NBKR Working Paper

Fiscal Issues in Conducting Monetary Policy in the Kyrgyz Republic

G. Kerimkulova[1]

NATIONAL BANK OF THE KYRGYZ REPUBLIC

[1] G. Kerimkulova – Chief Economist, Economic Department, National Bank of the Kyrgyz Republic

UDC 330.101.541 (575.2)

NBKR Working Paper

Fiscal Issues in Conducting Monetary Policy in the Kyrgyz Republic

by Gulnur Kerimkulova

Authorized for distribution by the Scientific and Expert Council of NBKR

August 2011

Abstract

This paper describes some indicators that evaluate the macroeconomic effect of fiscal policy and therefore enable more effective coordination of fiscal and monetary policies. The paper estimates such indicators as fiscal impulse and marginal excess burden of taxation that can further serve as the basis for assessing the results of ongoing fiscal policy in Kyrgyzstan and formulating policy recommendations.

Key words: Kyrgyz Republic, macroeconomic stabilization policy, fiscal policy, fiscal impulse, excess burden of taxation, effectiveness of tax policy.

JEL Classification Number: E62, E63, H21

For more information on this publication, please, contact:
101, T. Umetaliev str., Bishkek, Kyrgyz Republic, 720040
phone +996 (312) 66-90-51
fax: +996 (312) 61-07-30;
e-mail: gkerimkulova@nbkr.kg
Economic Department
National Bank of the Kyrgyz Republic

Êûðãûç Ðåñïóáëèêàñûíäà ìîíåòàðäûê ñàÿñàòòû æúðãúçúúä¸ãú áþäæåò-ñàëûêòûê àñïåêòèëåð

Ãúëíóð Êåðèìóëîâà

Êûñêà÷à áàíäàìà (ðåçþìå)

Êûðãûç Ðåñïóáëèêàñûíäà òúïò¸ëã¸í ìàêðîýêîíîìèêàëûê æàãäàéãà òàëäàï-èëèêò¸¸ë¸ðäú æúðãúçúúä¸ àêûðêû æûëääðû áþäæåò-ñàëûê ñàÿñàòûíûí ìàñåëåëåðèíå áàðãàí ñàéûí ê¸áúð¸¸ê ê¸üúë áóðóëóóäà. Ìóíóí íåãèçãè ñåáåáè – áþäæåò ñàÿñàòû æàãûíäà ìàêðîýêîíîìèêàëûê òóðóêòóóëóê ú÷úí òîáîêåëäèêòåðäåí îðóí àëûï æàòûøû. Áþäæåò-ñàëûê ñåêòîðóíó¸í ¸íúãúú òåíäåíöèÿëàðû ¸ç êåçåãèíää, Óëóòóô áàíê òàðàáûíàí æúðãúçúëúï æàòêàí ìîíåòàðäûê ñàñàòêà òúçä¸í-òúç òààñèðåí òèéãèçèï êåëåò. Óøóãà áàéëàíûøòóó, Êûðãûçñòàíäûí ìàìëåêåòòèê ôèíàíñû ñåêòîðó óëàì æàüû êîøóì÷à ê¸ðñ¸òêú÷ò¸ðäú ïàéäàëàíóó ìåíåí êûéëà êåüèðè êîíòðîëäóãà òèéèø. Ôèñêàëäûê ñåêòîðãî èëèêò¸¸ æúðãúçúú êàðàæàòûí êåüåéòúú àíûí ìàêðîýêîíîìèêàëûê ê¸ðñ¸òêú÷ê¸ òààñèð ýòúúñúí¸ êûëäàò áàà áåðúúã¸ ¸á¸ëã¸ òúç¸ò, Äåìåê, ôèñêàëäûê æàíà ìîíåòàðäûê ñàÿñàòòàðäû áèð êûéëà íàòûêæàëóó êîîðäèíàöèÿëîîíó êàìñûç êûëàò.

Áóë ýìåêòå Êûðãûçñòàíäûí áþäæåò-ñàëûê ñàÿñàòûíà òàëäàï-èëèêò¸¸ë¸ð ýêè áàøêà ê¸ðñ¸òêú÷ê¸: ôèñêàëäûê èìïóëüñêà æàíà êîøóì÷à ñàëûêêà áàà áåðúú àðêûëóó èøêå àøûðûëàò.

