Problems of Economic Transition, vol. 45, no. 7, November 2002, pp. 63–81.

ISSN 1061–1991/2003 $9.50 + 0.00.

VLADIMER PAPAVA

On the Laffer Effect in Post-Communist Economies

(On the Bases of the Observation of Russian Literature)

One of the most disputed problems of modern economic theory is the tax burden's impact on the economic activity as well as on state budgetary revenues.

More than four decades have elapsed since American economist Arthur Laffer proposed a curve (later named after him) that described the dependence of state budget tax revenues on an average aggregate tax (AAT), and according to which, initially, with an increase in the AAT, tax revenues grow too; however, having reached a certain point (called a Laffer point) at which the tax revenues reach their maximum value, they start falling. Such dependence, also known as a Laffer effect, in some works is referred to as Laffer's law (Guesnerie, 1998).

The Laffer curve is the clearest illustration of the key postulations of supply-side economics (Canto, Joiness, and Laffer, 1983). The "attractiveness" of the idea on which the Laffer curve was based as well as its simplicity of presentation influenced Ronald Reagan (who is said to have experienced the effects of the Laffer

The author, former minister of the economy of Georgia, is a corresponding member of the Georgian Academy of Sciences.

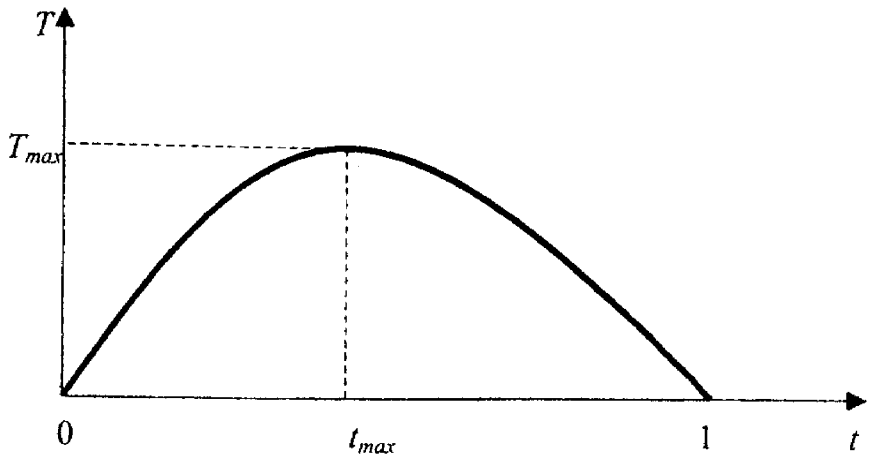
curve in real life [see Mankiw, 1998, p. 166]), a candidate for presidency at the time, to the extent that it became the basis of the economic policy (later called Reaganomics) that the U.S. administration pursued after Reagan won the presidential election. Irrespective of skeptical attitudes of many prominent economists of the time toward the Laffer curve itself, as well as the U.S. position on it, the simple clarity of the graphically illustrated dependence of tax revenues on the AAT gradually gained popularity. Later, the theory of supply-side economics not only became a subject of research on the part of International Monetary Fund (IMF) experts (Gandhi, Ebrill, Mackenzie et al., 1987), but also was at one time recognized as a part of IMF programs (see, for example, Moustapha, 1992).

Presently, almost all modern economics textbooks are critical of both the Laffer curve and the effects of Reaganomics (see Samuelson and Nordhaus, 1995, p. 31; Mankiw, 1998, ch. 8; McConnell and Brue, 1990, ch. 19; Dornbusch and Fischer, 1990, p. 18). Despite this, a number of recent works focus on studying the mathematical (e.g., Guesnerie, 1998) and empirical (e.g., Slemrod, 1996) implications of the Laffer curve.

According to E. Balatskii, the works devoted to the research of the Laffer curve can be divided into two major groups that can be classified as theoretical and practical research groups (Balatskii, 2000b, p. 33). The first group consists of works aimed at modeling fiscal and production processes and providing theoretical reasoning for a parabolic curve and availability of the Laffer points (e.g., Sokolovskii, 1989; Movshovich and Sokolovskii, 1994; Kapitonenko, 1994; Arkin, Slastnikov, and Shevtsova, 1999); the other group comprises reflections on the location of the Laffer points in different national contexts (e.g., Gusakov and Zhak, 1995; Balatskii, 1997b, 1997c, 1999, 2000b; Vishnevskii and Lipnitskii, 2000).

