The Swiss Debt Brake: An Implementation Proposal for Austria[1]

Working Paper
Vienna, September 2005

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Abstract

This study is based on the Swiss "debt brake" model and, proceeding from this approach, develops a flexible expenditure rule, embedded within a macroeconomic framework, for the Austrian fiscal policy. Government expenditure does not follow a pre-determined path, but is linked with revenue levels and a business cycle variable. The implementation of this rule would stabilize nominal public debt, over the business cycle, and lower the debt-to-GDP ratio. Finally, the approach developed here prevents a pro-cyclical budget policy and should lead to a structurally balanced budget.

JEL No: H63, H50, E61, E62

1 Introduction

With their goal of balancing the budget over the business cycle, Austria's fiscal policymakers have achieved a notable consolidation success. By the end of 2001, the negative budget balance of 1.5% of GDP in 2000 had been turned around into a surplus of 0.1%[2] of GDP. In the following year, 2002, the budget deficit amounted to no more than 0.4% of GDP, although the unfavorable economic situation was dampening revenue success. In 2003 and 2004, the Austrian budget deficits were somewhat higher at 1.2% and 1.0% of GDP, due to the continuing weak performance of the economy, but still clearly remained below average euro area levels. This means that Austria's fiscal policy has not only fulfilled the Maastricht criteria of having a budget deficit of lower than 3% of GDP (also in times of recession), but also essentially complies with the commitments arising from the Stability and Growth Pact (SWP) of keeping the general government's budget at "close to balance or in surplus."

However, so far no financial framework has been implemented that could ensure the sustainability of a zero deficit over the business cycle and could prevent pro-cyclical fiscal policies as well. A macro-economic concept providing for a strict division between "cyclical"

[1] Published in: WKÖ. Wirtschaftspolitische Blätter, Heft 1/2006. Vienna.
[2] According to the latest data update (Autumn 2005 notification of government's deficit/surplus).

and "structural" deficits, like the SWP, only supplies the information necessary to guarantee a balanced budget over the business cycle. In addition, international experience shows that fiscal policy, bounded by rules on the expenditure side, is an important component in the success of consolidation.

In the past, a series of EU countries[3] including the Netherlands, Sweden and Finland were able to demonstrate greater stability success than Austria with respect to both the budget balance and the reduction in the public debt-to-GDP ratio. Expenditure rules permit automatic stabilizers to have an effect on the revenue side of the budget and prevent pro-cyclical expenditure from increasing during an upswing period. Such limits on the expenditure side (expenditure rules) not only strengthen the control over budget execution but also support the complex process of annual budget preparation through a fiscal policy framework of several years.[4]

This study is based on the Swiss "debt brake" model and, proceeding from this approach, develops a flexible **budget rule, on the expenditure side, for the Austrian fiscal policy**. Government expenditure does not follow a pre-determined path, but is linked with revenue levels and a business cycle variable. The implementation of this rule would stabilize nominal public debt, over the business cycle, and lower the debt-to-GDP ratio. Finally, the approach developed here prevents a pro-cyclical budget policy and should lead to a structurally balanced budget.

The **second chapter** presents the concept of the Swiss debt-brake model. The main characteristics of the model (expenditure rule, stabilization account, management of unanticipated revenues and expenditures) are explained, and the economic effects as well as problems that may arise from the application of the debt brake are discussed.[5]

The **third chapter** applies the concept of the debt brake to Austria, using calculations based on the government's current stability program for 2004-2008. The effect of the debt brake on the budgetary development of general government is illustrated, and the operation mode of

[3] An overview of the major characteristics of the individual expenditure regulations in the individual member countries of the EU is provided in European Commission (2003a), p. 135f.
[4] For major elements of a fiscal policy bound by rules see, Bayer,K., Fleischman,E. and Part,P., 2002. Ansätze zur Verstetigung und Verbesserung der Steuerungsfähigkeit der österreichischen Budgetpolitik (Approaches towards steadying and improving the possibility of steering Austrian budget policies). In: Öffentliches Haushaltswesen, Vienna.

the theoretical model explained. In addition, we suggest conceptual adaptations to the Swiss model – regarding in particular the operation of the "stabilization account" – to guarantee a high level of fiscal flexibility, and recommend appropriate limits for the stabilization account. This would ensure the functionality of the debt brake as an instrument for stabilizing public debt.

In the **fourth chapter**, possible applications of the debt brake for Austria, especially its use for preparing the Austrian stability program, but also for evaluating the programs, are examined.

In the **fifth chapter**, the most important results and conclusions of the study are summarized.

2 The Swiss Model of the "Debt Brake"

In Switzerland, the so-called "debt brake" was approved by referendum as a flexible instrument for limiting public debt and laid down in the constitution. This new concept was implemented, for the first time, in the federal budget for 2003. Seeing that the Swiss federal debt had almost doubled in the period from 1990 to 1998, from 15% to 29% of the GDP, possibilities had been sought to put a brake on the prevailing debt dynamics. The idea was to establish a long-term anti-cyclical fiscal policy, compatible with the business cycle, based on the concept of the "debt brake" and to prevent the accumulation of permanent structural deficits. The debt brake model also attempts to bypass the "time-lag" problem[6], which usually exists when discretionary measures are implemented to smooth the business cycle. In the case that a passive stabilization policy, such as the debt brake model, is seen insufficient, discretionary interventions are still allowed to stimulate the economy.

