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Optimization criteria for entry into the consolidated group of taxpayers in order to create an effective tax mechanism and improve the social, economic development of regions in the Russian Federation

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Abstract

This article discusses the existing socio-economic development of regions. The social and economic development of the regions is directly affected by the tax ratio and mechanisms of their functioning, which are the subject of study for both foreign and Russian economists, as the state regulation of any economy is possible through tax relations between parties. In 2012, there was established the taxation of consolidated groups of taxpayers, which exists in many countries and provides payment of income taxes based on the total financial and business performance of the group. However, in our opinion, the requirements for entry into the group are much too high. The article presents a method that allows analyzing the changes in the number of potential participants of a consolidated group of taxpayers depending on the changes in the threshold of entry using indicators. These indicators can be based on the aggregate value of assets, or represented in terms of total revenue or the amount of taxes paid. The reduction in the existing criteria will optimize tax administration of the major taxpayers and more evenly redistribute financial flows between regions of Russia.

1. Introduction

Sadiq et al. (2014) have currently paid much attention to the socio-economic development of regions. This development is characterized by a variety of factors, such as the initial level of development of each region (Ting

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et al., 2013), industrial infrastructure (Adda et al., 2008), presence of the major taxpayers (Blitman et al., 2010), geographic location (Deloitte et al., 2008), production specialization (Herrold et al., 2009) and so forth. The development of any region is a complex, multi-purpose and multi-criteria process. Because of the complex structure and the presence of a large number of regions, the Russian and foreign scientists have not paid enough attention to the socio-economic development of the regions in Russia (Variychuk et al., 2012). Thus, the socio-economic level of development of Buryatia, the Kaliningrad Region, Yamal-Nenets Autonomous Region is very different. Currently, the government pays great attention to the formation of the effective tax mechanism to influence the activities of large enterprises in Russia (Bannova et al., 2014). Therefore, in 2012, they joined the new law - №321-Federal Law "On the consolidated group of taxpayers." This law introduces a new system of taxation of major taxpayers, which is focused on unification of tax administration of the major taxpayers, ensuring their competitiveness and increasing the income of the regions (Bannova et al., 2013). However, the requirements of entry into the consolidated group of taxpayers (CGT) are too high (Rumina et al., 2014), and therefore, considering their necessity, we have developed a technique to lower the threshold of entering CGT.

2. Model

The authors have developed a technique that allows one to analyze the changes in the number of potential participants of CGT depending on level change in the threshold of entry using a number of indicators. These indicators can be based either on the aggregate value of assets or represented in terms of total revenue, or by scrip paid taxes (these criteria are determined by law and submitted to the Tax Code of the Russian Federation Part 1.). In the domestic and foreign literature, there are not any analogues of this technique yet. The novelty of the authors' approach is that the threshold of entering one of the indicators can be set on the basis of the fundamental assessment of the economic situation, while the rest of the indicators are determined through the technical analysis, providing the coordination number of potential participants in both criteria. The algorithm for establishment of a methodology for determination of the optimal parameters is governing the association of enterprises in CGT.

The procedure involves the following steps:

1.1. Setting of the intended participants of CGT - *n*, in the general case of statistical processing of the data by establishing a mean value. The authors provide an opportunity to use this procedure, data on the basis of individual enterprises using case approach or method reference. In such cases, instead of using the average values of the indicators the method suggests using a single indicator.

Using these approaches, one will eliminate the restriction associated with statistical significance of the considered sample. Furthermore, the model involves working with weights to reflect more fully the economic situation in the region, or when considering the reform of the requirements for the creation of CGT as stimulating measures for the economy of the region. Thus, for the number of potential bidders, we can find *n* sets of individual threshold for entry on the basis of the value of assets - $\frac{A}{n}$, either by revenue- $\frac{R}{n}$, or the size of tax - $\frac{T}{n}$. Here A, R and T – are the requirements based on total value of the assets, the size of income and the size of the paid taxes, regulating the organization of CGT. The authors believe that the use of index A is more appropriate than indices R or T, as total assets for companies, potential participants of CGT are a more stable indicator. For example, in our model, n = 30.

