EVALUATING DISCRETIONARISM OF ROMANIAN FISCAL POLICIES BASED ON STRUCTURAL BALANCE

Stoian Andreea

Bucharest University of Economics, Faculty of Finance, Insurance, Banking, and Stock Exchange, Piața Romană. No.6, Bucharest, andreea.stoian@fin.ase.ro*, 021/3191901, ext. 264*

Abstract: Structural balance represents a useful fiscal indicator to evaluate the efficiency of fiscal policy from discretionarism point of view, also, giving some relevant insights on long run sustainability. According to estimated results for Romania's case, it could be noticed only 2 episodes of fiscal adjustment. Based on the size of structural balance from following years, it could be emphasized some inconsistency of Romanian fiscal policy. On long run, the main challenge is related to achieving fiscal sustainability.
Keywords: fiscal policy, discretionarism, structural balance, GDP gap, Hodrick – Prescott filter, fiscal sustainability

Introduction

Assessing sustainable fiscal policy requires active measures of increasing taxation or reducing budgetary expenditures, independent of business cycle. Those particular actions are part of *discretionary fiscal policies* implemented by governments in order to improve their fiscal stance. In order to investigate the dicresionarism of fiscal policy, it could be used some fiscal indicators out of which the most relevant is *cycle abjusted balance* (CAB) or *structural balance* (SB) (see in that sense, Muller and Price, 1984). Based on that fiscal indicator, it could be measured fiscal stance changes from one period to another, which, within the main literature stream, are known as *fiscal impulse* (Alesina and Perotti, 1995).

Structural balance represents an important fiscal indicator often used in order to evaluate the efficiency of fiscal policies on short, medium, and long run. It is mostly used by international organizations, such as Organisation for Economic Co-operation and Development (OECD), but, especially by governments within European Union (EU) area which are under the constraints of Growth and Stability Pact. Moreover, Giorno, Richardson, Roseveare and van den Noord (1995) consider that changes of structural balance give mportant insights on the incidence of fiscal policy on aggregate demand.

Many authors consider structural balance as an important indicator for identifying and measuring the discretionarism of fiscal policy. For instance, Chouraqui, Hagemann and Sartor (1990) consider the relevance of SB as an indicator for evaluating the discretionarism of fiscal policy, taking into account the following aspects[178]: (i) on one hand, based on SB, it could be made the distinction between cyclic component and non-cyclic component of budgetary balance, and, therefore, it could be used in order to estimate the incidence of fiscal policy promoted by governments; (ii) on the other hand, taking into consideration the consequences of public finance policies on long run, based on the changes of SB, it could be obtained some relevant insights on future orientation of fiscal policy. But, there were also some critics in that sense. For instance, Muller and Price (1984) consider that SB could give some insights on fiscal stance changes caused by public finance policies and not by business cycle.

The necessity of estimating *structural balance* consists in the fact that under a growing structural balance, public debt could become unsustainable and, therefore, active measures of fiscal policy are requested. Fiscal imbalance could be influenced by permanent factors, as well as by temporary factors (Blejer and Cheasty, 1991; Hagemann, 1999), and such an impact is reflected by the size of fiscal imbalance. It is considered as being *temporary factors* those effects on budgetary expenditures/revenues due to the deviation of GDP from its normal trend (e.g. rising social transfers, especially unemploylement transfers), while, *permanent factors* are represented by normal evolution of budgetary expenditures/revenues in the absence of some external shocks, when the economy operates on its full employment capacity[179]. Consequently, the relationship between fiscal balance and business cycle could be considered from two

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[178] Chouraqui, J.C., Hagemann, R.P., Sartor, N. (1990), „Indicators of Fiscal Policy: A Re-examination", *OECD Department of Economics and Statistics Working Paper No.78, April 1990*, pp.5.
[179] It is considered when the unemployment rate lies between 5 – 6%, according to Dornbusch and Fisher (1990) and when inflation rate is stable.

perspectives: (i) based on *discretionary changes* of fiscal policy; and (ii) based on *induced changes* due to business cycle.

The aim of this paper is to investigate the discretionarism of Romanian fiscal policy based on changes on estimated structural balance. The structure of the paper is the following. In Section 2, it will be presented methodological aspects on estimating structural balance. Section 3 consists in applied methodology for estimating Romanian structural balance. Section 4 is devoted to the analysis of Romanian fiscal policy and their efficiency from sustainability point of view, and also consists in concluding remarks.

Methodological background on estimating structural balance

In the main stream of literature, there have been identified two main approaches of estimating structural balance (see for instance, Mendez-Camba şi Lamo, 2002):

First approach lies on two stages. On the first stage, it is estimated the gap between the effective output and the potential output based on Hodrick-Prescott filter, or based on a production function. On the second stage, there are estimated elasticities of budgetary expenditures/revenues on GDP. The mentioned method is commonly used by international organizations, such as International Monetary Fund (IMF), European Comission (EC) or OECD, but it has some drawbacks steamed from the estimation of GDP gap (Brandner, Diebalek and Schuberth, 1998). For instance, OECD uses a Cobb-Douglas production function, while IMF does not apply the same methodology for all the countries. There are cases where production is estimated based on a general equilibrium model within NAIRU, and other cases where production is estimated based on statistical methods. On the other hand, EC uses Hodrick-Prescott filter, which is mostly used because of its simplicity.