2.1 The Mechanism

The concept of the Swiss debt brake is distinguished by four main characteristics:

- Simple expenditure rule with binding clause
- Consideration of exceptional circumstances
- Introduction of a stabilization account

[5] For further methodological aspects see e.g. Schips et al., 2003 and Brandner et al., 2005.

[6] In the past, discretionary measures in financial policy, taken to smooth the business cycle, have often demonstrated that the actual implementation occurs too late. The "time lag" problem results from the time delay

- Stipulations for the use of extraordinary revenue.

2.1.1 Expenditure rule

At the core of the debt brake is an **expenditure rule** that links the maximum level of total expenditure for a period to the revenue for the same period and takes the current stage of the business cycle into consideration. The "output gap," i.e. the ratio between the trend value of real GDP (potential GDP) and the current real GDP, serves as a business cycle variable.

*Maximum Total Expenditure = Total Revenue * (real trend GDP / real GDP)*

The product of the expected tax revenue T_t and the output gap k_t gives the permissible maximal amount for the expenditures in the estimated year $\overline{A}_t$:

$\overline{A}_t = k_t T_t$ with $k_t = \frac{\overline{Y}_t}{Y_t}$

$\overline{A}_t$ = Expenditure ceiling
T_t = Tax revenue according to preliminary budget
k_t = Output gap
$\overline{Y}_t$ = Estimated real trend GDP
Y_t = Real GDP (forecast)

If k_t is above one, then $Y_t < \overline{Y}_t$; this is an indication of a recessive episode and expenditures are higher than revenue. If k_t is below one, then $Y_t > \overline{Y}_t$; this indicates a boom period and revenue exceeds expenditure. In accordance with the stage of the business-cycle, the expenditure ceiling $\overline{A}_t$ lies above or below the revenue of the central government. This generates deficits or surpluses that translate into a balanced budget over the entire cycle.

The budget restriction of the government is depicted in the following well-known equation:

(2.1) $D_t - D_{t-1} = iD_{t-1} + G_t - T_t$

D_t represents the nominal public debt at time *t*. $D_t - D_{t-1}$ is, therefore, the increase in the government debt, determined by two variables: interest payment iD_{t-1} and the primary

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which develops between recognizing specific business-cycle situations and taking the necessary measures ("recognition lag") as well as in decision making ("decision lag").

balance, the difference between the government's expenditure G_t (without interest) and the total revenue T_t. If this is positive, we are dealing with a primary deficit; if it is negative, with a primary surplus.

The Swiss debt brake does not differentiate between interest payment and primary expenditure. The total expenditure A_t includes both components of the government's expenditure: $A_t = iD_{t-1} + G_t$. The revenue side remains unchanged and comprises the total revenue. The budget restriction is simplified to:

(2.2) $D_t - D_{t-1} = A_t - T_t$, the excess spending $A_t - T_t$ increases the government debt.

The Swiss expenditure rule links expenditure to revenue in the following manner:

(2.3) $$\overline{A}_t = T_t \left(\frac{\overline{Y}_t}{Y_t} \right)$$

Therefore, the expenditure ceiling $\overline{A}_t$[7] is proportional to the estimated tax revenue T_t, multiplied by the ratio $\left(\overline{Y}_t / Y_t\right)$. The quotient $\left(\overline{Y}_t / Y_t\right)$ represents the output gap which is used to define the business cycle position.

(2.4) $$\overline{A}_t - T_t = \left(\frac{\overline{Y}_t - Y_t}{Y_t} \right) T_t$$

According to the equation (2.4) the budget balance $\overline{A}_t - T_t$ is also proportionate to total revenue T_t and fluctuates with the deviation of the current GDP from its trend value $\left(\left(\overline{Y}_t - Y_t\right)/Y_t\right)$. In the equation (2.4), the latter is depicted in % of the current real GDP.[8] As a result of (2.2) and (2.4):

(2.5) $$D_t - D_{t-1} = \left(\frac{\overline{Y}_t - Y_t}{Y_t} \right) T_t$$

[7] Without the stabilizing account (chapter 2.1.3), the expenditure A is identical with the expenditure ceiling $\overline{A}$.

It can be seen that the nominal government debt increases when $Y_t < \overline{Y}_t$ and decreases when $Y_t > \overline{Y}_t$. When $Y_t < \overline{Y}_t$, the national economy is in a phase of weak growth or in a recession (the output gap is positive). If the government follows the Swiss debt brake, expenditure will exceed revenue, which will lead to an increase in the public debt. If, however, $Y_t > \overline{Y}_t$, then the economy is in a boom phase in which revenue exceeds expenditure. The evolving positive budget balance is automatically used to pay off debt, and the public debt decreases.

