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MODEL OF ECONOMIC SECURITY POLICY EFFECTIVENESS IN THE TRANSITION TO DIGITAL ECONOMY

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Abstract

The article analyzes the effectiveness of economic security policy in a transformational economy. It is noted that the modern economy is at the stage of transition from one economic system to another. Under these conditions, economic development and protection of the state's economic interests are hampered by the transformational crisis. The results of government economic policies may not be obvious. The article develops a model of the effectiveness of the state economic security policy to more accurately determine the results of such a policy and to identify the reasons for this situation in the case of low efficiency of such a policy. An analysis of the economic security policy of three states (Japan, Russia and Tajikistan) was carried out on the basis of the developed model. It has been determined that the economic security policy of Japan is highly efficient, and the economic security policy of Russia and Tajikistan has low efficiency and needs to be adjusted. At the same time, it was determined that the economic security policy of Tajikistan cannot be called effective at all, and the low efficiency of Russia's economic security policy is caused by a high share of consumption in the total income of the population, as well as small volumes of export of high-tech products. The reliability of the study results is confirmed by the compliance of the conclusion with the rating of the studied countries on the world stage in terms of development, as well as in the field of innovation and technologies.

Keywords: Economic security, economic security policy, digital economy, economic transformation.

1. Introduction

By all indications, the global transformation of economic systems is taking place at the present stage of economic development of the world economy. It is due to globalization processes, on the one hand, and the rapid expansion of the digital economy - on the other. The first phase of globalization, in which economic growth was based on extensive development through enhanced access to factors of production in partner countries, is coming to an end. Further development should be intensive in view of limited resources. Under these conditions, labor becomes a new factor of production, that is, a person who is at the same time a "producer, carrier and consumer of scientific knowledge" (Lapaeva & Maslennikova, 2014).

2. Problem Statement

At this stage, ensuring economic security and protecting the economic interests of the state is hindered by the impact of transformational processes. Researchers note that «sustainable development should also consider equity, irreversibility, as well as uncertainty, risk, and the processes of learning associated technological change and environmental vulnerability» (Zilberman, Gordon, Hochman, & Wesseler, 2018). At the same time, as noted in other studies, globalization also affects the welfare of the population, which forms the basis of economic security in modern society (Bergh, Mirkina, & Nilsson, 2019). Issues of economic development and welfare of the population have become more complicated by the development of new technologies (Cooper, McLaren, Rehman, & Szewezyk, 2015). All these processes, as well as transformational instability and randomness make it very difficult to determine how effective the measures of state economic policy are to ensure further development and completion of the transformation.

3. Research Questions

The swiftness of transformational processes leads to the emergence of new previously unaccounted problems. For example, according to some estimates, more than 50% of workers in Europe will be driven out by machines in 5 years (Kostin, 2017). In these conditions, it is necessary to determine the effectiveness of measures taken by the government to protect both their own interests and the interests of the population to ensure the stability and security of states.

4. Purpose of the Study

In this regard, the purpose of this study is to develop a model to assess the degree of effectiveness of the state economic policy in the field of economic security. Such a model should demonstrate both the level of economic security of the state, and the ability to maintain this level on the basis of the results of the policy. The analysis of economic security policy on the basis of such a model should also demonstrate in which area the policy is effective and which area requires a revision of the approach.

5. Research Methods

The study is based on the application of a systematic approach to general scientific research methods. The study is also based on the method of logical and mathematical modeling. The methods of systematic and comparative analysis, idealization and generalization were widely used in the study.

6. Findings

Most researchers of economic security problems agree that the main indicator of the level of economic security is GDP (Kurniawan & Managi, 2018).

Economic security in the modern sense is the condition of the economy in which its development is ensured on the basis of the efficient use of available resources and the stability and independence of the economic system are maintained. In this context, it is obvious that a country receives more resources to protect its economic interests and ensure security with an increase in GDP, that is, the level of economic security in a country increases with an increase in GDP.

Minor clarification required for the purposes of this study: the greatest degree of dependence of the level of economic security on the size of GDP is manifested if we take as a basis the size of GDP per capita, since this indicator can more accurately characterize the development of the economy. A similar approach is noted by many researchers as the most suitable for determining the level of development of the country. In particular, Estonian economist Helje Kaldaru notes: «In general, economic development lies in the increase in welfare, measured as GDP per capita and its growth rate» (Kaldaru & Parts, 2008). Thus, economic security is a function of GDP per capita:

$$S = f(Y_c),$$

where S is the level of economic security, Y_c is GDP per capita.