The second approach relies on SVAR model where budgetary deficit and GDP percentage change are the variables. Compared to the forst approach, the second one has some advantages because it does not imply estimation of potential production, nor elasticities, but it is difficult to be implemented in tha cases with short time series (e.g. Romania's case). Moreover, based on SVAR approach, Dalsgaard and de Serres (1999) estimate structural balance values which go to a conventional balance of 3% of GDP, according to Maastricht Treaty requirements. This method could be extended in order to analyse the reaction of fiscal policy to different shocks.

Generally, estimation of structural balance is based on conventional balance (D) determined as a difference between budgetary revenues (R) and budgetary expenditures (E):

$$D = R - E \qquad (1)$$

In order to identify and then eliminate the business cycle influences, it will be estimated *output gap*, as a difference between effective real GDP (Y), and potential output (Y^*), as percent of potential GDP:

$$GAP = \frac{Y - Y^*}{Y^*} \cdot 100 \qquad (2)$$

The next stage consists in estimation of budgetary revenues/expenditures elasticity related to GDP. The previous studies show that there are taken into consideration only those components of revenues/expenditures which could more probably be influenced by business cycle (taxes and social government spending).

In that sense, it is considered that taxes have a constant growth rate depending on GDP, and, therefore, the percent of potential fiscal revenues (R^*) in effective fiscal revenues (R) is given by the following relation:

$$\frac{R^*}{R} = \frac{k_0 (Y^*)^\alpha}{k_0 Y^\alpha} = (\frac{Y^*}{Y})^\alpha \qquad (3)$$

where:

α = fiscal revenues elasticity related to GDP, $\alpha > 0$;

k_0 = constant.

The cyclic component of fiscal revenues as percent of potential output is given by the first approximation of a Taylor serie:

$$\frac{R - R^*}{Y^*} = \frac{R}{Y^*} - \frac{R^*}{Y^*} = r - r^* = \alpha \frac{R}{Y} GAP \qquad (4)$$

The cyclic component of budgetary expenditures is estimated the same as in the case of fiscal revenues, but taking into consideration only those social transfers related to unemplyment ($E_{unemployment}$):

$$\frac{E_{unemployment} - E_{unemployment}^*}{Y^*} = \frac{E_{unemployment}}{Y^*} - \frac{E_{unemployment}^*}{Y^*} = e - e^* = \beta \frac{E_{unemployment}}{Y} GAP$$
$$(5)$$

where:

β = social transfers expenditures elasticity related to GDP, $\beta > 0$;

Based on the relations from (1) to (5), it could be estimated structural balance (d^*), which could have been obtained where effective output would be equal to potential output. Structural balance is conventional balance (d), adjusted with the cyclic effects of budgetary revenues/expenditures:

$$d^* = d - (\alpha \frac{R}{Y} - \beta \frac{E_{unemployment}}{Y}) \cdot GAP \qquad (6)$$

where:

$$d^* = \frac{D^*}{Y^*}; d = \frac{D}{Y^*}$$

Estimating structural balance on Romania's case

In Romania's case, National Bank of Romania (NBR) makes publicly available information related to the size of structural balance. But, according to its methodology, 'structural balance is estimated as a difference beteen conventional balance and privatization revenues, considered as being financing source and not an effective budgetary revenue'[180]. Within the main stream of literature (see in that sense, Blejer and Cheasty, 1991), it is emphasized that in tha case of transition countries, due to numerous distortions which could have some influence an macroeconomic aggregates, it could be estimated a *core deficit*, which eliminates such distortions. In that sense, privatization could be seen as a transitory process which could have some effects on some particular macroeconomic variables, but, estimating structural balance only by taking into consideration a simple difference, could be considered as being not relevant. Therefore, I propose within this paper a different approach of structural balance estimation, which it is more complex and could go to more relevant results.

Estimation of structural balance in Romania's case is based on the methodology presented within previous Section, but by taking into account some particular features of Romanian economy, further discussed:

1. estimation of *output gap* is based on relation (2) and by applying a Hodrick – Prescott filter[181] on GDP in 1990 constant prices.

2. in order to identify and isolate the transitory effects of business cycle, only fiscal revenues and unemployment social transfers are taken into account. But, there are, also, studies (see for instance, Lane, 2003) whichi investigate the impact of business cycle on different government expenditures/revenues components: current expenditures, government consumption, salary expenditures, capital spending. In Romania's case, business cycle could have much more influence on the total amount of budgetary expenditures/revenues than on their components. Moreover, in the case of transition countries, structural adjustment policies, could be considered as having transitory effects on budgetary revenues/expenditures because of their public financing, and, therefore could be asmimilated to the effects of business cycle[182].

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[180] National Bank of Romania, Annual Report 1999, pp.43.

[181] It represents a decomposition technique, where timer series are decomposed into a trend component and a stationary component (Enders, 1995).

