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On the Optimal Tax Burden

(Denunciation of Plagiarism)

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On the Optimal Tax Burden

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Iuri Ananiashvili and Vladimer Papava

Abstract: The problem of impact tax burden on economic activity and production capacity is very popular among economists. This paper is a response to the article published by *Intellectual Economics* in 2012 (No. 4) whose contents, unfortunately, constitute plagiarism. Several parts of the article comprise information taken from different publications under our authorship. This paper gives a brief analysis of the most recent results related to the development of the main ideas of supply-side economics based on the Laffer-Keynesian Synthesis.

Keywords: tax policy, tax burdan, budget, aggregate demand, aggregate supply, fiscal points, Laffer Curve, Laffer-Keynesian Synthesis

JEL classification: E62, H21, H61

Introduction

The journal, *Intellectual Economics*, 2012, No. 4, published an article entitled “The Influence of Optimal Tax Burden on Economic Activity and Production Capacity” (Abuselidze, 2012), written by George Abuselidze. Our attention was drawn immediately to this article because the problem posed in its title falls within the sphere of our scientific interests and is a topic about which we have written and published several works in Georgia and abroad.

We must admit that Abuselidze’s article turned out to be a surprise for us because it transcends all limits of scientific dishonesty. To convince the reader of our claim, we have provided an analysis of some of the points discussed therein as follows.

On the Abstract of Abuselidze’s Article

Let us start with the abstract. It is well known that an abstract presents a brief discussion of the essence of an article and what the author proposes to accomplish with the work. Instead of this, the abstract of Abuselidze’s article repeats the two paragraphs from the beginning of our article in Georgian (Ananiashvili, and Papava, 2011b) which was later translated and published in Russian (Ananiashvili, and Papava, 2011a) and in English (Ananiashvili, and Papava, 2012b). Our article was dedicated to the analysis of the transformation model of tax burden assessment and the model of behavioral type. The transformation model belongs to Evgeny Balatsky, the famous Russian researcher of tax burden, and the behavioral model is the construction offered by us. Both models enable us to assess so-called fiscal points of the first and second type. This concept was introduced into scientific circulation by Evgeny Balatsky. In our article, it is ground that tax burden in the transformation model is a determining factor for the technology and effectiveness of the use of resources and, in the behavioral model offered by us, a determining factor for the capacity of the use of resources and the level of economic activity. As a result, only the points derived from the behavioral model correspond to the known concept of Laffer. To get to this result, we began the introductory part of the article with the following text (Ananiashvili, and Papava, 2012b, pp. 71-72):

“The fact that the modern state and society could not exist without taxes needs no special proof. At the same time, it is recognized that taxation has an effect on consumption and savings, investment, supply and demand, pricing, the scale of markets, and so on (Atkinson, and Stiglitz, 1980; Stiglitz, 1988). In the final analysis, all of this directly or indirectly affects the amount of production and budget revenues.

The tax burden can affect the amount of output and the budget's tax revenues in two different ways. On the one hand, it has an impact on production technology and the efficiency of resource use, and it influences output and budget revenues in this way. On the other hand, a change in the tax burden has an impact on the amount of use of economic resources and causes growth or contraction of production and budget revenues according to the change in the involvement of resources in production. Both of these effects can be analyzed and estimated based on mathematical economic models."

It seems that Abuselidze liked this part of the text so much that he reflected this with minor changes and distortions (presumably because of the translation from the Georgian version (Ananiashvili, and Papava (2011b) of our article) in the abstract. The full version of his abstract is provided here.

Abuselidze has written (Abuselidze, 2012, p. 493):

"Abstract. That the modern state couldn't exist without taxes is something that doesn't need to be argued to society. It is also acknowledged that tax burden influences not only the budget revenues, but investments, demand and supply, prices and others. All this has direct as well as indirect influence on the economic activity and production capacity. In the concept of tax burden the important fact is the connection of tax burden with the economic activity and production capacity. The influence of tax burden on budget tax revenues and production capacity can be realized in two different ways. On the one hand, tax burden influences production technologies, effective usage of resources that accordingly will be depicted on the production capacity and, on the other hand, the change of tax burden influences budget tax revenues that will be depicted on the economic activity."

