

Analytical support for assessing the impact of coronavirus (COVID-2019) on the region tax security

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ABSTRACT: The article presents the author's methodology for assessing the impact of a pandemic caused by a coronavirus on tax security of studied region - the Republic of Mari El. The author has identified the formation of unforeseen risks and representing the main threat to the tax security of the territory - incomplete provision of tax revenues at all levels of the budget system. An industry analysis of the structure of tax revenues was carried out on the basis of the proposed methodology, the sectors most affected by the adoption of restrictive measures by the government were identified, and the depth of such influence was estimated. The author has developed indicators of tax security, on the basis of which should be further monitored.

Key words: Coronavirus, Tax Revenues, Tax Security, pandemic

I. INTRODUCTION

Sustainable development of the region is directly related to ensuring its tax security. This necessitates predicting the onset of adverse situations (risks), as well as a practical assessment of the influence of factors that form the main threats to tax security. The results of such an assessment and the management decisions adopted in accordance with it make it possible to neutralize the threats to the tax security of public-law entity.

Recent events in the global economy and healthcare suggest that there are threats to tax security, which until then had not been considered in the studies of scientists, nor were they identified as risky in the legislative acts by the state. The coronavirus pandemic forced all states to take radical measures to protect their populations: closing borders, self-isolation, quarantine, and others. These measures have a significant impact on the economy. In this connection, the assessment of such an effect has been consecrated, including in the scientific literature.

Thus, the effect of a coronavirus outbreak on international trade was investigated by S. Dolgov and Yu. A. Savinov (2020). The authors note that a pandemic in the short term will inhibit the growth of the global economy. The influence of epidemics on the development of the economy is also studied by A. Egorov. (2020). Shikov P.A. (2020) describes the fall of the Russian stock market amid the coronavirus pandemic, and also analyzes the "current economic situation of Russian companies in a period of severe turbulence."

Among foreign studies, the work of Ahani A., Nilashi M. (2020), in which the authors describe the role of social networking sites in the exchange of information between customers and enterprises, is noteworthy.

The influence of the outbreak of coronavirus on the global economy amid falling oil prices is considered by Albulescu C. (2020), taking into account other macroeconomic factors in the works of Fernandes N. (2020), Karabag SF (2020), Fetzter T., Hensel, L., Hermle, J., & Roth, C. (2020), Barua S. (2020), Fornaro L., Wolf M. (2020).

The lack of resilience of the global economy to the new threat caused by the pandemic is emphasized in a study by Leiva - Leon D., Pérez-Quirós G., Rots E. (2020).

Regional implications are addressed by Ayittey, F. K., Ayittey, M. K., Chiwero, N. B., Kamasah, J. S., & Dzuovor, C. (2020), Luo S., Tsang K. P. (2020) for China; Koirala J., Acharya S. (2020) for Nepal; Rani R (2020), Koshle

H., Kaur R., Basista R. (2020) - for India.

Sectoral analysis of tourism is provided by Yang Y., Zhang H., Chen X. (2020), Jamal T., Budke C. (2020), Khan, N., Hassan, AU, Fahad, S., & Naushad, M. (2020).

The strategy for further business development against the background of the epidemic is explored by Hudecheck, M., Sirén, C., Grichnik, D., & Wincent, J. (2020).

Investment opportunities and the search for unique strategies with proper risk management in the pandemic era are provided by Tashanova, Diana and Sekerbay, Ainur and Chen, Danni and Luo, Yuwen and Zhao, Shuyi and Zhang, Qingquan, (2020), Gormsen NJ, Koijen RSJ (2020).

An assessment of financial policy responses to the crisis caused by the virus is explored by Hafiz, H., Oei, S. Y., Ring, D. M., & Shnitser, N. (2020), Rae M. (2020).

However, among existing studies, there are no works that would assess the impact of a pandemic on the tax security of certain territories of the state, taking into account the peculiarities of their socio-economic development.

