

# The Swiss Debt Brake: How it Works and What Can Go Wrong

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## 1. Introduction

Large budget deficits and a high public sector debt are pervasive features of present day economies. Switzerland is no exception. During the 1990s, large budget deficits on all three levels of government have led to a large increase in public debt. Existing political mechanisms were not able to avoid this deterioration in public finances. The increasing level of debt was highly unpopular among the public. As a consequence, a mechanism limiting expenditure was worked out by the Federal Council and Parliament. In 2001, the necessary change in the constitution was approved by the voters with an overwhelming majority of 84.7% of the votes. The mechanism (called “debt brake” in what follows) was supposed to govern federal budgets starting from 2003. Unfortunately, a large structural deficit was uncovered in 2003, during a recession. It was considered as harmful to the economy if not outright impossible to correct this structural deficit right away, and an adjustment path on top of the rules of the debt brake was specified for the years 2004 to 2006.

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Despite its rocky start, the Swiss debt brake has a number of features which make it interesting for other countries. First, it sets an expenditure limit which applies to both budget and account. If the spending deviates from this limit, the difference is credited or debited to an adjustment account and has to be corrected in one of the following years. Second, it applies in both boom and recession periods. This double-sidedness has clear advantages over one-sided mechanisms such as the Maastricht deficit criteria. Simulations with historical data presented in this paper show that the mechanism works more or less as intended. However, it will also be argued that a number of problems remain. Critical for the mechanism will be revenue estimates close to structural revenue and a certain respect by politicians for the mechanism.

## 2. Conceptual Issues

The reasons for the deficit-bias in public finances are well understood by now.<sup>1</sup> Basically, there exists an externality problem. Over time, deficits allow spending without financing, leading to a problem of time-inconsistency. Spending is popular and therefore attractive for politicians when the pain of higher taxes or user fees falls on other generations or other politicians. Distributional conflicts can make the deficit-bias worse. Weak coalition governments need to fork out money to many different interest-groups to keep the coalition together. A lack of clear leadership in the budget process also tends to increase deficits. Having a weak finance minister, a weak president or a weak prime minister makes it more difficult to reign in the demands of the different ministries.

To eliminate the deficit bias, rules which limit spending to available revenue have been introduced in many countries.<sup>2</sup> Most US states have deficit rules which mandate a balanced budget. Another example is the deficit rule of the Maastricht treaty which limits deficits of EMU members to 3% of GDP. The aim of these rules is usually to set an upper limit for the deficit. In the simplest case, this is a balanced budget rule where the maximum deficit allowed is zero. The rules differ in their stringency as BOHN and INMAN (1994) discuss for the

1 See e.g. ALESINA and PEROTTI (1995) or VON HAGEN (1998) for different aspects of the problem, and MILESI-FERRETI (1997), PERSSON and TABELLINI (2002) or POTERBA (1996) for overviews.

2 Overviews can be found in POTERBA (1996), TANAKA (2005) and, with an application to Switzerland, WAGSCHAL (2002).

case of US states. The least stringent rules require the governor to submit a balanced budget. As long as the budget can be amended and deviations from the budget carry no sanctions, such a rule is not effective. Most effective are those rules which demand a balanced account and which are safeguarded by a constitutional guarantee. In this case, overriding the balanced budget usually requires a supermajority in parliament.

However, having a stringent rule might not be desirable even though it achieves the principal aim of avoiding deficits. The problem is that fiscal policy can become procyclical under strict rules (BAYOUMI and EICHENGREEN, 1995). An optimal policy would smooth revenue patterns and therefore allow deficits in recessions and surpluses in booms (BARRO, 1979). Restricting accounts to be always at least zero can therefore be too restrictive.<sup>3</sup>

The EMU deficit rule does not have such a stringent requirement since it allows a deficit of up to 3% of GDP. In principle, this leaves enough room for automatic stabilizers. But this additional flexibility comes at a price since it reintroduces the problem of time-inconsistency.<sup>4</sup> Policy-makers have insufficient incentives to produce surpluses in good times in order to be prepared for the bad times. When the bad times come, room for adjustment is limited and a contractionary fiscal policy is usually considered as both economically and politically unappealing. The council of finance ministers which is supposed to impose the sanctions in turn finds it hard to punish the deviating countries, especially when these are large countries such as Germany or France.

Some of the possible amendments to the Maastricht treaty which have been suggested put more emphasis on the structural balance. In principle, this would be reasonable. In practice, there are considerable difficulties in determining the size of the structural deficit. And introducing the consideration of the structural balance in an adhoc way might lead to a (further) weakening in fiscal discipline. The revisions in the application of the stability and growth pact from March 2005 do not address the asymmetry problem but rather introduce additional circumstances when the deficit rule can be violated.<sup>5</sup> While some of these new special circumstances are reasonable, they will hardly help to increase fiscal responsibility.

3 This can in principle be avoided by running so called "rainy day funds", see BOHN and INMAN (1994).

4 An overview of the difficulties with the Maastricht criteria and how they could be overcome can be found in BUTI, EIJJFINGER and FRANCO (2003) or WYPLOSZ (2002).

5 Besides the already existing case of a severe recession (a drop of GDP by more than 2%), the new cases are: a persistent economic slowdown and special costs such as a pension reform or the costs of German unification.

The United Kingdom, Australia and New Zealand have introduced rules which mandate a balanced budget over the course of a business cycle.<sup>6</sup> This means that temporary deviations from budget balance are possible, but that surpluses and deficits need to be balanced over the course of a business cycle. The Swedish rule is in principle similar, but aims at a budget surplus of 2% over the course of business cycle. Usually, violations of these expenditure limits carry no sanctions other than negative reputational effects for the government. This might be enough when a single government is responsible for fiscal policy over the course of a whole business cycle or longer. However, before and after a change of government, there might be incentive problems. Outgoing governments might not try hard to respect the limit. And incoming governments could be tempted to blame any problems on the previous government. The Swiss rule is in principle similar to this group of rules, but it is more rigid and relies not only on reputational effects. As we will argue in the next section, it was necessary to take this more restrictive approach.

