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Formation of Tax Policy in the Aspect of the Optimal Tax Burden

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Abstract

Improvement of tax system is the main condition of normal functioning and economic development of state. Tax system and, correspondingly tax policy is very important problem for a state of developed, developing or transition economy. In spite of level of development there are no countries without debates regarding tax system, its mechanism and management, tax policy and rates. This article covers just these matters, namely what tax burden should determine tax policy, what tax rates should determine certain tax in condition of such taxation. We present and analyze here statistic, pessimistic and optimistic concepts, as well as those of Laffer-Keynes and Abuselidze and their effects on business activity and output. The results of such effect clearly prove optimality of tax system, its mechanism and management, tax policy and rates.

Key Words: *Finance, State Budget, Tax Policy, Tax Burden, Optimal Taxation, Production Capacity.*

Introduction

Development of the optimal model of economic and social systems substantially depends on correctness of tax policy. In terms of objective reality, nowadays the world needs viable tax system causing development of business and economic growth. Taxes and tax policy fist of all shall correspond to local real situation. Tax and general economic policies of state shall be agreed and consolidated for the purpose of the same goals.

Hence, tax systems need improvement and concordance with reality: tax burden should be distributed fairly to prevent damages to public, i.e. tax system should be fair, what is a precondition of its effectiveness. It is obvious, because tax policy has direct influence on budget system, functions and relations of various level budgets, transfer policy, customs policy and customs tariffs.

In terms of above mentioned, formation of tax policy in compliance with the concept of optimal tax burden is one of the most important problems of economic science and practice. Fiscal policy should cause the situation, when growth of budget revenues stimulates development of business activity and growth of output and vice versa, development of business activity and growth of output provide growth of budget revenues.

Literature Review

Specificity of development of tax policy, tax system, its structure and management, policy and tax burden are considered and researched by many academic economists. In this regard, Laffer – Keynes model is undoubtedly popular. Our publications also cover our new version of the optimal tax burden. Some

interesting works covering this problem are written by many other economists ((Christopher Heady) (José María *et al.*)) (David and Christopher) (Kenneth Judd) (Robert Barro et al.)) and Etc.

According to so called pessimistic concept (pessimistic concept, www.wisegeek.com/what-is-keynesian-economics.htm) it is impossible to establish any dynamic regularities in this process, as due to incidental circumstances various tax payers bear different tax burden. Proudhon stated that all taxes finally focus at final consumers of products and cause reduction of their income, disproportions and losses in economics, injustice in society (Pierre-Joseph) According to optimistic production (The Fiscal Times, 2012) - contra wisely, all the taxes finally evenly distribute between all tax payers in direct proportion to goods consumption and utility.

Mathematic concept based on theory of marginal utility of production which founders the famous scientists Bohm-Bawerk, Walras etc. were (Kugaenco and Belyanin, 1999), illuminated research of this problem and use for its explanation such economic categories, as demand, supply and price, i.e. elasticity of demand and supply. They consider relation of these categories to taxes.

Statistic concept tries to explain the named phenomena by the way of fundamental analyzing of the statistic data received resulted multiple statistic observation. According to E. Atkinson and J. Stiglitz (Atkinson et al., 1995), payment of taxes results reduction of individuals' incomes. They really grow poorer and have to suspend retirement, reduce spare time on cost of growing working hours etc.

That is why, a tax, as an important element of the system of economic relations is so complicated without alternatives in fiscal policy that it always becomes an actual issue in the public discussions.
I think, everybody knows public idea of why shall taxes exist and why it would be worse without them, etc.
I hope, you agree that such consideration is rather utopian and even does not need to be argued, as lack of taxes in people's life equals to human's existence without satisfaction of thirsty.
Public mind is really pluralistic, it is doubtless. The most part of public supports idea of necessity of taxes, providing that the tax shall be limited with liberal legislation and the norms covering public interests.

Naturally, we shall agree with this opinion and it will be certainly without alternative if the legislator takes into consideration recommendations agreed with such public interests.
So, you can see that the opinions are really diverse, what proves that this problem is actual. That is why, we consider, that we, as a part of public, oblige to find the ways for solving of the named problems and present them as recommendations.

Survey

Economists, philosophers and statesmen of all times and epochs factually unanimously recognize special importance of taxes.

