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## A New Rule: “The Swiss Debt Brake”

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**IMF Working Paper**

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**A New Rule: “The Swiss Debt Brake”**

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**Abstract**

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The paper provides an international comparison and a comprehensive analysis of a new fiscal expenditure rule for the federal government in Switzerland. The proposed rule has two innovative features: it aims at a structurally balanced budget in the short-run by annually setting a cyclically adjusted expenditure ceiling, and it arrests the accumulation of public debt via corrections of future expenditure targets for past deviations from projected fiscal balances. The paper finds that the new rule is likely to reduce procyclical tendencies in fiscal policy and that its objectives are adequate in meeting long-run fiscal challenges arising from demographic changes.

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## SWITZERLAND'S DEBT BRAKE

### A. Introduction

In the mid 1970s many OECD countries started to run large fiscal deficits leading to rapidly increasing levels of public debt. In the 20-year period that followed, a doubling of the GDP ratio could be observed. However the tendency of ever-increasing debt-ratios came to a standstill in the mid 1990s due to a widespread fiscal retrenchment process propelled by political and economic developments.

For many countries a key element in arresting the long-running deficit bias was the adoption of formal fiscal rules. Forerunners of this new approach of voluntarily constraining fiscal policy were Australia and New Zealand which introduced new legal frameworks emphasizing transparency and thus public accountability. The launch of the European Monetary Union further enhanced the move towards tighter fiscal self-discipline. The adoption of the Stability and Growth Pact set new and binding fiscal policy goals requiring countries to achieve and maintain structural balance. With the fiscal objectives more clearly defined, a debate has ensued about adequate frameworks for fiscal policy and the role for fiscal rules (Kopits and Symansky 1998, Hemming and Kell 2001). Several countries such as Netherlands, Sweden and the United Kingdom have adopted formal fiscal rules (Heeringa and Lind 2001, Kell 2001), while others are still rethinking their fiscal policy frameworks (Wendorff 2001).

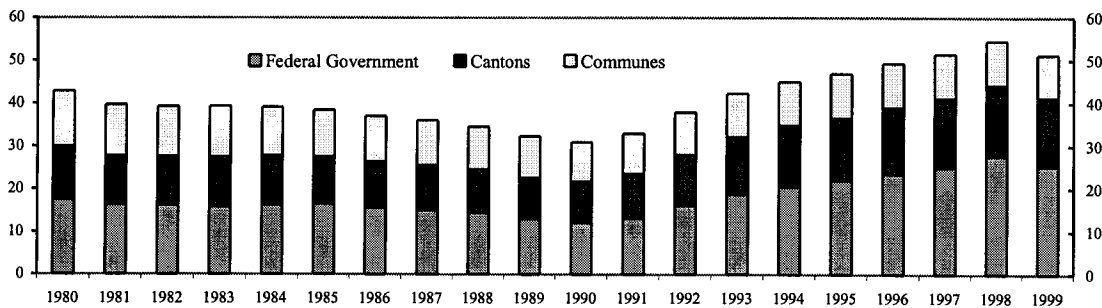
An innovative proposal for a new type of fiscal policy rule has recently emerged in Switzerland. The new rule aims to maintain *structural* budget balance while allowing a variation of the actual balance with the business cycle. A built-in error correction mechanism ensures against any further debt run-up over the business cycle. While Switzerland has a long tradition of sound public policies, the onset in 1991 of a prolonged economic slowdown led to a series of large deficits and a rapidly rising debt-to-GDP ratio. As a long-term solution to this problem the government has decided to enshrine in the Constitution a balanced budget rule at the federal government level. Already Switzerland has a constitutional balanced budget requirement and many cantons have constrained fiscal activities through legally binding fiscal rules.

This paper has two goals: (i) it puts the new rule in international perspective through a comparative discussion of its main characteristics, and (ii) it examines the effectiveness of the proposed fiscal policy framework in meeting Switzerland's fiscal challenges. The study attempts to shed light on both whether the medium- and long-term target of fiscal policy—budget balance—is appropriate in view of the strains on public expenditure arising from population aging, and whether the proposed amendments to the budget rule adequately address short-term cyclical inconsistencies in fiscal policy.