Ôèñêàëäûê èìïóëьñ ê¸ðñ¸òêú÷ú áþäæåò ñàÿñàòûí æåüèëäåòúú æå àíûí òààñèðèí êú÷¸òúú æàãûíà áàãûòòàëûøûí ìúí¸çä¸éò, áóë æûéûíòûãûíäà êåëèï áþäæåò ñàÿñàòûíûí ÷îãóó àëãàíäàãû ñóðîî-òàëàïòûí ¸ñúøúí¸ æå ò¸ì¸íä¸øúí¸ òààñèð ýòúúñú òóóðàëóó àéòóóãà ìúìêúíäúê áåðåò. Ì îíåòàðäûê ñàÿñàò ê¸ç êàðàøûíàí àëãàíäà, ìûíäàé ìààëûìàò êèéèí÷åðýýê àê÷à-êðåäèòòèê ïðîãðàììà áîþí÷à ÷å÷èìåðäè êàáûë àëóó ìàêñàòûíäà ìàìëåêåòòèê ôèíàíñû ñåêòîðóíóí èíôëÿöèÿãà òèéèçãåí òàñèðèíå áàà áåðúú ú÷úí ìààíëúú.

Àë ýìè êîøóì÷à ñàëûê ê¸ðñ¸òêú÷ú ìàìëåêåòòèí ñàëûê ñàÿñàòûíà àíûí íàòûêæàëóóëóãó ê¸ç êàðàøûíàí áàà áåðúúã¸ ¸á¸ëã¸ òúç¸ò. Àòàï àéòêàíäà: êîëäîíóóäàãû ñàëûê ñàÿñàòû ðєóðcòàðäû îïòèìàëäóó á¸ëúøòúðúúã¸, äåìåê æàðàíäàðäûí æàøîî øàðòûíà àíûí êàí÷àëûê òààñèð ýòå òóðãàíäûãûíà áàà áåðúúã¸ ìúìêúíäúê áåðåò. Àëûíãàí íàòûéæàëàð ýêîíîìèêàëûê ¸ñúøê¸ òúðòú áåðúú ìàêñàòûíäà, ñàëûê ñåêòîðóí àíäàí àðû ðåôîðìàëîî áîþ÷à ñóíóø-ê¸ðñ¸ò¸ì¸ðäú èøòåï ÷ûáóãà òúðòêú áåðåò.

Contents

INTRODUCTION **5**

I. ESTIMATES OF FISCAL IMPULSE INDICATOR FOR KYRGYZSTAN **6**

1.1. Definition of the Fiscal Impulse 6
1.2. Disadvantages and Limitations 6
1.3. Estimation Methodology 7
1.4. Estimates of Fiscal Impulse for Kyrgyzstan 8
1.5. Conclusions 10

II. ESTIMATES OF MARGINAL EXCESS BURDEN OF TAXATION FOR KYRGYZSTAN **11**

2.1. Theoretical Review 11
2.2. Calculation of Marginal Excess Burden of Taxation for Kyrgyzstan 13
2.3. Conclusions and Some Recommendations 14

III. REFERENCES **15**

Introduction

In recent years macroeconomic analysis in the Kyrgyz Republic has increasingly focused on fiscal policy. The main reason is persistent risk for macroeconomic stability posed from fiscal policy. In its turn, these fiscal policy developments have a direct influence on National Bank's monetary policy implementation.

Thus, public finance sector in Kyrgyzstan should be considered in a wider context, with the use of new additional indicators. A fiscal analysis with a wider toolbox will allow evaluating in more detail the effect of fiscal policy on macroeconomic developments and therefore enables more effective coordination of monetary and fiscal policies.

In this paper the fiscal policy is analyzed and assessed by two different indicators: fiscal impulse and marginal excess burden of taxation[1].

Fiscal impulse is a measure of whether government fiscal policy decisions are loosening or tightening, and therefore it can provide a first round impact indication of whether they are adding to, or subtracting from, aggregate demand pressures in the economy. While conducting and formulating a monetary policy program this information is useful for assessing the impact of fiscal policy on inflation.

Marginal excess burdens of taxation enables assessing the government tax policy from the point of its effectiveness. Namely, how the actual tax policy affects the optimal allocation of resources and, therefore, the welfare of citizens. The obtained results allow formulating practical recommendations on further tax reform to promote economic growth.

This paper is organized as follows: each indicator is discussed in a separate section (Sections I and II), which in its turn, in general, adhere to the following common structure - definitions and theoretical review, methodology or its brief description, estimations of indicators for Kyrgyzstan, main results and conclusions.

[1] Official statistics of public authorities was used when assessing these indicators, which may slightly distort the real situation due to a high level of the shadow economy in Kyrgyzstan.

I. Estimates of Fiscal Impulse Indicator for Kyrgyzstan

1.1. Definition of the Fiscal Impulse

Actual nominal budget deficit, more precisely its changes downwards or upwards, not always fully characterizes the changes in public finance sector. This is largely because developments in the actual balance reflect both changes in fiscal policy as well as how changes in the economy influence tax revenue and government spending. Put it differently, if only tracking the direction in deficit changes, it is not always clear whether it is a cause or result of changes in economic cycles.

