

# Tax Burden as an Indicator of Assessing the Impact of Taxation System on Region's Economy

Tatyana Vasileva

*Department of accounting and electronic business*  
*I.N. Ulianov Chuvash State University*  
 Cheboksary, Russia  
 tanya-7878@mail.ru

**Abstract**—In this paper the following such indicators of assessing the impact of taxation system on the economic development of a region were investigated: actual tax burden on region's economy and tax potential of the region. An additional indicator "estimated tax burden" is proposed which is calculated based on the "tax potential of the region" parameter. Comparison of the estimated and actual tax burden reveals the effect of region's tax benefits, the level of region's tax administration, and tax evasion. The following own calculations were performed: of indicators of the tax potential of the Chuvash Republic, actual and estimated tax burden on region's economy, as well as the analysis of tax burden on the main types of economic activity in the Chuvash Republic. It was revealed that the impact of "tax debt growth" indicator in the Chuvash Republic in recent years is minimal due to the increased effectiveness of tax control measures.

**Keywords**—taxation, tax burden, tax potential, tax payments, tax administration.

## I. INTRODUCTION

General questions of defining the optimal amount of taxes and fees that, on the one hand, would satisfy the needs of state budget, and on the other hand, did not impede the development of entrepreneurial activity, are widely covered in the scientific literature, and "Laffer curve" can be considered the basis of these studies. However, these issues do not lose their relevance, especially in the light of the regular regulatory and legislative changes in the field of taxation.

Official tax burden in Russia is described in the "Main directions of budget, tax and customs tariff policy for 2019 and for the planning period of 2020 and 2021" (approved by the Ministry of Finance of Russia)" and is calculated as the sum of all taxes and duties, customs duties, insurance contributions for compulsory state social insurance and other tax payments as a percentage of gross domestic product (GDP). At the same time, as the calculations of L.N. Lykova show, "tax burden on different tax bases in the Russian Federation varies significantly, and there are also differences from European counterparts" [1]. I.A. Mayburov, A.P. Kireenko carry out an in-depth analysis of tax reforms of the following parameters in modern Russia: "tax burden on the economy as a whole (nominal and actual); tax burden on certain elements of GDP (on wages, on gross profit, on actual final consumption), the number of changes made to tax legislation; terms and procedure for tax amnesties" [2].

If we consider tax burden at the micro level, we can distinguish the calculation methodology used by the Federal

Tax Service of Russia when planning field tax audits, when the tax burden in organization is calculated as "the ratio of the amount of taxes paid according to the reporting of tax authorities and the turnover (revenue) of organizations according to the Federal State Statistics Service (Rosstat)" [3]. In the appendix to the mentioned Order of the Federal Tax Service of the Russian Federation, different values of tax burden are given depending on the types of economic activity. There are many proprietary methods for calculating tax burden at the enterprise level. Methods proposed for calculating tax burden are often laborious, do not take into account industrial and regional characteristics, or do not have a complete information base. So, M.N. Kreinina compares each group of tax payments which is considered as a criterion for assessing tax burden, with the source of tax payment. According to E.A. Kirova, it is incorrect to take sales revenue as a basis for calculating tax burden at the micro level. She distinguishes "absolute and relative load" [4]. Absolute tax burden is taxes to be transferred to the budgetary and extra-budgetary funds (except for personal income tax, which is actually paid by the employees of organization). Relative tax burden is the ratio of calculated absolute tax burden to the newly created value.

If we consider tax burden at the regional level, then we can also highlight a number of proprietary methods. For example, P.B. Mitropolskiy offers a method for calculating region's tax burden based on the tax burden of main industries in proportion to their share in subject's economy [5]. Tax burden according to the method proposed by A.A. Vasilyeva and E.T. Gurvich includes a comparison of effective rates (in three categories – consumption, labor and capital) for the main tax bases estimated using the parameters of national accounts that allows taking into account not only revenues reflected in official statements, but also income from shadow economy [6]. Currently, no unified methodology for calculating the tax burden on region's economy was developed.

This article does not consider general issues of finding the optimal tax level; it describes the methodological issues of calculating parameters for assessing the impact of taxation system at the regional level. Economic development of region is influenced by many factors, such as natural resource and production base of the region, the level of development of scientific and technical industries, transport and geographical location, investment climate in the region, etc. Certain taxation parameters also have a significant impact on the development of this region, and this article is devoted to this issue.

The purpose of this study is to consider improving the assessment of the impact of taxation system on region's economy.

This research rationale is due to the importance of strengthening financial independence in order to expand further opportunities for regional socio-economic policies and to ensure the competitiveness of region's economy. The importance of calculating actual assessment of the impact of tax burden on the economy of the Russian region is due to the practical need for planning tax payments to the state budget.