[182] Blejer, M. I; A, Cheasty (1991), „The Measurement of Fiscal Deficits: Analytical and Methodological Issues", *Journal of Economic Literature,* Vol.XXIX (December 1991), pp.1644-1678, pp.1654.

Consequently, it is considered as being more relevant to identify and isolate the cycle component within budgetary revenues/expenditures, rather than of their components.

3. according to the structural balance estimation methodology, fiscal revenues and social transfers are considered to grow on a constant rate, α, in the case of revenues, and, respectivly, β, in the case of expenditures. Elasticity estimation relies on two models, which consider budgetary revenues/expenditures growth related to output growth (see in that sense, Brandner, Diebalek and Schuberth, 1998; Braconier and Holden, 1999): (i) for fiscal revenues growth, it is considered the following relation: $R_f = k_0 Y^\alpha$, and (ii) for social transfers (unemployment), it is considered, on a first stage, their growth related to unemployment rate $E_{unemployent} = k_1 U^a$, and, on a second stage, based on Okun model, it is established the relation between social transfers and output, according to: $E_{unemployment} = cY^\beta (Y^*)^\beta$ (Braconier and Holden, 1999). In Romania's case, it was taken into account, on one hand, the relationship between budgetary revenues and GDP growth $R = k_0 Y^\alpha$, and, on the other hand, the relationship between budgetary expenditures and GDP growth: $E = k_1 Y^\beta$. Applying natural logarithm on both relationships, it will be obtained the following regressions: $\ln R = \ln k_0 + \alpha \ln Y = c_1 + \alpha \ln Y$ and, respectively, $\ln E = \ln k_1 + \beta \ln Y = c_2 + \beta \ln Y$. Using OLS, it will be estimated α and β. Taking into account the difficulty of estimating Cobb-Douglas production function, the methodology applied within this study is often used (see in that sense, Lane, 2003). The estimated elasticities are presented in the table below:

Explanatory variables	Equation 1 Dependent variable: budgetary revenues[*]	Equation 2 Dependent variable: budgetary expensiures[*]
Intercept	-0.44 [-0.33] (0.74)	-0.23 [-0.25] (0.80)
LN_GDP[*]	0.83 [2.64] (0.02)	0.81 [3.88] (0.00)
AR (1)	0.75 [4.45] (0.00)	
MA (2)		0.89 [20.35] (0.00)
	R^2: 0.76	R^2: 0.58
	F-stat: 20.62 (0.00)	F-stat: 9.87 (0.00)
	Jarque-Bera: 3.09 (0.21)	Jarque-Bera: 0.65 (0.72)
	Inverted AR: 0.75	

[*] Budgetary revenues/expenditures and GDP are expressed as natural logarithm of their 1990 constan price values.

Source: IMF (budgetary revenues/expenditures) and National Bank of Romania (GDP and GDP deflator).

[ ]: t-statistic ( ): probability

AR(1) and MA(2) for errors correction.

Table 1. Government expenditures and revenues elasticity

The estimated elasticity for budgetary revenues, α, is about 0.83, and estimated elasticity for budgetary expenditures, β, is about 0.81. Based on the previous results, it will be estimated structural balance, according to relation (6) (see, Table 2):

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006

Structural balance (% GDP)	-1.4	-5.2	-0.3	-0.3	-2.2	-3.3	-4.5	-5.1	-5.5	-3.7	-4.1	-3.2	-2.6	-2.1	-1.0	-1.5	-1.

Table 2. Estimated structural balance

The analysis of Romanian fiscal policy discretionarism and concluding remarks

Taking into account the evolution of estimated structural balance, it could be noticed some inconsistency of Romanian fiscal policy within the considered period. For instance, for 1992, it could be observed the efforts of Romanian government to reduce the large deficit from previous year in order to prevent the consequences on inflation rate. Even so, in the next few years, inflation rate was on its highest, despite the reduced budgetary deficits. Moreover, in the next few years, structural balance rose again, and the next episode of fiscal adjustment could be observed in year 2001. This episode could be considered as being more efficient than the previous one, because structural balance reduced consequently in the following years. Obviously, this moment could be related to the efforts of Romanian government to assess the requirements of Maastricht Treaty referring the constraints imposed for budgetary deficit. Also, it is important to emphasize the growing trend in the last year (2006). Momentarily, Romanian budgetary deficit, still, lies between the accepted limit, and a continous growth could raise some distortions on fiscal sustainability. Much more, analyzing the evolution of estimated structural balance, it could reach to another significant conclusion, regarding the inertia of authomatic stabilizers, and the fact that fiscal adjustments focused only on reducing the large size of fiscal deficits, but had no effect on aggregate demand.

Structural balance represents a useful fiscal indicator to evaluate the efficiency of fiscal policy from discretionarism point of view, also, giving some relevant insights on long run sustainability. According to estimated results for Romania's case, it could be noticed only 2 episodes of fiscal adjustment. Based on the size of structural balance from following years, it could be emphasized some inconsistency of Romanian fiscal policy. On long run, the main challenge is related to achieving fiscal sustainability.

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