Adam Smith (Smith, 2011) wrote about necessity of the optimal tax policy in a country, that "the owner of the capital is actually the citizen of the whole world and doesn't represent the property of one country. He will immediately leave the country with undesirable tax condition and invest his capital in the country where he will be able to run his business and property without pressure".

Since old times many well-known economists, including Nobel Prize laureates highlighted the problem of decrease of tax burden, what should promote business activity and rise budget revenues.

Rise of budget revenues is really very important and optimal tax burden (38.2%) should be based thereon (Abuselidze, 2012) In such conditions a state first of all improves business environment which is very important for development of private sector.

Topicality of research of taxation problems is also conditioned with sharp manifestation of negative tends of effect of tax policy on the pace of economic development.

Qualitative and quantitative analysis of the current economic situation in the world proves that cause and factor of financial and budget crisis are multilateral and of large scale. Lack of unified reasoned strategy causes further worsening of situation and manifestation of decrepit state of budget and tax policy. It results inability to fulfill the obligations provided by budget both in revenues and expenditures items (Greece (Ministry of Finance Greek, official site: http://www.minfin.gr/?q=en/content/medium-term-fiscal-strategy-2012-2015), Spain (Ministry of the Economy and Finance Spain, official site: http://www.minhap.gob.es/EN-GB/CDI/Paginas/centraldeinformacion.aspx),
Italy (Italian Ministry of Economy and Finance, official site: http://www.mef.gov.it/en/) etc.).

The main priority of any country shall include optimization of tax system, because ability of financing of the required expenditures by state depends on its correct functioning. Besides, optimization shall mean solving of two important tasks, namely: 1) maximum mobilization of budget revenues and 2) taking into consideration paying capacity of tax payers in imposing of tax rates. Besides, it should be also taken into account that even in condition of full admissibility of tax burden, taxes may be seriously distorted.

For the purpose of analysis of effect of tax burden on macro- and microeconomics, as well as any kinds of business activity it is very important to clear how fair unified tax burden is distributed among various economic players, businessmen and consumers, various sections of the population.

One problem, which, as we think, prevents optimal functioning of tax system to considerable extent is that tax policy lost touch with the uniform public and economic policy. Besides, earlier economic programs and concepts are outdated. In such conditions the authorities try to make small changes to the separate segments of economy, including tax system. But it is clear that partial, detached transformation of the segments of economy will not give desirable result. As we think, it is time to develop a new complex program of economic reforms balancing macro- ands microeconomic policy and adjust all its elements.

It is generally known that socioeconomic development of country is determined with strengthening of the financial sphere to considerable extent, what may be achieved providing that tax policy is optimal and well-reasoned. Besides, it is also doubtless, that development and operation of the optimal tax system is very complicated problem.

But the main problem, as we think, is which and what kinds of taxes shall be imposed by state, what tax rate shall be applied? Who shall pay concrete kinds of taxes to meet the principles of equity, effectiveness and simplicity – these are the questions put before all true statesmen and scientists and they are waiting for timely, qualified response, solution and actualization.

Foreign researches in this sphere prove that in consideration of time factor it is very important how average total tax rate changes, i.e. decreases or increases. Any state always tries to increase taxes and such way provide growth of budget receipts. This may be demonstrated with formula:

$$Lim X_n = +\infty \text{ and } Lim Y_n = +\infty, \quad (1)$$

$$\text{where } y_{n+1} \succ y_n, \; x_{n+1} \succ x_n$$

Although many countries have reformed their tax system, it still fails to meet the requirements of economic development. We mean total tax burden, its distribution and formation of the appropriate mentality in market economy. That is why, when a state fixes tax burden, changes any tax or its rate, it shall preliminarily determine who will really bear this tax, what socioeconomic state is in this country and only after that solve the matter of its change, imposing, increase or decrease. It is also necessary to put in use

calculation of the population employment efficiency coefficient for analysis of socioeconomic status of state. It may be provided with the formula:

$$Kde = 1 - \sum_{j}^{i} \frac{Pe + Pu}{Pea}, \quad (2)$$

Where: Kde - population employment efficiency coefficient,

i,j – quantity of population groups according to employment,
Pe – quantity of population employed at a disadvantage,
Pu – percentage of unemployed population,
Pea – economically active population.

