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CYCLICALLY ADJUSTED BUDGET BALANCES IN SLOVENIA

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Abstract

This paper provides updated calculations of cyclically adjusted budget balances in Slovenia. Results obtained through both aggregated and disaggregated methods reveal a relatively tight stance of fiscal policy in the period 2000-2004, and concomitant progress in fiscal consolidation. However, the current structural deficit of nearly 2% of GDP still significantly exceeds the medium-term objective as required by the reformed Stability and Growth Pact (SGP). Slovenia should take advantage of favourable macroeconomic circumstances for a prompt correction of existing budgetary imbalances. Attaining and maintaining a structural budget balance would allow room for manoeuvre for fiscal policy, which will have to play a central role in macroeconomic stabilization after euro adoption, and at the same time it would enable to comfortably comply with the SGP requirements.

Keywords: fiscal policy, government budget, business cycle, automatic stabilizers
JEL Classification: E32, E62, H62

Povzetek

V prispevku so prikazani izračuni ciklično prilagojenih javnofinančnih bilanc za Slovenijo. Rezultati tako agregiranega kot dezagregiranega pristopa kažejo, da je bila fiskalna politika v obdobju 2000-2004 relativno omejevalna, kar se je odrazilo na napredku pri procesu fiskalne konsolidacije. Kljub temu trenutni strukturni javnofinančni primanjkljaj, ki dosega skoraj 2% BDP, še vedno presega srednjeročni cilj, kot ga določa reformirani Pakt o stabilnosti in rasti (PSR). Prisotnost trenutno ugodnih makroekonomskih gibanj ponuja priložnost za čimprejšnjo odpravo fiskalnih neravnovesij. Doseganje in vzdrževanje strukturnega ravnovesja javnih financ bi omogočilo večji manevrski prostor fiskalni politiki, ki bo po prevzemu evra morala odigrati osrednjo vlogo pri makroekonomski stabilizaciji, obenem pa bi zagotovilo zadostno varnostno rezervo glede izpolnjevanja zahtev PSR.

Ključne besede: fiskalna politika, proračun, poslovni cikel, avtomatični stabilizatorji
JEL klasifikacija: E32, E62, H62

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1. INTRODUCTION

General government budget balance can be broken down into two elements: structural budget balance and cyclical budget balance. The structural budget balance, or cyclically adjusted budget balance, is assumed to be predominantly influenced by governmental decisions and thus reveals the actual stance of fiscal policy. On the other hand, the cyclical budget balance reflects temporary effects related to business cycle fluctuations. During a recession, for example, less tax revenues are collected because of lower economic activity and more money is spent on unemployment benefits because the number of unemployed typically rises in that time. The opposite happens during a boom. Therefore, even if the fiscal policy stance remains unchanged, the general government budget balance will deteriorate during a recession and improve during a boom, necessitating the need for a calculation of cyclically adjusted budget balances when analysing and assessing fiscal policy.

Endogenous fluctuations in tax revenues and expenditures that are due to macroeconomic business cycle fluctuations generate positive economic effects as they operate to smooth the business cycle. Fewer collected taxes and increased unemployment benefits counteract the adverse movements in aggregate demand during a downturn, and vice versa during an upturn. In the economic literature this phenomenon is known as automatic fiscal stabilization. One way to measure the size of automatic fiscal stabilization is to estimate the cyclical component of the budget balances.[1] It is worth stressing that automatic fiscal stabilizers should be allowed to operate symmetrically over the business cycle. If a government fails to resist the temptation to spend temporarily increased tax revenues in an upturn, this leads to a deterioration of structural budget balances, which will become evident when the business cycle returns to normal. A deterioration of structural budget balances during an upturn or an improvement during a downturn results in a pro-cyclical fiscal policy that has destabilizing effects on economic activity.

A pro-cyclical fiscal policy may also occur when a government follows a fiscal rule based on actual, rather than cyclically adjusted, budget balance objectives. For instance, if there is a budget deficit threshold that a country should not exceed, the operation of automatic fiscal stabilizers might sometimes have to be offset by discretionary fiscal policies so as not to breach that threshold.

EU member states are obliged to respect provisions of the fiscal framework embedded in the Maastricht Treaty and the reformed Stability and Growth Pact (SGP). Under these provisions, the general government deficit should not exceed the reference value of 3% of GDP, which is seen as the minimum level of fiscal discipline. In addition, the euro area and the ERM II member states should adopt a country-specific medium-term budgetary objective that should be in a range between -1% of GDP and “in balance or surplus”, measured in cyclically adjusted terms, net of one-off effects and temporary measures. The euro area and the ERM II member states are also required to achieve the annual improvement of cyclically adjusted budget balances, net of one-off effects and temporary measures, in the amount of 0.5% of GDP as a benchmark on the adjustment path toward the budgetary objective.[2]

The EU fiscal framework itself should not pose a risk of pro-cyclical fiscal policy, since it allows the actual budget deficit to deteriorate up to 3% of GDP, which should be a sufficient margin to let automatic fiscal stabilizers work freely and symmetrically over the business cycle. However, in the case of fiscal imbalances, when a country does not achieve its

[1] For a deeper discussion on the role of automatic fiscal stabilizers, see van den Noord (2000).

[2] The European Central Bank (2005) reviews the reformed Stability and Growth Pact in detail.

medium-term objective, the SGP requirements could necessitate fiscal consolidation in bad times and therefore lead to pro-cyclical fiscal policies. For this reason, it is essential that countries achieve and maintain their medium-term budgetary objectives, thus ensuring a sufficient safety margin to respect the 3% of GDP deficit limit under normal macroeconomic fluctuations.[3]

This paper estimates the effects of business cycle on budget balances in Slovenia, partly updating the previous results of Žumer (2003). Both aggregated and disaggregated methods are used to obtain cyclically adjusted budget balances and to assess the actual stance of fiscal policy for the period 2000-2007. It is revealed that the stance of fiscal policy in the period up to 2004 was relatively tight. The structural balance thus improved from -3.8% of GDP in 2000 to -1.9% of GDP in 2004. On the other hand, forecasts and projections for the next three years indicate a worsening of fiscal trends in Slovenia.

The coefficient of budget balance sensitivity to the business cycle, providing an approximate measure of cyclical effects on general government budget balance, is evaluated for Slovenia at around 0.5. As a rule of thumb, the budget balance changes by 0.5% of GDP in response to a 1% change in GDP. This crude approximation is obtained using a stylized shock scenario. It should therefore be noted that the actual change in the budget balance could be different depending on developments in major tax bases, especially private consumption, private sector employment and private sector wages.

Further fiscal consolidation in Slovenia is desirable for several reasons. First, to create a sufficient safety margin against exceeding the Maastricht deficit reference value in the case of adverse cyclical developments, structural general government balance should be additionally improved. Second, because fiscal policy will play a central role in macroeconomic stabilization after euro adoption, sufficient budgetary room should be created to allow countercyclical fiscal responses to aggregate demand shocks in addition to symmetric operation of automatic fiscal stabilizers over the business cycle. Third, current economic conditions appear to support continuing fiscal adjustment toward the medium-term objective. Fourth, demographic projections show that ageing-related outlays are highly likely to increase considerably in the near future, thus making it of vital importance to further advance fiscal consolidation as soon as possible.