We should note that this abstract has nothing in common with the text (if not to take into account the similarity of the used terms) set out in Abuselidze's article.

On the Research Part of Abuselidze's Article

Because our aim is not to discuss all the aspects given in Abuselidze's article, we have omitted those paragraphs of the article whose titles are *Introduction* and *Overview of the Literature* (although we should note that regardless of the existence of this title, in fact, there is no overview of the literature in the article) and passed on to the characterization of the so-called research part of the article.

Instead of providing any results of his own research, Abuselidze confined himself to describing

well-known materials. At that, a significant part of this material referring to the imposition of obligations of taxes on economic subjects (producers and consumers) is extracted from known textbooks of economics with the first four paragraphs of his text extracted and appropriated from our article (Ananiashvili, 2008) or from the book (Ananiashvili, and Papava, 2010c, pp. 34-37) in their near entirety and with minor distortions (presumably because of translation¹). Specifically, the noted article discusses the function $Y = Y(t)$ of aggregate output (Y) with respect to the average tax rate (t) which within the supply-side economics is increasing when the value of the average tax rate increases for example from 0 to the certain t^* ($0 < t^* < 1$) level and it is declining in the following interval $(t^*, 1]$ of t changes. Our argument over this view is formulated in the following way (Ananiashvili, and Papava, 2010c, pp. 34-37):

“The peculiarity of the function of aggregate output with respect to the average tax rate noted here can be explained by means of the sum of positively and negatively operating effects. Positive is the effect which, in increasing of tax, is contributing to economic activity and aggregate output and in decreasing it becomes a hindering factor. Accordingly, negative are the effects which, in increasing of taxes, reduce economic activity and aggregate output, and in reducing of taxes – increases it.

*The effect creating economic environment and the effect of incomes can be qualified for the **group of positive effects**. **The effect creating economic environment** purports that the increase of the average tax rate expands financial possibilities of the government and it carries out the economic functions assigned to it in a better way. This effect is positively reflected on the aggregate supply as in the conditions of increased tax incomes; first, the supply actually grows from the side of the public sector by expansion of production and services and, secondly, the government improves a business environment that is very important for contributing to the increase of the aggregate supply of a private sector.*

***The effect of incomes** reflects direct influence of taxes on individuals’ behavior. According to Atkinson and Stiglitz, **the effect of incomes** arises because collection of taxes incurs reduction of individuals’ incomes which means that they become poor and are forced to postpone retirement on pension and also suffer from a decrease in leisure time owing to the increase in their working hours, etc. (Atkinson, and Stiglitz, 1995, pp. 48-49).² Coming from such logic, the effect of incomes, in increasing of taxes, is a contributing factor to the growth*

¹ We stress this circumstance once again because of the fact that some sentences within the text of the article are so incorrect that it is sometimes impossible to comprehend the meaning.

² In the English original of this book see (Atkinson, and Stiglitz, 1980, lect. 2).

of the economic activity.

*The replacement effect and financial effect³ belong to **the group of negative effects or the effects of the tax burden**. The existence of **the replacement effect** in relation to taxes is conditioned by the fact that not all activities are subject to taxation and what is taxed, as a rule, are taxed at different rates. When taxes increase, under the influence of the replacement effect, the economic activities move from the taxable sphere to the non-taxable sphere or from the sphere of high taxes to the sphere of low taxes. Individuals actively seek the ways, and frequently they find them, that give opportunities to evade taxes in full or in part. The ways of evading taxes leads us to the reduction of economic activity. The same result is yielded from the **financial effect**. This effect arises when the same activity can be paid in different forms and, accordingly, tax rates can be different. The classical example of this financial effect is the case when, to avoid high taxes, the use of cash payments among economic subjects and passage to “shadow” economy is realized.*

Let us consider Abuselidze’s version of this text. He starts the third paragraph of his article in the following manner (Abuselidze, 2012, pp. 495-496):

“3. Survey

In respect to taxation pressure, peculiarities of economic activeness and output may be explained by means of the balancing of positive and negative effects. Hereinafter the effects promoting growth of economic activeness and output in case of increase of taxation pressure and those preventing such growth in case of decrease of taxation pressure is called “positive”, and vice versa: the effects preventing growth of economic activeness and output in case of increase of taxation pressure and those promoting such growth in case of decrease of taxation pressure is called “negative.”