II. MATERIALS AND METHODS

The working hypothesis of the study is the provision that the assessment of tax security of the studied region - the Mari El Republic against the backdrop of a pandemic should be based on an industry analysis of the tax revenues structure. Moreover, the assessment of the depth of the impact of the measures taken on the stability of the budget system should be based on reasonable indicators characterizing the dynamics of changes in tax revenues.

We consider in detail the steps of the proposed method.

Stage 1. An industry-specific analysis of the structure of tax payments in the region in order to identify the sectors most at risk of tax evasion in the budget system.

In connection with the introduction of measures to prevent the spread of coronavirus infection, a large number of organizations suffered losses, including due to long-term downtime. The list of the most affected sectors was determined by Decree of the Government of the Russian Federation of April 3, 2020 No. 434. These industries include:

1. Culture, organization of leisure and entertainment;
2. Health care activities;
3. Air transportation, airport activities, trucking;
4. Sports and fitness activities and sports;
5. Creative activities, activities in the field of art and entertainment;
6. Activities of travel agencies and other organizations providing tourism services; hotel business;
7. Activities for the provision of food and beverages;
8. The activities of institutions of additional education, non-governmental educational institutions;
9. Organization of conferences and exhibitions;
10. Activities for the provision of household services to the population (repair, washing, dry cleaning, hairdressing and beauty salons).

In order to assess the depth of the impact of downtime of enterprises of these industries on tax revenues of the consolidated budget of the studied region, it is necessary to do a sectoral analysis of the tax revenues structure.

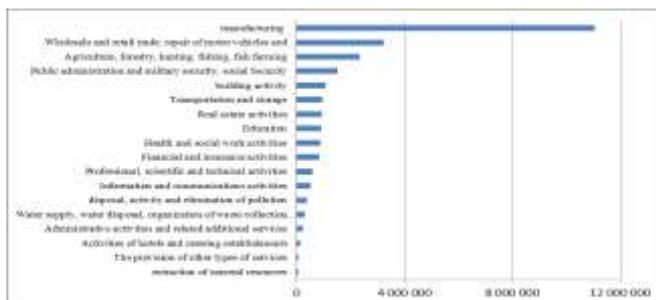


Figure 1. Consolidated budget sectoral structure of tax revenues (based on the materials of the Mari El Republic)

The analysis shows that 70% of the tax revenues of the consolidated budget of the Republic of Mari El consists of industries: manufacturing (40,5%), wholesale and retail trade; repair of motor vehicles and motorcycles (11,9 %), Agriculture, forestry, hunting, fishing, fish farming (8,6 %), Public administration and military security; social Security (5,6 %), building activity (4%), Transportation and storage (3,54%).

At the next stage, it is necessary to assess the depth of influence taken by the government in response to the pandemic.

Stage 2. Analysis of measures taken by the government, including regional, in response to the pandemic and their impact on the region tax security.

Let us analyze the dynamics of infection in the territory of the Republic of Mari El. Coronavirus infection statistics are presented in Figure 2.

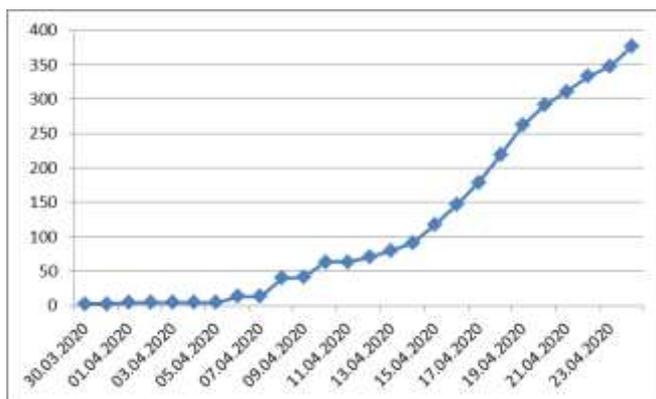


Figure 2. Coronavirus infection statistics in the Republic of Mari El

As the analysis shows, the number of infected grows daily, while there is no movement towards stabilization. This suggests that the lifting of the restrictive measures introduced on March 30 is inappropriate. Consequently, the downtime of many enterprises will last at least until mid-May. It is necessary to assess its impact, taking into account the impact of measures taken by the government. The results are shown in table 1.