Unfortunately, most of authors leave beyond their attention the problem of what impact have different tax treatments and rates on macroeconomic balance and employment rate. But regarding this problem we cannot agree with the Laffer-Keynes postulates according to which imposing of the optimal average tax rates itself cannot grow employment rate, initiate transition to the new balance and maximum mobilization of tax proceeds to budget.

Really, we can consider optimal tax burden such conditions when favorable economic environment is achieved for the best functioning of economy and business building, i.e. tax shall be optimal both for the state in whole and for certain businessmen. Such level is the state of simultaneous growth of budget revenues and output and we consider, it is possible at 38.2% tax burden (the article covering this problem is published in Journal of Applied Finance & Banking, vol. 2, no. 6, 2012, 121-130), please find Figure №1.

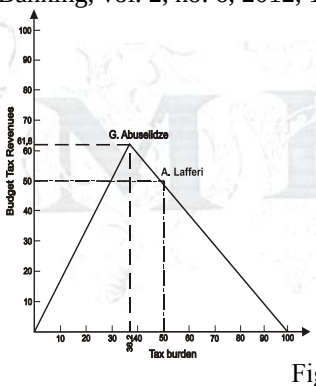

Figure №1

Taking into consideration Silverman-Toeplitz (Silverman, 1913; Toeplitz, 1911) theorem, for the formula

(Lim) we have $Lim \frac{x_n - x_{n-1}}{y_n - y_{n-1}}$, then $Lim \frac{x_n}{y_n} = Lim \frac{x_n - x_{n-1}}{y_n - y_{n-1}}$ (3)

If we assume, that $Lim \frac{x_n - x_{n-1}}{y_n - y_{n-1}} = \alpha$ and $y_0 = 0,\ x_0 = 0$,

$P_{nk} = \frac{y_k - y_{k-1}}{y_n}$ (k=1,2,…n) $x_n = \frac{x_n - x_{n-1}}{y - y_{n-1}}$ (n=1,2…)

According to the conditions of Silverman - Toeplitz (Silverman, 1913; Toeplitz, 1911) theorem for P_{nk} and X_n, for which $t_n = \frac{x_n}{y_n}$,

we receive, that $Lim\frac{x_n}{y_n} = Limt_n = Lim\frac{x_n - x_{n-1}}{y_n - y_{n-1}} = \alpha$ (4)

Besides, we shall take into account that at the present stage opinions of practitioner scientists regarding optimal tax burden are various and its meaning fluctuates between 0 and 100. As we think, it may be shown as follows:

$$X_r = \{a, b, c, d, ..l\} \quad (5)$$

If we note, that the optimal tax burden belongs to set X_r, we can express this dependence, as $a \in X$ и $X \to \alpha$ ($a = 38.2$), besides, the meanings belonging to X, are less than 100, what may be expressed, as $\{x: x \in N,\ x \prec 100\}$, where N – set of figures, and if we take into consideration Bolzano's theorem, where for each number $N \succ 0$ exists such number, when inequality $/f(x) - A/ \prec N$ is satisfied. If A is a border of function f, when x tends along set N to point a, then we receive $f(x) \to A$, when $x \to \alpha$, $x \in N$, or $Limf(x) = A$. Instead of symbol $x \to \alpha$, $x \in N$, we, as a rule, apply shorter form $N \ni x \to a$ and we write $Limf(x)$.

Somebody may oppose to us by means of the idea that the results of this note have the same privilege, as the original analysis Corlett-Hague (Corlett, W.J., Hague, D.C. 1953).

In the optimal taxation pressure concept relation of taxation pressure to economic activeness and output is especially important. According to this concept, at critical values of taxation pressure t=0 and t=1 activeness drops to minimum; at t=0 – because state will not have any revenues, nor fulfill its economic functions, and at t=1 – because at 100% taxation no one wishes to work out any legal revenues. At the same time, providing this concept, there are levels, differ from taxation pressure (t=0 and t=100), namely t_1=50% (Laffer) and t_2=38,2% (Abuselidze), when economic activeness and output differ. Besides, role and importance of these rates are determined with correlation of: a) taxation pressure and output; b) budget revenues and economic activeness (please find Figure №2).