1.2. The distribution of large-scale enterprises, potential participants of CGT, in terms of total assets and revenues is shown by the example of the Tomsk region in Figures 1, 2 and 3.
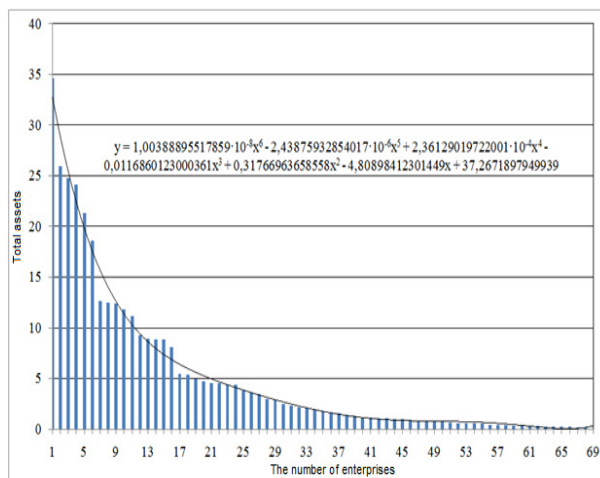
Fig. 1. Distribution of large-scale enterprises in Tomsk region on the basis of total value of assets in 2013.
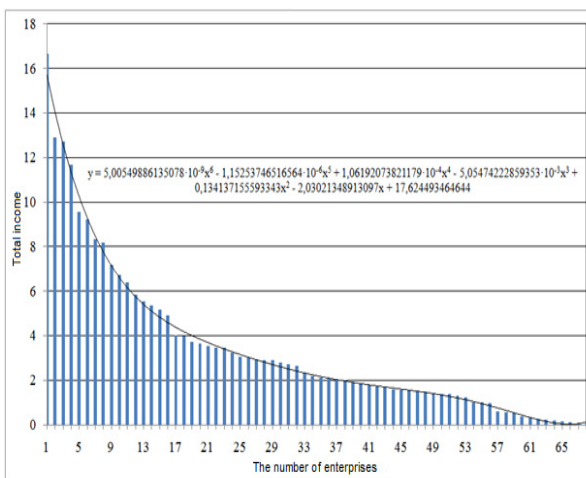

Fig. 2. Distribution of large-scale enterprises in Tomsk region by revenue in 2013.
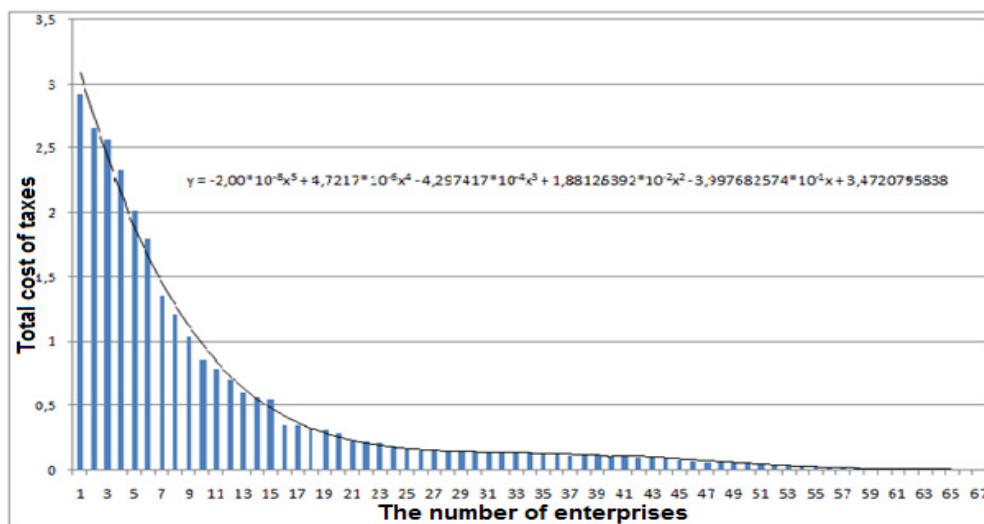