Table 1: Analysis of threats to the region tax security

Timeline of events March-April 2020	Content	Threats to the region tax security	Enterprise Measures	Support
in the Republic of Mari El adopted a decree of the chapter "On the introduction of high alert in the Republic of	The activities of organizations have been suspended - some of them continue to work in	Tax revenue from industry education is about 3%. At the same time, it is mainly possible to reduce tax	1. Interest-free loan for the payment of salaries 2. Grants for the payment of salaries and the solution of	

Mari El" March 17	a remote format	revenues from private organizations providing educational services. However, their share is insignificant.	other urgent tasks in April and May
Non-working week declared from March 30 to April 5	The work of agricultural enterprises is carried out as usual	absent	
non-working days extended till April 30	enterprises are closed, among them: restaurants, cafes, bars and canteens (they work only for delivery); shopping centers and retail non-food stores; large city parks; museums, exhibitions and amusement parks; hairdressing salons, beauty salons; spa centers, fitness clubs, saunas and baths; and other entertainment facilities	The threat of unsecured budgets of all levels with tax revenues	1. A delay of 6 months for all taxes except VAT 2. Deferral for 6 months for insurance premiums 3. For organizations and individual entrepreneurs included in the Unified Register of SMEs, the total amount of insurance premiums is reduced from 30% to 15%. The contribution rate to the FIU will be 10%, to the MHIF - 5%. Contributions to the Social Insurance Fund (for disability and maternity) are not paid.
Based on a letter from the Ministry of Construction, Architecture and Housing and Public Utilities, the activities of construction organizations were resumed	Construction companies have resumed activities	Absent. The increase in the pace of construction will allow fulfilling obligations under the contracts on time.	

Preliminary analysis shows that the greatest threat to the tax security of the region is the tax revenue received by the budget from the organizations listed in the table that have suspended their activities. Moreover, in aggregate, tax revenues from them amount to about 10%. If we assume that their downtime will last until the end of May, then the decrease in tax revenues can be estimated at 20% compared to the same period last year.

Stage 3. The choice of indicators of region tax security in order to monitor and determine the future strategy for economic development.

Among the indicators of the tax security of the region, for monitoring purposes, we suggest exploring the following indicators, the state of which affects the choice of the region's economic development strategy:

1. Tax revenues

It is necessary to analyze the income of tax revenues (in terms of revenues to the consolidated budget of the Russian Federation, as well as to the consolidated budget of the Mari El Republic) as of April 1, 2020, May 1, 2020, June 1, 2020 in comparison with the same periods of previous years. Particular attention should be paid to the study of tax revenues that have the largest share in the consolidated budget of the Republic of Mari El. Such taxes with a share of more than 80% include corporate income tax and personal income tax. The analysis should be based on monthly published reports of tax authorities in form 1-NM «Report on the calculation and receipt of taxes, fees, insurance premiums and other obligatory payments to the budget system of the Russian Federation».

2. Debt on taxes and fees

It is necessary to analyze the taxes and duties on debts as of April 1, 2020, May 1, 2020, June 1, 2020 in comparison with the same periods of previous years. Particular attention should be paid to industry analysis of debt, including by type of tax revenue. The analysis should be carried out on the basis of monthly published reports of tax authorities according to Forms 4-NM «Report on taxes, fees, insurance premiums, penalties and tax sanctions to the budget system of the Russian Federation» and 4-NOM «Report on taxes and fees, insurance premiums, penalties and tax sanctions to the budget system of the Russian Federation for major economic activities».