## B. Trends in Public Debt and the Proposed Fiscal Rule for Switzerland

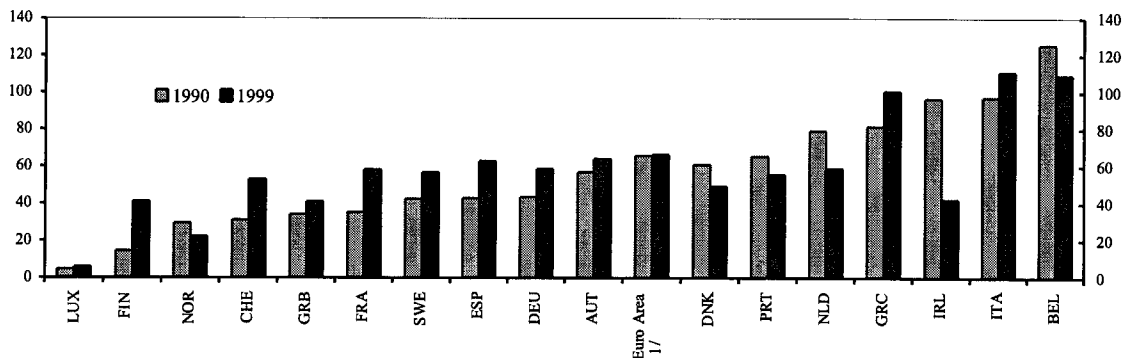
From an international perspective Switzerland's debt-to-GDP ratio is not excessive but its rate of growth in the 1990s stands out. In 1990 Switzerland had a substantially smaller debt burden in terms of GDP than many other European countries. Between 1990 and 1998, the gross debt-to-GDP ratio increased from 31 to 54 percent of GDP. The strongest increase was experienced at the federal level where debt more than doubled from 12 to 28 percent of GDP (Figure 1). By contrast, many European countries undertook over the same period a concerted effort to consolidate their budgets and to reduce their debt ratios. Ireland (quite dramatically), Portugal, Belgium, Netherlands, and Denmark all reduced their debt-to-GDP ratios. By 1998 the Swiss debt ratio had moved into the mid-range of ratios in the euro area of around 50–60 percent of GDP (Figure 2).

Figure 1. Switzerland: Debt-to-GDP Ratio of the Federal Government, Cantons, and Communes, 1980–1999



Source: Eidgenössische Finanzverwaltung, Switzerland, 2000.

Figure 2. Switzerland: International Comparison of General Government Debt Ratio (In percent of GDP)



Source: IMF, World Economic Outlook.  
1/Euro area without Luxembourg.

The Swiss economy's protracted period of stagnation was the main contributory factor to the steep rise in debt. Between 1990 and 1999, average annual growth of real GDP dropped to 0.5 percent compared to 1.8 percent between 1990 and 1999. While the decline was partly cyclical, it also reflected low underlying productivity growth (SM/98/43<sup>2</sup>). As a consequence, budget financing was persistently constrained by low revenues, which could not meet growing expenditures, especially for health insurance and invalidity pensions. High unemployment (by Swiss standards) also led to substantial deficits in the unemployment insurance program which required financing through the federal budget.<sup>3</sup>

More recently the Swiss government has taken steps to strengthen the fiscal framework and arrest the growth in debt. Based on a constitutional amendment in 1998, the government set out to eliminate the federal deficit by 2001 (Stabilisierungsprogramm). A marked turnaround in unemployment in 1999 and 2000 and a pick-up of economic growth greatly facilitated the achievement of the goal one year ahead of the target. As a result, the debt-to-GDP ratio has already been falling sharply. The government's efforts are now concentrated on gaining referendum approval for a constitutionally binding expenditure rule that will retain a balanced federal budget on average but allow some variation in the fiscal position over the economic cycle.

### **Characteristics of the proposed Swiss fiscal rule**

The proposed rule specifies a one-year ahead ceiling on central government expenditures equal to predicted revenues adjusted by a factor reflecting the cyclical position of the economy. The cyclical factor is determined as the ratio of trend real GDP to expected real GDP. Thus under the new rule it would be possible to run a deficit in a recession and a surplus in a boom, but over the whole cycle deficits and surpluses would have to cancel out. The intention is for expenditures to remain relatively independent of cyclical variations, while taxes act as automatic stabilizers.