### 3. The Situation in Switzerland

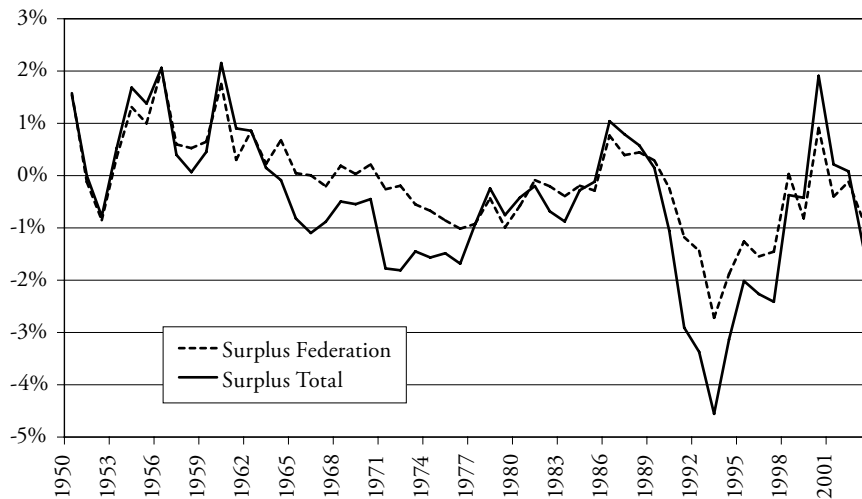
Switzerland has had for a long time lower budget deficits and less debt than most other OECD countries. This has changed during the 1990s when the consolidated public sector deficits reached up to almost 5% of GDP (*Graph 1*). As a consequence, consolidated public sector debt rose to over 50% of GDP by the end of the 1990s. This development was widely considered as unacceptable even though public sector debt remains below the OECD average.

There are a number of possible reasons why the deficits were higher in the 1990s. The long period of low growth certainly played a role. Switzerland grew on average by just below 0.4% per year during the whole decade, far less than any other OECD nation including Germany and Japan. Second, the political institutions might have been less adapted to the challenges of the 1990s. The strongest increase in government spending was related to social security and health care, both areas with a predominance of entitlement programs.

Switzerland has, with the large degree of direct democratic voter rights, another institutional feature which is expected to keep the level of government spending and deficits down. There is by now a large literature on the effects of the popular rights on government spending. In general, the finding is that direct

6 TANAKA (2005) gives a very useful survey of these different rules.

Graph 1: Budget Surplus in Switzerland, 1950–2003



Explanation: Budget surplus for federation alone and for the total of federation, cantons and municipalities, both as percentage of GDP. Own calculations based on data from the Swiss Federal Finance Administration and the Swiss Statistical Office.

democracy lowered government spending and deficits at the regional level in Switzerland.<sup>7</sup> However, this does not quite square with the deterioration of public finances during the 1990s which affected all three layers of government. Different answers are possible: first, the effect of direct democracy might not be as robust as presumed. Second, large spending for social security and health care is rather popular, and direct democracy might fail as a brake in these areas. Third, political control of entitlement programs is notoriously difficult, also in a system of direct democracy.<sup>8</sup>

In principle, the Constitution would have not only mandated a balanced budget but even the elimination of the debt in the medium to long term. However, the violation of this rule carried no punishment, which made the rule impotent. The policy process in Switzerland is so fragmented that reputational effects are not of

7 See e.g. FELD and KIRCHGÄSSNER (2001).

8 BODMER (2006) contains a further discussion of these points.

great importance, either. The government consists of seven members from four different parties. There is no prime minister nor is there a coalition agreement. Government decisions are made by consensus, if possible, and by majority voting, if necessary.<sup>9</sup> This fragmentation also affected the budget process. Before the introduction of the debt brake, the budget process started with the spending desires of the seven ministries. These went through the governmental decision process just described. The Finance Ministry had no special veto powers and basically had to aggregate the different spending decisions to an aggregate budget. The budget then went to parliament which could pass any amendment with simple majorities in both chambers.<sup>10</sup> As is known, such systems without a strong spending authority like a prime or a finance minister tend to favour deficits (VON HAGEN, 1998).

In the mid 1990s, it became clear that the existing institutions and rules were not able to stop the deficits and that a more stringent approach had to be taken. Given the institutional setting, this had to be a fairly rigid rule which did not rely solely on reputational effects. In the political debate, an expenditure rule linking expenditure to revenue was favoured.<sup>11</sup> The rule was supposed to have two properties: First, and essentially, it should avoid ongoing deficits and lead to a balanced budget in the medium term. Second, it should not lead to a procyclical fiscal policy, with large adjustments in periods of recession. In other words, there should be surpluses in boom periods and corresponding deficits in recession periods. Swiss fiscal policy has often been procyclical, with large spending increases in boom periods and a painful adjustment in recession periods (AMMANN, 1995). The proposed rule was accepted in a popular vote by close to 85% of the population and by all cantons, demonstrating the unpopularity of sustained deficits. The budget of 2003 was the first budget under the debt brake, which means that there are already first experiences with the new mechanism.<sup>12</sup> In the following sections, the mechanism will be described and analysed in some detail.