Following this introduction, Section 2 reviews relevant empirical facts on the business cycle, budget balances and fiscal ratios in Slovenia. Section 3 presents the analytical framework used in this paper, while the results are provided and discussed in Section 4. Section 5 concludes with some remarks about the fiscal challenges facing Slovenia in the years ahead.

2. SOME EMPIRICAL FACTS ON THE BUSINESS CYCLE, BUDGET BALANCES AND FISCAL RATIOS IN SLOVENIA

To calculate the indicators of cyclically adjusted budget balances, an assessment of the business cycle, budget balances and fiscal ratios is necessary. This section evaluates these factors in Slovenia's case.

[3] A notable example of pro-cyclical fiscal policy is that of Portugal in the second half of the 1990s. During that time, Portugal ran cyclically adjusted budget deficits in excess of 3% of GDP and did not follow the fiscal consolidation path, even though the economic conditions were highly favourable (the output gap reached 3.1% of GDP in 2000). After the economic slowdown in the years 2001-2003, a fiscal crisis emerged, forcing the policymakers to engage in pro-cyclical fiscal policy again, this time amplifying the cycle on the downside. See European Commission (2004) for a further discussion.

Following the initial contraction in the beginning of the 1990s, output growth in Slovenia has been relatively stable since 1993. Indeed, the variability of GDP growth in Slovenia as measured by the coefficient of variation (CV) is the second lowest among the EU-25 countries for the period 1995-2004. Moreover, annual GDP growth in Slovenia never fell below 2.7% in this period, a success that, in addition to Slovenia, only Ireland managed to achieve.

Slovenia's exceptional performance in terms of macroeconomic stabilization in the past ten years is by no means a guarantee that this trend will continue in the future. In fact, if one believes that at least part of this macroeconomic stability was due to the conduct of monetary policy, it is reasonable to assume that fluctuations in economic activity will increase after euro adoption. In light of potentially more pronounced macroeconomic fluctuations in the future, it becomes highly relevant to assess the effects of the business cycle on budget balances and to estimate the coefficient of budget balance sensitivity.

Table 1: Real GDP growth rates and their variations in the EU countries

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average	Std. Dev.	CV	Min
EU (25 countries)	:	1,8	2,7	3,0	2,9	3,7	1,8	1,1	1,1	2,4	2,28	0,89	0,39	1,1
Belgium	2,4	1,2	3,3	1,9	3,1	3,9	1,0	1,5	0,9	2,6	2,18	1,04	0,48	0,9
Czech Republic	:	4,2	-0,7	-1,1	1,2	3,9	2,6	1,5	3,2	4,4	2,13	2,05	0,96	-1,1
Denmark	2,8	2,8	3,2	2,2	2,6	3,5	0,7	0,5	0,6	2,1	2,10	1,11	0,53	0,5
Germany	1,9	1,0	1,8	2,0	2,0	3,2	1,2	0,1	-0,2	1,6	1,46	0,99	0,68	-0,2
Estonia	4,5	4,4	11,1	4,4	0,3	7,9	6,5	7,2	6,7	7,8	6,08	2,88	0,47	0,3
Greece	2,1	2,4	3,6	3,4	3,4	4,5	4,6	3,8	4,6	4,7	3,71	0,93	0,25	2,1
Spain	2,8	2,4	4,0	4,3	4,2	4,4	3,5	2,7	2,9	3,1	3,43	0,75	0,22	2,4
France	2,4	1,1	2,4	3,6	3,3	4,1	2,1	1,2	0,8	2,3	2,33	1,10	0,47	0,8
Ireland	9,8	8,3	11,7	8,5	10,7	9,2	6,2	6,1	4,4	4,5	7,94	2,54	0,32	4,4
Italy	2,9	1,1	2,0	1,8	1,7	3,0	1,8	0,4	0,3	1,2	1,62	0,91	0,56	0,3
Cyprus	9,9	1,8	2,3	5,0	4,8	5,0	4,1	2,1	1,9	3,8	4,07	2,43	0,60	1,8
Latvia	-0,9	3,8	8,3	4,7	3,3	6,9	8,0	6,4	7,2	8,3	5,60	2,92	0,52	-0,9
Lithuania	3,3	4,7	7,0	7,3	-1,7	3,9	7,2	6,8	10,5	7,0	5,60	3,28	0,59	-1,7
Luxembourg	1,4	3,3	8,3	6,9	7,8	9,0	1,5	2,5	2,9	4,5	4,81	2,92	0,61	1,4
Hungary	1,5	1,3	4,6	4,9	4,2	5,2	3,8	5,1	3,4	4,6	3,86	1,41	0,37	1,3
Malta	:	:	:	:	4,1	6,4	0,2	0,8	-1,9	0,4	1,67	3,02	1,81	-1,9
Netherlands	3,0	3,0	3,8	4,3	4,0	3,5	1,4	0,1	-0,1	1,7	2,47	1,60	0,65	-0,1
Austria	1,9	2,6	1,8	3,6	3,3	3,4	0,8	1,0	1,4	2,4	2,22	1,01	0,45	0,8
Poland	2,7	6,0	6,8	4,8	4,1	4,0	1,0	1,4	3,8	5,3	3,99	1,88	0,47	1,0
Portugal	4,3	3,6	4,2	4,7	3,9	3,8	2,0	0,5	-1,2	1,2	2,70	1,97	0,73	-1,2
Slovenia	**4,1**	**3,7**	**4,8**	**3,9**	**5,4**	**4,1**	**2,7**	**3,5**	**2,7**	**4,2**	**3,91**	**0,84**	**0,21**	**2,7**
Slovakia	5,8	6,1	4,6	4,2	1,5	2,0	3,8	4,6	4,5	5,5	4,26	1,51	0,35	1,5
Finland	4,4	3,8	6,2	5,0	3,4	5,0	1,0	2,2	2,4	3,6	3,70	1,54	0,42	1,0
Sweden	4,1	1,3	2,4	3,6	4,6	4,3	1,0	2,0	1,5	3,6	2,84	1,35	0,48	1,0
United Kingdom	2,9	2,7	3,2	3,2	3,0	4,0	2,2	2,0	2,5	3,2	2,89	0,58	0,20	2,0