Moreover, such an indicator as the acceleration or deceleration in the rate of growth of aggregate demand becomes important when making decisions on macroeconomic stabilization policy. The indicator which characterizes the relative change in fiscal policy towards tightening or loosening is required to determine the influence of public finance on this index. Accordingly, comparing the fiscal impulse indicator with the economic cycle indicator (e.g., GDP gap), one can make some preliminary conclusions on whether fiscal policy implements its stabilization function. As a reminder, ceteris paribus, maintaining macroeconomic stability from fiscal side means stimulating the economy in recession periods and, conversely, contracting in "overheating". In other words, fiscal policy is usually considered to be stabilizing when it is counter-cyclical**.**

Taking into account the aforesaid, it is clear that there is a need to expand the fiscal analysis for decision-making on macroeconomic policy.

Therefore, in economic literature (Heller et al. (1986), Blanchard (1990), Wells (1995) et al.) attempts to use alternative measures that would allow to assess in more detail the influence of fiscal policy on aggregate demand have been widely developed. The *fiscal impulse* is one of such indicators that can be a useful component in the analysis and interpretation of ex post and ex ante changes in the fiscal sector.

The positive (negative) fiscal impulse in this paper means more expansionary (contractionary) fiscal policy in the current period compared to the previous one.

1.2. Disadvantages and Limitations

As Blanchard (1990) points out in his study on disadvantages of short-term fiscal indicators, first, the assessment of fiscal policy impact on the economy should not be limited to any one indicator.

Second, Blanchard draws a distinction between the initial and final effect of fiscal policy. In this case, in his opinion, if the fiscal impulse plays a role in determining the effect of fiscal policy on aggregate demand, it is only to assess the initial effect. For example, increase in public spending in the first stage may have some stimulating effect on the economy from the demand side. However, these government measures may cause firms and households to change their behavior in terms of investment and consumption. A simple single indicator cannot capture these second-round changes. Therefore, consideration of dynamic

indicators through time, that is only possible with more complex macroeconomic models, is also required.

According to Heller et al. (1986), the calculation of the fiscal impulse should be considered as a first step in the fiscal analysis. This indicator, at best, reflects the direction of fiscal policy, that is whether it is focused on tightening or loosening, but not on the actuating magnitude of the budget.

Generally, as fairly noted by R. Philip and J. Janssen (2002), an indicator of fiscal impulse shall not be considered by government authorities as the motive for action or inaction. Ideally, government fiscal measures should be based on estimation results of the general macroeconomic model. Moreover, since the measure of fiscal impulse plays more informative role, estimates of fiscal impulse alone cannot imply a fundamental shift in the selected mid-term fiscal policy – there should be a clear awareness of the nature of fiscal impulse indicator in order to prevent its improper use.

1.3. Estimation Methodology

Using the methodology of the International Monetary Fund (Heller et al., 1986), the fiscal impulse will be estimated in several steps:

- The first step is to estimate the adjusted fiscal balance, which, first of all, will maximally exclude revenue and expenditure admittedly having no impact on the domestic demand. These are, for example, interest payments on external debt, membership fees to the international organizations, funding agencies and diplomatic missions, etc.

Secondly, all operations of public sector, including the budget of the Social Fund of the Kyrgyz Republic, should be considered, where possible. While assessing the adjusted budget balance, quasi-fiscal operations should be also included. Quasi-fiscal deficit has been calculated in the electricity industry of Kyrgyzstan since 2002. It represents the size of the hidden subsidies paid by the government to the electricity sector, calculated as the difference between the actual income earned by state regulated tariffs and the income required to cover full costs of production and capital investment.

- The second step is to decompose the adjusted actual budget deficit into cyclically neutral component and fiscal stance. Cyclically neutral budget assumes that government revenue increase proportionately with increases in nominal GDP, and increases in government expenditure are proportional with encreases in potential GDP. The fiscal stance is the difference between cyclically neutral and actual budget balance. *In this paper the change in fiscal stance is defined as the measure of fiscal impulse.*

The cyclically neutral budget is calculated under the assumption of unitary elasticity of expenditure and revenue in relation to the potential and nominal GDP respectively, because the calculation of elasticity for each tax is more suitable for a stable tax system, while disaggregated methodology is not easily applicable to regularly-changing systems (Spilimbergo, 2005) to which Kyrgyzstan refers.

- Estimation of potential GDP is also required to perform the calculations described in the previous step. The potential output was estimated using the Hodrick-Prescott time series filtering method.

- Defining a base period is also an important methodological aspect. A range of developed countries define the base year (t=0) as a year when the economy is at its estimated potential level. However, this approach, even if the practical difficulties are not taken into account, has substantial risks that changes in fiscal stance in any particular year may be neglected or skewed by changes in following years. These risks are particularly common for the countries with transition economies, where the reform is an ongoing process. Therefore, a very popular version of the "moving" base period, implying that any data sequence of period *t* are used as base for estimating the fiscal impulse in period *t+1*, has been applied in this paper.