9 This organisation of government is part of the Swiss consensual system, see e.g. LINDER (1994) for a description.

10 An overview of federal budget process can be found in URIO and MERCKS (1996) or OECD (1995).

11 As an alternative, the introduction of a fiscal referendum at the federal level was suggested. Many cantons know such fiscal referenda, some have in addition a debt brake. There is a wide variation in cantonal designs of these debt brakes. Details can be found in FELD and KIRCHGÄSSNER (2004), KIRCHGÄSSNER (2004), NOVARESI (2001), SCHALTEGGER (2002) or STAUFFER (2001). All but the last of these references contain also a discussion of the interrelation between debt brakes and fiscal referenda on the cantonal level.

12 An overview of the first experiences can be found in HIMMEL and GEIER (2004). Other surveys of the mechanism can be found in BELJEAN (2001), DANNINGER (2002) and COLOMBIER (2004).

#### 4. The Mechanism

The mechanism is applied in two periods, the budget period and the period of final accounts. The process starts with setting an upper limit for expenditure in next year's budget ( $E_L$ ). The limit is based on the revenue estimates  $\hat{R}$  for next year and a factor  $\hat{k}$  which reflects the state of the economy:<sup>13</sup>

$$E_L = \hat{k} \cdot \hat{R}, \quad (1)$$

The factor  $\hat{k}$  represents the cyclical state of the economy and is calculated as the ratio of predicted Trend-GDP ( $\hat{Y}_T$ ) and predicted GDP ( $\hat{Y}$ ):

$$\hat{k} = \hat{Y}_T / \hat{Y}, \quad (2)$$

If  $\hat{k}$  is larger than one, the economy is predicted to be below trend. Trend-GDP is calculated with the help of the Hodrick-Prescott-Filter. We will come back to this point shortly.

In the account period, the calculations are redone with the figures as they turned out to be ex post:

$$E_{xp} = k \cdot R, \quad (3)$$

where  $E_{xp}$  is the amount of expenditure allowed ex post. Both  $k$  and  $R$  are the ex post realizations of the two variables. Then, the difference between expenditure allowed ex post ( $E_{xp}$ ) and actual expenditure ( $E$ ) is credited or debited to an adjustment account. If the adjustment account has a deficit of more than 6% of last year's spending, it has to be corrected in the following three years.

The expenditure limit holds only for the budget. Budget amendments can exceed the spending limit. In general, spending can be higher (lower) than allowed by the debt brake. But in this case, the difference has to be debited (credited) to the adjustment account. All new laws or changes in laws which affect the budget fall under the debt brake. In other words, if a new law causes expenditure to lie above the limit, compensation has to be found elsewhere. Extraordinary revenue such as that arising from the sale of shares does not enter the calculations of the limit.

13 There are no time subscripts added. All variables in this section apply to a single period and are either estimates or actual values.

Basically all expenditure types fall under the spending limit. Importantly, no distinction is made between current and investment spending.<sup>14</sup> One exception is extraordinary spending, defined as spending which accrues only in a certain year or spending due to unforeseen events. This can be placed outside the spending limit by a qualified majority of both chambers of parliament. Examples could be the state-aid to the flag-carrier Swiss or disaster relief. Another aspect is that the debt brake applies to the financial account. Besides, there is a profit and loss account which also includes depreciation.<sup>15</sup> Recently, there have been some large spending increases in this area, due to the deficits of the pension funds for federal employees.<sup>16</sup> This spending does not fall under the rules of the debt brake.

One reason for introducing the possibility to exclude extraordinary items was not to overburden the budget process. Adjustment possibilities from year to year are limited. A large majority of spending is bound by contractual obligations or by law. Neither can be changed on short-notice. Also, unforeseen events might need a rapid reaction. The exclusion of extraordinary revenue in turn limits the possibilities to fix the accounts by one-off measures such as tax holidays or the sale of assets.

#### *The Basic Idea: Tying Spending to Structural Revenue*

The basic idea behind equation (1) is to tie spending to structural revenue, thereby first avoiding deficits in the medium-term and second smoothing spending by insulating it from temporary shocks. This can be seen by making a number of transformations. First, revenue estimates ( $\hat{R}$ ) can be divided into the three parts structural, cyclical and irregular revenue:

- 14 This has also given rise to criticism since the burden of adjustment might fall disproportionately on investment (see COLOMBIER and FRICK, 2000). However, the distinction of investment spending is often arbitrary and would introduce an important loophole in the debt brake. KELL (2001) gives an overview of this trade-off.
- 15 Financial account stands for the German “Finanzrechnung”, profit and loss account for “Erfolgsrechnung”.
- 16 The deficit of the pension fund has accumulated mostly through insufficient payments by the government into the fund. The pension fund is still part of government finances and runs on a defined benefit plan. Therefore, there is a continuing danger of further deficits which would have to be financed by the government. It is planned to switch the pension plan to a defined contribution plan, thereby avoiding future liabilities for the federal government. The treatment of pension liabilities is related to issues of long-term fiscal sustainability which do not enter the debt brake. JEANRENAUD (2004) gives a recent overview of the state of the discussion in Switzerland.



$$\hat{R} = \hat{R}_S + \hat{R}_C + \hat{R}_I \quad (4)$$

The distinction of irregular revenue is little common but necessary. The Swiss federal government relies to a large degree on capital taxes such as corporate income taxes, the stamp duty and the withholding tax. These show wide yearly fluctuations which cannot be explained by the business cycle alone.<sup>17</sup> The forecast of irregular revenue should be zero:

$$\hat{R}_I = 0 \quad (5)$$

Next, cyclical revenue can be characterized as a share of structural revenue:

$$\hat{R}_C = (\hat{Y}/\hat{Y}_T - 1) \cdot \hat{R}_S \quad (6)$$

Substituting equations (4) to (6) into equation (1) gives:

$$E_L = \hat{R}_S \quad (7)$$

Or in words: The expenditure limit should be equal to the estimate of structural revenue. Revenue decreases in recessions and increases in boom periods. A smooth spending path therefore allows deficits in recessions and mandates surpluses in booms. As a result, fiscal policy should be passively anticyclical. DANNINGER (2002) has suggested that expenditure should also react to the business cycle, rising in recessions and falling in boom periods, relative to trend. This has not been considered as necessary since social security is to large part excluded from the federal budget. Old age and invalidity pensions are outside the federal budget, though they receive transfers from it on a regular basis. The unemployment insurance fund has been placed outside the federal budget and receives loans only if necessary. These loans do not enter the financial account and have to be paid back when the fund runs a surplus. Help to the poor is done by cantons and municipalities and does not affect the federal budget.