The group of positive effects may include the effect of creation of economic environment (or economic ability of state) and the effect of benefits. The effect of creation of economic environment supposes that the growing of taxation pressure up to the optimal level – 38,2% (Abuselidze, 2005) – extends the financial abilities of the state and performs its economic function better (please see the Abuselidze curve,⁴ Fig. 1).

³ These two effects, along with the effect of incomes, are considered as the main characteristics of taxes (Atkinson, and Stiglitz, 1995, pp. 48-49).

⁴ It is important to be mentioned, that in different places of the article the family name of Mr. Arthur Laffer is written differently: Laperi (Abuselidze, 2012, p. 496), Laffer (Abuselidze, 2012, p. 500), Laper (Abuselidze, 2012, p. 501). This can be a result of translatores from Georgian into English.

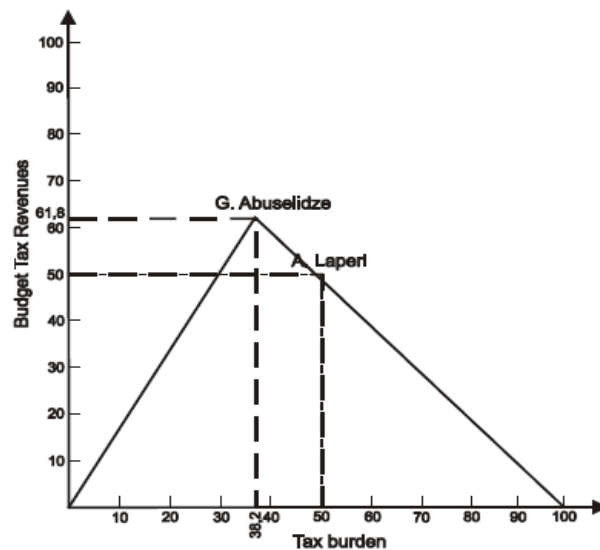


Fig. 1. Abuselidze curve

This effect is positive for output, as in conditions of growing tax revenues, first of all supply from the public sector itself grows by means of creation of more public wealth and services, and, secondly, the state improves business environment, which is very important for promotion of growth of economic activeness in private sector. The effect of benefits defines direct influence of taxes on individuals' behaviour. So, the effect of benefits promotes economic activeness in case of growing of taxation pressure up to the optimal level.

The group of negative effects includes the effect of replacement and financial effect. Existence of the effect of tax replacement is provided with that some kinds of business are not taxable, besides those taxable are liable to various rate taxes. When tax rates grow over the optimal pressure, the result is the effect of the replacement of business transfers from taxable spheres to tax-free spheres or from the spheres of heavy taxes to the spheres of lower taxes.

Individuals actively seek and often find ways to avoid taxes partly or wholly. Such ways of avoiding taxation lead to reduction of budget revenues (Abuselidze, 2005). The same result is received resulted financial effect. This effect originates when the same business may be compensated in various forms and correspondingly the rate may vary. A classic example of the influence of this effect is the case when for the purpose of avoiding grown tax the business entities shift taxes onto each other and transfer to shadow economy.”

As we see, the given text differs very insignificantly from our work. Despite this, we want to focus the readers' attention on several circumstances. First, Abuselidze disregarded not only us but also famous economists, Anthony Atkinson and Joseph Stiglitz, and overlooked the reference to their book provided in our text. It should be noted, however, that Abuselidze indicated Atkinson and Stiglitz's book (Abuselidze, 2012, p. 501) within his list of references which is appended at the end

of his article as if he has consulted it page-by-page. We emphasize this fact because our article misquoted the reference as pages 48 and 49 instead of, in fact, 47 and 48. Abuselidze repeated our mistake and misquoted the exact same page numbers.