If the real GDP follows the trend path $\left(Y_t = \overline{Y}_t\right)$ this automatically results in a balanced budget and the nominal value of public debt remains constant $\left(D_t - D_{t-1} = 0\right)$.

The relationship can also be depicted schematically (Figure 1). It is easy to show that when the elasticity of the tax revenue with respect to real GDP is one, the tax-to-GDP ratio τ is constant and independent from Y_t. In this case, government's revenue is proportional to real GDP.

(2.6) $T_t = \tau Y_t$

When (2.6) is inserted into the expenditure rule, the result is:

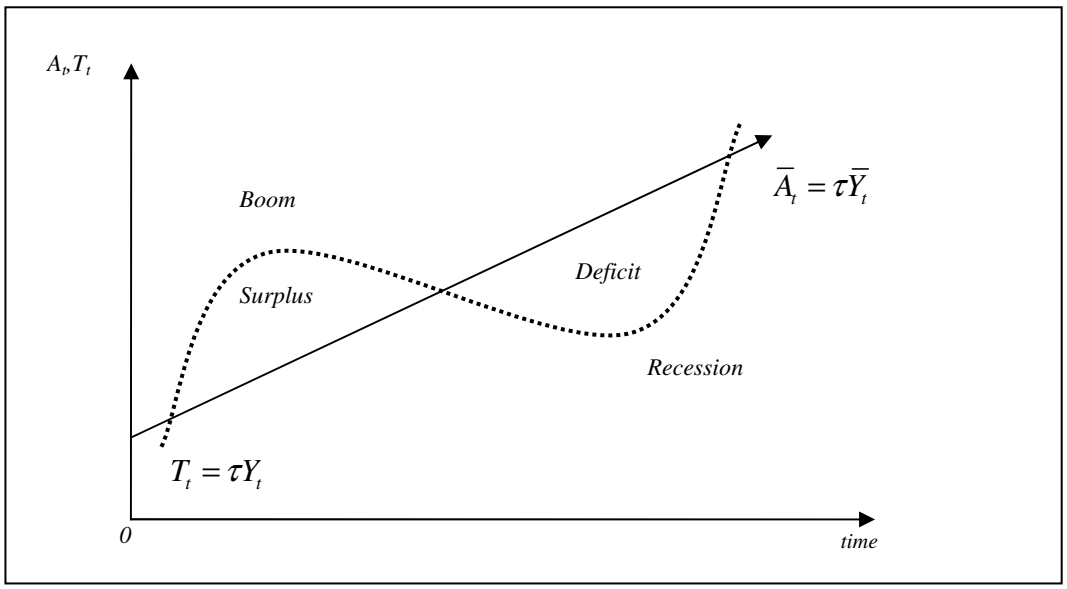
(2.7) $\overline{A}_t = \tau Y_t \left(\frac{\overline{Y}_t}{Y_t}\right) = \tau \overline{Y}_t$

The expenditure ceiling is proportional to the trend GDP. If the trend GDP increases at a constant rate, the expenditure ceiling also increases at a constant rate. The permissible budget deficits and necessary budget surpluses (according to the expenditure rule) are a result of the variations in tax revenue, due to the business cycle. This is shown in equation (2.8):

(2.8) $\overline{A}_t - T_t = \tau \overline{Y}_t - \tau Y_t = \tau\left(\overline{Y}_t - Y_t\right)$

[8] Usually, the output gap is given in % of the trend GDP $\left(\frac{\overline{Y}_t - Y_t}{\overline{Y}_t}\right)$, see chapter 3.

Figure 1: Schematic depiction of the expenditure function



In figure 1, the straight line depicts the expenditure ceiling $\overline{A}_t$, the dotted, sinus-formed line the current course of the total revenue T_t. The rule implies budget surpluses in the boom phase: $Y_t > \overline{Y}_t$ leading to $T_t - \overline{A}_t > 0$, a budget surplus; $Y_t < \overline{Y}_t$ leading to $T_t - \overline{A}_t < 0$, a permissible budget deficit.

Recognizing that the Maastricht criteria are based on the debt-to-GDP and deficit-to-GDP ratios, it is necessary to express the expenditure rule in the same terms. Dividing equation (2.2) by Y_t results in:

$$(2.9)\quad \frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}}\frac{Y_{t-1}}{Y_t} = \frac{A_t}{Y_t} - \frac{T_t}{Y_t}$$

Conversion results in:

$$(2.10)\quad \frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \frac{A_t}{Y_t} - \frac{T_t}{Y_t} - \left(\frac{Y_t - Y_{t-1}}{Y_t}\right)\frac{D_{t-1}}{Y_{t-1}}$$

If one inserts (2.4) the result is:

$$(2.11)\quad \frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \left(\frac{\overline{Y}_t - Y_t}{Y_t}\right)\frac{T_t}{Y_t} - \left(\frac{Y_t - Y_{t-1}}{Y_t}\right)\frac{D_{t-1}}{Y_{t-1}}$$