The objective of this article is to make some corrections to the graphical illustration of the Laffer effect (particularly, in post-Communist economies) based on generalized effects of operation of the Laffer curve.

Figure 1. **Laffer Curve**



Key theoretical aspects of the Laffer curve

The idea underlying the Laffer curve is very simple: it is assumed that where the AAT amounts either to 0 percent ($t = 0$), or to 100 percent ($t = 1$), tax revenues of the state budget amount to zero; however, at a certain point between 0 percent and 100 percent, where the AAT, or t_{max} is located, the revenues reach their maximum value T_{max}. A graphical illustration of the Laffer curve is shown in Figure 1.

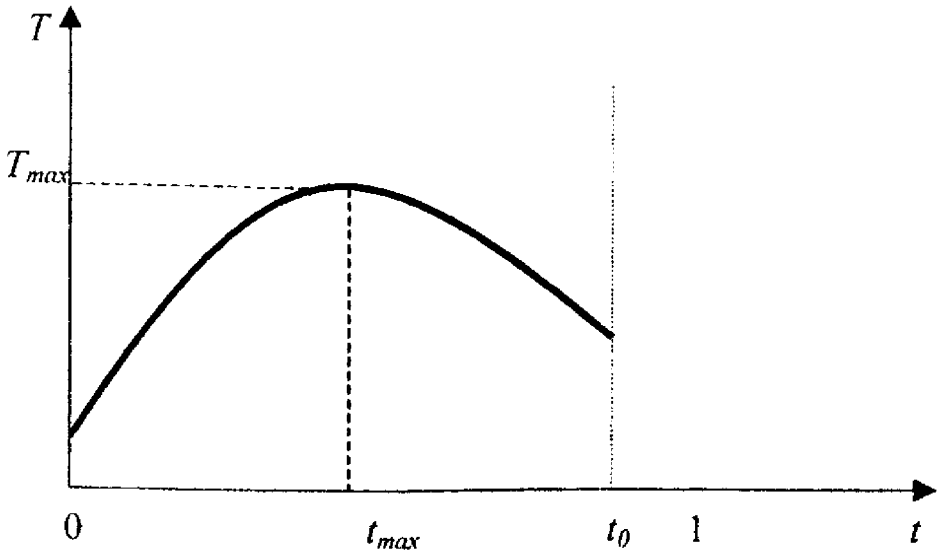
According to E. Balatskii, both the idea and the graphical presentation of the Laffer curve are based on the following purely artificial postulations:

1. A dogmatic assertion (which, in fact, is just a logical supposition) that at a certain point between 0 percent and 100 percent, the AAT ensures a maximum amount of tax revenues (Balatskii, 1997a, p. 39); however, as is shown below, further research may shed more light on the correctness of this assertion.

2. A hypothetical reflection on certain marginal situations, as the immediate implication of zero-rate taxes is that there is no government at all (because there would be no funds to maintain the government); furthermore, a supposition that as soon as the government succeeds in collecting all revenues in their entirety, production output will start falling and the government will no longer get anything may be disproved by the long experience of a command economy; from this point one can conclude that the Laffer curve does not "cover" the whole interval [0, 1], but rather a shorter section of it $(0, t_0)$, where $0.5 < t_0 < 1$ (Balatskii, 1997b, p. 93); with this correction the Laffer curve will look as it does in Figure 2.

3. A mechanical implication, stemming from an original macroeconomic statement of the problem, that all taxes are proportional, as a result of which more sophisticated fiscal systems (of both progressive and regressive taxation) that are encountered quite often in practice "cannot fit" the aggregated framework of the Laffer curve (Balatskii, 1997a, pp. 39–40);

Figure 2. **Laffer Curve Under Undetermined Marginal Conditions**



4. A supposition that there is an economy without inflation, as the Laffer curve describes tax revenues in their nominal value; as a result, under the conditions of the Oliver-Tanzi effect, which causes the growth of tax revenues as well as the shrinking of tax base because of a relatively high inflation rate (i.e., in the environment of inflation), it becomes necessary to recalculate tax revenues in real terms; however, this may question the very existence of the Laffer curve, as such (Balatskii, 1997a, pp. 40–42).