Second, the excerpt of Abuselidze's text differs from our text, if not to take into account translation peculiarities, principally by the fact that the author has mentioned his own surname twice—in one case, as the author who found the optimal level of the tax pressure at 38.2% and, in the second case—as the author of the “Abuselidze Curve.” We want to confirm that the provided percentage rate as well as the “Curve” (or, rather, broken line and not a curve as Abuselidze calls it) were really devised by Abuselidze and we have no issue with his claiming ownership. We would like to turn our attention to other things. The point is that the rate and the “Curve” were provided by Abuselidze in his article (Abuselidze, 2005)⁵ in 2005 **without any real economic argumentation.** In mathematics, the *golden ratio*, also known as the *golden section* which refers to the division of an integer into two unequal (0.382 and 0.618) parts (when the ratio of the sum of the quantities to the larger quantity is equal to the ratio of the larger quantity to the smaller one). Abuselidze makes a conclusion about the determination of the level of optimal tax burden on the basis of the *golden ratio*. In other words, according to Abuselidze, this so-called “argumentation” is enough to be sure that the section 0.382 (or 38.2%) is the level of the optimal tax burden. But to choose the level of the optimal tax section 0.382 for only the reason that it is the known figure in mathematics is unacceptable. Not a less known number is, for example, the natural logarithm base, or Neper number e , or otherwise, the number π which shows the ratio of the length of circumference with its diameter. Incidentally, among them the reverse of the first is 0.368, and the reverse of the second is 0.318. It is natural to ask why we must take 38.2% and not 31.8% as the value of optimal tax rate and, moreover, among them the latter (31.8%) is very close, for example, to the average tax rate existing in the US. The answer to this question is very simple: for economy, the artificial imposition of a “nice” mathematical regulation, abstractions, numbers having particular qualities, sequences and so on, as Abuselidze offers, is not admissible. All economists know—and Abuselidze must also know that economy along with all other things is a social system and its quantitative and qualitative characteristics are determined by the behavior of the subjects involved in this system—their concrete immanent qualities, traditions, habits, environment and so on, which change permanently. Proceeding from this, if we want, for example, to determine the optimal tax rate, then instead of an abstract model or number we must consider and assess such a model whose structure and qualities will be an adequate reflection of the current processes and events in the concrete economy.

⁵ This article is mentioned in the list of references (Abuselidze, 2012, p. 501) with mistakes in English translation.

Third, when we discuss the level and role of tax burden we must differentiate the so-called output and fiscal curves from each other. The output curve corresponds to the function $Y = Y(t)$ of the aggregate output which characterizes the impact of the changes of the level of tax burden on the whole output when the fiscal curve corresponds to the function $T = T(t)$ of the budget tax revenues and describes the impact of the changes of the level of tax burden on the volume of budget revenue. It is found through numerous research works that these two functions and the corresponding curve, as a rule, reach their maximum on different levels of the tax burden. At that, maximum fiscal effect (maximum of budget revenues) is reached in the conditions of higher levels of tax burden than maximum output effect (maximum aggregate output). In our text provided above, which is copied by Abuselidze in its entirety, there is a discussion about the curve of aggregate output (correspondingly on the function) and those possible four effects which condition its image and qualities. It gives the impression that Abuselidze mixes output and fiscal curves with each other because in “his” text he discusses the output curve and how tax burden changes affect economic activity and volume of output and “offers us to see Abuselidze Curve” which is a fiscal curve (or, rather, a broken line).

On the Final Part of Abuselidze’s Article

The final part of Abuselidze’s article, “Conclusions and Recommendations,” has nothing in common with the preceding parts of the article and are copied in their entirety from one of our articles or our book.

In the 1990s, our research (initially solely Papava) brought forward the idea of the Laffer-Keynesian synthesis (Papava, 1996, pp. 263-267). Later, we devoted several articles (Ananiashvili, (2004; Ananiashvili, and Papava, 2010a, 2010b, 2010d, 2012a) and a book (Ananiashvili, and Papava (2010c) to the further perfection of this idea. In these publications we came to the conclusion that a full explanation of the role of taxes in the economy and getting over the unilaterality of Keynesian and Laffer’s (representative of supply-side economics) theories is possible on the basis of the consideration of the model of macroeconomic equilibrium which consists of the function of aggregate demand and aggregate supply. But in contrast with the standard model of aggregate demand and aggregate supply, these functions must be considered not on the plane of coordinate axes of price level and output volume but on the plane of tax rate (t) and output (Y) coordinate axes. At that, we found that in the conditions of such a model, the curve of aggregate demand, depending on what correspondence exists between marginal propensity of

consumption b and marginal propensity of governmental purchases g , can be declining or increasing with respect to the average tax rate. On the base of this, we built and analyzed the model of macroeconomic equilibrium in the formal-mathematic context as well as using relevant graphic illustrations. The basis of these illustrations is the graphic model (see fig. 2) which shows that one or two values of balanced average tax rate can exist or cannot exist in the given model of the Laffer-Keynesian synthesis for aggregate demand and aggregate supply.