Fig. 3. Distribution of large-scale enterprises in the Tomsk region according to tax rate in 2013

Based on these data it is possible to establish distribution functions using the method of the least squares, which is a primary method of the regression analysis. Due to the lack of information about the nature of the analyzed economic laws it is expedient to use a polynomial function for approximating. The functions describing the distribution for this example are shown in the corresponding figures. We denote the distribution function of assets y = $f_A(x)$, by income – y = $f_R(x)$, by taxes– y = $f_T(x)$.

1.3. By numerical solution of the equation $\frac{A}{n} = f_A(x)$, we can locate x_T , corresponding to the number of enterprises that have the possibility of entrance into CGT in terms of size of assets, subject to this requirement, among all other participants. The solution of the equations in this and the following paragraph should be calculated numerically - by dichotomy (bisection). The method of dichotomy is a logical division of the segment.

The choice of this method is based on the simplicity of the problem. To implement it, the first step should be determined by the period of the function, which will be specified in order to find the roots. After receiving the interval function, which is calculated and determined by means of the middle section of a function, we should divide the middle by a number, which is more or less than zero, in order to select a further narrowing of the interval. The process continues until a certain narrowing of the error takes place, which is given initially. The magnitude of the error in the general case is connected with a number of companies under consideration and should be less than n^{-1}.

On the basis of the obtained result, determined by the share of large enterprises, the potential participants of CGT can be specified as $d_{\text{т}·A} = 100 * \frac{x_{\text{т}}}{v}$. For example, in the Tomsk region, the figure is 16,42%.

1.4 The analysis of the increase in the number of potential participants of CGT is implemented by introduction of coefficient b (set up in the range of 0-1), which determines the reduction in the requirements for participants in CGT for this indicator. In this case, we can consider the total cost of assets (the figure is selected by the authors). Accordingly, the equation $\frac{bA}{n} = f_A(x)$ is located at x_b, determining the number of enterprises that have the possibility of joining CGT, simulating the measure of the assets size. Further, by analogy with $d_{\text{т}}$ we determine the corresponding proportion d_{b^A}. The increase in the number of potential participants is defined as CGT $r_b = \frac{x_b}{x_{\text{T}}}$.

1.5. We should determine the required largest revenues by solution of the inverse problem. To do this, let us consider the functional dependence of $f_R(x)$ on a predetermined condition $d_{b^R} = d_{b^A}$, where R determines the change required for entry into CGT level of income.

1.6. The procedure allows establishment of the requirements for the necessary amount of taxes, just by solving the inverse problem. There is the functional dependence $f_T(x)$ on a predetermined condition $d_{b^R}= d_{b^{\text{т}}}$, where d^T determines the change in the amount of taxes required for entry into CGT.

Taking into consideration our example, based on the model, which underestimates taxes by 10%, the income should increase by 21%, while the assets must be significantly reduced by 66%.

1.7. Based on the results of paragraphs 4-6 one can predict an increase in the number of potential participants of CGT in the case of lowering of the threshold of entering and the size of the aggregate value of the assets by setting different values of b.

Thus, the authors' model establishes a relationship between the number of potential participants of CGT and the requirements imposed on the participants of CGT. The authors have shown that the existing CGT entrance requirements are not effective, the formation of CGT requirement for one of the parameters (for example, in terms of total asset value) significantly exceeds the requirements for others. The authors have revealed the complex relationship between the total amount of the assets and the total income.