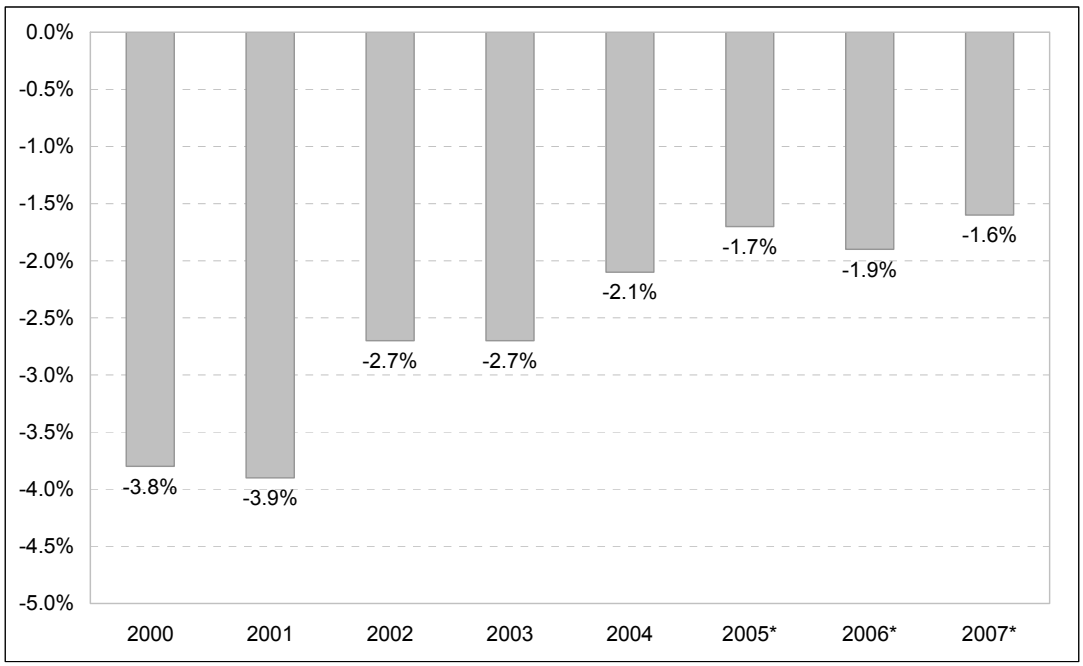
Sources: Eurostat; own calculations.

General government budget balance in Slovenia has been in deficit since 1997 and has been fluctuating around -1.5%, as measured by national methodology.[4] Data consistent with

[4] For an in-depth analysis of general government budget balance and public expenditures in Slovenia since 1992, see Strojan Kastelec (2005).

the ESA-95 methodology are available from 2000 onwards and show slightly higher deficits (*Figure 1*). Cyclically unadjusted numbers reveal an improvement in the general government budget balance from a deficit of -3.8% of GDP in 2000 to a deficit of -2.1% of GDP in 2004. This improvement could be a result of fiscal consolidation, favourable developments in economic activity or a combination of both. We explore the issue further in Section 4.

Figure 1: General government budget balance (ESA-95)



Sources: SORS for 2000-2004; * European Commission Autumn 2005 forecasts for 2005-2007.

The forecasts of general government budget balance used in this paper are based on the European Commission forecasts, published in November 2005 (European Commission, 2005b). The forecast for 2005 is in line with the the latest official forecast, published by the Ministry of Finance in the September 2005 EDP notification. For 2006 the European Commission forecasts the deficit to increase, mainly due to the government decision to index pensions to wages and due to the commitment to gradually abolish the payroll tax. In 2007 the deficit is expected to decrease, which is in accordance with the proposed national budget that projects lowering the deficit by 0.2% of GDP as measured by national methodology.

Fiscal ratios reveal some evident differences between Slovenia and other EU-25 countries. Most notably, Slovenia has a relatively high level of indirect taxes, measured in terms of GDP. Indeed, with revenues from indirect taxes in the amount of 16.8% of GDP, Slovenia ranked third in the EU-25 in 2003, behind Denmark and Sweden. Value added tax (VAT) represents the biggest share of indirect taxes, at close to 9.0% of GDP in recent years, which again is the third highest among the EU-25 countries. The large contribution of indirect taxes to general government revenues can be expected to result in a greater influence of fluctuations in private consumption on the overall budget balance. On the other hand, direct taxes play a somewhat less important role among fiscal revenues than in the EU-15 countries (the same holds for all ten new member states). Direct taxes on households are approximately 4 percentage points lower than the average in the EU-15. Direct taxes on

enterprises (as a percentage of GDP) are also below the EU-15 level, but have been rising recently. The level of social security contributions, measured in terms of GDP, is broadly in line with the EU-15 and euro area averages. Total general government revenues amounted to about 45% of GDP in the last few years, which is more or less equal to the EU-15 average. However, among the ten new member states, Slovenia collects the most fiscal revenues.

Table 2: Fiscal ratios in Slovenia (% of GDP)

Budget category	2000	2001	2002	2003	2004	Average 00-04	EU-15 (2002)
Total revenue	44.8	45.1	45.7	45.8	45.8	45.4	45.4
Direct taxes	7.6	7.7	8.0	8.3	8.5	8.0	13.3
… on households	6.1	6.3	6.2	6.3	6.3	6.3	9.9
… on enterprises	1.2	1.2	1.5	1.9	2.0	1.6	2.4
Indirect taxes	16.5	16.2	16.5	16.8	16.5	16.5	14.0
… VAT	9.0	8.6	8.9	8.9	9.0	8.9	7.0
Social security contributions	15.1	15.4	15.2	15.2	15.1	15.2	14.2
Other revenue	5.6	5.8	6.0	5.5	5.7	5.7	3.9
Total expenditure	48.5	49.0	48.4	48.5	47.9	48.5	47.6
Unemployment-related expenditure	0.5	0.5	0.4	0.4	0.3	0.4	1.4*
Interest payments	2.4	2.4	2.3	2.1	1.9	2.2	3.9*
Other expenditure	45.6	46.1	45.7	46.0	45.7	45.8	…
Budget balance	-3.8	-3.9	-2.7	-2.7	-2.1	-3.0	-2.2

Sources: SORS; Eurostat; Bouthevillain et al. (2001); own calculations. * Data refer to 1999.

3. THE ANALYTICAL FRAMEWORK FOR ESTIMATING CYCLICALLY ADJUSTED BUDGET BALANCES

The actual (i.e. published) budget balances (BB) can be broken down into a cyclical component (CBB) and a structural component (SBB):

$$BB = CBB + SBB.$$

In empirical calculations, an estimate of the cyclical component is obtained and then subtracted from the actual budget balance to determine the cyclically adjusted budget balance (CABB):

$$SBB = CABB = BB – CBB.$$

The literature on cyclically adjusted budget balances provides many methods for estimating the cyclical component, and no consensus has yet been reached in favour of one specific method.[5] This paper builds on the methodology proposed by Bouthevillain et al. (2001), which is currently applied within the ESCB. Bouthevillain et al. (2001) use a disaggregated approach to estimate the cyclical component of budget balances. They focus particularly on five cyclically dependent budget categories (CBC): direct taxes on households, direct taxes on companies, indirect taxes, social security contributions and unemployment-related expenditures. Additionally, one or more macroeconomic bases that are linked to each of

[5] Hagemann (1999) provides a description of the IMF's methodology, van den Noord (2000) and Girouard and André (2005) explain the approach used by the OECD, while the European Commission (2005a) gives details on the cyclical adjustment when assessing the stability and convergence programmes.

these budget categories are identified. Then, taking into account the cyclical positions of the macroeconomic bases and multiplying them by fiscal elasticities, the cyclical component of each budget category is estimated. Finally, all five cyclical components are added together to obtain the aggregate cyclical component of budget balances.

