



MULTI-FACTOR ECONOMETRIC MODELS THAT REPRESENT CHANGES IN THE DYNAMICS OF THE TAX BURDEN

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Abstract

Key issue for the management of the economy by the state of the economy and entrepreneurship, labor, capital, goods and services markets, the development of the provisions of the bilateral relations and the support that they need to ensure the effective functioning and development of the economy. In this case, the efficiency of the economy under the concept of socio-economic oriented to achieve results to be achieved with a minimum expenditure of efforts to understand.

Keywords: tax, tax-burden, multi-factor econometric models, dynamics of tax burden

Economics is important not only that, if such a state of society in the conduct of economic policy, social and economic and financial-investing expect opportunities to come.

The state of the economy and entrepreneurship, taxes, tariffs and other economic instruments as part of a stable system of rules that can be managed, in any circumstances waiting for the economy of the community acts representing the social optimum criterion.

At the same time, the state taxes important management tool. Taxes - agricultural businesses and citizens by public authorities in accordance with the established rates for the collection of dues.

The total amount of the tax burden on the state of its functions (management, defense, courts, regulation, etc.) is determined by the amount of the expenses you will need to perform. Expressed them in the fiscal function of taxes.

The economy, and more complex management tasks associated difficulty in public spending leads to an increase in the tendency of the economy but taxable entities (legal and natural persons) to reduce the tax burden on families. It is important to remember that the individual taxes, the total tax harvest of 2-3%, so the basis of budget receipts taxes collected undertakings. The economic condition of the economy of each of the undertakings clearly there is a limit on the amount of the tax burden, increase the tax burden on business activity declined sharply and if increased by more than a partial or complete closure of the production flow.

This event represents the Laffer curve is very good.

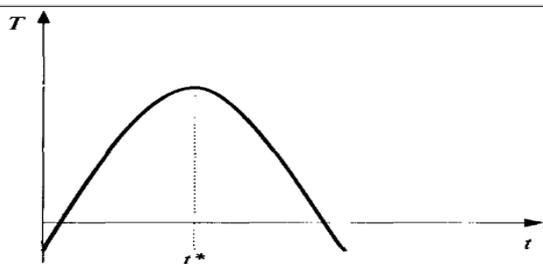


Figure 1 - Dependence on tax collection T from the tax rate t Laffer curve based on the following estimated production volume of the company lies in (the tax base) to decrease t e'' t0, t e'' t0 X '(t) < 0. Therefore, the budget revenues (taxes and fees), the tax rate t u function as T = tX (t)

he brought in the picture above. At the same time, the maximum tax rate, providing tax receipts T* is determined by the following conditions. T'(t*) = 0

$$\text{or } t^* = -\frac{X}{X'}, \quad t^* > t_0$$

For example, if the assessment goes on decreasing with the increase in the volume of production line

$$p(X) = b - aX,$$

And the costs associated with the quadratic function of the volume of production (excluding tax)

$$C(X) = \alpha X^2 + \beta X + \gamma$$

net profit (after tax), equal to

$$P(X) = (b - aX)X - \alpha X^2 - \beta X - \gamma - tX$$

On the criterion of maximum profit (tax rate t)

$$P'(X) = b - 2aX - 2\alpha X - \beta - t = 0$$

It stems
$$X(t) = \frac{b - \beta}{a + \alpha} - \frac{t}{a + \alpha},$$

that is, the production function of the linear reduction of the tax rate, budget revenues (tax collection) will be the form

of a parabola
$$T(t) = \frac{b - \beta}{a + \alpha} t - \frac{t^2}{a + \alpha},$$

Therefore,
$$t^* = \frac{b - \beta}{2}$$

Clearly, the belief that the tax rate of the tax burden on the border line T* and tax T (T*) will be equal to the increase in the tax rate will lead to the acceleration of the decline in the volume of production.

It is necessary to remember that the tax rate at T < T*, our work on the criterion of maximum profit and the tax rate t e'' T* that- business criterion, which is trying to maintain its position in the market.