Revenue and real GDP forecasts are based on forecasts from the current budget planning process. According to the proposal, trend GDP would be calculated as an extrapolation of a Hodrick Prescott-filtered (HP) historical output time series.<sup>4</sup> The spending ceiling for the budget year  $t+1$  can be expressed as:

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<sup>2</sup> See chapter one on "Switzerland's Long-Run Growth Slowdown" by A. Jaeger in: Switzerland Selected Issues and Statistical Appendix, April 1998.

<sup>3</sup> Between 1993 and 1997 the federal government paid a net SwF 4.3 billion (1.1 percent of GDP) into the unemployment insurance fund. A similar amount was provided by the cantons.

<sup>4</sup> The HP-filter is a widely used method for decomposing time series data into a trend and a cyclical component. It has the advantage of providing a transparent and objective measure of potential output. However, the authorities are open to alternative approaches if a superior, yet still transparent, method for calculating the output gap can be found.

$$G_{t+1}^c = E_t(R_{t+1}) \cdot E_t(C_{t+1}) + A_{t+1}$$

where  $G_{t+1}^c$  is the spending ceiling for period  $t+1$ . The two components,  $E_t(R_{t+1})$  and  $E_t(C_{t+1})$ , denote expectations at time  $t$  of revenue and the cyclical position at time  $t+1$ . The term  $A_{t+1}$  is an adjustment factor correcting for past differences between budget targets and outcomes. These differences may arise from revenue forecast errors or breaches of the spending limit. A full record of these deviations is kept in a fictional account which is debited in case of an unanticipated deficit (over-spending or under-collecting) and credited in case of an unanticipated surplus (under-spending or over-collecting).<sup>5</sup> The fiscal rule requires that the government must eliminate any *negative* balance on this account, but no time horizon is specified. Only if the negative balance exceeds 6 percent of expenditures (0.6 percent of GDP) must the government bring it below 6 percent within three years.

The legal text specifies the computation of the expenditure ceiling and also includes a definition of its main component variables—revenue and the cyclical factor. The correction for past errors,  $A_t$ , is not regulated so long as the accumulated overspending amounts to less than 6 percent of expenditures. No reporting requirements are specified for revenue and growth forecasts.

The expenditure ceiling is binding for both the budgetary planning and execution stage. In accordance with the constitution, the government would be required to present a budget subject to the expenditure rule to parliament. Parliament would then be permitted to make changes to both the level and composition of expenditures. If this amended budget still satisfies the rule, then it is adopted as law. If not, the budget can only be enacted with a qualified majority in parliament.<sup>6</sup> If this majority cannot be achieved, the original government's budget is adopted by default.

Sanctions are judicial by nature. The federal budget must satisfy the expenditure rule and the spending ceiling cannot be overturned throughout the year by budget amendments. Only under exceptional circumstances can the spending ceiling be broken by a qualified majority in parliament. The law does not specify these conditions and allows considerable room for interpretation. Simulations by the Ministry of Finance indicate that the expenditure ceiling would have been breached on exceptional grounds at various times in the 1990s (*Botschaft zur Schuldenbremse*), but the overall amount would have been less than 2 percent of GDP distributed over several years.

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<sup>5</sup> The balance of the fictional account is determined as the accumulated difference between revenue and expenditures deviations minus discrete adjustments  $A_t$  any prior year. The overall balance is given as:  $\sum_j^t (E_j(R_j) - R_j) - \sum_j^t (G_j^c - G_j) - \sum_j^t A_j$  where  $j$  ranges from the start of the rule to the current period  $t$ .

<sup>6</sup> The qualified majority requirement is waived if the proposed expenditures exceed the ceiling by less than 0.5 percent.

### C. An International Comparison of the Swiss Rule

In recent years fiscal rules have become a popular vehicle for imposing fiscal discipline. The response has been driven by the perception that political and institutional factors such as the short time horizon of governments, a bias to overestimating returns to public expenditures, and lax procedures for spending amendments, lie at the root of the problem (Hemming and Kell, 2001). Fiscal rules are commonly defined as constraints on fiscal policy with a time-bound character. In their most common form they set a numerical target or define specific rules for the budget process. The underlying objectives of fiscal rules are various (Kopits and Symansky, 1998) and depend on the particular economic situation of a country. They include: achieving lower interest rates and debt through reputational effects (New Zealand, Sweden); reducing the size of government, as measured by tax-to-GDP ratio (Finland, Netherlands); restraining demand in an overheating economy (Ireland, Portugal); and tackling future ageing-related spending needs (Austria, Belgium, Denmark).

