Tax Avoidance and Fiscal Limits: Optimization of Tax Burden on Economy with «Non-observed» Sector

M O Kakaulina

1 Amur State University, 675000, Blagoveshchensk city, Ignatievskoe highway 21, Russia

E-mail: beuty1@mail.ru

Abstract. The article deal with problem to optimization of the level of tax burden on economy with «non-observed» sector. The methodology of this study is the concept of the Laffer curve. The main method of investigation is the graphical method. The article presents different variants of graphical interpretation of the Laffer curve under conditions of «shadowing» the economy, revealing the main regularities, highlighting the «non-observed» sector, as well as reflecting the sensitivity of tax revenues to crisis phenomena. Authors draw the following main conclusions. First, if the economy is on ascending branch of Laffer curve and at the same time the government doesn’t take into account the presence of «non-observed» sector, then an increase in tax rates leads to significantly overstated expected values of tax revenues. Second, if the economy is on descending branch of Laffer curve, then an increase in the tax burden has a deterrent effect on tax revenues - economic effects of tax policy would create an incentive to drop employment and production in the official sector, increase tax evasion. Thirdly, the economy without tax compliance problems is much more sensitive to economic crises than the economy with the illegal sector. Thus, underestimation of «non-observed» sector of economy and neglect of the effects of income from tax avoidance call into the question the correctness of current fiscal policy. The obtained results can be used to model the dependence of tax revenues and output on tax burden in economy with «non-observed» sector and to develop a sound fiscal policy.

1. Introduction

One of the negative properties of shadow schemes is that they lead to under-filling of budgets, since at the present stage the «non-observed» economy is connected, first of all, with non-payment of taxes to budgets of various levels. At the same time, tax evasion not only prevents the filling of budgets, but also distorts the taxation system, the performance of its functions - fiscal and regulatory. All of this slows down the development and improvement of taxation. One of the first steps to solve this problem is an adequate assessment of the impact of level of tax burden on the scale of «non-observed» economy of the territory.

Theoretical and empirical tools for quantitative estimation of size of shadow economy at the national level have already been created and are quite diverse [1]-[3]. Problems of tax evasion due to the departure of economic agents into the «shadow» are also widely considered by various authors [4]-[6]. Determination of the size of tax burden, taking into account the contribution of informal sector, as well as an estimation of its optimal value in the current economic conditions are given in [7]-[9].
Graphically, the relationship between tax burden and tax revenue in the budget displays the Laffer curve. The scientific works of many economists are devoted to the study of the external form of this curve [10]-[11]. A separate group consists of publications that sanctify the graphic interpretation of the Laffer curve, taking into account the existence of «non-observed» economy [12]-[18].

However, all of the studies presented in economic literature, containing a graphic representation of the Laffer curve under «shadowing» conditions, presuppose a stable state of the economic system. The impact of economic crises on the tax base and tax revenues isn’t considered here. In this regard, the purpose of our study is the theoretical justification of sensitivity to crisis phenomena of a legal economy and the economy with problem of tax evasion.

2. Graphic interpretation of the Laffer curve with «non-observed» sector of the economy

One of results obtained by researchers in visualizing the Laffer curve is the conclusion that tax evasion increases when tax burden exceeds its optimal value, and, on the contrary, that business comes out of the «shadow» when the level of tax burden is reduced to the optimal value and below.

![Figure 1. Laffer’s curve and the underground economy. [19].](image)

The second important result is the allocation of the area of «non-observed» economy on the Laffer curve. Thus, the curve, taking into account the existence of «non-observed» sector of the economy, is located lower than the curve constructed exclusively for the legal sector (see Fig. 2). It can be clearly seen from the figure that state authorities, neglecting the effects of income from tax evasion, mislead themselves, since planned tax revenues were initially significantly overstated, and real revenues to the budget subsequently turn out to be much lower.

![Figure 2. Areas of «non-observed» economy on the Laffer curves in bi-dimensional space. a: in the Cartesian system coordinates; b: in the polar system coordinates. [20](image)
The third result is the visualization of the Laffer curve, taking into account «non-observed» sector in bi-dimensional space, which clearly shows the following regularity: if there is only a fully formal economy for a tax burden equal to 100%, tax revenues are zero - sloping tail of the Laffer curve (see Fig. 3 Panel b); in economy with tax evasion for a tax burden equal to 100%, tax revenues don’t simply exist, but even exceed their value corresponding to optimal tax rates – «upward sloping» tail of the Laffer curve (see Fig. 3 Panel a).

![Figure 3. Laffer Curve with (without) tax evasion. a: Laffer curve under tax evasion; b: Laffer curve without tax evasion. [21]](image)

This phenomenon is due to the fact that high tax rates stimulate the economy to redistribute resources to illegal sector. The higher tax rates, the stronger this redistribution will be, all other things being equal.

The presence of crisis phenomena in the economy, in our opinion, leads to the following situation: a sharp drop in tax revenues in the official economy and a small reduction in tax revenues in the economy, taking into account the «shadow» sector.

![Figure 4. Laffer Curve with (without) tax evasion: sensitivity exercise with respect to economic crises.](image)
Thus, economy without problems with tax compliance is much more sensitive to economic crises: maximum consumption and minimal investments reduce the tax base. In economy with «non-observed» sector, this effect is offset by a shift of labor force to illegal market. Those, «non-observed» sector is a kind of bad times insurance.

3. Conclusion
In process of this study, we made the following main conclusions:

1. If the economic system is on ascending branch of Laffer curve, and tax authorities don’t take into account the existence of «non-observed» sector of economy when implementing the fiscal policy, an increase in tax rates leads to significantly overestimated expected values of tax revenues. Those, increase in tax rates will not have such a strong impact on growth of tax revenues, as it’s supposed.

2. If the economic system is on descending branch of Laffer curve, then an increase in tax rates has a false effect on revenues. The economic consequences of fiscal policy will create an incentive to reduce employment and production in formal sector, increase tax evasion, which will outweigh the arithmetic effect of tax rates on tax revenues.

3. Tax revenues to the budget subject to the existence of «non-observed» sector are less sensitive to negative phenomena in economy than tax revenues to the budget in completely legal economic system. In this case, the «shadow» sector is a kind of «shield» from unexpected budget losses.

4. References
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