Development of the model of the effectiveness of economic security policy on the basis of the selected correlation requires identifying factors that affect the opportunities and prospects for ensuring economic security and reflect the effectiveness of the reforms and the quality of economic development. The most common scientific position is that the quality of economic development is manifested in the living standard of the population (Hall, Lacombe, & Shaughnessy, 2018).

Since the present study is aimed at determining the level of economic security in a transformational economy, the direct impact of factors in the model can be described through a coefficient calculated on the basis of criteria characterizing the effectiveness of reforms in the transformational period. Modern researchers relate to such criteria (Chubrik, 2000):

- inflation rates;

- poverty level;

- consumption as a percentage of household income.

The social orientation of these criteria is explained by the fact that the basis of stability and security in a transformational economy is the living conditions of the population, since all other areas of economic activity go through changes and cannot be characterized as stable. Moreover, the social sphere mostly dependent on the results of measures taken by the government, and its condition affects not only

other areas of the state's economic activity, but also the conditions and quality of life in neighboring states (Bosco, 2019).

Thus, the coefficient of efficiency of economic policy of the state in the conditions of transformation takes the following form:

$$\alpha = \frac{I \times P \times C}{100\%},$$

where I is the inflation rate in percent, P is the poverty level, C is consumption as a percentage of household income.

We should not forget about such features of the transformation as its tendency to complete. This implies that if the transformation was not completed for one reason or another, then the transformation processes will be activated in the economy again at the end of the influence of factors that suspended the transformation. In this regard, it is necessary not only to identify indicators characterizing the effectiveness of the supporting state policy, but also to identify criteria directly related to the objects of transformation and allowing to determine the degree of completion of transformation processes.

The transformation of the economic system involves a change in the way of resources using or changes in the system of economic relations at all stages of reproduction. The transition to the digital economy is taking place at the present stage of development. Its completeness is determined by the following factors, according to researchers (Kodachigov, 2012):

- the share of investment in innovation in the total investment;
- the share of enterprises in the field of digital technology in the total volume of production;
- the ratio of high technology exports to total exports.

The coefficient of transformational reforms efficiency based on the listed factors has the following form:

$$\beta = \frac{I_i \times P_t \times E_t}{100\%},$$

where I_i is the share of investment in innovation as a percentage of the total investment, P_t is the share of digital technology enterprises in total production, E_t is the share of high-tech exports in total exports.

On this basis, and taking into account the fact that the coefficient of efficiency of economic policy includes negative processes in the economy, and the coefficient of efficiency of transformational reforms includes positive processes, the formula for the model of the effectiveness of economic security policy in a transformational economy takes the following form:

$$S = \frac{Y_c \times \beta}{\alpha},$$

where Y_c is GDP per capita, α is the coefficient of efficiency of economic policy of the state in the conditions of transformation, β is the coefficient of transformational reforms efficiency.

The graph constructed in the framework of this model is a curve started at the origin and located in the first quarter of the coordinate system. If GDP per capita is set along the abscissa axis and the level of economic security is specified along the ordinate axis, a slope of the graph towards the abscissa axis indicates a low level of effectiveness of the state's economic security policy, and, conversely, its slope towards the ordinate axis shows its high efficiency.

It is advisable to choose the following types of states as the object of analysis for this model:

- one of the leading countries in the digital economy,

- a state at an average level of development,

- poorly developed state.

According to experts, the USA, Japan and China are the undisputed leaders in the digital economy (Kozin, 2012). To our opinion, to ensure greater objectivity of the analysis, we should choose the economic policy of Japan, as a country with an economy based on market relations, unlike China, and not having artificial support from the world community, unlike the United States. It is proposed to study the example of the Russian Federation as a country in the middle of the way, and Tajikistan can be an example of a country that has only proclaimed its goal to switch to digital methods of management.

According to the official statistics of these countries, their indicators have the following meanings within the framework of the model of the effectiveness of economic security policy (Table 01).