On the basis of the established patterns, the use of CGT has been simulated by the example of the Tomsk region, that is, how the calculated number of potential participants of CGT depends on the threshold of entrance to CGT. When one or another indicator changes, one may set the number of potential participants of CGT, as well as track tax deductions from the budget of CGT participants of the Russian Federation. This model suggests the possibility of scaling, i.e. application of the sizes of certain regions and the country as a whole. The model is flexible; it is possible to change the criteria, depending on the economic situation in the region/country.

The results of the study show the following: the reduction of the total cost of the assets required for the entry into CGT, compared to the current 10%, will increase the potential members of CGT by 7.4%.

As an example, the authors have predicted the distribution of the number of enterprises in the Tomsk region by the size of assets and income on the basis of 2009-2013, and the results are presented in Figures 4 and 5.
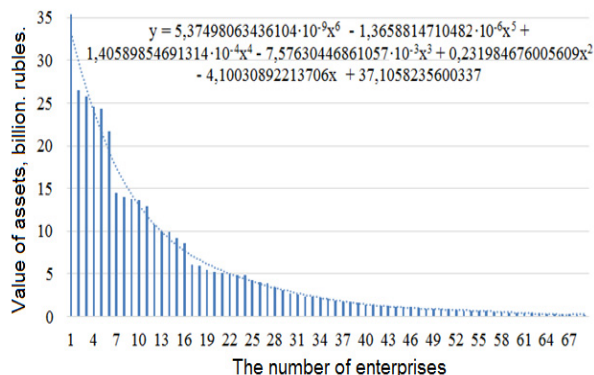
Fig. 4. Distribution of large-scale enterprises in the Tomsk region in terms of assets in 2013
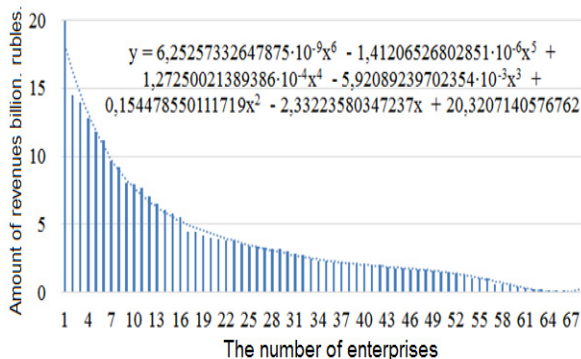

Fig. 5. Distribution of large-scale enterprises in the Tomsk area by the size of income in 2013.

The obtained equation approximates the data distribution (summarizing the mentioned figures). Authors' model has been applied to the projected data, obtained in 2013. The number of potential CGT participants of the entry threshold by the amount of the assets is shown in Table 1.

Table 1. The number of potential CGT participants of the entrance threshold by the size of the aggregate value of assets (2013).

Asset size, bln. rubles.	The number of potential CGT participants, %
300	100
285	105.5
270	110.3
255	116.0
240	121.1
Note	
* The authors' calculations	

Thus, the authors have shown the applicability of the developed model for the analysis of the future economic situation. Lowering of the threshold of entry into CGT can result in a broader participation in CGT and, as a consequence, the promotion of enterprises and streamlining of the tax administration for tax authorities and taxpayers, potential participants of CGT.

3. Conclusion

In conclusion, we would like to note that with the introduction of a new order of taxation (CGT) in Russia, a number of advantages might appear both for taxpayers and for the government. As to the government, CGT can enhance the optimization of the tax administration of the major taxpayers in a more uniform redistribution of financial flows between the regions of Russia. The benefits for taxpayers are the change in the scheme of tax control over transfer pricing, as well as optimization of the tax burden (an effectively established taxable basis for income tax for CGT). Combining taxable income, participants receive significant preferences, in particular, the ability to sum up their income and expenses in the calculation of corporate income tax. This strategy is aimed at the development of the regions where the income is actually concentrated in the center of the large-scale enterprises in Russia, which is expressed in the redistribution of income tax among the companies belonging to the CGT. This factor gives an invaluable economic multiplier effect, as it contributes to an increase in income tax expense in the regional budgets and, hence, gives rise to the development of regions, which has an overall positive effect on the development of production and the social sphere at state level of the Russian Federation.