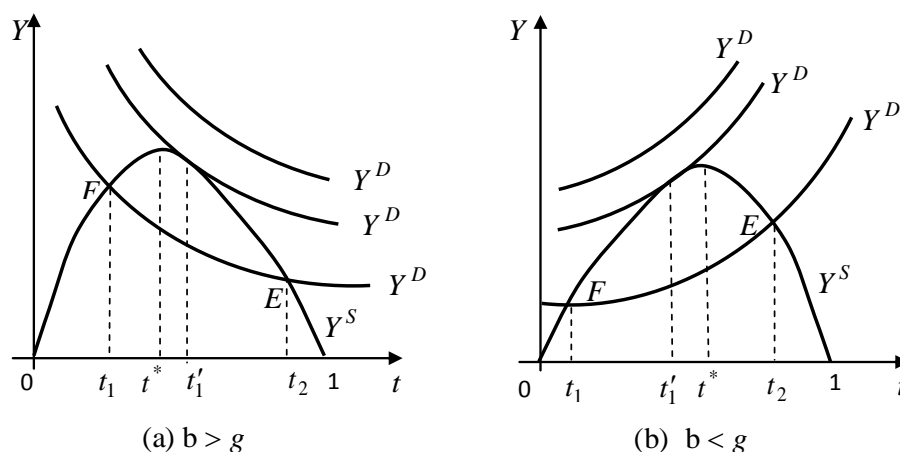


Fig. 2. Equilibrium in Conditions of the Laffer-Keynesian Synthesis.

We would like to particularly stress the graphic illustrations because it seems that Abuselidze liked them very much (although, unfortunately, he did not comprehend their designation) to the degree that he presented them as his own research as he did with certain fragments of our text. We provide this fragment of our text from the article (Ananiashvili, 2009) which, by the way, Abuselidze indicated on the list of literature consulted (Abuselidze, 2012, p. 501).

To make the content of the provided fragment understandable for readers, we note that in the conditions of the Laffer-Keynesian Synthesis model offered by us it describes one of the scenarios of the restoration of macroeconomic equilibrium when the changes of aggregate demand cause equilibrium disruption (Ananiashvili, 2009, pp. 72-73):

“To find out how the equilibrium of the goods market is established in the conditions of the given model, let us refer to the cases given in Fig. 3. At the initial stage, let us consider that equilibrium for the given $Y^S(t)$ and $Y^D(t)$ lines at point F exists and t_1 is a average tax rate which corresponds to it. Let us say that for certain reasons autonomous expenses increased by ΔA . In other equal conditions, this change causes the growth of aggregate demand and movement of the corresponding curve to new $Y_1^D(t)$ position which is shown in Fig. 3.