The change of the public debt ratio depends on two factors: on the product of the tax-to-GDP ratio (T_t/Y_t) and the output gap, and on the rate of growth of real GDP times the debt-to-GDP ratio of the previous period. The first term of the equation (2.11) must be interpreted as being analogous to the equation (2.2): If $Y_t < \overline{Y}_t$, the debt brake leads to an increase in the debt-to-GDP ratio; if $Y_t > \overline{Y}_t$, the ratio falls. For the second term the following is valid: a positive growth rate of the economy $((Y_t - Y_{t-1})/Y_t)$[9] reduces, ceteris paribus, the debt-to-GDP ratio. If the economy follows the trend path, the debt-to-GDP ratio falls, as real GDP increases with the given nominal public debt. If actual output deviates from the potential output, the development of the debt-to-GDP ratio in year *t* is dependent on whether the first or second term in the equation (2.11) dominates. Over the business cycle, or medium-term, the debt-to-GDP ratio falls.

2.1.2 Consideration of exceptional circumstances

A further characteristic of the Swiss debt brake is that, within expenditure limits, the autonomous decision processes of parliament, in connection with the structure and level of the individual expenditure categories, remains intact. In certain **exceptional circumstances** (serious recession, natural disasters, etc.) an increase in the volume of expenditure is permissible, provided that an absolute majority in both houses of parliament is in agreement. In this situation, we are dealing with a "flexible" rule commitment, leaving discretionary leeway.

2.1.3 Stabilization account and extraordinary revenue

Since the rule is used in planning the public budget (proposals), it is inevitable to use revenue estimations when setting expenditure ceilings. In order to cushion differences between the current revenue and expenditure and the estimated revenue and permitted expenditure, included in the budget proposal, a so-called **stabilization account** is introduced.

[9] In the equations (2.10) and (2.11), the influence of economic growth as a change in the GDP flows in as a percentage of the current GDP.

This stabilization account does not provide an account in a bookkeeping sense, but an analytical instrument for monitoring deviations between estimated and realized budgets and for linking several budgetary years.

Over-predicting tax revenue leads to the expenditure ceiling being set too high, whereby the expenditures made on the basis of the budget proposal exceed those permitted. The stabilization account is debited with the difference between the expenditure ceiling and the level of expenditure, calculated ex post. The resulting shortfalls on the stabilization account must be taken into consideration in the subsequent budget proposals (with the setting of the expenditure ceiling) and reduced over the long term. Only when the accumulated shortfall in the stabilization account exceeds 6% of the expenditure of the previous fiscal year, must Switzerland reduce the amount above 6% within three years. The comparatively large freedom in decision making, with respect to the level and term of the account balance, leaves leeway for the budgeting process, which can be useful in the case of large investments, etc.
Let us assume that the stabilization account AK_t has accumulated a structural deficit due to excess spending and faulty calculations. A decision must be made to reduce this shortfall in several annual repayments (similar to paying back a loan). Let us call the repayment rate in year t (a proportion of AK_t), AL_t. It becomes necessary to modify the formula for the expenditure ceiling as follows:

(2.12) $\bar{A}_t = T_t k_t - AL_t$

Note that a positive value for AL_t ($AL_t > 0$) indicates a debt. The maximum expenditure ceiling is reduced by the amount AL_t, through the reduction of the structural deficit on the stabilization account. In other words: the total revenue of general government $T_t k_t$ covers both the expenditure ceiling $\bar{A}_t$ and the debt repayment on the stabilization account AL_t.

In Switzerland the targeted reduction in the debt-to-GDP ratio is, moreover, supported by the fact that **extraordinary revenue must be used for repayments to reduce public debt or for a reduction of any stabilization account's deficit** and not for financing current expenditures.

3. Implementation of the "Debt Brake" in Austria

3.1 Expenditure Rule

Applied to Austria, the Swiss debt brake concept should lead to a medium-term stabilization of the indebtedness of the general government (in the sense of Maastricht). The stabilization of nominal public debt should be reached when the permitted maximum amount of governmental expenditures, listed in the budget proposal (BP), corresponds with public revenues, corrected by the business-cycle factor k_t.

(3.1) $$\overline{A}_t = \left(\frac{\overline{Y}_t}{Y_t}\right) T_t = k_t T_t$$

$\overline{A}_t$ is the maximum permitted expenditure, or the expenditure ceiling, in the budget proposal;

T_t is the estimated tax revenue;

k_t is the cyclical variable, or the "output gap", defined as ratio of the trend GDP, $\overline{Y}_t$, and current GDP, Y_t.

Another possibility for denoting the output gap is:

(3.2) $$\Delta_t = \frac{\overline{Y}_t - Y_t}{\overline{Y}_t}.$$

Here, the output gap is shown as a percentage deviation of actual GDP from trend GDP.

The positions of the business cycle are illustrated through the output gap in the following way:

(1) Boom phase: The real current GDP is higher than trend GDP; i.e., $Y_t > \overline{Y}_t$ in this case, $k < 1$ and/or $\Delta_t < 0$.