#### Types of fiscal rules

A number of diverse rules have been developed. The two most common types are (i) deficit and debt rules<sup>7</sup> and (ii) expenditure rules (Table 1). These are not exclusive categories, but rather tend to highlight different *degrees of specificity*. Deficit and debt rules define only levels of final fiscal objectives and are usually vague about how to attain them. On the other hand, expenditure rules concentrate on the steps to achieve fiscal targets and put heightened emphasis on implementation issues. The distinction between these two categories of rules is, however, by no means clear cut.

A typical example of a deficit rule in conjunction with a debt goal is the “close to balance” requirement for general government budgets under the EU’s Growth and Stability Pact.<sup>8</sup> Countries are required to meet the criterion unless exceptional circumstances can be claimed, but although ECOFIN reviews a member country’s stability program, no instructions are provided on how to achieve these goals. Other examples are the fiscal rules in United Kingdom and Germany that specify limited deficit targets to allow debt finance of investment as a means to pursue a growth-enhancing policy (golden rule). Debt targets—defined by the debt-to-GDP ratio—are commonly used as supplementary goals specifying an upper limit, since some debt-variability is in general considered desirable (Barro 1979). Examples are a maximum debt-to-GDP ratio of 60 percent defined in the Maastricht criteria and a maximum 40 percent debt-to-GDP ratio in the United Kingdom.

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<sup>7</sup> Deficit and debt objectives are unequivocally linked through the flow-stock identity that fiscal deficits are equal to changes in the debt level.

<sup>8</sup> The Stability and Growth Pact was adopted in 1997 and is geared towards fiscal discipline among the member countries of the European Monetary Union.



Table 1. Switzerland: Comparison of Fiscal Policies in Selected Countries

	<b>Objective</b>	<b>Planning horizon</b>	<b>Operating variables</b>
Switzerland	Debt control through permanently balanced budget	Permanent rule applied each year	Expenditure ceiling while allowing cyclical budget variation
European Union Growth and Stability Pact	Sound budgetary positions close to balance or in surplus	Permanent rule, exceptions possible	Countries have to provide multiyear stability programs
Austria	Balanced budget	Four year stability program	Revenue and expenditure side measures
Australia	Sound fiscal policy through public scrutiny: budget balance over the cycle	Three year fiscal strategy statements; also sustainability assessment for next 40 years	Annually specified in budget strategy program which includes short term fiscal measures.
Belgium	Deficit and debt targets of Maastricht	Four year stability program	Target ceilings for social expenditure growth
Canada	Balanced budget with supplementary growth enhancing measures	Two year budget plan under prudent planning	Restraints in program spending
Denmark	Budget surplus and debt reduction	Four year stability program	Tax reform and expenditure restraints
Finland	Deficit reduction and in future tax cuts	Four years on an annually rolling basis	Expenditure ceilings
France	Balanced budget	Three year stability program	Tax reduction and expenditure growth target
Germany	Deficit and debt targets of Maastricht	Five year target plan for budget	Expenditure restraint and tax reform
Ireland	Budget surplus to curb inflation	Two year stability program	Tax reform and expenditure control
Italy	Balanced Budget	Three year stability program	Tax and primary expenditure cuts
Netherlands	Deficit reduction and tax cuts	Four years set at beginning of coalition period	Expenditure ceilings for government and social security
New Zealand	Operational surplus; decline of debt-to-GDP ratio; improved credibility	Long-run goals set forth in budget policy statement; no specific time horizon	Expenditure restraints, and revenue measures
Portugal	Eliminating deficit by 2002	Five year medium-term outlook	Expenditure control
Spain	Deficit targets for each level of government	Four year stability program	Expenditure control
Sweden	Debt reduction through budget surplus of 2 percent	Three years based on macro forecasts	Expenditure ceiling on categories
United Kingdom	Balanced budget over cycle holding debt to GDP ratio at prudent level (below 40 percent)	Three years on a two year rolling basis	Expenditure restraint while allowing cyclical budget variation
United States	Balanced budget as defined in Budget Enforcement Act 1997	Four year reform program ends in 2002	Expenditure ceiling for each fiscal year, expenditure changes tied to revenue measures

Expenditure rules on the other hand focus on the steps to achieve a fiscal target. While expenditure restraint is only one approach to fiscal improvement, it has proven to be the most effective one (Alesina and Perotti, 1997). The country-specific setup of expenditure rules reflects diverse political systems and budget procedures. Some expenditure rules pursue explicit deficit targets (Sweden, Switzerland), while others allow policy makers to change the objectives over time (Netherlands, Finland).