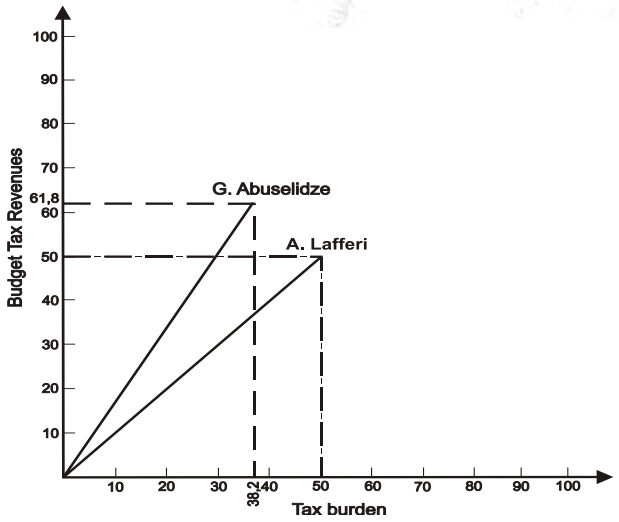

Figure №2

Thus, any state shall be oriented to tax policy which provides increase of business activity and output simultaneously with growth of budget revenues (please find Figures №3 and №4).

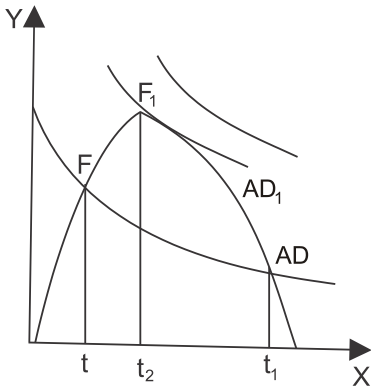

Figure №3

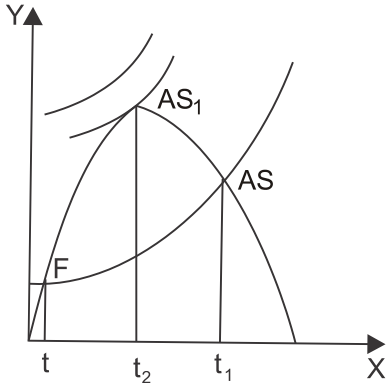

Figure №4

It is doubtless that any tax burden includes integrity of various taxes rates, what may be expressed as follows: $A \subset A$.

If a state operates various taxes and we impose rates according to profit (margin) of business activity, it may be written as follows:

$$a_{11}\ a_{12}\ a_{13}\ a_{14}\ \ldots\ a_{1n}$$
$$a_{21}\ a_{22}\ a_{23}\ a_{24}\ \ldots\ a_{2n}$$
$$a_{31}\ a_{32}\ a_{33}\ a_{34}\ \ldots\ a_{3n}$$

a_{ij} means division i of business activity, j means taxes payable by each businessman.

If we also consider how business activity and output distributes in condition of certain tax burden, we receive:

$$T_{11}\ T_{12}\ T_{13}\ T_{14}$$
$$T_{21}\ T_{22}\ T_{23}\ T_{24}$$
$$T_{31}\ T_{32}\ T_{33}\ T_{34}$$

Which shows T_{ij} (i,j = 1, 2, 3, 4) of business activity and output which may be achieved in conditions of the optimal tax burden.

Our assumption of tax policy optimization conflicts with Sandmo (Sandmo, 1990) who considers tax indicators fixed. We think that tax policy shall be formed such manner that provides progressiveness of tax rate and determination of tax burden generally with progressiveness towards the groups of business activity, i.e. be differentiated for large-scale, middle- and small-scale entrepreneurship (business activity).

The named function may be expressed with the following formula:

$$\begin{cases} a_{11}x_1 + a_{21}x_2 + \ldots + a_{1n}x_n = b_1 \\ a_{21}x_1 + a_{22}x_2 + \ldots + a_{2n}x_n = b_2 \\ a_{n1}x_1 + a_{n2}x_2 + \ldots + a_{nn}x_n = b_n \end{cases} \quad (6)$$

where $b_1=b_2=b_n=38.2\%$

Such assumption of tax policy, as we think, does not breach principles of justice and effectiveness, although it is very difficult to determine degree of fairness of public tax policy.