(2) Recession: The current GDP lies below the trend value and $Y_t < \overline{Y}_t$. In this case $k > 1$ and/or $\Delta_t > 0$.

A fiscal policy that follows the debt brake rule allows automatic stabilizers to operate and prevents "time lag" problems of discretionary fiscal policy.

The debt brake has the effect that, on account of the expenditure ceiling (k_t * T_t), the governmental expenditures listed in the budget proposal develop steadily over the business cycle, whereas any taxation revenues (value-added tax, revenue and corporate taxes, etc.) that

depend on the business cycle situation decrease when the economy weakens and increase when it recovers. This leads to the desired anti-cyclical result of fiscal policy. In the case of a discretionary (activist) fiscal policy, an attempt is made to bring the economy back to life through investment programs and/or tax reductions, in addition to the automatic stabilizers. Experience in practice shows that, due to the already-mentioned time lag problem, discretionary fiscal policy often acts pro-cyclically.

It seems to be very useful to apply the debt brake model for the preparation of the federal stability program, an important and suitable instrument for mid-term budget planning.

3.2 The Stabilization Account

The debt-brake concept takes problems which occur in practice into account. The introduction of the "stabilization account" allows to correct (over the medium term)

- excessive expenditure (structural deficits),
- forecast errors of the revenue estimations and/or the k-factor
- exceptional effects (capital transactions)

and to create

- leeway for discretionary measures for the future.

As a rule – not taking into account the "special cases" (one-off measures, incorrect estimations, additional scope for the future) – the **stabilization account is only debited by "structural" deficits,** i.e. deficits which do not disappear in periods of a normal business situation. In other words, structural budget deficits increase the public debt if they are not reduced by "counter-financing" on the revenue or expenditure side.

Budget deficits and surpluses that result from the course of the business cycle are not booked in the stabilization account. They should be balanced over the business cycle.

Once again, this stabilization account does not provide an account in the sense of bookkeeping, but an analytical instrument for monitoring deviations between estimated and realized budgets and for linking several budgetary years. Accumulated deficits show the necessity of consolidation to stabilize public debt in the medium term.

When **setting the upper limit for the stabilization account** (applied for general government), an orientation on the EU's budgetary stipulations appears appropriate. In accordance with the EU Commission's calculations (EU Commission 2003) an annual upper limit of 2% of the nominal GDP would seem appropriate for the stabilization account. With respect to Austria's structural budget deficit, maintaining this upper limit should suffice to prevent a budget deficit of general government of over 3%. Furthermore, the maximum deficit allowed (target for cumulative deficits) could be limited to 3% of GDP (but this level could also be raised under extraordinary circumstances, like during the phase of implementation), dampening the need for consolidation, caused by former structural deficits.

If **the limits have been exceeded**, it would be necessary to settle the account within the following four years. From an economics viewpoint, the following rule appears more suitable:

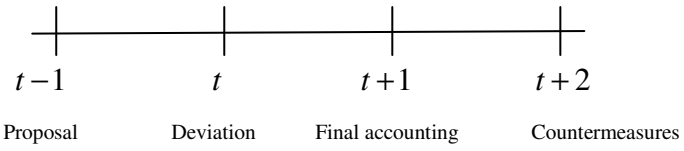
- The realized structural budget deficit of the year t and/or the shortfall in the stabilization account presented in the year $t + 1$ must be reduced in the years $t + 2$ to $t + 5$.
- The central, provincial and local governments must present appropriate consolidation plans, which will be adjusted yearly and take both structural budget deficits and surpluses into account for the following years (revolving process).
- Moreover, should the shortfall in the stabilization account exceed one of the upper limits, additional deterrent instruments (e.g. sanctions) should be implemented.

The following changes have effects on the stabilization account (**entry variations**):

1. **Excess of the expenditure ceiling $\overline{A}_t$ by the current expenditure A_t**
   $\left(A_t - \overline{A}_t > 0\right)$: Current expenditures according to final accounting > Expenditure ceiling according to budget proposal → debiting stabilization account by the amount of the difference.
2. **Prognosis errors in the calculation of revenues and the business-cycle factor k_t**
   2.1 Expenditure ceiling according to final accounting < Expenditure ceiling according to budget proposal → debiting the stabilization account by the difference.
   2.2 Expenditure ceiling according to final accounting > Expenditure ceiling according to budget proposal → crediting the stabilization account by the difference.

At the beginning of an upswing period, revenue is generally underestimated; at the beginning of a recession, overestimated. Within the scope of the debt brake model, this temporal course leads to a smoothing of expenditures.