References

1. Sadiq, K., Coleman, C.F., Krever, R., Hanegbi, R., Obst, W., Jogarajan, S., Ting, A. (2014). Principles of Taxation Law. Thomson Reuters (Sydney, Australia), 612, 255-312.
2. Stolarek, T. (2007). Leaving a Consolidated Group – Separation Without Tears. *Journal of Tax Specialist*, 11(2), 89-110.
3. Stolarek, T. (2012). The Tax Treatment of Consolidated Groups: Managing Tax Change. In Chris Evans and Richard Krever (Eds.), Australian Business Tax Reform in Retrospective and Prospect (pp.204-281).
4. Ting, A. (2014). iTax - Apple's International Tax Structure and the Double Non-Taxation Issue. *Journal of British Tax Review*, 1, 40-71.
5. Ho, D., Ting, A. (2014). Hong Kong's Corporate Group Structure: A Call for a Tax Consolidation Regime. *International Tax Journal*, 40(3), 49-59.
6. Ting, A. (2013). Playing with Fire: Resetting Cost Bases of Assets in Consolidated Groups. *Australian Tax Forum*, 28(3), 583-604.
7. Ting, A. (2013). Playing with Fire: Issues with the Cost Setting Rules under Consolidation. *Australasian Tax Teachers Association Conference*, 22-46.
8. Adda, Marco (2008). Can a Permanent Establishment be a 'Legitimate Heir' in a Domestic Consolidated Tax Regime? *Journal of European Taxation*, 48(9), 215- 238.
9. Agundez-Garcia, Ana, (2006). The Delineation and Apportionment of an EU Consolidated Tax Base for Multi-Jurisdictional Corporate Income Taxation: A Review of Issues and Options. *European Commission Taxation Paper* (EC, Luxembourg), 1-23.
10. Blitman, Samuel (2010). Consolidated Returns in the Federal Tax System. *National Tax Journal*, 8(3), 245- 260.
11. Deloitte, G. (2008). ECJ Rules French Group Consolidation Rules Incompatible with EC Treaty. EU/France Tax Alert.
12. Hennessey, R., Kevin, M., Yates, K., Richard, F., James, W., Patrica, W. (2003). The Consolidated Tax Return: Principles. Practice & Planning (2003, RIA, New York), 1-45.
13. Herrold, Lloyd W. (2009). Consolidated Return Considerations in a Period of Transition. *Journal of Tax Executive*, 22(3), 108-177.
14. Variychuk, Elena (2012). Consolidated Groups of Taxpayers: A New Concept in Russian Tax Law. *Bulletin of International Taxation*, 2, 94 - 100.
15. European Commission publications «Summary record of the meeting of the common consolidated corporate tax base working group» (CCCTB/WP/025, CCCTB WG, 2006)
16. D'Ascenzo, Michael (2005). Consolidation: The Intent of the Consolidation Regime. *Paper presented at the Taxation Institute of Australia Consolidation Symposium*, 87- 115.
17. Bannova, K.A., Rumina, U.A. (2014). Consolidated corporate tax system: the Russian and foreign aspects. (pp. 120- 450). Publishing House of the STT.
18. Bannova, K.A. (2013). The consolidated group of taxpayers. *Current issues in modern economics: a fresh look and new solutions : materials of International youth academic and research conference*, 45-49.
19. Bannova, K.A., Rumina, U.A. (2013). Causes and effects of the consolidation of taxpayers. Bulletin of Tomsk State University. *Journal of Econom*y, 2 (22), 141-146.
20. Rumina, U.A., Balandina, A.S., Bannova, K.A. (2014). Tax incentives for activities of businesses in today's usloviyah. (pp. 255-320). Publishing House of the STT.
21. Tax Code of Russian Federation Part 1.