Above you can see the availability of the functions of the corresponding taxes. The state of the economy, reducing the tax burden can boost movement, otherwise it will lead to the reduction of its efforts to increase the tax burden. If you need to collect a certain amount of tax, then this should

be the distribution of the tax burden among the subjects of the economy, the economy in general management, high-tech to create the best conditions for the growth of the network should provide. Therefore, the capacity of the scientific networks, providing high-growth sectors of the economy and tax benefits. For example, the employment of a person of agricultural investments, industrial relations mutual chain of other industries to provide employment for more than ten light industry, one of which leads to additional employment in other industries provide more than a quarter of people and etc.

Assessment tax assessment base will be able to direct against inflation. If the actual assessment base increased, which will increase in proportion to the actual evaluation of the normal tax base (equal to the increase in the tax assessment tax is simple); if equal, the tax assessment will be equal to zero; a database, it's a realistic assessment of the normal tax base will be reduced proportionately. For basic goods - goods companies.

Tax liable entities formed in the present circumstances, can be divided into two groups: Capital taxes (the total fees of 15-30%); gross national income and its components taxes (fees, most of the enterprises);

Capital is only indirectly related to the results of the activities of agricultural taxes, so get rid of inefficient enterprises with funds and encourage access to capital resources to the maximum. Doing so is very difficult as possible tax evasion.

The second group of the taxes clearly seen in the image below. Each subsequent tax the tax base and economic costs of production decreases due to the payment of taxes.

The company's production has increased by more than the rate of tax revenues in the company stops the types of costs associated with the products. The production of value-added tax, which can be used to develop the production of the manufacturer and then a portion of the proceeds. This benefit applies to tax more: the top of the investment tax will reduce investment and future growth, income or consumption tax reduces the interest in the development of the model.

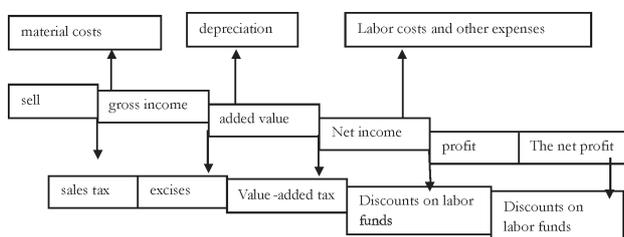


Figure 2 - Material costs in taxes

In general, representing the results of the financial activities of the company tax fiscal function, followed by an increase in prices and a decrease in the volume of production. This tax reduction, economic growth accelerated, and this is the first case with the budget deficit can be observed, and therefore, require additional emission of money, but the excessive growth of the money mass production later can be calculated.

Microeconomic level (enterprise, organization) macro-level indicators (taxes), a natural aggregation. Macro-economic Modeling Based on the results of the activities of the economy as a whole is considered as a function of the production cost aggregated resources:

$$F = (K, L)$$

where X -aggregation products (for example, compared to the base year constant prices);

K - Capital (or a significant part of the main production funds, compared to the base year constant prices);

L - The number of employed in the economy, mln. .

Thus, the production of all taxes, labor and capital taxes appears to be effective. However, the resources will lead to a reduction in the tax resource, and therefore, in accordance with the production. The decrease in the production of the production function can be calculated. Therefore, you can convert the tax on the production of such a tax.

As a result, the simulation of macro-taxation of all taxes, production tax submission. In practice, a tax rate of production in current prices in the economy (or large sections) corresponding to the current value of the collection of taxes can be calculated as a ratio of production:

$$t = \frac{T}{pX}$$

A formula that makes sense, especially if the price remains constant prices, production as a previous rising prices collected taxes will remain unchanged, the reduced tax rate at the current prices.

Neither improving the tax system to calculate taxes at the micro level nor does the opposite: it is the production of large sections of the economy, any change in the system according to the tax rate change. At the same time the burden of taxation of large sections of the economy, comparative analysis of the distribution of the tax burden between them that allows you to make conclusions about the possible directions of improvement of the tax system.