It is no surprise that in view of both the above and the results obtained by other researchers, Balatskii concludes that the Laffer curve is nothing but an unproved hypothesis (Balatskii, 2000a, p. 9). Despite this, many researchers presume the a priori existence of the Laffer curve (Aleksashenko, Kiselev, Teplukhin, and Iasin, 1989; Sokolovskii, 1992; Dagaev, 2001; Papava, 1996, 1999).

A number of works are designed to determine the level of "dependence" of specific taxes on the Laffer curve. Specifically, it has been demonstrated that what this curve describes best is the dependence of tax revenues on the valued-added tax (VAT) rate (Movshovich and Sokolovskii, 1994; Gusakov and Zhak, 1995); however, it must be noted that the applicability of the Laffer curve to some categories of taxes is questionable (Balatskii, 1997b, 1997c).

In fact, since the very invention of the Laffer curve the question of using it with the purpose of setting an optimal profit tax rate (which was later replaced with "total of all taxes withheld from profits") has been discussed continuously by researchers; however, the most recent theoretical studies have established that this curve is not usable for describing changes in the profit tax rate and that any rise in this rate will be followed by a rise in budgetary revenues as well (Movshovich and Sokolovskii, 1994, pp. 139–40).

It must be underlined that the Laffer Curve was originally formulated in a macroeconomic context, which makes it not applicable to individual taxes, but rather to a certain AAT (Balatskii, 1997a, p. 39). Quite often, instead of the latter, the concept of "tax bur-

den" is used, which is described as a ratio of actual tax revenues of the state budget to a country's gross domestic product (GDP) (Balatskii, 2000b, pp. 33–34).

We believe that this method of estimating the tax burden is debatable because it does not cover, on the one hand, all those potential tax revenues that, for a number of reasons, never go to the state budget, including the dead weight of the tax burden, and, on the other hand, the part of GDP that, for the same reasons, is produced by the "shadow economy." In other words, this index, which is designed to measure the tax burden, does not cover the losses to both the state budget and the GDP because of its dead weight.

As was noted above, graphically the Laffer curve is described as the "ratio of tax rate to tax revenues." As to the idea on which the curve is based, it covers not only fiscal, but also production-related aspects of changes in the AAT. In particular, according to the proponents of supply-side economics, a decrease in the AAT from a relatively high point facilitates growth in the labor supply as well as in investments, which in turn, brings about the growth of GDP, and, in the long run, the expansion of the tax base. As Balatskii points out, the concept of the Laffer curve rests on the belief that there is a certain dependence of the tax base (i.e., of the GDP) on the AAT, analogous with the dependence of tax revenues on the same AAT; in other words, the Laffer curve makes it possible to describe simultaneously the fiscal and production-related aspects (effects) of any changes in the AAT (Balatskii, 1997a, p. 39).

On the basis of this assumption, Balatskii offers to split the entire concept of the Laffer point into two types: the first type encompasses cases where the GDP achieves its maximum value, and the second type, where the high point is reached by the state budget's tax revenues (Balatskii, 1997b). In addition, if we try to draw the Laffer curve on the basis of the above-mentioned tax burden, we will see that the Laffer point of the first type will be shorter than that of the second type (it will be to the left side of the abscissa axis); in other words, the maximum amount of GDP can

be reached at a lower value of tax burden that can enable maximum tax revenues to the state budget. This means that during the interval between the two Laffer points, an increase in tax revenues may be effected even under the conditions of relative drop in production output (or reduction of GDP) (Balatskii, 2000b).

This result is in perfect accord with the works of A. Dagaev, who asserts that whenever the Laffer curve is used to describe the dependence of investments on AAT, it is demonstrated that the value of the latter at which the maximum amount of investments is reached is lower than the other that ensures the maximum amount of collected taxes (Dagaev, 1995, 2001); consequently, during the period between these two values of AAT, the decrease in investments will not disable increases in tax revenues.

As one can see, the Laffer curve is associated with a number of debatable questions involving conceptual and even graphical aspects. Irrespective of skeptical attitudes on the part of some modern prominent economists (e.g., Krugman, 1994, pp. 157–58; 1998, pp. 47–51) toward both the Laffer curve itself and its theoretical foundations, a number of applied developments, primarily regarding post-Communist economies, attest to the existence of Laffer effects in the real world (e.g., Balatskii, 2000b; Vishnevskii and Lipnitskii, 2000). Although this fact cannot be used as incontrovertible evidence of the verity of the whole curve, it does confirm that under certain circumstances there is an interdependence between the growth of both tax revenues of the national budget and the GDP, on the one hand, and the reduction of relatively high AAT, on the other hand.