- Finally, the fiscal impulse is calculated as follows:

$$\left.\begin{aligned} B &= (t_0 Y - g_0 Y^p) - FS \\ B &= T - G \end{aligned}\right\} \Rightarrow FS = -(T - G) + (t_0 Y - g_0 Y^p),$$
$$FI = \Delta FS$$

where

FI – measure of fiscal impulse;

FS – measure of fiscal stance;

B – budget balance;

$t_0 = T_0 / Y_0$, the ratio of revenue of the base period to GDP in the base period;

$g_0 = G_0 / Y_0$, the ratio of expenditure of the base period to GDP in the base period;

T – government revenue;

G– government expenditure;

Y– nominal actual GDP;

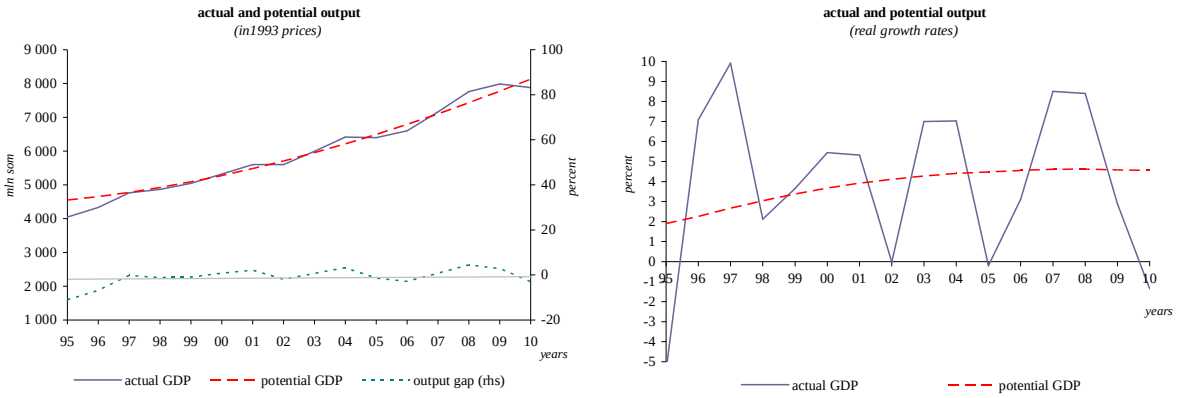
Y^p – nominal potential GDP.

1.4. Estimates of Fiscal Impulse for Kyrgyzstan

Estimates of the potential output from 1995 to 2010 (Figure 1.1) indicate that actual GDP as a whole has been growing faster than the potential one. Average real growth rate of actual GDP for this period is 4.0 percent, while that of potential GDP is 3.8 percent (in 2006-2010 potential GDP grew by 4.6 percent annually[1]).

[1] Reference: Adapted from the seminar "The use of models and macroeconomic tools, financial programming and public debt management", held in Bishkek on June 3-5, 2010; potential GDP in Kyrgyzstan, calculated by the method for constructing of production functions, constituted approximately 4.5 per cent.

Figure 1.1. Potential GDP Estimates for Kyrgyzstan



Potential GDP growth was above actual GDP growth rates in 1995, 1998, 2002, 2005-2006 and 2010 which is largely understandable if we recall the defining factors in the economy during these years. For example, impact of the Russian crisis of 1998, a failure at the "Kumtor" Gold Mine in 2002 and political instability in the country in 2005-2006 and 2010.

The calculation results, first of all, allow assuming of inflationary pressure in the economy, since actual GDP is growing faster than the potential one. Moreover, estimated potential growth rate of 3.8 percent is regarded as being quite low and is indicating a need for further structural reforms in the economy.

Finally, Table 1.1 shows the results of the calculation of fiscal impulse indicator in the economy of Kyrgyzstan. We used the following initial values:

- Actual and potential GDP;
- Adjusted government expenditure (including quasi-fiscal deficit in the electricity and Social Fund expenditure, and excluding expenditure on interest payments on the external debt and membership fees to the international organizations, funding diplomatic agencies, representative offices and travel expenses);
- Adjusted government revenue (including Social Fund revenue, and excluding foreign grants, revenue from Ganci Air Base);