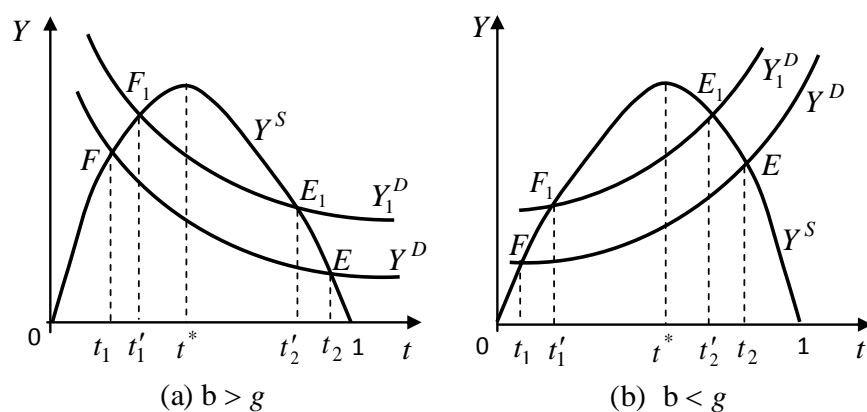


Fig. 3. Restoration of Equilibrium in the Case of a Change in Aggregate Demand

Because the average tax rate only partially subjects to self-regulation, thus, if we assume that above discussed theory of aggregate demand is fair, then in a created situation for the establishment of new equilibrium in parallel with increased autonomous expenses the government on the basis of relevant legislation must increase the level of t from t_1 to t_1' . The fact is that the initial point of the equilibrium at point F the economy is in the ascending part of the curve of aggregate supply. In this case, from the effects produced by the increase of t dominating is the sum of income effect and the effect creating economic environment, both of them having an positive impact on the aggregate supply. Hence, as paradoxical as it may be, the increase of taxes will promote the growth of resources supply. In the conditions of increased amount of usage of the existing resources, the aggregate output will increase and equilibrium will turn out at point F_1 .

If the initial point of the economy's equilibrium was not at point F , but at E , the situation would be different. According to Fig. 3a, the latter point (i.e. E) is on the descending part of the aggregate supply curve where the negative effects of taxes (the replacement effect and the financial effect) play a dominant role. It is obvious, that in such conditions the natural way for promoting the economic activity and increasing of the aggregate supply is the reduction of the average tax rate. Therefore, if in the hypothetically created situation the government lowers the level of t from t_2 to t_2' , then the economy will be able to make the transition to a new equilibrium E_1 and ensure that the increased aggregate demand is properly satisfied."

Let us now see how all of this is appropriated by Abuselidze. He writes⁶ (Abuselidze, 2012, pp. 500-501):

⁶ It is easy to notice the identity of the provided text with our text. Note also the title of the figure given Abuselidze.

“Let us assume that at the initial stage balance of output and economic activeness is at point F and it is corresponded with tax rate t . Let us say that due to some circumstances state charge grew to some value. In other equal conditions this change will cause growing of economic activeness and correspondingly curve moves to the new position. In such situation, for the purpose of achieving the new balance, simultaneously with grown expenses state has to rise t value up to t_2 . The matter is that at F point of the initial balance economy is on the ascending part of the curve of aggregate supply. In such case, among the effects originated resulted rise of the t sum of the effect of creation of output promoting environment and the effect of revenues prevail. That is why, ironically enough, rise of taxes up to t_2 will promote growing of recourse supply. In circumstances of grown quantity of using recourse available the aggregate output will grow and balance will be achieved at point F_1 (Fig. 4).

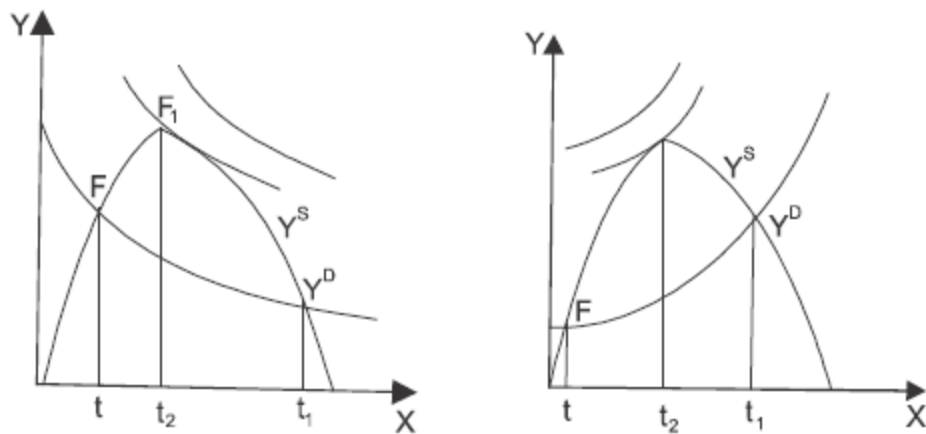


Fig. 4. Tax policy and effect of Economics—Abuselidze version

The different situation takes place, when the initial balance point is at E . This latter is on the descending part of output and aggregate supply, where prevailing role belongs to negative effects of taxes (effect of replacement and financial effect). Certainly, in such conditions lowering of taxation pressure is a natural way of economic activeness stimulation and growth of output. That is why, in this hypothetic situation, if state reduces t value from t_1 to t_2 , then economy will manage to transfer to the new balance at E_1 and satisfy the grown aggregate demand (Fig. 5).”