In conclusion we can say a few words about the sources of tax. Many people believe that the source of the tax benefit. As a picture, taxes are a source of economic activity. Operating results for the production of (product, service), and therefore taxes. Taxes, in our view - that economic activity and social load, the load of material costs, the depreciation charge as inevitable. As a result, the reorganization of the tax system so that the proceeds from the production of products that are necessary for life to carry out the production costs and taxes, as well as slightly should encourage the expansion of production and workers.

$$d \hat{t}^p = \sum_{i=0}^2 x_i dt_i$$

If it is positive, there was an increase in taxes called, In particular, in such situations is usually an increase in taxes. $dt_0 > 0, dt_1 > 0, dt_2 > 0$.



The world practice, to speed up economic growth, attraction of investments into the development of its business in one of the main conditions of the main producers of new job creation, modernization of production and does not prevent the implementation of innovations in this area, including the low tax burden of the fiscal policy in the country econometric models ensure macroeconomic stability.

However, there is another important issue which is the first review of the tax rate, and to determine how these changes in the macroeconomic situation is directly related to solving complex problems.

In fact, the different types of taxes to reduce the tax burden on the uniform of a fundamentally different macroeconomic consequences. As a result, the dynamics of the process of developing a new tax system to make it more options for GDP growth and other indicators to assess the impact of changes in the parameters of the tax burden and economic activity is considered a prerequisite for reforming the tax system.

It should be noted that the most urgent problem of tax policy in this area to identify the limits on tax optimization and tax rates, the tax is based on the scientific aspects of these issues - the budget policy will serve as a reliable econometric models.

It is known that a decrease in the equilibrium level of income taxes multiplier effect. If taxes "T reduction, increase of income, the availability of the software and consumer spending increases $\Delta T \cdot b$ in line with the movement of the planned expenditure curve up the size of the balance of

production and an increase in the $\Delta Y = -\Delta T \cdot \frac{b}{1-b}$ amount

of Y1 to Y2. Thus where the tax multiplier $\frac{\Delta Y}{\Delta T} = -\frac{b}{1-b}$.

If the income tax contributions to the state budget (Y) dynamics, as you can imagine, the tax will be able to function the following: $T = t \cdot Y$, where t represents the tax rate. Including in this case, the consumer will be able to function the following: $C = a + b(Y - tY) = a + b(1-t)Y$.

It should be noted that the above tax multiplier model $m = -\frac{b}{1-b(1-t)}$ îe m, and this is expressed in a closed economy, the tax multiplier.

In view of the above, the full function of the tax Macroeconomic econometric model, if it is a common manifestation of the: $T = T_a + tY$, that T_a - self-expression, and it is related to the amount of current income taxes (for example, real estate, inheritance taxes, etc.), taxes, and also t - tax rate.

If the consumption tax taking into accounts the function of the functions of the econometric model of the recording for a while, then his appearance will be as follows:

$C = a + b[Y - (T_a + tY)]$ and in this case, the balance of the volume of production model of the economy as follows:

$$Y = \frac{a + I + G + g}{1 - b(1-t) + m'} - \frac{bT_a}{1 - b(1-t) + m'}, \text{ here } \frac{-b}{1 - b(1-t) + m'}$$

- an open economy, the tax multiplier. At the same time

$$\text{equal to } \Delta Y = \frac{\Delta G}{1 - b(1-t) + m'} - \frac{\Delta T_a \cdot b}{1 - b(1-t) + m'}$$

If it exceeds the same amount of state spending and taxes autonomous, it also increases the size of the balance of production. In this case, speak about the balanced budget multiplier and it will always be less than or equal to one.

However, the balanced budget multiplier of any budget deficit or surplus does not provide the absolute elimination. So this is a balancing changes in the income and expenditure of the budget, $\Delta T = \Delta G$ calculated in accordance with the order to maintain equality, the ΔT character with all the changes to the budget ΔG All changes in the budget.

Thus public spending rises ΔG , the production will increase the size of the balance following amounts:

$$\Delta Y = \frac{\Delta G}{1 - b(1-t) + m'}$$

If the government of autonomous taxes at the same time $\Delta T_a = \Delta G$ reduce the amount done to balance the production capacity:

$$\Delta Y = -\Delta T_a \cdot \frac{b}{1 - b(1-t) + m'}$$

Change in the total production volume balance

$$\Delta Y = \Delta G \cdot \left(\frac{1}{1 - b(1-t) + m'} - \frac{b}{1 - b(1-t) + m'} \right), \text{ that is}$$

describes $\Delta Y < \Delta G = \Delta T_a$.