Table 1.1. Measure of Fiscal Impulse for Kyrgyzstan

	2002	2003	2004	2005	2006	2007	2008	2009	2010
					(bln som, if not indicated)				
Real GDP growth, *percent*	0.0	7.0	7.0	-0.2	3.1	8.5	8.4	2.9	-1.4
Real potential GDP growth, *percent*	4.1	4.3	4.4	4.5	4.6	4.6	4.6	4.6	4.6
Actual GDP, *nominal*	75.4	83.9	94.4	100.9	113.8	141.9	188.0	201.2	212.2
Potential GDP, *nominal*	76.8	83.3	91.4	102.4	117.1	140.7	180.0	195.8	218.8
Actual balance of the state budget	-3.8	-3.8	-4.2	-4.1	-3.8	-2.3	-0.1	-2.9	-10.8
Actual balance of the consolidated budget	-3.7	-3.6	-4.1	-3.7	-3.3	-1.0	1.6	-2.7	-13.1
Adjusted balance of the consolidated budget	-16.3	-14.8	-15.4	-14.2	-13.3	-13.8	-11.8	-24.4	-35.7
					(percent to GDP)				
Actual balance of the state budget	-5.0	-4.5	-4.5	-4.1	-3.3	-1.6	0.0	-1.4	-5.1
Actual balance of the consolidated budget	-4.9	-4.3	-4.4	-3.7	-2.9	-0.7	0.8	-1.3	-6.2
Adjusted balance of the consolidated budget	-21.6	-17.7	-16.3	-14.1	-11.7	-9.7	-6.3	-12.1	-16.8
Cyclically neutral budget balance		-21.3	-16.4	-16.8	-15.2	-11.4	-8.1	-5.4	-13.3
Fiscal stance		-3.7	-0.1	-2.7	-3.5	-1.7	-1.8	6.7	3.5
Fiscal impulse			**3.5**	**-2.6**	**-0.8**	**1.8**	**-0.1**	**8.5**	**-3.2**

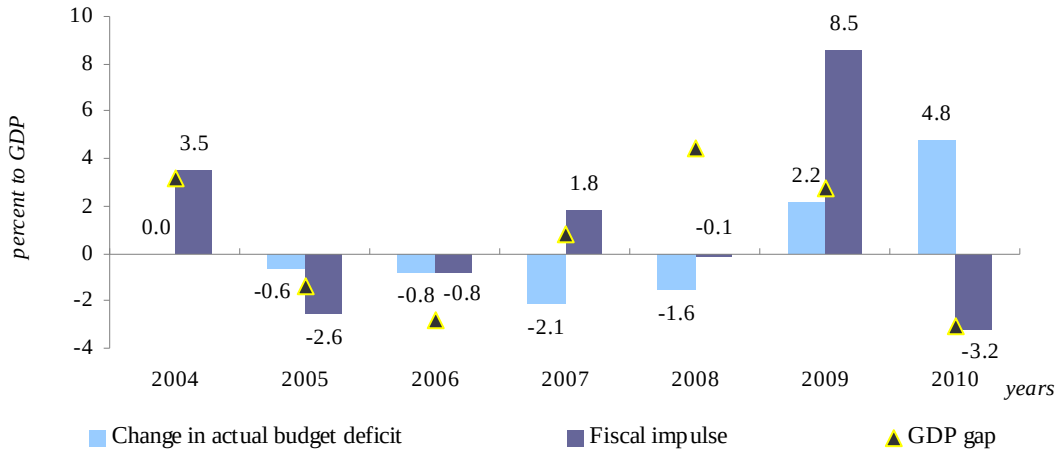
Source: NSC, MoF data and author's calculations

1.5. Conclusions

Presented results indicate that up to 2008 budget deficit had been gradually decreasing, but later in 2009-2010 it sharply increased. Herewith, estimates of fiscal impulse indicator show rather different dynamics of ongoing fiscal policy and its impact on aggregate demand.

Fiscal impulse for 2004-2010 estimated at 7.2 percent to GDP (1.9 percent for 2004-2008), implying expansionary fiscal policy in this period and, thus, promoting growth of aggregate demand. The dynamics of the fiscal impulse and GDP gap has also shown a pronounced pro-cyclical fiscal policy.

Figure 1.2. Dynamics of Fiscal Impulse, Budget Deficit Changes and GDP Gap



More detailed examine of results shows that after a significant positive impulse in 2004, next year the economy experienced an even greater tightening of fiscal policy than the change in the nominal deficit of the consolidated budget demonstrated.

In 2007 and 2009, fiscal policy is characterized by a significant positive impulse, therefore, exerting positive effects on the growth of aggregate demand and creating higher inflationary background in the economy. Taking into account the lag effect, these results allow assuming that the contribution in the inflation acceleration being observed since 2007 was also made by fiscal policy (besides other factors). Such a significant fiscal impulse in 2009 was largely because the required financing of budget expenditure (including major investment projects in hydropower facilities) met with significant limitations on the part of tax revenue. Reduction in tax revenue during that period was due to a general slowdown in business activity in the country, the decline in import and changes within a new Tax Code (reduction in VAT and sales tax rates, introduction of a temporary moratorium on property taxes, etc.). These losses of the state budget were largely covered by foreign grants, including that from the Russian Federation. Therefore, they did not strongly affect the value of the nominal budget deficit. However, when estimating the fiscal impulse, i.e. the actual direction of influence of government fiscal policy on aggregate demand, that grant revenue was excluded.