In practice, keeping spending equal to structural revenue is not an easy task. The distinction between structural, cyclical and irregular revenue is difficult, especially *ex ante*. There is a danger that revenue estimates follow too closely actual revenue, with strong fluctuations due to irregular revenue. This danger is

<sup>17</sup> BODMER (2003) discusses the problems and provides estimates for the three revenue categories.

real. The budget is passed towards the end of a fiscal year when there are already fairly good estimates for the revenue of the passing year available. These, in turn, can be used to make predictions for the revenue of next year.

It was this type of problems which caused large difficulties when the debt brake was introduced in 2002. In 2001, revenue was high due to very good results of the corporate income tax, the stamp duty and the withholding tax. Also, revenue was more or less equal to expenditure. And since GDP was more or less on trend in 2001, this was interpreted as high structural revenue and a structurally balanced budget. In 2002, revenue from these taxes fell dramatically. Overall, revenue was almost 10% lower than expected. With hindsight, there was a structural deficit of about 3.5 Bn Swiss Francs, which corresponds to about 1% of GDP or 8% of federal expenditure (BODMER and GEIER, 2004).

### *The Factor k*

In the formula for the expenditure limit,  $k$  has the function of counteracting the cyclical movements of revenue. In practice, it might not do this fully. First, it relies on GDP forecasts. Usually, GDP forecasts are too high when the economy is entering a recession and too low when it comes out of it. This should make the expenditure limit more countercyclical. Second, Trend-GDP has to be determined. For this task, the Hodrick-Prescott-Filter (HP-Filter) had originally been chosen, with a smoothing factor of 100. Alternatives could be based on estimates of potential output using a production function approach.

There were two reasons for choosing the HP-Filter. First, it is almost symmetrical, at least when applied ex-post to a time-series.<sup>18</sup> This property is desirable since a balanced budget should result over a complete business-cycle. With real-time data, where the trend has to be estimated newly each year, symmetry does not hold exactly anymore. However, as will be shown shortly, the results are sufficiently close to being symmetrical for the purpose at hand.<sup>19</sup> If estimates based on potential output were used, they might not be symmetrical. In periods of a protracted slump such as experienced by Switzerland in the 1990s, GDP is bound to be below its potential throughout and large deficits might accumulate. The second reason for choosing the HP-Filter is its transparency. The calculations

18 MÜLLER (2003) criticises the lack of symmetry coming from the GDP series having a trend. This means that the deviations from trend will become larger and larger in value. Therefore, positive and negative deviations will not be exactly equal in size.

19 On the long-term symmetry properties, see also BRUCHEZ (2003b) and GEIER (2004).

can be done by anyone equipped with a statistical software. Potential output, on the other hand, has to be calculated by an economic research unit and might be subject to political pressure and manipulation.

However, the use of the HP-Filter comes at a price. The problem lies in the last observation, variations in which can lead to large movements in the trend. For example, a downward revision in the GDP forecast of 1% for next year can lead to a fall in the trend-GDP of next year by about 2/3%. Let us also assume that revenue estimates fall by about 1%, together with the forecasts for GDP. This implies that  $k$  cannot offset the fall in estimated revenue and the expenditure limit has to be adjusted downwards, by about 2/3% as well (BRUCHEZ, 2003a).

While this large reaction of the trend to revisions in the last observation is not desirable for the proper functioning of the mechanism, it has an important justification. Ex ante, it can never be known whether a change is permanent or transitory. Modern business cycle research tends to view most of the changes in GDP as permanent, based on the presence of a unit root in GDP series. Also, the symmetry of the HP-Filter is partly achieved by a strong reaction to the last observation.

However, BRUCHEZ (2003a) has developed an alternative filter which preserves the symmetry properties of the original HP-Filter while lowering the response of the trend to a 1% fall in GDP forecasts from 2/3% to about 1/3%. This is achieved by reducing the weight of the last observation, using otherwise the original HP-Filter. In the revisions to the debt brake, which were necessary in its first year of operation, this revised HP-Filter has been chosen instead.<sup>20</sup> While there still remain significant movements in the trend of GDP, it is probably as much of an improvement as can be achieved without losing the symmetry property. And as will become clear in the simulations, the factor  $k$  is in practice not as important as might be thought in the first place.

### *The Adjustment Account*

The last piece of the mechanism is the adjustment account. If expenditure ( $E$ ) turns out to be higher than expenditure allowed ex post ( $E_{xp}$ ) according to equation (3), the difference is debited to the adjustment account ( $AA$ ):

<sup>20</sup> Transparency has been preserved by making this alternative filter available to the public on the internet.

$$dAA = E_{xp} - E \quad (8)$$

If the accumulated deficit in the adjustment account is more than 6% of spending of last year, it has to be lowered in the following three years under this limit. In other words, spending has to be lower than allowed by equations (1) and (3). There are three sources of errors: first the errors in the revenue forecasts, second the errors in GDP forecasts, and third spending which exceeds the expenditure limit. As will become clear shortly in the simulations, the errors in the revenue forecasts play the most important role.