3. Operational statistical indicators characterizing the state of the economy.

We include such indicators: consumer price index; industrial production index; commissioning of residential buildings; retail turnover.

The choice of these indicators, primarily due to the fact that they are evaluated on a monthly basis by public authorities, and the data itself are open. In this connection, they can be considered operational and relevant. It should also be noted that existing sets of indicators for assessing the impact of coronavirus, including on the economy as a whole, are almost impossible to project on some subjects of the Russian Federation. For example, Bloomberg L.P. (2020) proposes to use 5 indicators for such an assessment, which include: consumer spending, the hotel sector, box office cinemas, the theater industry, and consumer confidence. At the same time, tax revenues received in the budget system from the activities of hotels in 2019 in the Republic of Mari El amounted to about 0.5%, cultural, sports and entertainment organizations - about 1%. Consequently, the downtime of these enterprises for three to five months (based on expert assessments, quarantine measures will last a given period of time) will not greatly affect the consolidated budget of the studied region.

If we approach the assessment of tax revenues of the consolidated budget on the basis of their dependence on GDP and GRP, then we cannot deny the decrease in tax revenues against the background of a drop in these indicators. According to the Center for Macroeconomic Analysis and Short-Range Forecasting (2020), the fall in real GDP in the optimistic scenario will be able to keep at 2.3–2.5% in 2020 and 0.5–0.8% in 2021. In two years, thus, the economy will decline by 2.8–3.3%. There are less optimistic forecasts. So, the Chairman of the Accounts Chamber Alexei Kudrin predicts a decline in GDP of 7-8%. Given the direct relationship between GDP and tax revenues, we can assume that the latter will decrease in the same proportions.

III. RESULTS

The search for a strategy for ensuring tax security in the region should first of all be connected with the solution of priority tasks. These include: maintaining the financial stability of industries and sectors of the economy, as well as regional budgets. However, such support is impossible without an assessment of the economic effects of the introduced response measures. The monitoring technique developed by the author on the basis of the selected indicators makes it possible to assess the state of the tax security of the region. The first results of testing this methodology can already be obtained in May 2020, after the formation of reporting by state authorities.

IV. CONCLUSION

Thus, ensuring the tax security of public-law entity under conditions of unexpected tax risks, the onset of which is a direct threat to the budgetary system's lack of tax revenues, at the first stage should be connected with the organization of monitoring indicators to assess the depth of the impact of unforeseen risks. At the same time, the reduction and prevention of such risks (leveling) is the main tool for ensuring the tax security of the region and is based on the choice of a further strategy for economic development.

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VI. REFERENCES

- [1] Shemyakina, M.S., Murzina, E.A. & Yalyalieva, T.V. **Management of the territory tax potential to ensure its tax security**. Regional Science Inquiry, Vol. XI, (2), pp. 59-72, 2019.