## II. METHODS

Research methods used for this paper include the investigation and integration of scientific literature, the study and analysis of statistical data of the Federal State Statistics Service of Russia and the Federal Tax Service of Russia, logical and comparative methods, as well as a graphic presentation.

This article is a taxation-related theoretical research.

Tax policy regulation tools usually include tax base (mechanism of its forming), tax rates, tax benefits, tax sanctions. In our opinion, tax burden on region's economy and tax potential of the region are important parameters for assessing the impact of tax system on the economic development of the region. The concept of "tax potential of the region" is used in practical calculations to align the budget levels of the regions of the Russian Federation; we understand it as "the ability of region's economy, taking into account its development level and structure, to provide maximum tax revenues to the budgets of all levels" [7, p. 8]. The concept of "tax burden" is actively used in summarizing the results of tax reform in the Russian Federation. We should note that current tax collection parameters depend on the level of tax burden as the degree of tax potential realization, and also the possibility of their increase in future. Moreover, both the tax potential of the region and tax burden "depend on the sectoral structure of region (which determines the composition of tax objects and the size of tax base), specifics of region's legislation (by establishing elements of individual taxes, providing an investment tax credit, deferrals, installments, etc.) and the level of tax administration" [8].

## III. RESULTS

According to the "General Guidelines for Budget, Tax and Customs Tariff Policy for 2019 and the Planning Period of 2020 and 2021" officially approved by the Ministry of Finance of Russia in 2017, share of tax revenues and payments in Russia's GDP amounted to 30.29%, without any significant changes for the last five years (range of 30-31% of GDP). In Russia as a whole, the maximal tax burden is on oil and gas revenues associated with taxation of oil, gas and oil products – ST (severance tax) and export customs duties – 6.85% of GDP. If we turn to the forms of official tax statistical reporting, in particular, form 1-NOM "Report on the receipt of taxes, fees and insurance contributions to the budget system of the Russian Federation by main types of economic activity" and consider only tax revenues excluding insurance payments and customs duties, we can see that severance tax is steadily leading in the share of taxes levied in the whole country (Figure 1).

Speaking about tax burden on the regions of Russia, we should "take into account their large territorial differentiation in socio-economic conditions and, accordingly, in their share

of revenues in the country's consolidated budget" [9]. In particular, "the region under consideration – the Chuvash Republic – refers to the subsidized regions of the Russian Federation and has practically no resource and raw material base" [10].

According to the statistics of Chuvashia, in the production structure of gross regional product for 2017, the main type of economic activity – "manufacturing" – takes 26.3%, followed by "wholesale and retail trade; repair of motor vehicles and motorcycles" – 13.7%, "agriculture, forestry, hunting, fishing and fish farming" – 9.0%, "activities on real estate operations" – 7.8%, etc., "mining" is in the last place – 0, 1% [11].

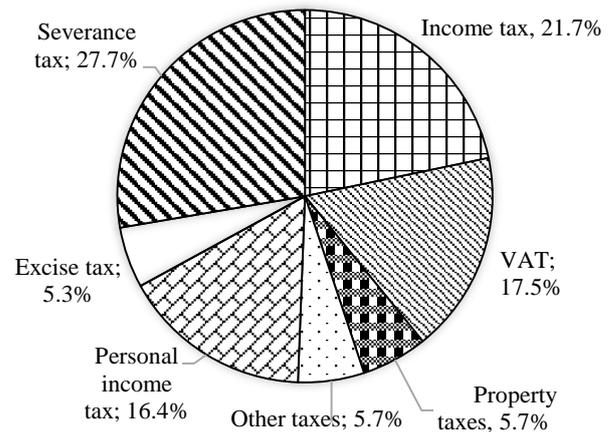


Fig. 1. Structure of revenues to the consolidated budget of the Russian Federation for January-August 2019 [12].

We believe that tax burden on region's economy is an indicator of assessing the impact of taxation on the socio-economic development of the region, taking into account its sectoral structure and its region's tax policy. In our opinion, it is reasonable to take gross regional product (GRP) as a basis for calculating tax burden on the region's economy, moreover both actual and estimated tax burden on the region's economy should be assessed. Actual tax burden is calculated as the share of actual tax revenues in gross regional product, by analogy with the method for calculating tax burden used by the Government of the Russian Federation in developing General Guidelines for Tax Policy of the Russian Federation. We propose to calculate estimated tax burden based on "tax potential of region" parameter. Comparison of estimated and actual tax burden will reveal the effect of tax benefits of the region, the level of tax administration in the region, and tax evasion.

As the first stage of the study of assessing the impact of tax system on the economic development of the region, we consider the current level of actual tax burden on region's economy illustrated by the example of the Chuvash Republic. The second stage is to assess tax potential of the region what will allow calculating estimated tax burden of the region and comparing it with the actual one.

