Optimization of taxation for business entities under the conditions of regional sustainable development

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Abstract. One of the current problems of the Russian tax system is optimization of the level of tax burden on agricultural producers. Differentiated business conditions in agricultural production necessitate a review of the definition of the tax base and tax rates of the unified agricultural tax (UAT). The authors propose to calculate the average rate of UAT in the context of the subjects of the Russian Federation (regions) by the country's average level of climatic conditions, and the natural and climatic potential of the zone should be determined based on the soil fertility index taking into account soil bonitet values and bioclimatic potential. Thus, the results of calculations by regions of the Russian Federation illustrate the following. Regions with the least favorable climatic potential are located within the North-West Federal District - the Komi Republic, the Arkhangelsk Region, the Vologda Region, respectively, and tax rates there should be minimal.

Key words: optimization of taxation, tax system business, entities, region, sustainable development.

1 Introduction

The current state of the agricultural sector of Russia demonstrates the presence of high percentage of low-profitable enterprises in the industry [1]. At the same time, in such a situation, the tax burden ("tax endurance", "tax burden", "tax weight") for agricultural producers remains rather low compared with other sectors of the economy [2-5]. However, even the relatively low percentage of withdrawals is a significant burden for agrarian companies, comparable to the much larger withdrawal process in other industries [6-8].

Discussing the vectors for improving taxation in the agricultural sector, the key approach should be considered from the point of view of the stability of legislation in the area of agricultural taxation, which is extremely important for making financial and managerial decisions [9, 10].

For each manufacturer of agricultural products, clarity and perspicuity of the government position in the area of taxes and taxation is essential, since taxes, as the main source of revenue in a country's budget, have a significant impact on the investment attractiveness of the agricultural sector, can increase its profitability and, ultimately, contribute to solving the problem of food security at the micro and macro levels [11-13]. Foreign authors wrote about the principles and system of taxation [14-18]. There is a simulation of tax and economic processes [19-22].

2 Materials and methods

It is well known that the Tax Code of the Russian Federation prescribes the possibility for agricultural producers of using a special tax regime in the form of a unified agricultural tax. According to the tax statistics, the number of taxpayers under this special regime in 2014-2018 averaged about 100 thousand
units, most of which are individual entrepreneurs and peasant farms equated to them, that is, small business [14]. However, it should be borne in mind that all agricultural manufacturers are in different conditions to carry out their business activities and this circumstance, in our opinion, should be taken into account when considering the possibilities of improving the tax system for agricultural producers.

From our point of view, the conceptual approach to justifying the rate and the base of UAT is that the unified agricultural tax and the corresponding tax burden on agricultural producers should be significantly lower compared to the taxation of organizations of other industries, given the presence of price disparities [15-17]. Besides, in our opinion, the average rate of UAT should correspond to the country's average level of climatic conditions, and the climatic potential of the zone should be determined based on the soil fertility index, taking into account soil bonitet scores and bioclimatic potential, i.e. assessment of the combined effects of climate and soil on biological productivity [18-20].

We propose a method for calculating the differential rate of UAT in the context of the subjects of the Russian Federation (regions) according to the following formula:

$$C_{\text{diff}} = \frac{CP_{AV}}{CP} \times C_{UAT},$$

(1)

where $C_{\text{diff}}$ – calculated differential rate of UAT for the region of the Russian Federation, % of the revenue;

$CP$ – climatic potential of the zone where the region is located;

$CP_{AV}$ – average climatic potential for the Russian Federation;

$C_{UAT}$ – actual rate of the unified agricultural tax in the Russian Federation, 6%.