The disaggregated approach has certain advantages compared to aggregate methods that estimate the effect of cyclical fluctuations on the level of GDP by calculating the output gap. Specifically, tax revenues and expenditures typically depend on relevant macroeconomic bases, which may fluctuate differently than GDP. Relevant macroeconomic bases might be in a different cyclical phase than GDP, and even if they are in the same cyclical phase, the magnitude of fluctuations might differ. These compositional effects, stemming from the presence of unbalanced GDP growth, can be more adequately addressed in the disaggregated framework.

On the other hand, the aggregated approach exploits only the information on the output gap, which multiplied by the estimated coefficient of budget balance sensitivity yields the cyclical component of general government budget balance. The advantage of the aggregated approach lies in relatively simplicity of the calculation and in intuitive interpretation. In addition, the aggregated approach enables using different output gap measures (e.g. ones obtained by Kalman filter, production function, Hodrick-Prescott filter) for calculating cyclically adjusted budget balances.

3.1. The disaggregated procedure for estimating cyclically adjusted budget balances

This subsection provides a more detailed description of the disaggregated procedure for estimating cyclically adjusted budget balances as proposed by Bouthevillain et al. (2001). The procedure can be divided into three steps.

First, the cyclical position of each relevant macroeconomic base is estimated using statistical techniques. The standard practice within the ESCB is to apply the Hodrick-Prescott filter with a smoothing parameter equal to 30.[6] All macroeconomic variables (in real terms) are extended with forecasts and projections until 2010 in order to mitigate the well-known end-of-sample bias of the Hodrick-Prescott filter. The gaps of macroeconomic bases in real terms are estimated accordingly:

$$GAP_i = (V_i - V_i^*) / V_i^*,$$

where V_i^* denotes the trend value of a macroeconomic variable V_i (in real terms), obtained with the Hodrick-Prescott filter.

Second, fiscal elasticities that measure the automatic responses of individual budget categories to macroeconomic fluctuations are assessed. These elasticities might be obtained by econometric estimation or, alternatively, they can be derived from tax laws. Econometric estimation of elasticities suffers from several drawbacks, which are even more pronounced in the case of Slovenia. The most prominent among them is the requirement of long time series, as the comparable ESA-95 data on general government accounts for Slovenia span only the period from 2000 onwards. This is clearly not enough to obtain reliable estimates of fiscal elasticities, especially because the estimated regression equations should include many control variables, such as time trends and dummies for tax reforms. In addition, many macroeconomic variables are found to be non-stationary, which

[6] See Bouthevillain et al. (2001) and Žumer (2003) for a sensitivity analysis on choosing different values of the smoothing parameter.

implies the need for a more sophisticated econometric framework with even higher data requirements. Further difficulties in econometric estimation arise due to the simultaneity issue, as economic activity and fiscal policy are inherently interlinked.[7]

For these reasons, the budget elasticities for Slovenia were assessed on the basis of tax rules and estimated elasticities for the EU-15 countries as reported in Bouthevillain et al. (2001). The estimated fiscal elasticities generally do not differ significantly between the EU-15 countries. In cases where they do, specifics of the Slovenian tax code were taken into account in order to obtain reasonable estimates. In general, proportional taxes yield unit elasticity, while in the case of progressivity (regressivity) the elasticity can exceed (fall below) unity. Using the elasticities estimated on the EU-15 data also provides greater cross-country consistency and comparability.

Table 3: Fiscal elasticities with respect to relevant macroeconomic bases

	Budget Category	Macroeconomic Base	Slovenia	EU-15	Min (EU-15)	Max (EU-15)
1	Direct taxes on households (private sector*)	Employment	1.0	1.0	1.0	1.0
		Average wage	1.6	1.5	1.2	2.6
2	Direct taxes on companies**	Corporate profits	1.0	1.2	0.7	1.5
3	Indirect taxes (incl. VAT, excises and duties)	Private consumption	1.0	0.9	0.7	1.1
4	Social security contributions (private sector*)	Employment	1.0	1.0	1.0	1.0
		Average wage	1.0	1.0	0.9	1.0
5	Unemployment-related expenditures	Number of unemployed	1.0	0.9	0.2	1.0

Sources: Bouthevillain et al. (2001); own estimations and assessments. * The variables correspond only to the private sector, because the cyclical effects on the public sector are assumed to be limited. ** For Slovenia, the assumption of a one-year lag between changes in corporate profits and collected direct taxes on companies was adopted.

Third, fiscal elasticities are multiplied with the corresponding macroeconomic gaps and with the actual values of budget categories to obtain the cyclical component of each budget category:

$$CBC_i = BC_i \times GAP_i \times Elasticity\_BC_iV_i.$$

By adding together all five cyclical components of budget categories, the aggregate cyclical component of budget balance is obtained:

$$CBB = \sum CBC_i.$$

3.2. The aggregated procedure for estimating cyclically adjusted budget balances

A simpler, alternative way to estimate cyclically adjusted budget balances is to multiply the GDP level, the output gap (OG) and the coefficient of budget balance sensitivity (σ_B):[8]

[7] Murchison and Robbins (2003) address the simultaneity issue employing the Generalized Method of Moments estimation technique.

[8] Note that the coefficient of budget balance sensitivity is sometimes also called the semi-elasticity of the budget balance (as a % of GDP) with respect to the output gap. See Girouard and André (2005).

$$CBB = \sigma_B \times OG \times GDP,$$

or expressed as a % of GDP:

$$CBB / GDP = \sigma_B \times OG \times 100.$$

This indicator of cyclically adjusted budget balances does not take into account changes in the composition of GDP or in the distribution of income. Instead, it is based upon a stylized shock scenario of a 1% change in GDP. Specifically, the elasticities of the budget categories with respect to the output are obtained as a product of the elasticities of the budget categories with respect to their macroeconomic bases, and the elasticities of these macroeconomic bases with respect to the output:

$$Elasticity\_BC_iGDP = Elasticity\_BC_iV_i \times Elasticity\_V_iGDP.$$

The coefficient of budget balance sensitivity is calculated accordingly:

$$\sigma_B = \sum (R_i/GDP \times Elasticity\_R_iGDP) - \sum (X_i/GDP \times Elasticity\_X_iGDP) - BB/GDP,$$

where R_i denotes revenue budgetary categories, X_i denotes expenditure budgetary categories and BB/GDP denotes a budget deficit as a percentage of GDP.

The coefficient of budget balance sensitivity can be seen as a crude synthetic indicator of the effects of the business cycle on budget balances. Indeed, it is frequently used as a simple rule of thumb to get a quick estimate of cyclically adjusted budget balances. Another advantage is that it allows for a sensitivity analysis of the calculated cyclical component of budget balances that is a result of applying different output gap estimates. The interpretation of the coefficient of budget balance sensitivity is also quite straightforward, because it is defined as the change in the budget balance as a percentage of GDP in response to a 1% GDP (stylized) shock.[9]

4. RESULTS

This section provides estimates of the cyclically adjusted budget balances. Macroeconomic variables gaps were estimated applying the Hodrick-Prescott filter with a smoothing parameter equal to 30. Data on macroeconomic variables span the period 1992-2010 (forecasts and projections were used to extend the series; see *Table 4*), except for the data on corporate profits, where the data from the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES) are available only after 1994. Data on fiscal variables correspond to the ESA-95 methodology and are thus only available from 2000 onwards.