The adjustment account is a central piece of the debt brake. First, it sanctions overspending and therefore punishes excess spending which has not been decided by an absolute majority of the two chambers of parliament. Excess spending approved by parliament does not enter the adjustment account. Second, since revenue forecasts are insecure, it provides a learning mechanism. In other words, it is not that important that revenue estimates are on target in each and every year. Errors can be corrected in the future.

## 5. Simulations

While it is not possible to test the behaviour of the debt brake for all possible situations, e.g. by establishing its formal properties, it can be tested using historical data.<sup>21</sup> We use data from 1989 to 2002 for which the necessary information is available. For the simulations, three assumptions are made. First, revenue estimates are not affected by the hypothetical presence of the debt brake. Second, possible actions due to an imbalance of the adjustment account are ignored. Third, the effect of the debt brake on GDP figures is also ignored. All three assumptions seem rather strong, but are justifiable. The first assumption – revenue estimates remain the same – can be justified by the fact that federal revenue estimates were historically unbiased on average. Short-run mistakes have occurred, but they have tended to cancel each other out over the period of a business-cycle. Furthermore, we have no alternative hypothesis of how the revenue estimates would have turned out had there been a debt brake. The second assumption – no role of the adjustment account – is due to the fact that the

21 However, BRUCHEZ (2003b) gives a formal proof that the accumulated deficit cannot exceed a certain limit under the debt brake. GEIER (2004) uses simulations with artificially generated data to show that the debt brake does not produce unsustainable deficits in the long run. AMMANN (2001) also uses artificially generated data.

timing of the adjustment can be chosen at will as long as the three year period for getting back to the 6% threshold is respected. And as we will see, no policy action would have been necessary to fulfil this condition.

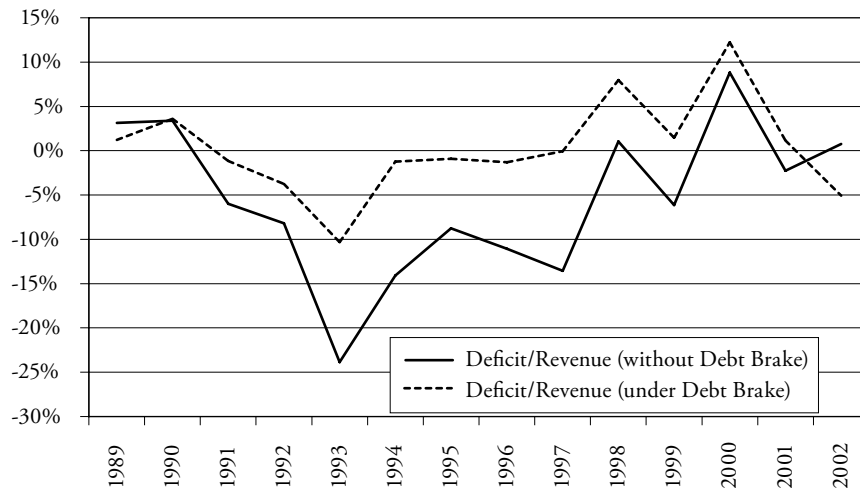
The third assumption – disregarding the feedback effect from the debt brake to the economy – has to be justified by its probably small effect and by practical considerations. In principle, it would be possible to use a simulation model of the economy to assess the feedback effect of the debt brake on the economy and the budget. This is done for other rules by BAYOUMI and EICHENGREEN (1995) and by KOPITS and SYMANSKY (1998), using the IMF's MULTIMOD model. However, we have no such model and therefore disregard the feedback effects.<sup>22</sup> Further, the two main points of the simulations can be understood without a full macroeconomic model. First, the debt brake allows large deficits at the beginning of recessions, mostly due to forecast errors in the revenue estimates. And second, over the course of the period from 1990 to 2002, federal accounts would have been more or less balanced.

It is important to notice the recursive character of the simulations. The expenditure limit is set for each budget with all the information available up to that point, which is late Fall. These are the revenue estimates, the provisional GDP figures for this year and the GDP predictions for next year. Based on this information,  $k$  and the expenditure limit are calculated. Assuming that expenditure was equal to the expenditure limit and taking actual revenue series, a hypothetical deficit can next be calculated. This can be compared to actual spending and the deficit. *Graph 2* shows the resulting deficit together with the deficit as it occurred in reality. It can be seen that the debt brake would have led to much lower deficits. However, the resulting deficits would have been quite large in certain years such as 1993. Therefore, the debt brake would still have allowed an anti-cyclical policy during the 1990s. Over the whole period, an accumulated surplus of 2.5 Bn Swiss Francs would have resulted instead of the 27 Bn deficit which occurred in reality.<sup>23</sup> It has to be remembered, however, that the feedback effects of the debt brake on the economy – which we have ignored – would tend to worsen this balance somewhat.

22 This follows at least in spirit BUTI, FRANCO and ONGENA (1997) which try to assess the hypothetical effect of the Maastricht criteria on the fiscal position of member countries for the period 1961 to 1996.

23 For the calculations, the revised HP-filter by BRUCHEZ (2003a) has been used on the log of GDP from 1979 to 2003. Extending the simulations to the years after 2002 would not be of great interest since an adjustment path has been specified for 2004 to 2006. Expenditure can deviate therefore from that allowed according to equations (1) and (3).