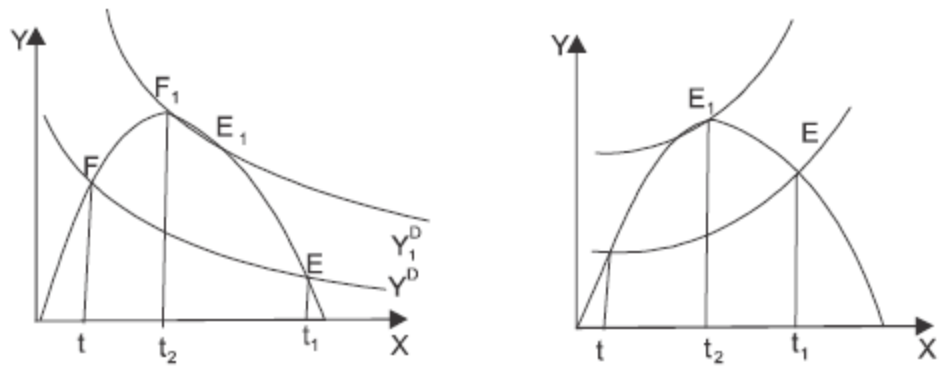


Fig. 5. Tax policy and effect of Economics—Abuselidze version

On the whole, the “Conclusions and Recommendations” of Abuselidze’s article, in addition to the main fragments provided here, contain two more paragraphs. There are obvious signs of plagiarism in both of them. Although the above provided is sufficient to show what and whom we are dealing with, we cannot help but accentuate the last paragraph which follows as:

“In spite of curves shifting fiscal points t_1 and t_2 remain unchanged, although maximum values of output and economic activeness determined by these points do change (Fig. 6). So, the level of balance of economic activeness and output depends on optimal taxation pressure $t_2=38,2\%$.”

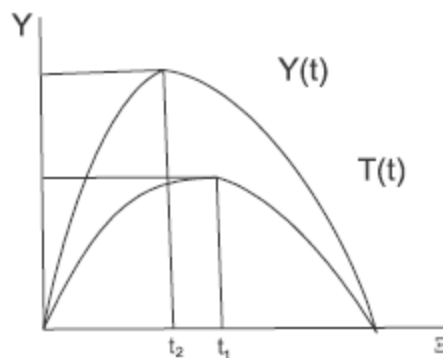


Figure 6. Tax burden curves – compliance with Laper and Abuselidze.”

This paragraph is the direct continuation of the text provided above by Abuselidze although it is not connected to it by content. Furthermore, it is extracted from our text so meaninglessly that it is impossible to make any conclusion on its basis. As for the given figure—for some reason Abuselidze attached his and Laper’s (?) names to it—it is well known and is used for the illustration of the curves of aggregate supply $Y(t)$ and budget tax revenues $T(t)$. For example, in the article (Ananiashvili, 2009) or in the book (Ananiashvili, and Papava, 2010c, pp. 94-95), from where this figure and the appended text were presumably copied, it is written:

“The value of aggregate supply $Y(t)$ and tax revenues $T(t)$ depend on t , also on the volume of economic resources, namely on the volume of capital and labour and on the level of their possible usage. It is obvious that if in other equal conditions the value of K and L is changed, for example, towards the increase, then on figure the curves $Y(t)$ and $T(t)$ which are given on coordinate plane will move upward, because these two functions are growing with respect to K and L . At that, despite the curves movement, fiscal points t^ and t^{**} (or t_1 and t_2 points on figure 6) remain unchanging although the maximum values of budget revenues and aggregate supply undergo changes determined by these points.”*

Conclusion

Finally, we would like to note that this review will probably come as a surprise, namely for Mr. Abuselidze. Our intent, which we believe we accomplished, was to show a clear case of plagiarism. Perhaps he thought that by sending it to Lithuania it would not reach a Georgian readership. Of course, this is not a pardon for his actions. We understand that it was difficult for the Editor or Reviewer(s) of the *Intellectual Economics* to find out scientific honesty of the article’s author.

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