3 Results

The results of the calculations of the differential UAT rates (with the average rate of 6%) and their absolute values for the regions of the Russian Federation are demonstrated in table 1 and table 2.

| Regions of the Russian Federation | CP (clim. potent.) | CP/CPav | Cdiff$_{UAT}$ |
|----------------------------------|-------------------|---------|--------------|
| **Northwestern Federal District** |                   |         |              |
| Komi Republic (south)            | 33.6              | 0.64    | 3.9%         |
| Arkhangelsk Region (south)       | 33.6              | 0.64    | 3.9%         |
| Vologda Region                   | 37.7              | 0.72    | 4.3%         |
| Vologda Region (north, east)     | 34.6              | 0.66    | 4.0%         |
| Vologda Region (south, west)     | 40.8              | 0.78    | 4.7%         |
| Kaliningrad Region               | 58.0              | 1.11    | 6.7%         |
| Leningrad Region                 | 41.8              | 0.80    | 4.8%         |
| Leningrad Region (north, east)   | 39.2              | 0.75    | 4.5%         |
| Leningrad Region (south, west)   | 44.4              | 0.85    | 5.1%         |
| Novgorod Region                  | 44.4              | 0.85    | 5.1%         |
| Pskov Region                     | 47.4              | 0.91    | 5.4%         |
| **Central Federal District**     |                   |         |              |
| Belgorod Region                  | 71.8              | 1.37    | 8.2%         |
| Bryansk Region                   | 53.1              | 1.02    | 6.1%         |
| Vladimir Region                  | 45.6              | 0.87    | 5.2%         |
| Voronezh Region                  | 69.0              | 1.32    | 7.9%         |
| Ivanovo Region                   | 41.6              | 0.79    | 4.8%         |
| Kaluga Region                    | 50.4              | 0.96    | 5.8%         |
| Kostroma Region                  | 39.8              | 0.76    | 4.6%         |
| Kursk Region                     | 67.0              | 1.28    | 7.7%         |
The results of the performed calculations show that depending on the climatic potential of the region the maximum UAT rate is in Kabardino-Balkarian Republic – 10.9%; and the minimum rate is in Arkhangelsk Region and Komi Republic – 3.9%.
Thus, the results of calculations by regions of the Russian Federation illustrate the following. Regions with the least favorable climatic potential are located within the North-West Federal District - the Komi Republic, the Arkhangelsk Region, the Vologda Region, respectively, and tax rates there should be minimal. The largest range of differentiation at unified agricultural tax rates is presented by the Central Federal District – from 37.3 in the Yaroslavl natural and climatic zone to 71.8 in the Belgorod Region. In turn, the Volga Federal District is characterized by a minimal degree of differentiation from the point of view of the climatic potential in the context of the constituent entities of the Russian Federation. And, finally, the maximum value of the unified agricultural tax rate, which depends on the most favorable natural and climatic potential (84.0-95.0), is proposed for the North Caucasus Federal District.

4 Discussions
The absolute changes in the tax rates of the unified agricultural tax for the constituent entities of the Russian Federation convincingly demonstrate a maximum decrease of 2.1% within the borders of the North-Western Federal District, and a maximum increase of 4.9% in the North-Caucasian Federal District.

| Regions of the Russian Federation | \( C_{\text{UAT,}} \) | \( \text{Cdif}_{\text{ECXH}} \) | UAT rate change |
|----------------------------------|----------------|-----------------|----------------|
| **Northwestern Federal District** | | | |
| Komi Republic (south) 6.0 | 3.9 | -2.1 |
| Arkhangelsk Region (south) 6.0 | 3.9 | -2.1 |
| Vologda Region 6.0 | 4.3 | -1.7 |
| Kaliningrad Region 6.0 | 6.7 | +0.7 |
| Leningrad Region 6.0 | 4.8 | -1.2 |
| Novgorod Region 6.0 | 5.1 | -0.9 |
| Pskov Region 6.0 | 5.4 | -0.6 |
| **Central Federal District** | | | |
| Belgorod Region 6.0 | 8.2 | +2.2 |
| Bryansk Region 6.0 | 6.1 | +0.1 |
| Vladimir Region 6.0 | 5.2 | -0.8 |
| Voronezh Region 6.0 | 7.9 | +1.9 |
| Ivanovo Region 6.0 | 4.8 | -1.2 |
| Kaluga Region 6.0 | 5.8 | -0.2 |
| Kostroma Region 6.0 | 4.6 | -1.4 |
| Kursk Region 6.0 | 7.7 | +1.7 |
| Lipetsk Region 6.0 | 7.5 | +1.5 |
| Orel Region 6.0 | 7.4 | +1.4 |
| Moscow Region 6.0 | 4.6 | -1.4 |
| Ryazan Region 6.0 | 6.2 | +0.2 |
| Smolensk Region 6.0 | 4.7 | -1.3 |
| Tambov Region 6.0 | 7.6 | +1.6 |
| Tver Region 6.0 | 5.2 | -0.8 |
| Tula Region 6.0 | 7.0 | +1.0 |
| Yaroslavl Region 6.0 | 4.3 | -1.7 |
| **Volga Federal District** | | | |
| Republic of Bashkortostan 6.0 | 6.1 | +0.1 |
| Republic of Mari El 6.0 | 5.1 | -0.9 |