Laffer curve under the conditions of the post-Communist economic transformations

As was noted above, the concept of the Laffer curve "was born" and from the very beginning was fulfilled in the United States as a part of Reaganomics. One of its key goals was to reduce the existing state budget deficit. However, this goal was never reached;

moreover, the effect was in fact just the opposite—the deficit grew (e.g., Krugman, 1994, pp. 157–58; 1998, p. 48; Slemrod and Bakija, 1996, p. 28; Steinmo, 1993, pp. 163–64; Naumov, 1998, pp. 106–7; 1999, p. 23). This had a very strong impact on the formation of a skeptical attitude toward the Laffer curve, which, as noted above, was also reflected in modern economics textbooks.

An empirical analysis of countries that are members of the Organization for Economic Cooperation and Development (OECD) significantly calls into question the existence of the Laffer curve, even in those countries (e.g., Leibfritz, Thornton, and Bibbee, 1997, pp. 10–11). The most recent studies attest, however, that high marginal tax rates and their progressive nature are negatively correlated with sustainable economic growth (Padovano and Galli, 2001).

However, a logical question arises here: are the facts that the Laffer curve was practically disproved by the U.S. economy in the 1980s and that empirical studies have questioned its very existence in the context of the OECD countries sufficient proof to assert that the Laffer Curve does not exist at all, even in countries that have a different economic background?

It is quite possible that the answer to this question will not be affirmative. At any rate, the question remains open in the case of post-Communist economies, because, as was noted above, some studies have shown that under certain circumstances Laffer effects do take place (Balatskii, 2000b; Vishnevskii and Lipnitskii, 2000). Of no less importance is the fact that some well-known economists (e.g., Gary S. Becker in relation to Georgia [Becker, 1998] and Jeffrey Sachs in relation to Ukraine [Mankiw, 1998, p. 169]) have advocated reducing the tax burden in such countries in order to encourage both economic activities and an increase in tax revenues to the state budgets. It is noteworthy that in the Georgian context, the reduction of some tax rates in 1996, accompanied by a reduction of AAT as well, actually resulted in the increase of national budgetary revenues: in 1997, as a result of reducing the payment rates for the Social Welfare and Medical Insurance Fund

(SWMIF) from 37 percent to 27 percent, total payments made by legal entities for the benefit of the SWMIF increased to 41 percent; payments to the Employment Fund grew by 1 percent as a result of lowering the tax rate from 3 percent to 1 percent; budgetary revenues increased by 26.4 percent and 34.6 percent, respectively, as a result of reducing the excise rate on beer from 100 percent to 15 percent and import duties on certain goods from 12 percent to 5 percent; an "anti-example" of these was the government's decision—made under the IMF's pressure—to raise, as of January 1, 2000, the cigarette excise rates by 60 percent for filter cigarettes and by 110.5 percent for nonfilter cigarettes; as a result, tax revenues from the cigarette business dropped by 36.9 percent (Papava, 2001 a, p. 46).

An important feature typifies economies in post-Communist transformation and distinguishes them from other economies: a post-Communist economy is characterized by a free availability of idle production capacities, as a result of which real growth of production output can be attained without utilizing significant investments. This creates favorable grounds for the development of Laffer effects (Vishnevskii and Lipnitskii, 2000, pp. 110–11). However, here we must make a very important remark: because of their inability to produce competitive goods, many enterprises in post-Communist countries, are actually "dead," which brings about what we call "necroeconomics" (Papava, 2001d). Obviously, "dead" enterprises cannot have production capacities, as such.

During the transition from a command economy to a market economy, even if the reduced tax burden facilitates the growth of supply, to no less an extent, it will stimulate the growth of demand as well, which may be very important for post-Communist economies. Such a transition was formulated as a theoretical postulation called the Laffer-Keynesian synthesis, which forms a methodological base for "tax therapy" whose goal is to stimulate the development of post-Communist economies (Papava, 1996, pp. 263–67; 1999, pp. 285–91).