Graph 2: Simulated Budget Surplus with and without Debt Brake



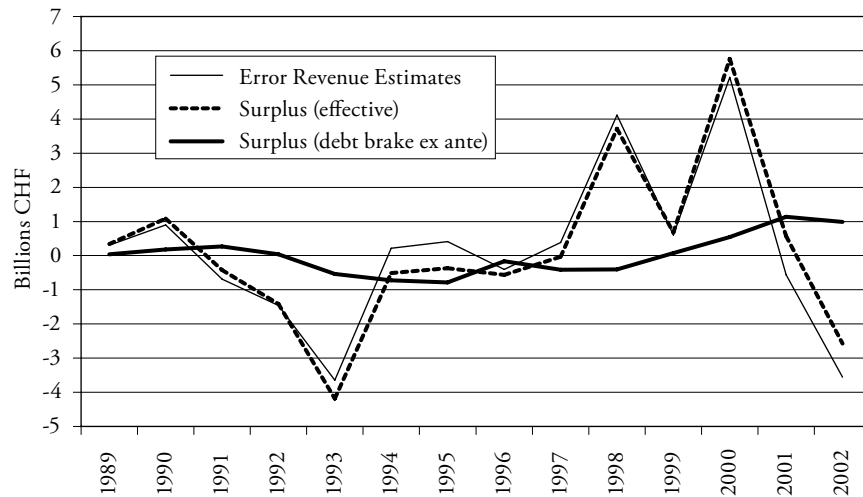
Explanation: The series “without debt brake” corresponds to actual deficits; data from the Swiss Federal Finance Administration. The series “under the debt brake” is based on a recursive simulation of the debt brake; own calculations, see text for details.

To understand the functioning of the debt brake better, it is useful to make a simple decomposition. Assuming that effective spending ( $E$ ) is equal to the expenditure limit ( $E_{xp}$ ), the effective budget surplus (*Surplus*) can be written as:

$$Surplus = R - E = R - E_{xp} = (R - \hat{R}) + (\hat{R} - E_{xp}) \quad (9)$$

The first term in brackets is the error in the revenue estimates, the second term is the deficit allowed ex ante by the debt brake, based on the factor  $k$  and the revenue estimates. Using the same data as for *Graph 2*, this decomposition leads to the figures in *Graph 3*. As can be seen, the main source of deficits and surpluses are the mistakes in the revenue estimates. These are large at the beginning of recessions and of booms. It is mostly these mistakes which are responsible for the anti-cyclical behaviour of fiscal policy. The factor  $k$ , which has been constructed to this end, contributes rather little. This can be seen from the ex ante surplus under the debt brake which remains very close to zero. It also means that the debt brake is not that different from a simple balanced-budget rule, leaving all the other features like the adjustment account in place.

Graph 3: A Decomposition of the Simulated Surplus under the Debt Brake

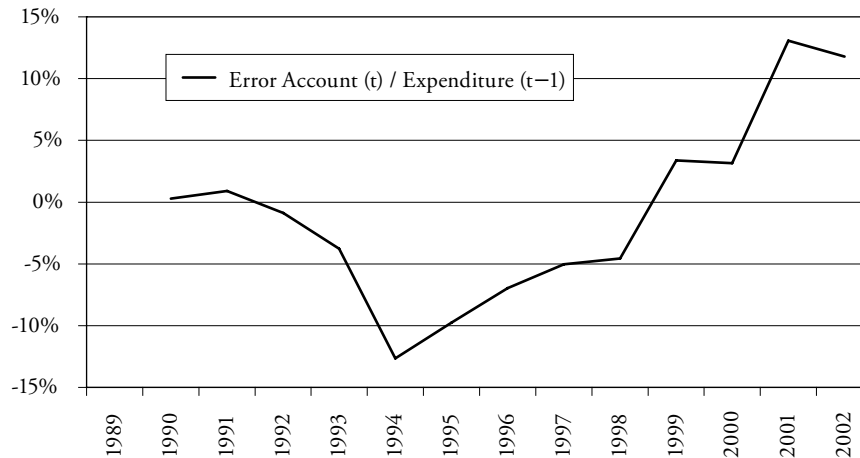


Explanation: Decomposition of the budget surplus according to equation (9), Billions of Swiss Francs. Own calculations based on recursive simulation of the debt brake, see text for details.

Last, it can be calculated how the adjustment account would have evolved. As can be seen in *Graph 4*, it would have developed rapidly a substantial deficit in the early 1990s, up to about 13% of previous year's spending in 1993. Therefore, an additional adjustment would have had to be made to bring the account back under the 6% limit. However, the violation of the deficit limit was for 1993 and would therefore have been detected only in 1994. The adjustment would have had to be made in the three following years, 1995 to 1997. But by 1997, the deficit of the adjustment account would have been back under the 6% limit without any additional steps. Of course, it will never be known when the adjustment will be automatic and when it will require additional steps.<sup>24</sup> This creates some insecurity, and it will have to be seen how this works in practice. The adjustment account is also alimeted by two sources: mistakes in the revenue estimates and revisions of  $k$ . As should be already clear from the figures in *Graph 3*, the main source are again the mistakes in the revenue estimates.

<sup>24</sup> Further, the position of the adjustment account at the beginning of a cycle is also of importance.

Graph 4: Adjustment Account



Source: Own calculations based on recursive simulation of the debt brake, see text for details.

Judging from the figures presented so far, the mechanism of the debt brake works more or less according to expectations. The anti-cyclical behaviour of the deficit is rather better than expected due to the important role of the errors in revenue forecasts. It becomes also clear from *Graph 2* that in protracted recessions such as the one Switzerland experienced in the 1990s, the room for deficits will be limited. This is no surprise since the mechanism was designed to produce a balanced budget over the course of a whole business cycle.