Tax multiplier effect of a decline in the growth of public spending multiplier effect of weaker, and this is the algebraic way expenses are characterized by the animators be more than the tax multiplier Arch. The impact of stronger income and consumption levels of public expenditures (tax changes) result. This difference is decisive in the choice of means of fiscal policy. If this policy is aimed at the expansion of the state sector of the economy, the elimination of the periodic crisis of public spending (this is a powerful incentive effect), to stop the inflationary growth of taxes (this is a relatively soft limit event).

If fiscal policy aimed at limiting the public sector, and then periodically during the crisis reduced taxes (less incentive effect), reduced public expenditures during the period, this decrease faster than the rate of inflation.



Figure 3 - The change in the tax burden

In recent years, the falling level of the tax burden in the country and strengthening the financial stability of the enterprises of the real sector of the economy, macroeconomic and played a special role.

Thus in recent years the tax burden as a result of the fiscal policy achieved the following levels (Figure 3)

This statistical data shows that the share of direct taxes in GDP in 2000 to 7.5%, while in 2010 this figure reached 5.7%, respectively. The value of the tax burden between the years 2000. Thus the average share of direct taxes in GDP reached 6.3% in the period 2000-2014.

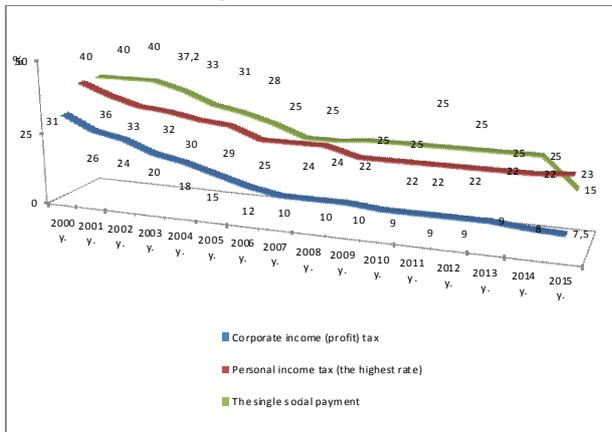


Figure 4 - The dynamics of the rates established in the years 2000-2015

As we know, the structure of indirect taxes, the budget revenues the largest share. Thus if you give attention to the trends of changes in the tax burden, this figure accounted for 16.0% of GDP in 2000, while in 2010 this figure you can see the GDP amounted to 11.1%. In particular, the period referred to in indirect taxes in the GDP average of 12.2%.

To the decline in the last years of tax rates on a regular basis in the development of small business and private entrepreneurship, as well as special attention is given to individuals' income (Figure 4).

I would like to say that, according to the econometric analysis of the tax burden, and there is a certain amount of quantitative link between inflation, according to the annual inflation rate

of 1% of the increase in the share of taxes in GDP, or in other words, 0.39% leads to an increase in the tax burden on the economy: $TAX = 24.8 + 0.39INFLATION$.

The stability of the model coefficients $t_{a_1} = 2.7$ and to communicate its results equal to $R^2 = 0.45$, $F = 7.4$, it is considered adequate statistical criteria.

In addition, the tax burden on the economy at the same time as an endogenous factor, and a 1% increase in macroeconomic conditions and other factors which influence the level of monopolization of production in the country increased by 0.37%:

The stability of the model coefficients $t_{a_1} = 3.9$ and to communicate its results equal to $R^2 = 0.62$, $F = 15.1$, it is also considered adequate statistical criteria.

It can be said that the above summarize the development of strategies for effective macroeconomic regulation of the huge potential of the econometric approaches, reflecting the changes happening in the national economy, the real economic indicators and the creation of new laws will help identify reliable, and also above the revised fiscal policy econometric models and econometric analysis of the tax burden in the country in ensuring macroeconomic stability in the quantitative determination of laws, as well as economists, who always attract the attention of some of the controversial issues in this area because of the clarification of certain aspects of great help.

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