The Keynesian approach rests on the assumption that a decrease

in tax rates causes an increase in consumption; in a short-term perspective, an increase in consumer spending results in the growth of demand for goods and services, in other words, of production output and employment; at the same time, a decrease in savings caused by the increase in consumption results in the intensification of competition between investors, which, in the long run, brings about an increase in interest rates; this, in turn, discourages local investors and produces incentives for foreign capital (e.g., Mankiw, 1992, ch. 16). It has been argued that this effect has negative implications for countries with developed economies. However, as far as post-Communist economies are concerned, the following positive results can be expected: first, the reduction of tax burden may indirectly facilitate at least the partial utilization of the above-mentioned idle production capacities, and, thereby, an expansion of production; second, the replacement of necroeconomics with competitive businesses can only be feasible via attracting modern foreign investments (Papava, 1996, p. 264; 1999, p. 287).

As was noted above, in post-Communist economies, because of readily available production capacities, the likelihood that Laffer effects will show up grows. Nevertheless, as is shown below, this does not necessarily mean that the Laffer curve itself exists. From now on, our attention will be focused on the disclosure of the Laffer effect relative to Laffer point 2, as this is exactly the foundation on which the very idea of the Laffer curve rests.

Alternatives to the Laffer curve

Above, while reviewing the postulations on which the Laffer curve is based, we pointed out that if such a curve really existed it should not cover the whole interval [0, 1], but rather a small section of it $(0, t_0)$ (see Postulation 2).

Further "corrections" to the Laffer curve are based on a factor of time, in particular, of that time interval that is necessary for the Laffer effect to be disclosed.

Most recent studies have shown that whenever the time factor is

taken into account, it is an equally important question in which direction the AAT is changing: upward (Balatskii, 2000a) or downward (Vishnevskii and Lipnitskii, 2000). Let us review each of these scenarios separately (Papava, 2001b, 2001c).

Balatskii proposes a concept of "post-effect" the key implication of which is that at a certain point, a further increase in AAT brings about the cutting of the budget's tax revenues only after a couple of years (Balatskii, 2000a, p. 8). Dagaev, in turn, uses a concept of tax "hysteresis" ("deferment" in Greek) (Dagaev, 2001, p. 65). To the extent that the Laffer effect always appears a couple of years later, more precise phrasings would be "the Laffer effect with tax 'hysteresis'" or "the Laffer effect with 'after-effects' 'post-effects.'"

Because of a need to take into account the time factor, a so-called fiscal curve, in which this effect should be reflected, should not be expressed by "tax revenues and AAT" coordinates, as is the case in connection with the Laffer curve, but rather, as is proposed by Balatskii, by those of "tax revenues and time" (Balatskii, 2000a, p. 9). We believe, however, that the best option would be a three-dimensional fiscal curve presented by the following three coordinates: AAT (t), tax revenues (T), and time (τ).

Before we offer a graphical illustration of fiscal "hysteresis" on a fiscal curve, let us consider the scenario in which the AAT changes upward. Bearing this in mind, let us project the three-dimensional space (see Figure 3).

Let us consider the time interval $[0, \tau_2]$ during which AAT goes up from 0 to 1. As is shown in Figure 4, in the case of interval $[0, \tau_1]$, an increase in AAT (t) results in the growth of tax revenues, which reach their climax (T_{max}) at the point of t_{max}; A and C are relevant points on the fiscal and tax curves, respectively. It is during the transition from A to B on the fiscal curve that the Laffer effect with the tax "hysteresis" appears, provided the AAT is going upward; specifically, even at a very insignificant increase in t_{max} of AAT, the tax revenues will start falling only after è years, that is, as of the year $(\tau_1 + \theta)$. In other words, A of the fiscal curve

corresponds to C and D of the tax curve; at the same time, the latter (i.e., D) matches B of the fiscal curve.