Table 01. Indicators within the framework of the model of the effectiveness of economic security policy

Country	GDP per capita in US dollars	The coefficient of efficiency of economic policy	The coefficient of transformational reforms efficiency
Japan	39287.00	1.932	1055.063
Russia	9264.27	109.561	34.505
Tajikistan	808.6	203.964	0.54

Source: author (Analytical statement, 2019, Analytical Center for the Government of the Russian Federation, 2019, Federal State Statistic Service, 2019, Agency for Statistics under the President of the Republic of Tajikistan, 2018)

The model of the effectiveness of economic security policy for these countries takes the following form based on the data in the table (Figure 01).
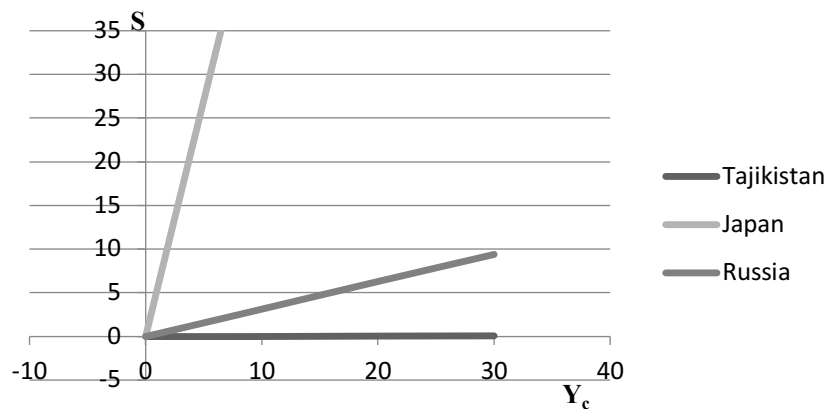

Figure 01. The model of the effectiveness of economic security policy

The analysis of this model confirms the factual information on the development results of each of the studied states. Thus, the position of Japan can be characterized as stable, and its economic security policy demonstrates high efficiency. This is fully consistent with the rating of this country on the world stage. The opposite situation is developing in Tajikistan, since the transition to a market economy is still ongoing in this country and the level of the pre-reform period for key indicators has not been reached yet.

The model demonstrates the extremely low efficiency of the economic security policy in this country and confirms the need to review the reform methods.

The effectiveness of Russia's economic security policy remains relatively low, although it is much higher than in Tajikistan. The slope of the curve characterizing the economic security policy of Russia is much less than 45°. This implies a lack of measures for successful and speedy completion of the transformation and transition to a digital economy. It is also required to review certain elements of state economic policy in a similar situation.

It is necessary to analyze the obtained coefficient of efficiency of economic policy and coefficient of the of transformational reforms efficiency in order to understand which of the elements of economic policy requires revision. Since the coefficient of efficiency of economic policy identifies negative phenomena and processes in the economy, its high values characterize a high level of negative manifestations in the economy and low efficiency of economic policy. An increase in the coefficient of efficiency of transformational reforms, on the contrary, implies an increase in the effectiveness of such reforms. If both coefficients demonstrate positive dynamics of economic activity for Japan, in particular, the coefficient of efficiency of transformation reforms is extremely high, then both of these coefficients reflect extremely negative trends for Tajikistan. The coefficient of efficiency of economic policy of Tajikistan shows that the measures taken by the state to ensure the well-being of the population are insufficient, which is manifested in a high level of poverty and consumption. In addition, real actions are still not taken to ensure such development in Tajikistan, in spite of the officially announced course for innovative development: there is still no production of high-tech sphere, and investment in innovation in relation to the total investment is insignificant (0,54%).

The situation in Russia is much better than in Tajikistan, but the level of consumption in the total income of the population is still too high, and the share of exports of high-tech products is low. Therefore, it is necessary to review foreign trade policy, as well as analyze the reasons for the large share of consumption in the total income of the population.

7. Conclusion

The application of the model of the effectiveness of the economic security policy made it possible to determine the degree of effectiveness of such a policy for all the studied states. The reliability of the results was confirmed by their correspondence to the level of these countries in the world ranking. Analysis based on the model demonstrated the insufficient effectiveness of the economic security policy of two of the three studied countries and made it possible to give recommendations on how to adjust their state economic policy. Thus, it can be argued that the developed model is a valid analysis tool in determining the effectiveness of economic security policy, and its practical application allows to identify omissions and shortcomings in state economic policy.

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