This relationship can be explained in the following manner: at time $t - 1$ a budget is drawn up for the period t, on the assumption of normal economic conditions ($k = 1$). In t an (unexpected) recession occurs, which implies a distinct overestimation for the revenue forecast in $t - 1$. This results in a budget deficit in t and the debiting of the stabilization account (booking according to (2.1)). If we assume that the deficit exceeds the upper limit, adjustment measures become necessary. The assessment of the real deficit can only be made in the period $t + 1$, so that possible counter-financing can not be implemented until $t + 2$. The total adjustment must be made within the years $t + 2$ to $t + 5$. In a normal business cycle, the recession should be over by $t + 2$ at the latest. In this way, the adjustments to expenditure would be less painful. At the same time, at the beginning of a new boom period revenues should be underestimated, which would finally push expenditures below the ceiling (i.e., to a surplus) and, therefore, automatically cause the account to become balanced. This example should show that, when dealing with the errors of overestimation or underestimation, we are dealing with errors which do not accumulate, but usually balance out.



To achieve expenditure smoothing, **exceptional effects** on the revenue side should remain unconsidered – as should **extraordinary expenses** (e.g. due to natural disaster) that would reduce the room for manoeuver for other expenditure items. Note that special cases should be defined as restrictive as possible.

3.3 Empirical Results for 2003 to 2008

Let us now deal with **table 1** below: the numerical depiction of the debt brake. The **first line** represents a **forecast of the current GDP to 2008**. The forecast and the actual data are in line with the government's current stability program for the years 2004-2008, dating from November 2004.

The **second line** represents the estimated **trend GDP forecast** using a HP filter. This corresponds to the forecasts of the Federal Ministry of Finance and the EU Commission.

The **third line** shows the **business-cycle factor** $k_t = \frac{\overline{Y}_t}{Y_t}$. As mentioned earlier, a k_t >1 indicates an under-capacity of the domestic economy (a recession). According to this, the domestic economy in the year 2004 would be working at an under-capacity amounting to 1.4% of GDP. In the following year, the business situation should improve and the under-capacity would be reduced to 0.9% of GDP (k = 1.009). That upswing should continue in the following years. According to the forecast of the ministry, the Austrian economy should attain its potential output level in 2008 ($Y_t = \overline{Y}_t$ and/or $k_t = 1$).

The **fourth** and **fifth lines (total revenue** and **total expenditure)** show the revenue estimation as well as the expenditure projections of the Federal Ministry of Finance, in keeping with Maastricht, and here, once again, we are dealing with the federal government's stability program. Due to tax cuts, total revenues are expected to increase only moderately in 2005 and 2006, and public deficits will exceed those of the previous years. But at the end of the planning period a zero deficit is planned.

The **seventh line** of the table shows the **expenditure ceiling** $\overline{A}_t$, of the level of expenditure that is permissible when the debt brake is applied. Technically, the expenditure ceiling is the product of the k-factor (third line) and total revenue (fourth line). For example, the expenditure ceiling for 2005 of € 116.84 bn equals the product of 115.80 * 1.009, and the expenditure ceiling for 2006 the product of 117.20 * 1.004.

The **eighth line** is the difference between the total revenue T_t and the expenditure ceiling $\overline{A}_t$; in other words, the difference between line 4 and line 7. If $T_t - \overline{A}_t < 0$ we are faced with a **cyclically permissible deficit**; if $T_t - \overline{A}_t > 0$ with a **cyclically** necessary surplus. If we consider the year 2005, total revenue (€ 115.80 bn) minus expenditure ceiling (€ 116.84 bn) result in a permissible deficit of € 1.04 bn.

Since, according to the forecast, normal economic conditions ($k_t = 1$) will only be expected in 2008, the debt brake model enables cyclically induced deficits between 0.1 and 0.4% of GDP from 2005 to 2007.

Table 1 : Stability program of the federal government from 30 November 2004 and the debt brake (Expenses after swaps; normal growth scenario)

	2003	2004	2005	2006	2007	2008
Real GDP, € bn	216,00	220,18	225,67	231,31	236,42	242,06
Change in %	0,8	1,9	2,5	2,5	2,2	2,4
Real potential output, € bn	218,84	223,20	227,69	232,34	237,14	242,07
Change in %	2,0	2,0	2,0	2,0	2,1	2,1
K-Factor : Potential output/real GDP	**1,013**	**1,014**	**1,009**	**1,004**	**1,003**	**1,000**
Total revenue, € bn	**111,96**	**113,80**	**115,80**	**117,20**	**121,00**	**125,60**
Change in %	1,0	1,6	1,8	1,2	3,2	3,8
Total expenditure, € bn	**114,45**	**116,80**	**120,50**	**121,60**	**123,00**	**125,60**
Change in %	2,8	2,1	3,2	0,9	1,2	2,1
Net lending/borrowing (ESA 95), € bn	**-2,50**	**-3,00**	**-4,70**	**-4,40**	**-2,00**	**0,00**
in % of nominal GDP	-1,1	-1,3	-1,9	-1,7	-0,8	0,0
Total expenditure ceiling, € bn	**113,43**	**115,36**	**116,84**	**117,72**	**121,37**	**125,61**
Change in %	2,2	1,7	1,3	0,8	3,1	3,5
Cyclically allowable net borrowing/required net lending, € bn	**-1,47**	**-1,56**	**-1,04**	**-0,52**	**-0,37**	**-0,01**
in % of nominal GDP	-0,7	-0,7	-0,4	-0,2	-0,1	0,0
Structural budget balance resp. deviation from the ceiling, € bn (< 0 = structural deficit)	**-1,02**	**-1,44**	**-3,66**	**-3,88**	**-1,63**	**0,01**
in % of nominal GDP	-0,5	-0,6	-1,5	-1,5	-0,6	0,0
Tax revenue (incl. social security contributions), € bn	**97,44**	**99,70**	**101,34**	**102,63**	**106,03**	**109,68**
in % of nominal GDP	43,1	42,7	41,6	40,5	40,3	40,0
Change in %	0,8	2,3	1,6	1,3	3,3	4,2
Stabilization account (end-of-period), € bn			**-3,7**	**-7,5**	**-9,2**	**-9,2**
in % of nominal GDP			-1,5	-3,0	-3,5	-3,3
Nominal GDP, € bn	226,1	233,5	243,6	253,4	263,1	274,2
Change in %	2,3	3,3	4,3	4,0	3,8	4,2