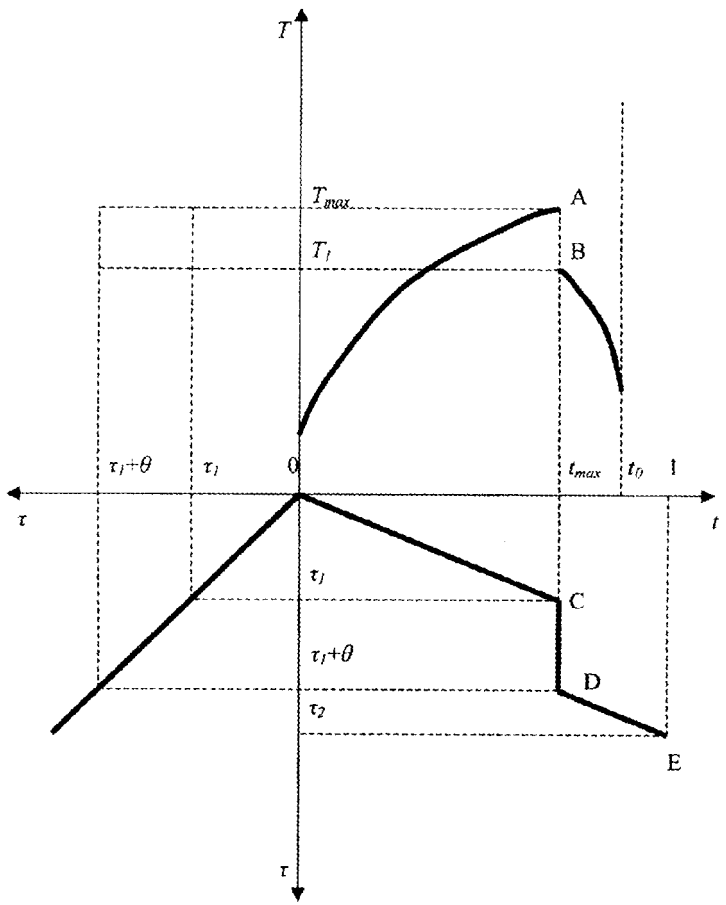
Consequently, if AAT is equal to t_{max}, in the year τ_1, tax revenues will reach their maximum value T_{max}, whereas in the year $(\tau_1 + \theta)$ they will be reduced to T_1. The split of the fiscal curve at points A and B is the very reflection of the Laffer effect with the tax "hysteresis." It is important to note that in case of a further increase in AAT, after it has "passed" the Laffer effect with tax "hysteresis" (which on the tax curve is illustrated by a move from D to E), during the interval (t_{max}, t_0), tax revenues will be dropping.

It is also noteworthy that on the fiscal curve we are considering here (Figure 3), the Laffer effect looks significantly modified, which, as was noted above, is a result of the effect of tax "hysteresis." Furthermore, the Laffer point is missing and the fiscal curve itself, displayed in Figure 4, could hardly be referred to as the Laffer curve. To the extent that the fiscal curve in Figure 4 is a reflection of Balatskii's research efforts, it would be fairer to call it the "fiscal curve according to the Balatskii version," or simply the "Balatskii–Papava curve" (as it was constructed by Papava, 2001b, 2001c) and the t_{max} point (for the purposes of this curve) at which the effect of tax "hysteresis" appears, the "Balatskii–Papava point."

The Laffer Effect with tax "hysteresis," as Vishnevskii and Lipnitskii show, reveals itself—albeit in a somewhat modified shape—in the case where the AAT is changing downward (Vishnevskii and Lipnitskii, 2000, pp. 113–14). As in the case of Figure 3, we draw a graph of the fiscal curve, where during the time interval $[0, \tau_2]$, the AAT goes down from 1 to 0 (see Figure 4).