The year 2010 was characterized by a number of measures, primarily aimed at supporting affected entrepreneurs and reconstructing some damaged cities. As a result of

these measures, at year-end, government expenditure significantly increased and against the background of slowing tax revenue resulted in the growth of the nominal budget deficit. However, the obtained value of the fiscal impulse shows the tightening of fiscal policy against the previous year, which can be explained by a high level impulse of the base period and, in general, continued compliance of conducted fiscal policy with economic cycles.

However, as has been noted earlier, the indicator of fiscal impulse determines the direction of changes in the fiscal stance rather than the value of impact on the economy, that requires additional study on the fiscal multiplier using a general macroeconomic model.

II. Estimates of Marginal Excess Burden of Taxation for Kyrgyzstan

2.1. Theoretical Review

Besides a direct sum of the tax paid by a taxpayer to the Government (state administration bodies), taxation, as is known, is associated with many other costs, such as:

1) Direct expenditure for tax collection that is the operating costs of public authorities for tax collection (wages, premises, etc.) and enforcement of tax laws;

2) Direct costs of taxpayers for implementation of tax regulations (tax accounting, accountants wages, etc.);

3) Indirect costs due to the impact of taxation on the efficiency of resource allocation, known in economic literature as a deadweight loss or excess burden of taxation (excess tax burden).

In this paper estimation of indirect costs of taxation, i.e. of excess burden of taxation, is presented.

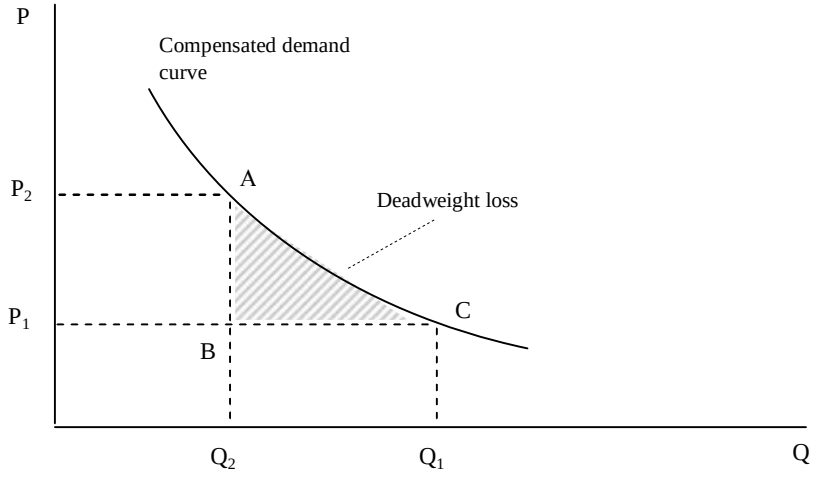
Diamond and McFadden (1974), based on the work of Hicks (1941), have begun to use the concept of Additional Compensating Income (ACI) in order to quantify the deadweight loss. ACI is a dummy variable interpreted as a certain additional amount to be added to the income of an individual as compensation for the rise in prices for goods as a result of the tax imposition. In other words, it is assumed that a consumer is given an extra income for his welfare level after-tax to remain unchanged. The value of ACI can be statistically calculated. Thus, it becomes possible to estimate the excess burden of taxation deducting the amount of tax revenue from ACI.

A graphical explanation is presented below (Figure 2.1) for illustration purposes.

Let us assume that the price of commodity X is equal to P_1. When introducing the tax, the price has risen to P_2 (where $P_2 = P_1 +$ tax t). As the price grows, number of consumed amount of the commodity X is decreasing. The area of the figure P_2ACP_1 reflects the changes in consumption amount after tax payment in case of price increase (Figure 2.1.). Within this figure, the area of P_2ACP_1 represents tax revenue of the state budget (tax t, multiplied by consumption of Q_2). Thus, the area of the figure ABC, which is the difference between the figures P_2ACP_1 and P_2ABP_1, is a deadweight loss or excess burden of taxation, which arises solely due to imposition of a tax.

The excess burden of taxation represents a loss of social welfare caused by the tax influence, and reflects inefficiency of a tax or a tax system.

Figure 2.1. Excess Burden of Taxation



As pointed out by J. Stiglitz (1997), the triangle ABC is sometimes called a Harberger triangle in honor of an economist A. Harberger, who used these triangles not only to measure inefficiency due to the distorting effect of taxation, but other types of inefficiency as well, such as those related to monopoly or to cost-benefit analysis of public investment projects.