[9] An alternative interpretation, used within the OECD, is the change of government net lending in response to a 1 percentage point change in the output gap. See Girouard and André (2005).

Table 4: Macroeconomic forecasts and projections (real growth rates)

	2005	2006	2007	2008	2009	2010
GDP	4.1	3.8	3.8	3.7	3.6	3.5
Household consumption	3.5	3.4	3.2	3.7	3.6	3.5
Corporate profits	4.1	3.8	3.8	3.7	3.6	3.5
Unemployment (persons)	-1.2	0.0	0.0	0.0	0.0	0.0
Employment (private sector)	0.7	0.3	0.5	0.0	0.0	0.0
Wages (private sector)	5.0	3.3	3.3	3.7	3.6	3.5

Sources: Banka Slovenije (2005), own calculations.

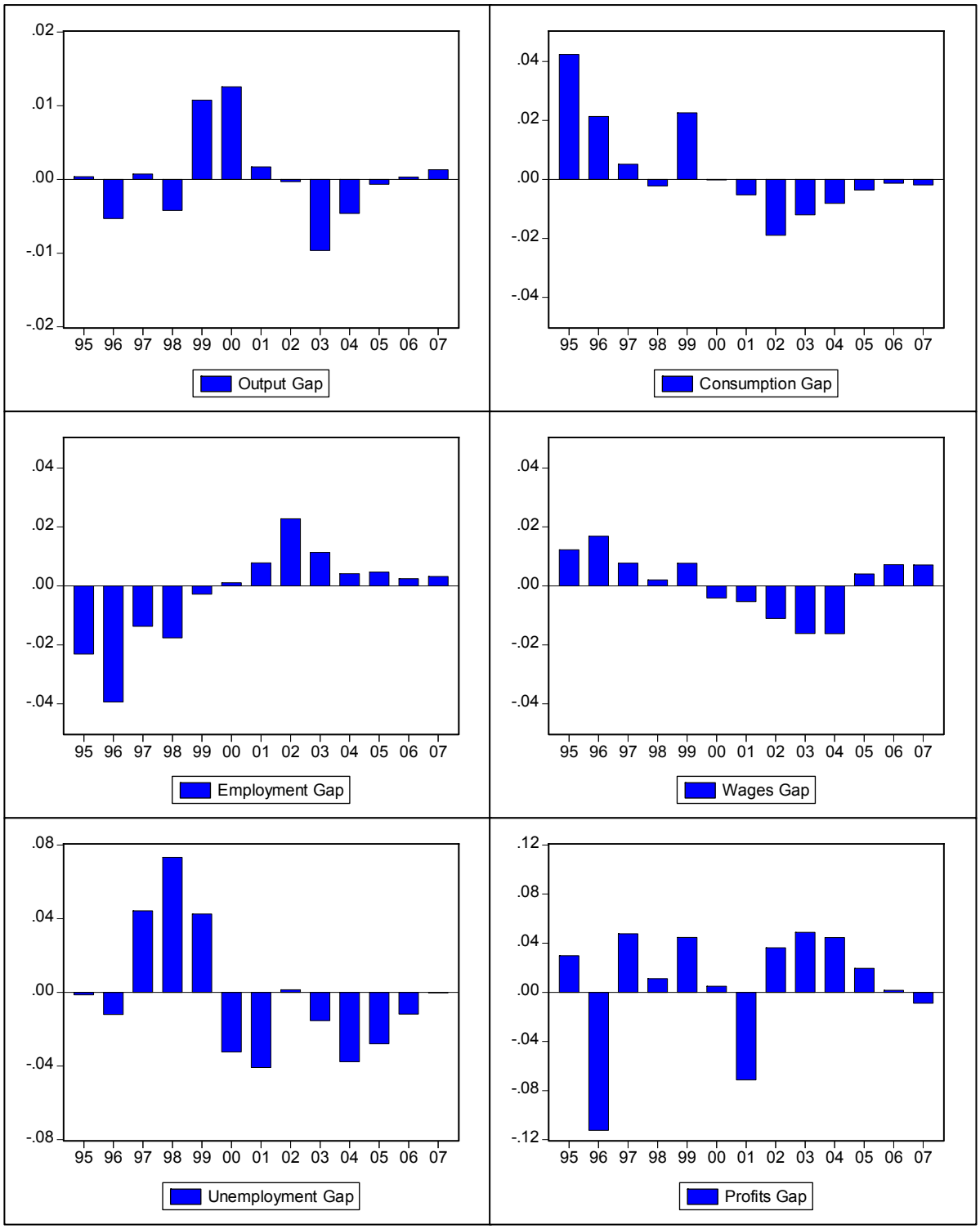
4.1. The disaggregated procedure for estimating cyclically adjusted budget balances

The estimation of the output gap and gaps of macroeconomic bases indicates that composition effects due to unbalanced growth of GDP were indeed present in the period under investigation (*Figure 2*).[10] The most obvious difference can be observed for the year 2000, when the output gap reached its highest positive value, while consumption, employment, wages and profits gaps were almost neutral. The reason behind this is that GDP growth in 2000 was largely due to favourable developments in external trade balance, which contributed 2.6 percentage points to overall output growth. External trade, however, being one of the main components of GDP, is not considered to be a macroeconomic base with a direct influence on tax revenues or expenditures, and therefore external trade developments are excluded when estimating cyclically adjusted budget balances with the disaggregated procedure.

The volatility of the output gap was rather modest, with deviations from the trend output not exceeding 1.5% of GDP, confirming the common perception of a rather stable macroeconomic environment in Slovenia. Among other macroeconomic variables, corporate profits and the number of unemployed appear to be the most volatile. However, since direct taxes on companies and unemployment-related expenditures account for a rather small share of the Slovenian budget, cyclical effects arising from these two variables are likely to be limited. The aggregate demand shock in 1999 is clearly visible on the graph for the consumption gap. Relatively low growth rates of private consumption after 1999 resulted in a substantially negative consumption gap in 2002, which has been receding only gradually. Interestingly enough, the gaps of private sector wages and private sector employment moved in opposite directions in the period studied. The periods of above-average growth in private sector wages corresponded to the periods of below-average growth in private sector employment and vice versa. The cyclical effects of both variables thus cancel each other out, implying that one can expect rather low cyclical components of direct taxes on households and social security contributions.