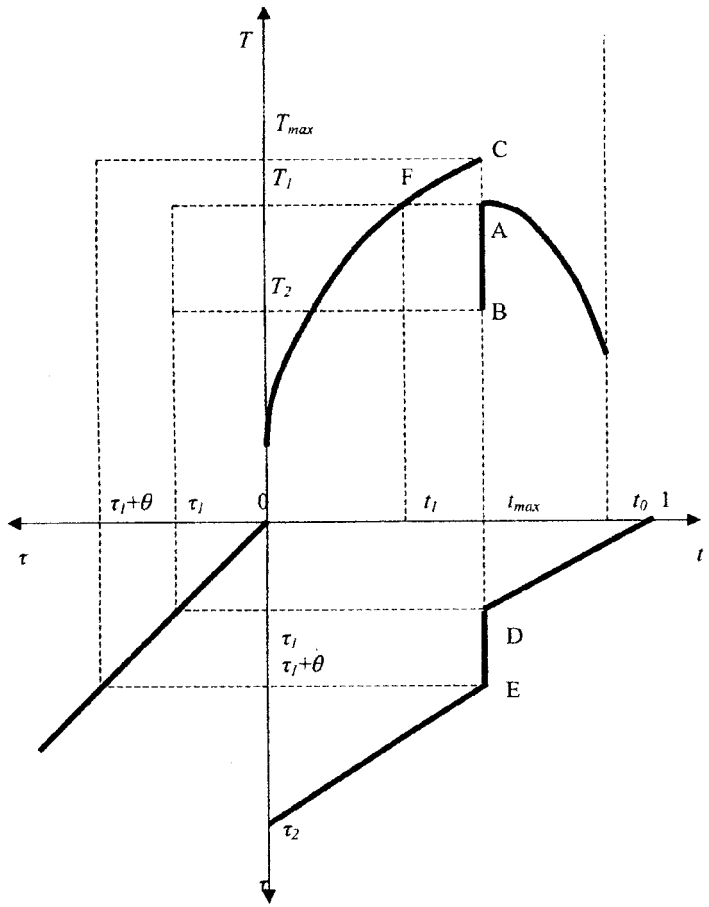
According to Figure 4, during the time interval $[0, \tau_1]$, a reduced AAT rate (t) causes an increase in budgetary tax revenues up to t_{max}, which revenues, having approached the T_1 level (corresponding to A on the fiscal curve), drop immediately to the T_2 level (corresponding to B on the fiscal curve) and stay there for the subsequent years (θ). Consequently, A and B of the fiscal curve match D of the tax curve. In the year $(\tau_1 + \theta)$, however, provided

Figure 3. **Fiscal Curve According to the Balatskii Version (Balatskii–Papava Curve)**



the AAT rate is the same amounting to t_{max}, because of the effects of tax "hysteresis," tax revenues will "jump" to their maximum value, T_{max} (corresponding to *C* of the fiscal curve and *E* of the tax curve). On the fiscal curve, to the extent that the AAT rate is falling, the effect of tax "hysteresis" appears during the transition from

Figure 4. **Fiscal Curve According to the Vishnevskii–Lipnitskii Version (Vishnevskii–Lipnitskii–Papava Curve)**



A to *C*, "through" *B*. If that declining process continues, after the year ($\tau_1 + \theta$), the tax revenues will start dropping as well.

As in the case of the Balatskii curve, again, because of tax "hysteresis," the Laffer effect appears modified on this fiscal curve too (see Figure 4). Again, the Laffer point is missing, which is why

one cannot call this a Laffer curve. To the extent that the fiscal curve on Figure 4 is a reflection of the research efforts of Vishnevskii and Lipnitskii, it would be fairer to call it the "Fiscal Curve According to the Vishnevskii–Lipnitskii Version," or simply the "Vishnevskii–Lipnitskii–Papava curve" (as constructed by Papava, 2001b, 2001c), and the t_{max} point (for the purposes of this curve) at which the effect of tax "hysteresis" appears, the "Vishnevskii–Lipnitskii–Papava point."

The fact that both the Laffer point and the Laffer curve are missing does not mean that in every event of a reduced AAT rate one has to expect that a tax "hysteresis" will show up; for example, if originally the AAT rate had been in the interval (t_{max}, t_0) and later it was cut to the extent that it was suddenly found in the interval (t_1, t_{max}), the tax revenues will grow almost "immediately" as they will be no less than T_1. That is exactly what happened in Georgia in 1996, when, as mentioned above, the cutting of certain tax rates, and thereby of the AAT rate, resulted in significant increases in the budgetary tax revenues.

The main problem related to the practical use of the Laffer Effect is one of avoiding mistakes in identifying the economy's location along the Vishnevskii–Lipnitskii–Papava curve that corresponds to the interval (t_{max}, t_0). Likewise, it is difficult to identify the extent to which the AAT rate should be cut, in order to avoid an exit from the interval (t_1, t_{max}), which would be between C and F on the Vishnevskii–Lipnitskii–Papava curve (see Figure 4).

It happens quite often that discussions about selecting proper fiscal policies for specific countries become difficult because it is extremely hard to identify the exact location of an economy on the Balatskii–Papava and Vishnevskii–Lipnitskii–Papava curves.

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