Thereafter, more attention was focused in the literature (Stuart, 1984; Ballard, Shoven, Walley, 1985) on Marginal Excess Burden (MEB), that is, net loss per each additional unit of tax revenues, defined as the ratio of excess burden to the growth of tax revenue.

Using this approach, Movshovich et al. (1999) study the relative value change in excess burden of taxation rather than its absolute value (which requires the use of a large number of assumptions about the behavior of economic agents). Based on the theory of the general economic equilibrium, these authors have developed a simple aggregated equilibrium model with taxes which allows obtaining final formulas that calculate MEB with observed economic indicators and characteristics of consumers' preferences. Henceforth, using this model, Chernogorsky (2002) estimated the value of MEB for Russia and some EU countries in 1997-2000.

Table 2.1. MEB Indicator for Some EU Countries and Russia

	1997	1998	1999	2000	Average
France	0.36	0.34	0.32	0.26	*0.32*
Germany	0.15	0.16	0.15	0.15	*0.15*
Great Britain	0.23	0.23	0.22	0.21	*0.22*
Italy	0.42	0.36	0.32	0.28	*0.34*
Russia	0.25	0.23	0.25	0.33	*0.27*
Sweden	0.60	0.55	0.49	0.41	*0.51*

Source: Chernogorsky S.A., 2002

Practically, these MEB indicators mean that, for example, in Russia in order to get 1 ruble of taxes, the optimal allocation of resources is distorted to such an extent that the society

as a whole spent 1.33 rubles in 2000 or an average of 1.27 rubles for the period from 1997 to 2000.

2.2. Calculation of Marginal Excess Burden of Taxation for Kyrgyzstan

The value of marginal excess burden of taxation will be further calculated for the economy of Kyrgyzstan using the calculation methodology given in the above-indicated studies. It should be noted that the detailed description of the model and transformation of formulas are given in indicated studies, thus, we will not do it in this paper.

Table 2.2 shows the initial statistical data about the state of the economy of Kyrgyzstan in 2003-2009: data on household spending, their savings, transfers and income from property, as well as the data on tax revenue of the Government control sector (that is, the state budget is consolidated with the budget of the Social Fund).

Table 2.2. Selected Indicators of the Kyrgyz Economy

		2003	2004	2005	2006	2007	2008	2009
Economically active population	*mln people*	2.14	2.18	2.26	2.29	2.34	2.38	2.42
Unemployed	*mln people*	0.21	0.19	0.18	0.19	0.19	0.20	0.20
Household spending on consumption C_0 + savings S - transfers n - property income e	*bln som*	53.21	53.13	56.94	68.85	80.69	101.08	105.43
Tax revenue T	*bln som*	15.74	18.33	21.34	25.57	33.68	44.98	46.90

Source: NSC, MoF

Herewith, based on these statistics the interim indicators are calculated (Table 2.3.). Let us explain some of the indicators. Let L denote the time and L_0 - time for work and leisure (excluding sleep time). Parameter h, according to obtained formulas, is the average of the values that satisfy the equation $\frac{\omega}{C} = \frac{h}{L_0 - L}$ for different time periods. The value of the tax parameter θ is calculated by the equation $\theta = \frac{T}{C_0 + S - n - e}$.

Table 2.3. Interim Estimated Indicators

		2003	2004	2005	2006	2007	2008	2009
Work time **L** (line 1- line 2 in Table 2)	*mln people/ year*	1.93	1.99	2.08	2.10	2.15	2.18	2.22
Tax collection **T**	*bln som*	15.74	18.33	21.34	25.57	33.68	44.98	46.90
Net real wages of households **$\omega L = C_0 + S - n - e$**	*bln som*	53.21	53.13	56.94	68.85	80.69	101.08	105.43
Net real wage per unit of time **$\omega = (C_0 + S - n - e) / L$**	*bln som*	27.56	26.68	27.41	32.85	37.49	46.28	47.57
Tax parameter **θ**		0.30	0.35	0.37	0.37	0.42	0.44	0.44
$L_{0\ average}$		3.11	3.11	3.11	3.11	3.11	3.11	3.11
h		0.49	0.42	0.35	0.30	0.26	0.25	0.25
$h_{\ average}$		0.33						

Source: NSC, MoF data and author's calculations

Finally, Table 4 shows the values of $\frac{\theta\omega r}{L}$ and MEB, which are interrelated as follows: $\frac{\theta\omega r}{L} = -T\frac{L_0 - L}{L(1+h)(C_0 + S - n - e)}$, and $MEB = \left(1 + \frac{\theta\omega r}{L}\right)^{-1} - 1$

Table 2.4. Value of MEB in the Kyrgyz Economy

		2003	2004	2005	2006	2007	2008	2009
θωr / L		-0.12	-0.14	-0.14	-0.14	-0.15	-0.15	-0.14
MEB	*som per 1 som of taxes*	0.16	0.17	0.16	0.16	0.16	0.16	0.16

Source: author's calculations

2.3. Conclusions and Some Recommendations

The obtained values of marginal excess burden of taxation in Kyrgyzstan show that every 1 som collected as a tax distorts the optimal allocation of resources in such a way that total public costs equal to 1.16 som on an average.