We calculate actual tax burden on region's economy of tax payments mobilized in the Chuvash Republic (according to the Federal Tax Service for the Chuvash Republic) to the gross regional product (GRP) (Table 1).

TABLE I. CALCULATION OF ACTUAL TAX BURDEN IN THE CHUVASH REPUBLIC

Parameter	2013	2014	2015	2016	2017
Gross regional product (in market prices): total, mln RUR	223147.9	237447.2	251307.0	261574.3	270634.6
Amount of tax revenues from taxpayers of Chuvashia to the budgets of all levels, mln RUR	34616.8	35291.6	36133.7	40780.6	43428.3
Ratio of tax payments to gross regional product, %	15.51	14.86	14.38	15.59	16.05

As the calculated data in Table 1 showed, the level of tax burden in the Chuvash Republic approximately corresponds to the all-Russian level and amounts to 16% in 2017 (for reference: in Russia – 18.7%.) In 2016-2017, the growth rate of tax revenues was slightly higher than the growth rate of GRP: for example, the growth rate of tax revenues in 2017 was 106% compared to the previous year, in 2016 – 113%, and the growth rate of GRP was 103% and 104%, respectively. We believe that for the sustainable development of economy, the growth rate of GRP should exceed the growth rate of tax revenues.

Let us consider the level of actual tax burden for the main types of economic activity in the Chuvash Republic in 2017 (Fig. 2).

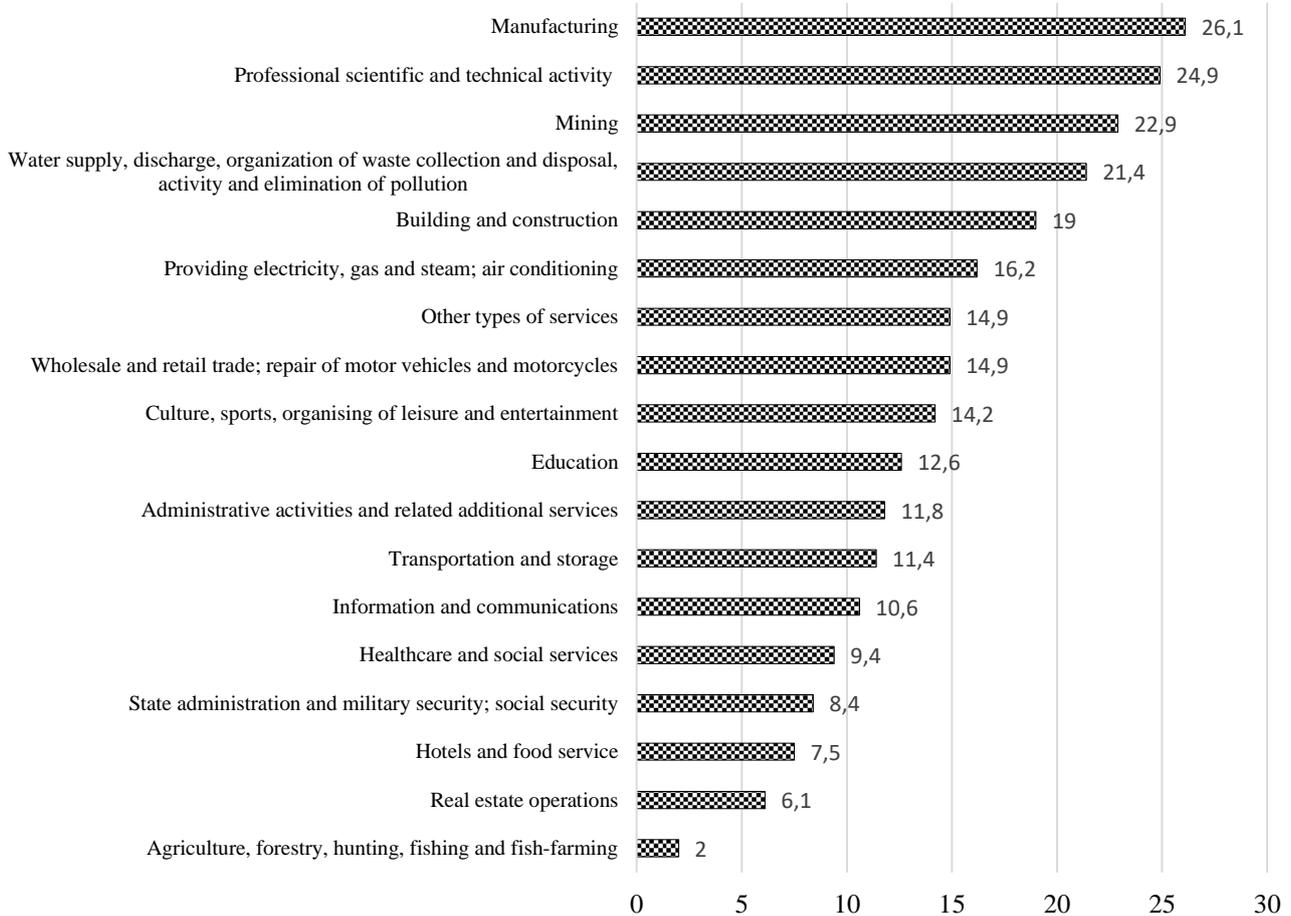


Fig. 2. Actual tax burden on gross added value in the Chuvash Republic by economic activities in 2017, %.