Despite the fact that the mechanism seems to work as intended, there have been large problems in its first year of operation. However, as has already been mentioned, these problems were not due to the mechanism per se but rather due to the difficulties in determining the size of the structural deficit. Instead of a structurally balanced budget in 2002, there existed a structural deficit of about 3.5 Bn Swiss Francs. Since the adjustment possibilities within a given year are limited and since Switzerland was in recession at that time, a time path for correcting the structural deficit was proposed and accepted by parliament.<sup>25</sup>

25 There is an amendment to the budget law ("Finanzhaushaltsgesetz") which says that spending in 2004 can be higher than the limit by 3 Bn Swiss Francs, in 2005 by 2 Bn and in 2006 by 1 Bn. This change in the budget law has been included in an adjustment program which



In other words, the debt brake had to be overridden in its second year of existence. This is unfortunate since it could undermine the political support the debt brake enjoys and might thereby endanger its future functioning. As will always be the case with such a mechanism, proper functioning will depend on the political support it enjoys and on the easiness it can be circumvented. We turn to these aspects next.

## 6. The Political Economy of the Swiss Debt Brake

Mechanisms like the Swiss debt brake are introduced to limit the possibilities of politicians to spend money. However, politicians continue to have an incentive to run deficits and will therefore try to circumvent the mechanism. There are two possibilities. First, it might be possible to circumvent the debt brake openly. Second, creative budgeting might allow to fulfil the rule in form but not in substance. In a comparative perspective, both possibilities are common as e.g. the discussion of the US experience in WILDAVSKY (1980) and BOHN and INMAN (1996) or the discussion of the Italian case in MILESI-FERRETI (1997) show.

Regarding the Swiss debt brake, there are a number of issues. On the positive side is the fact that the debt brake applies to almost all budgetary items. Spending beyond the limit is possible. However, it has to be debited to the adjustment account and will have to be compensated at some point. The adjustment account provides therefore a sanction mechanism, be it for intentional or for unintentional errors.

A first critical factor are the revenue estimates. One aspect, which we have already discussed, is the need to keep revenue estimates close to structural revenue and more or less smooth. Second, there are political aspects to consider. Up to now, the process of setting revenue estimates was not subject to political pressure since these estimates did not have a great importance in the short-run. Accordingly, the estimates were made in a rather adhoc manner. This has changed with the introduction of the debt brake since revenue estimates are probably the most important piece of the mechanism. This introduces the danger that revenue estimates become subject to political pressure. In this respect, it has to be remembered that it is only the Finance Ministry which makes such revenue estimates in Switzerland. Parliament does not have the resources itself to check

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has received an absolute majority of both chambers of parliament and was subject to an optional referendum.

the estimates. However, the adjustment account makes again sure that possible deliberate mistakes in the revenue estimates remain of little consequence in the medium to long run.

The second critical factor lies in extraordinary spending for items which occur only once or are due to unforeseen events. These can be placed outside the budget by an absolute majority of both chambers of parliament. It creates the danger that the definition of extraordinary spending might be broadened to include other items such as investments in road or rail transport or that the clause is invoked often. A certain tendency in this direction could already be observed when parts of parliament tried to place an important traffic project outside the bounds of the debt brake, to fend it off from spending reductions. But of course, this would create a dangerous precedent by placing regularly occurring items outside the realm of the debt brake.

Placing parts of spending outside the expenditure limit of the debt brake would be easy in principle. Such extraordinary spending approved by parliament carries no direct sanctions since deviations with parliamentary approbation are not included in the adjustment account. However, the debt brake enjoys wide popular support, as the large majority in the popular vote indicates. While the political left would be happy to dump the debt brake anytime, as its exponents have made clear repeatedly, the rightist Swiss National Party stands in principle clearly behind the debt brake. Overriding the debt brake would therefore need votes from the centre parties, the Christian Democrats and the Liberal Party. For these, overriding the debt brake might be costly in the face of strong popular support and the pressure exerted from the Swiss National Party. However, there might be "good reasons" which make overriding the debt brake unavoidable.

The difficulties with the budget for 2004 and the following events indicate how this might happen. The debt brake applies only to the budget and the account, but not to the financial plan which covers the three years following the budget. This means that spending decisions for later years can be made without sufficient funding. For example, in 2006, there could be a decision to raise spending for traffic projects starting from 2008. This does not violate the debt brake directly but will lead to problems with the debt brake in 2007 when the budget for 2008 is made. At that point, there is limited room for adjustment. Raising taxes takes a considerable amount of time and is politically difficult. The rates of the important federal taxes are fixed in the Constitution and cannot be changed without popular approval. Similarly, spending on many other items cannot be reduced in the short-run.

In other words, such a decision would increase the structural deficit and would lead to the same type of problems as occurred in 2003 when a large structural

deficit was discovered. Depending on circumstances, the most reasonable reaction might again be to set an adjustment path for the structural deficit. Therefore, the exception of the financial plan from the debt brake introduces an important loophole for the old problem of spending without financing.

There remains the question whether it might be possible to apply the debt brake also to the financial plan. In principle, nothing prevents this. In practice, the estimates of the financial plan are imprecise and depend on highly debatable assumptions about inflation and growth.<sup>26</sup> Even if the procedure would be optimised, doubts and ambiguities would remain. This in turn would not help the functioning of the debt brake.

From this discussion, two weak spots of the Swiss debt brake emerge: First, there is the possibility to place extraordinary spending outside the debt brake, if approved by an absolute majority of both chambers of parliament. Second, the debt brake does not apply to the financial plan. Of these, at least the first is necessary to avoid difficulties in the face of extraordinary circumstances. The second weak spot can be justified given difficulties in providing good estimates for the years of the financial plan. However, the possibility of introducing new laws for the years beyond the budget period reintroduces the old problem of spending without financing. Much will depend on how such cases will be handled in practice. Circumventions around the debt brake, like the one introduced in 2003 for the adjustment of the structural deficit, should be avoided, even if this implies drastic measures.