- [2] Matthews S. **Five Early-Warning Economic Indicators Show U.S. Virus Shock** By Steve Matthews, 2020, Available at <https://www.bloomberg.com/news/articles/2020-03-14/five-early-warning-economic-indicators-show-u-s-virus-shock?sref=kNX4EXaz>
- [3] Dolgov, S.I., & Savinov, Yu.A.. **The effect of the outbreak of the new coronavirus on international trade**. Russian Foreign Economic Bulletin, Vol. 2, pp. 7-18, 2020.
- [4] Egorov, A.V.. **The economy of epidemics**. Banking, Vol. 3, pp. 7-11, 2020
- [5] Shikov P.A. **The fall of the domestic stock market amid the spread of the coronavirus epidemic**. Scientific electronic journal of the Meridian. Vol. 9 (43), pp.. 553-555, 2020.
- [6] Ahani, A., & Nilashi, M. **Coronavirus outbreak and its impacts on global economy: The role of social network sites**. Journal of Soft Computing and Decision Support Systems, Vol. 7(2), pp. 19-22, 2020.
- [7] Albulescu, C. **Coronavirus and oil price crash**, 2020 Available at SSRN 3553452
- [8] Fernandes N. **Economic effects of coronavirus outbreak (COVID-19) on the world economy**. 2020, Available at SSRN 3557504
- [9] Karabag S. F. **An Unprecedented Global Crisis! The Global, Regional, National, Political, Economic and Commercial Impact of the Coronavirus Pandemic** .Journal of Applied Economics and Business Research. T. 10, №. 1. , pp. 1-6, 2020.
- [10]Fetzer, T., Hensel, L., Hermle, J., & Roth, C. (2020). **Perceptions of Coronavirus Mortality and Contagiousness Weaken Economic Sentiment**. arXiv preprint arXiv:2003.03848.
- [11]Barua S. **Understanding Coronanomics: The economic implications of the coronavirus (COVID-19) pandemic**, 2020 Available at SSRN: <https://ssrn.com/abstract=3566477> or <http://dx.doi.org/10.2139/ssrn.3566477>
- [12]Fornaro L., Wolf M. **Covid-19 Coronavirus and Macroeconomic Policy**, 2020. CEPR Discussion Paper No. DP14529. Available at SSRN: <https://ssrn.com/abstract=3560337>
- [13]Leiva-Leon D., Pérez-Quirós G., Rots E. **Real-Time Weakness of the Global Economy: A First Assessment of the Coronavirus Crisis**, 2020 ECB Working Paper No. 2381. Available at SSRN: <https://ssrn.com/abstract=3560170>
- [14]Ayithey, F. K., Ayithey, M. K., Chiwero, N. B., Kamasah, J. S., & Dzuovor, C. **Economic impacts of Wuhan 2019-nCoV on China and the world**. Journal of medical virology, 2020, 92:473–475. <https://doi.org/10.1002/jmv.25706>
- [15]Luo S., Tsang K. P. **How Much of China and World GDP Has The Coronavirus Reduced?** 2020, Available at SSRN 3543760
- [16]Koirala J., Acharya S. **Impact of Novel Corona Virus (COVID-19 or 2019-nCoV) on Nepalese Economy**, 2020. Available at SSRN 3560638
- [17]Rani R. **The Impact of Corona Virus on Indian Economy**. Studies in Indian Place Names. T. 40, Vol. 60, pp.. 3618-3626, 2020.
- [18]Yang Y., Zhang H., Chen X. **Coronavirus pandemic and tourism: Dynamic stochastic general equilibrium modeling of infectious disease outbreak**. Annals of Tourism Research. pp. 102913, 2020
- [19]Jamal T., Budke C. **Tourism in a world with pandemics: local-global responsibility and action**. Journal of Tourism Futures, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JTF-02-2020-0014>, 2020
- [20]Khan, N., Hassan, A. U., Fahad, S., & Naushad, M.. **Factors Affecting Tourism Industry and Its Impacts on Global Economy of the World**. 2020, Available at SSRN 3559353
- [21]Hudecheck, M., Sirén, C., Grichnik, D., & Wincent, J. **How companies can respond to the Coronavirus**. MIT Sloan Management Review, 2020 Online available at: <https://sloanreview.mit.edu/article/how-companies-can-respond-to-the-coronavirus/>

- [22] Tashanova, D., Sekerbay, A., Chen, D., Luo, Y., Zhao, S., & Zhang, T. **Investment Opportunities and Strategies in an Era of Coronavirus Pandemic**. 2020. Available at SSRN 3567445
- [23] Gormsen, N. J., & Kojen, R. S. **Coronavirus: Impact on stock prices and growth expectations**. University of Chicago, Becker Friedman Institute for Economics Working Paper, Vol. 2020-22, 2020.
- [24] Hafiz, H., Oei, S. Y., Ring, D. M., & Shnitser, N. **Regulating in Pandemic: Evaluating Economic and Financial Policy Responses to the Coronavirus Crisis**. Boston College Law School Legal Studies Research Paper, Vol. 527 , 2020.