Source: Austrian Stability Program as of November 2004, own calculations.

The **ninth line "deviation from the ceiling"** describes the deviation of the current expenditure A_t from the expenditure ceiling $\overline{A}_t$. $A_t - \overline{A}_t > 0$ indicates a **"structural" deficit,** an expenditure overhang which results irrespective of the business cycle situation. This deficit permanently increases public debt. Conversely, a deficit resulting from the business cycle (line 8) occurs only in slack periods of the business cycle. It is (broadly) compensated by budget surpluses accumulated during upswing periods, keeping nominal public debt constant over the business cycle. In times of normal economic conditions ($k_t = 1$), this deficit disappears.

A structural budget deficit (of general government) indicates that the state has too little revenue to fulfill its duties and/or that governmental expenditure is too high. A structural deficit can be changed either through an increase in taxation or through an adjustment to the level of spending.

With the help of the "debt brake" concept – in particular with its k-factor – a budget deficit can be separated into a structural component and a business cycle component. For the years 2004 and 2005, we have the following breakdown:

In € bn	**2004**	**2005**
Budget balance (deficit)	3.0	4.7
Structural deficit $\left(A_t - \overline{A}_t\right)$	1.4	3.7
Deficit due to the business cycle	1.6	1.0

Here, it can be seen that, through the second stage of the taxation reform in 2005, the structural deficit will increase noticeably. That kind of deficits sustainably raises nominal public debt and debits the stabilization account (line 11) as well. The relatively high budget deficits in 2005 and 2006 – each accounting for 1.5% of the GDP – are reasonable for an additional need to consolidate for an amount of more than € 9 bn (3.3% of the GDP) until 2008. The current stability program contains a considerable decline of structural deficits after 2007, but it will not work without countermeasures on the expenditure side.

The presented empirical results support the conclusions that the year 2009 seems to be an appropriate time horizon for implementing the debt brake in Austria. By then the structural deficit should have vanished, eliminating the need to debit the stabilization account in advance. In addition the current Austrian fiscal sharing Act and the Austrian Stability Pact will expire by the end of 2008. That provides the possibility to redefine budgetary commitments among all levels of government (federal, provincial, local) for the period 2009 till 2012 in line with the Austrian debt brake.

4. Possible Applications of the Debt Brake for Austria

The debt brake model should refer to general government, corresponding to the European Stability and Growth Pact. Therefore, the underlying rules for accounting should also be consistent with ESA 95. From an economic point of view, including all levels of government has the advantage of non-restrictions according to stabilization effects during downswing periods, but also allows ignoring intergovernmental concerns.

The application of the debt brake for Austria seems to be very useful during the preparation of the federal stability program, also based on the accounting guidelines of ESA 95. Those

programs have to be submitted annually and should cover the budget plans of the following four years. Furthermore an evaluation of the stability program by using the debt brake model would be appropriate.

The adherence to the public budget path based on the debt brake should be supplemented – as in the past – by intergovernmental regulations (Austrian Stability Pact) and mid-term-orientated fiscal policies, following those criteria and on the public administrative authorities' responsibility. The use of spending restrictions, with respect to economic and political preferences, administrative concerns and budget planning conditions, could support the implementation of mid-term budget policies.

According to the Austrian Stability Pact, the enforcement of the "cyclical component" would be desirable when discussing the contributions of each level of government to the cyclically permitted deficit of general government. But due to missing data describing regional economic developments, a pragmatic modus operandi should be chosen, so as not to challenge the debt brake itself.

5. Summary and Conclusions

5.1 Essential Features of the Debt brake for Austria

- The debt brake is a macro-economic concept which, through the strict separation of cyclical and structural deficits, provides the information (need for consolidation) required to reach a balanced (general government) budget over the business cycle.
- Specifically, the highest-permissible expenditure ceiling (determined annually) equals the predicted revenue – corrected by a business-cycle factor :

  *Maximum Total Expenditure = Total Revenue * (real trend GDP / real GDP)*

  In this way, budget surpluses are demanded in boom phases and deficits permitted in a recession. Within the ceiling of the total expenditure, the individual expenditure categories can be negotiated autonomously.
- The new rule guarantees the development of automatic stabilizers on the revenue side and prevents time-lag problems of discretionary fiscal policy, with its tendency to act pro-cyclically.