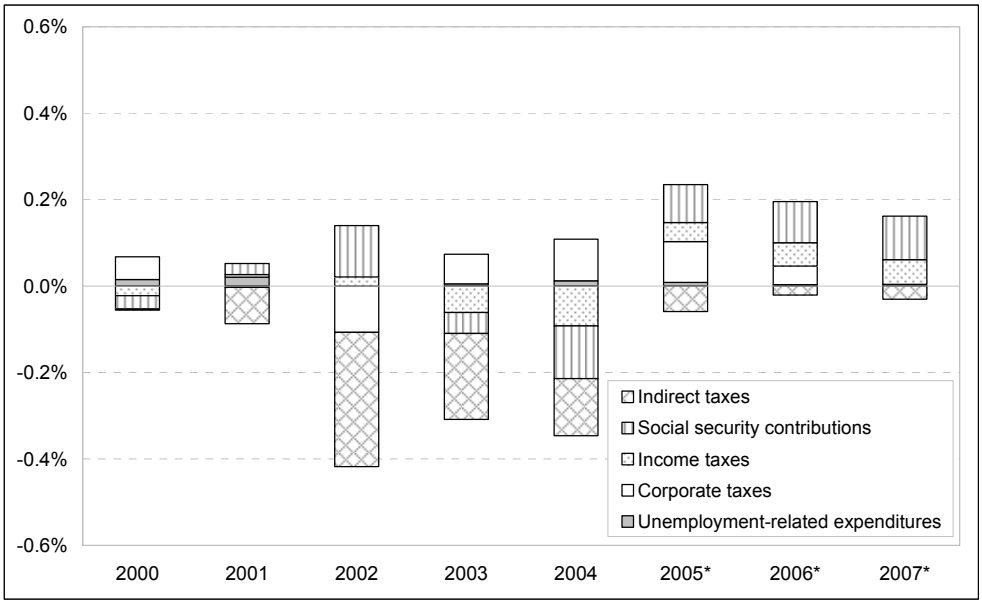
[10] Note that, following ESCB methodology, the output gap is estimated using yearly data. Therefore, the estimates of the output gap might differ from the estimates from quarterly data, which are usually published by the Banka Slovenije (e.g. Banka Slovenije, 2005).

Figure 2: Output gap and gaps of macroeconomic bases



Sources: Own calculations. The chosen value for the smoothing parameter of the Hodrick-Prescott filter was 30.

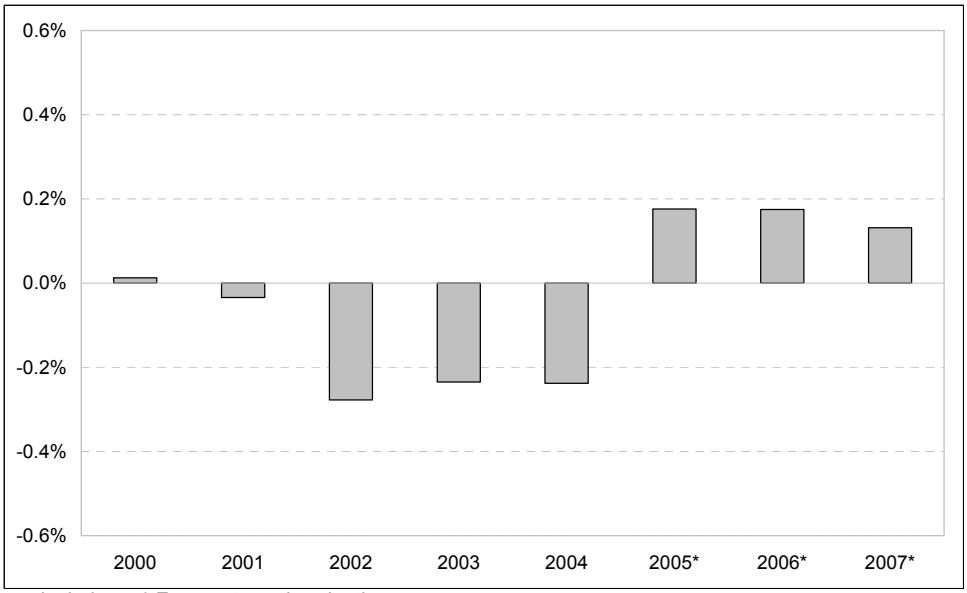
Figure 3: Cyclical components of budget categories



Sources: Own calculations. * Forecasts and projections.

Figure 3 shows cyclical components of five cyclically dependent budget categories. As expected, cyclical components appear to be modest, which is mostly due to a stable macroeconomic environment and also due to the offsetting movements in some of the relevant macroeconomic bases. The most prominent is the effect of the business cycle on indirect taxes, which is transmitted through fluctuations in private spending. After adding together all five cyclical components, a negligible cyclical component of the overall budget balance is estimated for 2000 and 2001 (*Figure 4*). In the next three years, when the business cycle was in its contraction phase, the overall cyclical component decreased to approximately -0.25% of GDP. Forecasts for 2005 show that the cyclical component is expected to be positive, mainly due to a favourable cyclical position in private sector wages.

Figure 4: Cyclical component of overall budget balance – disaggregated approach



Sources: Own calculations. * Forecasts and projections.

4.2. The aggregated procedure for estimating cyclically adjusted budget balances

Table 5 summarizes the calculation of the coefficient of budget balance sensitivity for Slovenia. The assessment of elasticities is based upon estimates for the EU-15 (Bouthevillain et al., 2001) and OECD (Girouard and André, 2005) countries, allowing for some country-specific features in Slovenia's case.

Results in *Table 5* show that, as a simple rule of thumb, a 1% change in GDP results in a 0.5% of GDP change in the budget balance. Of course, one needs to keep in mind that this approximation is based upon a stylized shock scenario and a no-policy change assumption.[11] In the case of changes in the structure of GDP growth or fiscal policy response, the exact effect on budget balance might differ from the one approximated above.

Table 5: The calculation of the coefficient of budget balance sensitivity for Slovenia

Budget category (BC)	Elasticity_BC_GDP	BC/GDP × 100 (average 00-04)
Total revenue	0.93	45.4
Direct taxes on households	1.30	6.3
Direct taxes on enterprises	1.60	1.6
Indirect taxes	1.00	16.5
Social security contributions	1.00	15.2
Other revenue	0.00	5.8
Total expenditure	-0.05	48.5
Unemployment-related expenditure	-5.65	0.4
Other expenditure	0.00	48.1
Budget balance		-3.0
Coefficient of budget balance sensitivity	0.48	

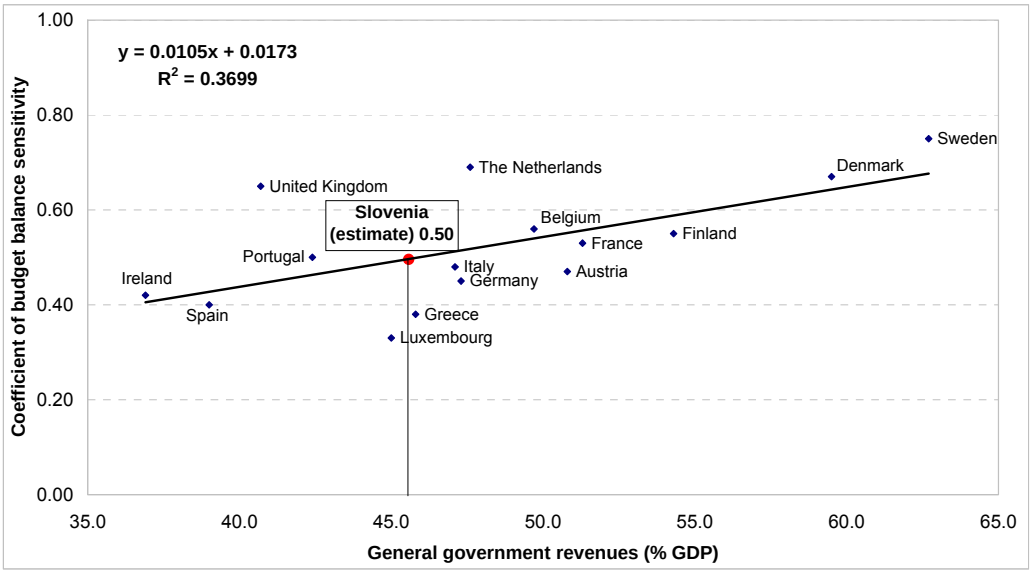
Sources: Bouthevillain et al. (2001); Girouard and André (2005); SORS; own estimations and assessments.