Table 2. The absolute changes of UAT rates for the regions of the Russian Federation.
| Region                      | Index | Value | Change |
|-----------------------------|-------|-------|--------|
| Republic of Mordovia        | 6.0   | 6.8   | +0.8   |
| Republic of Tatarstan       | 6.0   | 6.1   | +0.1   |
| Chuvash Republic            | 6.0   | 6.7   | +0.7   |
| Udmurt Republic             | 6.0   | 4.7   | -1.3   |
| Perm Region                 | 6.0   | 4.8   | -1.2   |
| Kirov Region                | 6.0   | 4.7   | -1.3   |
| Nizhniy Novgorod Region     | 6.0   | 5.6   | -0.4   |
| Orenburg Region             | 6.0   | 6.0   | -0.0   |
| Penza Region                | 6.0   | 6.9   | +0.9   |
| Samara Region               | 6.0   | 6.2   | +0.2   |
| Saratov Region              | 6.0   | 6.6   | +0.6   |
| Ulyanovsk Region            | 6.0   | 6.2   | +0.2   |

**Ural Federal District**

| Region                      | Index | Value | Change |
|-----------------------------|-------|-------|--------|
| Kurgan Region               | 6.0   | 5.8   | -0.2   |
| Sverdlovsk Region           | 6.0   | 4.5   | -1.5   |
| Tyumen Region               | 6.0   | 4.5   | -1.5   |
| Chelyabinsk Region          | 6.0   | 5.7   | -0.3   |

**Siberian Federal District**

| Region                      | Index | Value | Change |
|-----------------------------|-------|-------|--------|
| Altai Territory             | 6.0   | 6.0   | +0.0   |
| Krasnoyarsk Territory       | 6.0   | 4.5   | -1.5   |
| Irkutsk Region              | 6.0   | 4.1   | -1.9   |
| Kemerovo Region             | 6.0   | 5.4   | -0.6   |
| Novosibirsk Region          | 6.0   | 5.0   | -1.0   |
| Omsk Region                 | 6.0   | 4.1   | -1.9   |
| Tomsk Region                | 6.0   | 4.0   | -2.0   |

**North Caucasian Federal District**

| Region                      | Index | Value | Change |
|-----------------------------|-------|-------|--------|
| Republic of Ingushetia      | 6.0   | 10.8  | +4.8   |
| Kabardino-Balkarian Republic| 6.0   | 10.9  | +4.9   |
| Republic of North Ossetia-Alania | 6.0 | 10.4 | +4.4 |
| Chechen Republic            | 6.0   | 10.8  | +4.8   |
| Stavropol Territory         | 6.0   | 9.6   | +3.6   |

**Southern Federal District**

| Region                      | Index | Value | Change |
|-----------------------------|-------|-------|--------|
| Krasnodar Territory         | 6.0   | 10.1  | +4.1   |

As a result of the application of adjusted rates of the unified agricultural tax, taking into account the climatic factors and location conditions, the overall profitability of the activities of agricultural organizations will increase by 3.82 percentage points [20].

The application of the above procedure for setting the UAT rates will optimize the taxation of agricultural organizations, taking into account modern conditions and requirements, and guarantee the fulfillment of the fiscal, regulatory, redistributive and control functions of taxes.

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