- The approach separates the permissible changes in the budget balance reflecting cyclical conditions from the structural deficit. The latter causes a permanent increase in public debt.
- The stabilization account smooths overspending and underspending (structural budget deficits or surpluses), as well as the budgetary consequences of forecast errors made in the current budget planning process.
- It is imperative that the structural deficit be reduced as soon as it has reached a specified level; however, there is relatively great leeway concerning the level and term for balancing the account. According to the fiscal targets of the EU an annual upper limit for the stabilization account of 2% of GDP seems to be useful. The maximum deficit allowed (target for cumulative deficits) could be limited to 3% of GDP, dampening the need for consolidation caused by former structural deficits.
- Reducing a structural deficit is only feasible by structural savings on the expenditure side or raising structural revenues. A boom phase only changes the cyclical component of the budget balance.
- Extraordinary expenditures (serious recession, natural disasters, etc.) should remain without consideration in the debt brake's framework, in order not to charge the expenditure ceiling or the stabilization account. In that point, the presented concept is in line with the European Stability and Growth Pact.

5.2 Empirical Results for the Years 2002 to 2008 (stability program, November 2004)

- Following the second stage of the taxation reform, the structural deficit will increase noticeably and reach € 3.7 bn (1.5% of the GDP) in 2005. On the basis of the stability program, there will only be a slight reduction in the structural budget deficit in the following years (2007: -0.6% of the GDP). In 2008 a structural balanced budget could be expected.
- The annual structural budget deficits will accumulate in the stabilization account if no countermeasures are taken. The relatively high budget deficits in 2005 and 2006 – each accounting for 1.5% of the GDP – are reasonable given an additional need to consolidate for an amount of more than € 9 bn (3.3% of the GDP) until 2008 according to the debt brake rule.
- From today's point of view the presented empirical results strengthen the conclusions that the year 2009 seems to be an appropriate time horizon for implementing the debt brake in Austria. The structural deficit should have vanished by then, eliminating the

need to debit the stabilization account in advance. In addition the current Austrian fiscal sharing Act and the Austrian Stability Pact will expire by the end of 2008. That provides the possibility to redefine budgetary commitments among all levels of government (federal, provincial, local) for the period 2009 till 2012 in line with the Austrian debt brake.

5.3 Implications for Economic Policy

- A balanced budget over the business cycle could be guaranteed by implementing a "debt brake rule," which contributes to the stabilization of the (nominal) Austrian public debt.
- This concept is in line with the regulations of the EU's Stability and Growth Pact, and is already in operation in Switzerland.
- Within the expenditure limits, autonomous political decision-making in connection with the structure and level of the individual expenditure categories remains intact.
- The modus operandi of the "debt brake" allows for a temporarily higher structural deficit (taking advantage of the stabilization account) and makes the need for consolidation, resulting independently from business cycle variations, apparent. The stabilization account plays a major role as a control mechanism for budget execution and an instrument for strategic budget planning and contributes to the transparency of the budget.
- New wishes for expenditure should only be honored when the structural budget deficit has been previously reduced (brake for new expenditures).
- When setting the upper limit for the shortfall of the stabilization account, an orientation on the EU budgetary stipulations is necessary. The calculations of the EU Commission indicate that an annual upper limit for the stabilization account of 2% of the GDP would be appropriate. The maximum deficit allowed (target for cumulative deficits) could be limited to 3% of GDP, but this level could also be raised under extraordinary circumstances.
- The debt brake keeps the nominal public debt constant over the business cycle and, in periods with a growing economy, reduces the debt-GDP ratio. This ratio of more than 64% in 2004 was above the Maastricht ceiling, a reduction of this ratio is also a challenge in the sense of the Maastricht treaties. The regime of the debt brake is not a financial dogma, but should be seen as a method to significantly lower the public debt ratio to below 60% of the GDP. Once the public debt ratio has fallen significantly –

e.g., to 50% of the GDP – a new fiscal goal can be considered for the stabilization of the public debt-to-GDP ratio.

- The debt brake could be applied for preparing the federal stability program. Upon EU requests stability programs outlining the public fiscal policy for the next four years have to provided annually. It could be embodied in a law that the stability programs meet the debt brake's requirements.
- The adherence to the public budget path based on the debt brake should be supplemented – as in the past – by intergovernmental regulations (Austrian Stability Pact) and mid-term-orientated fiscal policies, following those criteria and on the public administrative authorities' responsibility.
- At the same time, an ongoing monitoring of its observance would be necessary. After the presentation of the balance of accounts for all public budgets, the level of the structural deficit and/or the amount necessary for consolidation should be made transparent. The Government Debt Committee, as an independent body, would be the appropriate institution for defining this.

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