Van den Noord (2000) reports factors that determine the cyclical sensitivity of the budget balances. He finds that the most important influence can be attributed to the size of the general government sector (positive correlation with the cyclical sensitivity). Other factors include the tax structure (the higher the taxation of cyclically sensitive tax bases, the greater cyclical sensitivity of the fiscal position), the progressivity of the tax system (positive correlation with the cyclical sensitivity), the generosity of unemployment benefits (positive correlation with the cyclical sensitivity) and the cyclical sensitivity of macroeconomic bases relevant for budget categories (positive correlation with the cyclical sensitivity).

To perform a plausibility check on the obtained estimate of the coefficient of budget balance sensitivity for Slovenia, the approach by van den Noord (2000) is followed and a simple regression of coefficient of the budget balance sensitivity on general government revenues (as a percentage of GDP) is estimated for the EU-15 countries. The results confirm the existence of the strong link found by van den Noord (2000) and by Girouard and André (2005), even though the fit of the regression line is slightly weaker. Given the estimated parameters of the regression equation, the predicted value for Slovenia is calculated. The predicted value of 0.50 is indeed very close to the our estimate of 0.48.

[11] A no-policy change assumption might be a bit too strong in the case of Slovenia, because the government has discretion to suspend new spending commitments in the case of a revenue shortfall. However, this discretion to reduce expenditure proportionally to a revenue shortfall is limited to 15 billion tolars (0.25% of GDP).

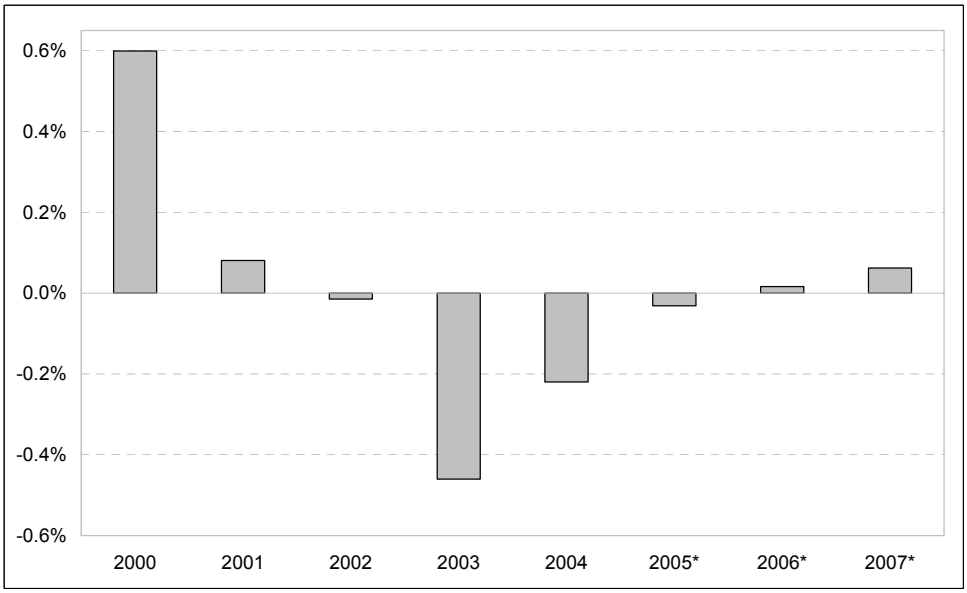
Figure 5: Coefficient of budget balance sensitivity and general government size, 1999



Sources: Bouthevillain et al. (2001); Eurostat; own calculations and estimations. Data on general government revenues for Slovenia refer to the 2000-2004 average.

The aggregate procedure for calculating the cyclical component of the overall budget balance yields somewhat different results for individual years, while the overall picture remains the same. The cyclical component clearly reflects the business cycle peak in 2000 and business cycle trough in 2003. However, the aggregate procedure identifies neither favourable effects on budget balances because of high growth in private sector wages in 2005, nor the unfavourable developments in private consumption in 2000.

Figure 6: Cyclical component of overall budget balance – aggregated approach



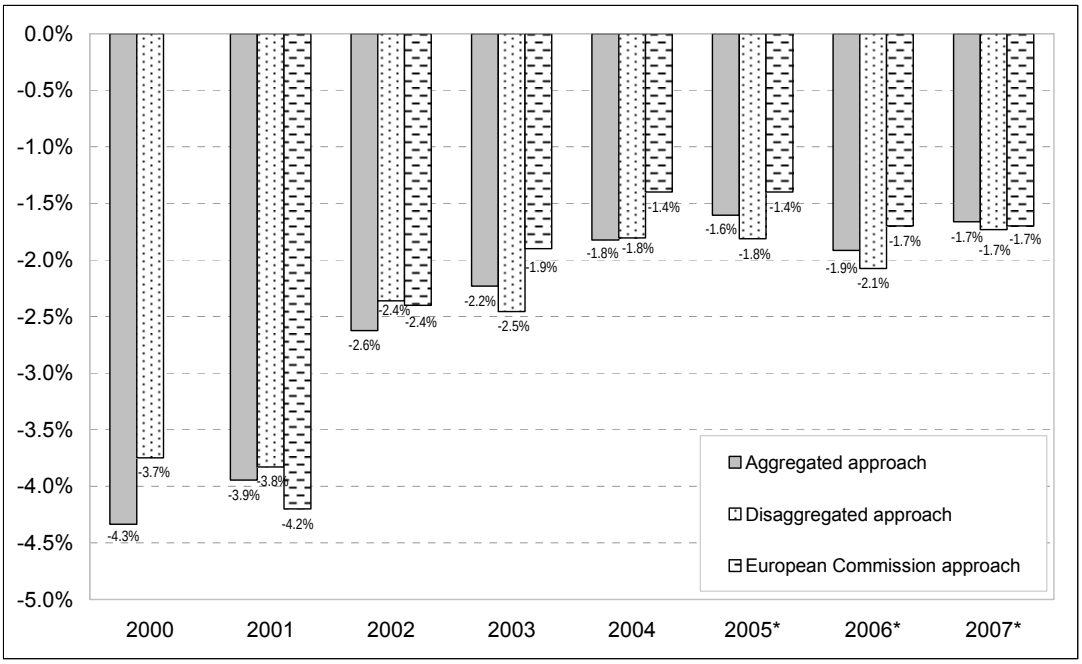
Sources: Own calculations. * Forecasts and projections.