On the positive side, it has to be mentioned that the debt brake seems to have raised the awareness of government and parliament that funds are limited. HIMMEL AND GEIER (2003) report that parliamentary work now takes account of the budget constraint which the debt brake imposes. This might also help to mitigate the discussed problems with the financial plan. In case this loophole is exploited by politicians, additional checks would have to be introduced. One possibility, whose advantages and shortcomings have been just discussed, would be to apply the debt brake to the financial plan. Another possibility would be to introduce additional political safeguards against spending increases. The introduction of a fiscal referendum on the federal level has been discussed for a long time and might become again an option in case the functioning of the debt brake was considered to be unsatisfactory.<sup>27</sup>

26 COGAN, MURRIS and SCHICK (1994) discuss the manipulations of the baseline estimates in the USA. POTERBA (1996) gives an overview of the US federal budget rules which incorporate these baseline estimates.

27 KIRCHGÄSSNER (2004) and FELD and KIRCHGÄSSNER (2004) discuss the role a federal fiscal referendum might play alongside a debt brake, based on the available cantonal experience.

## 7. Conclusions

The Swiss debt brake has two basic aims: a balanced budget in the course of a business cycle and a passively anti-cyclical fiscal policy. Judging from simulations with historical data, both of these aims can in principle be achieved. The most important anticyclical effect comes from a large error in revenue estimates early on in the recession. This also means that there is little difference to a simple balanced budget rule. The rule could be made more anticyclical, e.g. by raising the factor  $k$  to a power above one. Given the large errors in revenue estimates, this does not seem necessary. However, it might well be possible that the process of revenue estimation improves after the introduction of the debt brake and that the large estimation errors will disappear. As a consequence, fiscal policy would become less anticyclical at the beginning of boom and recession periods.

Overall, the Swiss debt brake has the clear advantage of applying both to boom and to recession periods. This symmetry property should help to avoid time-inconsistency problems such as the ones encountered by the Maastricht deficit criterion. However, time-inconsistency remains an issue since there are two loopholes in the mechanism. The most important of these is the exclusion of the financial plan. This means that spending increases or revenue decreases can be made by parliament at will, as long as they do not affect the budget, even though they create a deficit in the years following the budget. Once the budget has to be made for this future period, the need for adjustment might be considered too large to be made within a single budget. Then, it would be tempting to take recourse to a temporary suspension of the debt brake, e.g. by defining an adjustment path for the structural deficit. This already had to be done in 2003 due to an unexpectedly large structural deficit. However, if it is done repeatedly, the mechanism will stop being credible and will lose its power to control budget deficits.

In practice, the mechanism could work well in spite of this shortcoming. First, it (still) enjoys wide popular support and an outright violation will come at a political cost which the relevant centre parties will probably not be willing to bear. Further, the mechanism has led to a much more disciplined budget process and has therefore already influenced the practical budget work in a positive way. It should also be remembered that the debt brake has the aim of a zero deficit of the financial account which is restrictive both in comparison to the Maastricht criteria and to cantonal rules. The last usually apply only to the current account with deficit financing of investment still possible. Some deviations from budget discipline can therefore be allowed without jeopardizing the stability of federal public finances.

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#### SUMMARY

After a decade with large budget deficits, Switzerland introduced a debt brake in 2002. It is an expenditure rule whose aim is a structurally balanced budget. The rule is two-sided and limits expenditure both during boom and recession periods. Judging from simulations using historical data, the mechanism works more or less as intended. There is a sanction mechanism present since deviations from the expenditure limit have to be compensated in the future. Extraordinary revenue is not included in the mechanism which excludes short-term fixes to a large degree. However, the debt brake has also a number of weak spots which could lead to a failure to achieve its aim.

## ZUSAMMENFASSUNG

Nach einer Dekade mit hohen Budgetdefiziten und einer stark steigenden Verschuldung führte der Bund im Jahre 2002 eine Schuldenbremse ein. Es handelt sich um eine Ausgabenregel, welche ein strukturell ausgeglichenes Budget als Ziel hat. Die Regel gilt sowohl für Rezessions- als auch für Aufschwungphasen. Simulationen auf Basis von historischen Daten ergeben, dass der Mechanismus den Erwartungen entsprechend funktioniert. Es besteht ein Sanktionsmechanismus, da Abweichungen vom Ausgabenlimit kompensiert werden müssen. Einmalige Einnahmen können nicht zu einem Budgetausgleich verwendet werden, was die Möglichkeiten für kurzfristige Budgetkosmetik einschränkt. Trotzdem bestehen einige Schwachstellen, welche das korrekte Funktionieren der Schuldenbremse in Frage stellen können.

## RÉSUMÉ

Après une décennie caractérisée par d'importants déficits budgétaires, la Suisse a introduit un frein à l'endettement en 2002. Il s'agit d'une règle qui détermine les dépenses ayant pour but un budget structurellement équilibré. La règle s'applique aussi bien durant les périodes de récession que durant les périodes de reprise. A en juger à partir de simulations sur des données historiques, le mécanisme fonctionne à peu près comme prévu. Il y a un mécanisme de sanction qui consiste en ce que les déviations par rapport à la limite des dépenses doivent être compensées ultérieurement. Les recettes extraordinaires n'entrent pas en ligne de compte dans la détermination du plafond des dépenses, ce qui exclut en grande partie un recours à la cosmétique budgétaire. En même temps, le frein à l'endettement a des faiblesses qui pourraient l'empêcher d'atteindre son objectif.