As we can see from the Table 2, tax burden is characterized by extremely uneven distribution by types of economic activity. For example, the lowest tax burden is on agriculture. In Chuvashia, the share of agriculture in GRP is 9%, while the share of tax payments is only 0.3% what is associated with tax incentives for the development of this industry. For agriculture VAT, budget debt to the organization (entrepreneur) arises, since the sale of agricultural products is subject to VAT at the rate of 10%, and input VAT from purchases is accepted at the rate of 20%. Profits from the sale

of agricultural products that have undergone primary processing are exempt from income tax. Enterprises at Single Agricultural Tax pay tax at a very small amount due to the established low 6% rate and a high share of costs in agriculture. Increased tax burden in Chuvashia is borne by manufacturing industries.

Next, we will assess tax potential of the region and the estimated tax burden (table 2).

**TABLE II. CALCULATION OF THE TAX POTENTIAL OF THE CHUVASH REPUBLIC, MLN RUR**

Parameter	2013	2014	2015	2016	2017
Amount of tax revenues from taxpayers of Chuvashia to the budgets of all levels, mln RUR	34616.8	35291.6	36133.7	40780.6	43428.0
Debt growth for the reporting period	-13.2	785.8	521.2	788.6	-502.6
Amount of taxes not received in the budget in connection with the provision of regional and local benefits	1075.1	744.4	734.8	650.7	616.0
Total tax potential of the region	35678.7	36821.8	37389.7	42219.9	43541.4

There are several methods for assessing tax potential. In this study we used simplified method by V.I. Gorsky, when tax potential is calculated as the sum of actual tax revenues, increase in tax debt for the reporting period (arrears) and the amount of taxes not received in the budget in connection with the provision of taxpayers with the benefits established by regional and local legislation [13, p. 28]. Information base for the calculation were annual static tax reporting forms of the Office of the Federal Tax Service for the Chuvash Republic [12].

This simplified method of assessing tax potential can be applied in assessing estimated tax burden of the region (Table 3).

**TABLE III. CHANGES OF TAX BURDEN IN THE CHUVASH REPUBLIC IN 2013-2017**

Parameter	2013	2014	2015	2016	2017
Actual tax burden	15.51	14.86	14.38	15.59	16.05
Estimated tax burden	15.99	15.51	14.88	16.14	16.09
Deviation of the estimated level of tax burden from the actual, including due to:					
- provided benefits	0.48	0.31	0.29	0.25	0.23
- increase in tax debt	0.00	0.33	0.21	0.30	-0.19

#### IV. CONCLUSION

So, as the final Table 3 showed, the level of estimated tax burden exceeds the level of actual tax burden throughout the analyzed period due to the provision of tax benefits and tax arrears by regional and local authorities. Hidden economy was not taken into account for these calculations. We should note that incentivization is a state-regulated instrument by which tax system has a stimulating impact on economic growth. The impact of "tax debt growth" parameter in the Chuvash Republic in recent years is minimal due to the increased effectiveness of tax control measures.

Thus, we compared the growth rates of gross regional product, tax revenues, and tax burden in the Chuvash Republic in 2013-2017; calculated the values of tax potential of the Chuvash Republic, actual and estimated tax burden on region's economy, and also analyzed tax burden on gross added value by main types of economic activity in the Chuvash Republic. It was revealed that manufacturing enterprises bears the increased tax burden in the Chuvash Republic due to the existing structure of region's economy, high equipping with fixed assets, significant length of production cycle, and high level of tax control by tax authorities (especially of large taxpayers).

Main parameters for calculating tax burden were actual tax revenues mobilized in the Chuvash Republic; tax potential of

the region and gross regional product (GRP). GRP was used as the main parameter characterizing tax base at the regional level, since GRP aggregates tax bases of four taxes (value added tax, corporate income tax, excise taxes and personal income tax), the share of which in the structure of tax revenues mobilized in the Chuvash Republic amounted in 2017 to 82.7%.

Analysis of taxation practices at the regional level is important in terms of assessing the prospects for changes in the volume of tax revenues in future; it also allows assessing the effectiveness of tax administration measures.

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