wide opportunities for the development of digital youth entrepreneurship in Russia.

IV. DISCUSSION OF RESULTS

Results of assessing the dynamics of human potential (RG of the number of youth by structure and age groups), environmental potential (RG of exchange turnover on transactions with real commodities, industrial production, agricultural products, cash in circulation (outside the Bank of Russia)), tools (RG of the proportion of organizations (in % of the total number of organizations surveyed) that used broadband Internet access and special software tools) revealed the following:

- high human potential in the urban youth group 30-34;

- high RG values of urban youth group 30-34 are supported by the influx of rural youth;

- RG of cash in circulation (outside the Bank of Russia) is almost four times less than the RG of exchange turnover on transactions with real commodities;

- high RG of the proportion of organizations (% of the total number of organizations surveyed) that used broadband Internet access and special software.

It should be noted that the RG of using broadband Internet access significantly exceeds the RG of using special software; it indicates limited demand for intellectual potential for creating software products. However, ICTs are not used in full. They can be actively used for mining, forging (minting) and ICO cryptocurrencies.

Excess human potential formed by urban youth group aged 30-34 can be used as an intellectual resource to create a specialized software product that increases the RG of exchange turnover on transactions with real commodities. RG of exchange turnover on transactions with real commodities are determining the potential of environment, the excess of it more than four times RG of cash in circulation (outside the Bank of Russia) indicates a lack of cash in Russian economy. High RG of exchange turnover on transactions with real commodities and their significant excess over RG of cash in circulation (outside the Bank of Russia) indicate that it is necessary to use Bitcoin and Altcoin based on a peer-to-peer payment system (p2p platform) for further growth. Using of a peer-to-peer payment system stimulates the development of digital youth entrepreneurship in Russia.

High RG of urban youth group 30-34, mainly due to the influx of rural youth for complete assimilation as urban population, indicate urbanization. Urbanization is confirmed by decreasing RG of agricultural production with trend different from that of RG of industrial production, and by the loss of its importance as a commodity.

Development of digital entrepreneurship in Russia is promoted by the active work of various institutions. For example, Otkritie Bank and the All-Russian Public Organization of Small and Medium-Sized Enterprises "Opora Rossii" actively support the development of youth and women's entrepreneurship.

In the Sverdlovsk region, the Youth Business League program was launched to train young people from 14 to 30 years old in entrepreneurial skills. A "social network" is being created for young people where it will be possible since school days to get acquainted with entrepreneurship, communicate with peers who are also interested in it, and with real businessmen.

Young entrepreneurs are more actively using social networks looking for employees through electronic services and spending money on promoting businesses in search engines. 54% of entrepreneurs under the age of 35 use Internet channels to sell their goods and services. Internet promotion is also more popular with young entrepreneurs. Messengers have become an integral part of the business of young entrepreneurs.

Center-Invest Bank and Rostov Regional Entrepreneurship Support Agency have created a regional Accelerator League. Acceleration program is divided into four areas: consulting, comprehensive training, mentoring and financing.

In the Tambov Region, "Center for Coordination and Support of Business of the Tambov Region" Autonomous Non-Profit Organization provides subsidies as part of the "Small and Medium Enterprises and Support for Individual Entrepreneurship Initiatives" national project in accordance with "Acceleration of Small and Medium Enterprises" regional project. Allocated funds were provided to support the activities of export support center and the creation of My

Business center on the basis of one-stop shop principle in the Business Geometry business space.

Thus, in Russia, a set of prerequisites for the development of digital youth entrepreneurship has developed:

- excessive human potential – urban youth group aged 30-34, not fully in demand for the production of special software products but with extensive knowledge of ICT users;

- sufficient tools – broadband Internet access and special software;

- specific environmental potential – high RG of exchange turnover on transactions with real commodities and their significant excess over RG of cash in circulation (outside the Bank of Russia).

V. CONCLUSION

The prospects for further development of digital youth entrepreneurship in Russia in the face of global recession risk are particularly favorable. In the context of world trade slowdown and increased global competition, new forms of development of global, national and regional economies are required. At the moment, the current form of development is digital economy as a way to avoid the effects of globalization, centralization and dominance of individual economies, and the institutions that they generate.

Coming in 2019 technical recession of Russian economy brings to the fore the solution to the problem of population employment, as a rule, not in traditional sectors of the economy but in its new forms. Everything new is most quickly mastered by young people who can become a new driver for economic development, namely in the form of digital youth entrepreneurship.

This is facilitated by the work of the International Labor Organization to create decent jobs for youth combining global investment resources to ensure youth employment. The decline in youth employment in Europe has led to a shift towards entrepreneurship which has become a determining factor among measures to provide youth employment.

In the face of increasing global competition and escalated trade war between the largest economies in the world – these of United States and China – the Russian economy experienced these negative effects to a greater extent. On the one hand, the sanction pressure of the United States and EU member states to limit technology exports and attract external borrowing at a stable low interest is increasing, and on the other, China is delaying the process of a complete transition to the national currency in settlements for Russian hydrocarbon exports, not to mention about Chinese imports.

At the same time, the United States, maintaining sanctions policy against Russia and making trade war against China, is actively encouraging the use of cryptocurrency as an opportunity to get around the traditional global financial system. Venezuela, Iran, India, Brazil, South Africa, Hungary and other, mainly developing countries, may soon join it.

Russia, giving priority to the advancement of Blockchain technology as a long-term goal of economic and national security, could become China's main partner for forging of cryptocurrencies. RG of human and environmental potential, excess tools in Russia demonstrate wide opportunities not only for forging cryptocurrencies, but also for the development of digital youth entrepreneurship. Moreover, both formal and informal development institutions which have developed and are emerging in Russia are actively contributing to it.

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