It is noteworthy that the tax reform of 2006 (when profit tax rate was reduced from 20% to 10%, and income tax rate was established at the flat rate of 10%), according to the calculations, resulted in no decrease of MEB. The new Tax Code introduced in 2009 had also no effect on the value of MEB as estimated for the first year being in force.

On the one hand, these results indicate a relatively low excess burden of taxation in the Kyrgyz economy (compared with some other countries) and, therefore, under existing conditions, it is pointless to conduct the tax reform by changing tax rates only, since it adversely affects the performance of the state budget. Therefore, it is the tax administration that is of much greater importance for improvement of the fiscal system in our country. And the major direction in the ongoing reform should be focused on the transition to easily administered forms of taxation.

On the other hand, the current tax system in Kyrgyzstan still generates excess burden. Considering the level of welfare of the Kyrgyz population, even relatively low loss from taxation, in our opinion, should be minimized as well. It is reasonable to use in a greater degree such categories of taxes that do not affect the efficiency of business units. In practice, this type of tax includes tax patents, tax contracts, land tax, property tax, namely all kinds of lump-sum taxes, i.e. tax that does not depend on the behavior of the entity. As stated in the IMF Tax policy handbook (1995), “a tax, except in the form of a lump-sum levy, reduces the consumer’s welfare … The efficiency loss of a tax refers to the excess of the reduction in the consumer’s welfare above and beyond that which can be accounted for by income loss due to payment of the tax … A lump-sum tax, which by definition does not distort relative prices, cannot have any excess burden …”.

III. References

1. Blanchard O. (1990) “Suggestions for a new set of fiscal indicators”. Organization for Economic Development and Cooperation Economics Department Working Papers No 79.
2. Chernogorsky S.A. “Marginal excess burden of taxation in the economies of some EU countries and Russia”: Report from the Fifth International Conference. “Public Sector Transition”, St. Petersburg, 2002. http://www.aspe.spb.ru/Papers/25_17.pdf.
3. Diamond P., McFadden D.L. (1974) “Some uses of the expenditure function in public finance” // Journal of Public Economy, 3.
4. Heller P., Haas R. and Mansur A. (1986) “A review of the fiscal impulse measure”. IMF Occasional Papers, No 44, May.
5. Hicks J. (1941) “The rehabilitation of consumer’s surplus” // Review of Economic Studies, 9.
6. IMF Country Report No. 05/217 “Republic of Belarus: Selected Issues”, June, 2005.
7. IMF Country Report No. 08/375 “Republic of Armenia: Selected Issues”, December 2008.
8. IMF Country Report No. 09/61 “Former Yugoslav Republic of Macedonia: Selected Issues”, February 2009
9. Movshovich S. M. “Assessment of excess burden of taxation in the Russian economy” / Movshovich S.M., Krupenina G.A., Bogdanova M.S. - Moscow: EERC “Eurasia” Foundation 1999.
10. Philip R. and Janssen J. (2002) “Indicators of Fiscal Impulse for New Zealand” New Zealand Treasury Working Paper, No 02/30, December.
11. Robinson E. and Jiun A. (2001) “Assessing the fiscal policy stance in Singapore”. BIS Papers, No 20.
12. Spilimbergo A. (2005) “Measuring the Performance of Fiscal Policy in Russia”. IMF Working Papers, No 05/241, December.
13. Stiglitz, J. E. “Economics of the Public Sector”: 3d ed, 1999.
14. Stuart Ch. (1984) “Welfare costs per dollar of additional tax revenue in the United States” // American Economic Review, 74; Ballard Ch., Shoven J., Walley J. (1985) “General equilibrium computations of the marginal welfare costs of taxes in the United States” // American Economic Review, 75.
15. Tax Policy Handbook / ed. by Shome P.- Washington: IMF, 1995.
16. Tideman N., Plassmann F. “Sources of public revenue that make nations” / Tideman N., Plassmann F. // The Journal of Law and Economics. - 2007. - No 1. – Pp. 3 - 23.
17. Vasilyeva E.A. “Analysis of the stabilization function and sustainability of public finances of the Russian Federation” / Vlasov S.A., Ponomarenko A.A. // HSE Economic Journal. - 2009. – No 3. – Pp. 383-402.