4.3. Discussion of the results and some fiscal policy challenges

As noted in Section 2, the general government deficit in Slovenia shrank from 3.8% of GDP in 2000 to 2.1% of GDP in 2004. The main question, however, is how much of this reduction can be attributed to fiscal consolidation and what role business cycle fluctuations played.

To address this issue, both actual budget balance and structural budget balance numbers have to be examined. *Figure 7*, which shows structural budget balance numbers obtained by the aggregated, the disaggregated, and the European Commission approach, reveals that the decrease in actual budget deficit was achieved despite the unfavourable developments in economic activity that were present until 2003. In other words, the deficit decline in the period between 2000 and 2004 is even more impressive if we control for business cycle effects, since the structural deficit, obtained for example by the disaggregated approach, fell from 3.7% in 2000 to 1.8% in 2004. This improvement of the structural budget balance is wholly comparable with the provisions of the recently reformed SGP that require an annual adjustment in cyclically adjusted terms of 0.5% of GDP as a benchmark.

Figure 7: Structural general government budget balance (ESA-95)



Sources: European Commission (2005b), own calculations. * Forecasts and projections. The European Commission method for cyclical adjustment is based on the production function approach for calculating output gap.

Nevertheless, indicators of the fiscal policy stance in Slovenia suggest that fiscal consolidation is likely to stall in the coming years. The structural budget deficit is forecasted to increase by 2006, while the number for 2007 shows only a modest improvement. This assessment is robust to various estimates of structural budget balance.[12]

Because fiscal policy should play the role of the main stabilization instrument in a monetary union, balancing public finances before euro adoption should be a key tenet of fiscal policy

[12] Note that the deterioration of the structural budget balance, as measured by national methodology, is also projected by IMF staff (IMF, 2005). The IMF staff projects that the structural budget balance will deteriorate by a cumulative 0.6% of GDP in the next three years.

in Slovenia. Indeed, for successful participation in the EMU, more budgetary room than currently available is needed to effectively counteract potential asymmetric shocks. Otherwise, the requirement to respect the Maastricht deficit ceiling might even necessitate offsetting automatic fiscal stabilizers by discretionary fiscal measures during a business cycle downturn. Without doubt, this kind of fiscal consolidation would be more painful for the economy than engaging in correcting fiscal imbalances during good economic times.

Given favourable macroeconomic circumstances in 2005 (high economic growth, rising employment and wages in the private sector, and the growth rate of private consumption above the last five-year average), the actual budget balance should be below 1.7% of GDP to continue the adjustment path toward the medium-term budgetary objective. As the current structural deficit amounts to nearly 2% of GDP, further fiscal consolidation is obligatory because Slovenia, as a member of ERM II, is required to adopt a medium-term objective for structural balance between -1% of GDP and "in balance or surplus", according to the reformed SGP.

Avoiding pro-cyclical fiscal policy is another important commitment that should be undertaken in a monetary union or in a stable exchange rate regime. Expansionary fiscal policy, which can be defined as deterioration in structural budget balance, might facilitate the overheating of an economy if it occurs during an upturn, and is thus highly likely to have an unwanted impact on inflation and price competitiveness. This impact might even been strengthened if, as recent evidence suggests, the increase in government spending is followed by an increase in consumption.[13] Furthermore, avoiding loose fiscal policy during good economic times is not only a continuing task after euro adoption, but also a current challenge for Slovenia in order to fulfil the inflation objective as specified by the Maastricht price stability criterion. In line with this view, IMF staff recently recommended a more restrictive stance of fiscal policy in Slovenia to reduce risks of missing the inflation objective (IMF, 2005).

Forthcoming pressures in ageing-related expenditures, which will further worsen the sustainability of public finances, are an additional argument against postponing fiscal consolidation.[14] Slovenia faces one of the worst demographic projections in the EU, and it is therefore highly desirable to achieve structural balance in the shortest possible time. Delaying fiscal consolidation may result in imposing excessive burdens on future generations. Finally, restructuring public finances, which is needed in order to lower expenditure rigidities, will be a harder task to perform if a sound fiscal policy stance is not adopted.

[13] See Galí et al. (2005) and references therein.

[14] Genorio (2005) provides an extensive analysis of the impact of rising ageing-related expenditures on fiscal sustainability.

5. CONCLUSIONS

General government budget balances typically worsen during a recession and improve during a boom. These adjustments are a reflection of operation of automatic fiscal stabilizers and are beneficial for an economy because they reduce cyclical volatility through smoothing private income and counteracting movements in aggregate demand. However, they also mask developments in the actual fiscal policy stance. To assess public finances and fiscal policy, it is therefore fundamental to remove cyclical effects of general government budget balances.

Estimating the cyclical position of the economy and the cyclically adjusted budget balances is subject to a significant amount of uncertainty. This paper applies two methods for estimating cyclical effects on fiscal balances. The disaggregated approach takes into account cyclical movements in five macroeconomic variables whose impact on public finances is generally assumed to be more direct.[15] The aggregated approach estimates the output gap of the economy and multiplies it by a coefficient of the budget balance sensitivity to obtain balance in cyclically adjusted terms. The latter approach has the advantage of simplicity and straightforward interpretation. It was found that the general government budget balance in Slovenia changes by 0.5% of GDP in response to a 1% change in GDP.

Results of the disaggregated method show that the impact of fluctuations in macroeconomic variables on budget balances has been relatively small in recent years. Nevertheless, it is argued in the paper that small cyclical components of budget balances can be mostly attributed to low business cycle fluctuations as compared to other EU countries, which should not be taken for granted in the future, in particular because the conduct of macroeconomic policy in Slovenia will change substantially after euro adoption. Another finding of this paper is that fluctuations in private consumption, which influence VAT revenues, have had the largest cyclical effect on general government budget balance.

Estimated structural general government budget balances reveal that the fiscal stance in Slovenia has been relatively tight in the period 2000-2004. During this period the structural balance improved on average by 0.5% of GDP annually. However, forecasts for the next three years indicate that fiscal consolidation efforts seem to be losing momentum and that the position of fiscal policy in Slovenia is likely to worsen, at least temporarily.

Relatively favourable current macroeconomic developments present an adequate environment to further advance fiscal consolidation. Because of the need for fiscal policy to play its role in stabilizing the economy after euro adoption, the requirement to respect the Maastricht deficit ceiling, and the approaching pressures related to population ageing, a prompt achievement of structural fiscal balance should be of the highest priority for macroeconomic policy in Slovenia. In addition, a loose or even neutral fiscal stance in the period before euro adoption is not conducive to reducing possible risks linked to the inflation objective.

[15] Mélitz (2005) reports some evidence that other expenditure categories than unemployment compensation respond automatically to the cycle. Inclusion of payments for health, expenditures connected with early retirement for labour market reasons and spendings for active labour market policies in the calculation of cyclical budget component is together with the detailed analysis of one-off effects and temporary measures left for future empirical research.

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