According to the principle of horizontal equitable taxation, persons with the same characteristics shall be imposed the same tax burden; according to the principle of vertical equitable taxation, tax payer shall pay taxes in compliance with his/her position, but neither economic welfare, nor capacity to pay taxes makes

basis for tax burden equity. Both belong to contribution to public by a person which is determined proceeding from the meaning of economic production made by this person. That is why, taxes shall be differentiated with awarding privilege to public welfare by tax-payer, besides, such differentiation does not conflict with calculation of tax burden with the formula (6).

Taking into consideration that taxes cause changes in aggregate demand and aggregate supply, what from its side causes change of balanced prices, we think that optimality of tax system is calculated not only on achieving of progressiveness which provides equal conditions for upper income and low income payers (formula 6). We shall find such condition, when at existing tax burden 38.2% the balance point of aggregate supply and aggregate demand, business activity and output is achieved. For this purpose we shall create function graphs and find equation of curve which passes through the point (38.2; 61.8) and which will have such property that length of tangent passing its any point and located between axes of coordinates is divided in half by the point of touch (please find Figure №5).

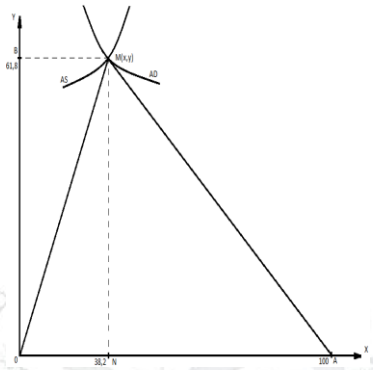

Figure №5

Let's M (x,y) is an optimal point of tax burden and tax budget revenues which as per condition is a point on curve in which in condition of such burden business activity and output, aggregate demand and aggregate supply are in balanced conditions and it expresses condition of development, improvement of socioeconomic status of state. Then we receive that ΔAOB is similarly to ΔANM, so, it follows from the property of triangles similarity, that

$$\frac{OB}{OA} = \frac{NM}{NA}, \quad (7)$$

If we insert NM=y и NA=x into formula (7), then

$$\frac{OB}{OA} = \frac{y}{x} \qquad (8)$$

It follows from right-angled triangle AOB that

$$OB=OA \tan (180^* - \alpha) = - OA \tan \alpha \qquad (9)$$

Where α is an angle, where for the aggregate demand and aggregate supply and/or business activity and output at approach of tax burden Ox to optimal meaning, from formula (9), taking into account formula (8) we receive

$$\tan\alpha = -\frac{OB}{OA} = -\frac{y}{x} \qquad (10),$$

so, we receive from (10) as follows:

$$\frac{dy}{dx} = -\frac{y}{x} \qquad (11)$$

It is just the formula in solution of which we achieve the optimal variant when in condition of 38.2% of tax burden we may consider that the aggregate demand and aggregate supply are balanced and business activity and output are the most optimal.

Solution of this equity will be $y = \frac{c}{x}$, and if we take into account that in point M (38.2; 61.8) balance is achieved, then $C = 61.8 \times 38.2$; and according to definition of derivative

$$y' = -\frac{y}{x}\ ,\ y = \int -\frac{y}{x} dy \qquad (12)$$

It may be mentioned that tax systems are not pragmatic yet. If our aim includes achievement of economic growth, promotion of investments, reduction of unemployment etc., we shall develop the appropriate program. As for realization of tax strategy, it shall be economically grounded. Tax rates and preferences shall be selected not mechanically, but by means of mathematic calculation taking into consideration real economic situation.

Conclusion and Recommendations

And finally, for effective functioning of tax system not only optimal tax rates are required, but high tax culture of each tax payer.

Economically strong state is based not only on the optimal tax rates, but tax collection, acknowledge of binding of tax payment, responsibility of each businessman and tax-collector and generally on quality of administration.

But we know figure of speech “the reverse of the coin”. This reverse is just “the main economist” whose goal includes only accumulation of funds in budget, not acceleration of socioeconomic processes, although such processes became the object of constant care of developed countries.

In this terms, it is purposeful to make tax system transparent; impose rates on the ground of economic calculations; make tax system stable, not ever-changing.

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