A main factor in choosing one type of rule over another is the trade-off between the commitment to achieve long-run fiscal goals—which requires more detailed rules—at the cost of insufficient short-run fiscal flexibility. Relatively rigid rules, such as the requirement to restrict expenditures to a pre-determined value, are more likely to achieve a given fiscal goal, but can create an undesired fiscal policy stance in the short run. In contrast, rules with fewer regulations or less specific goals—e.g., a budget “close to balance”—allow more flexibility in the short run, but suffer from weaker enforcement discipline. More complex rules with conditional clauses could improve the trade-off, but have not found much application in practice due to difficulties in communicating policy intentions to the public.

Transparency is an important adjunct to fiscal rules. Transparency involves being open to the public about the structure and functions of government and its policy intentions and projections. The reputational effects associated with transparency lead to more accountability of policy decisions and facilitate performance judgments against fiscal objectives. Some countries have explicitly emphasized this approach to fiscal policy, with New Zealand pioneering this approach through its Fiscal Responsibility Act of 1994. More recently, Australia (1998) and the United Kingdom (1997) have adopted some of these aspects.

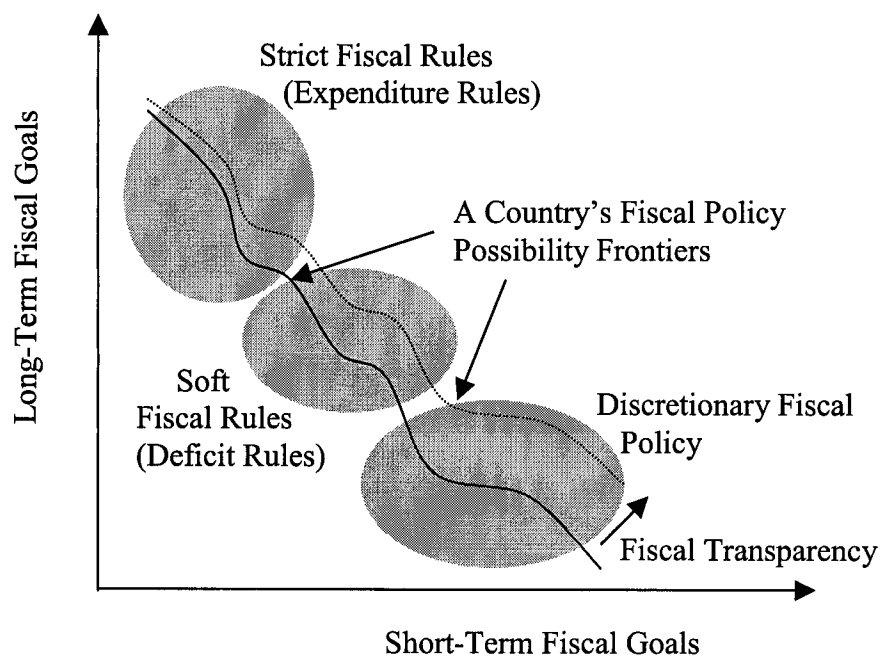
Assuming transparency has a disciplining effect, policy makers can exploit credibility gains and implement fiscal policy more flexibly. A schematic representation of the fiscal policy trade-off is shown in Figure 3. The axes on the graph denote desired short-run policy goals (e.g., counter-cyclical policy) and long-term policy goals (e.g., debt reduction). The solid downward sloping curve represents the set of feasible fiscal policies. The disciplining effect of fiscal transparency leads to a less severe policy trade-off (dotted line). The “north-west” region of the graph is characterized by the adoption of binding fiscal rules. The expenditure rules of Switzerland, Netherlands, Sweden, and Finland would fall into this area. The “center area” depicts soft rules with some built-in some flexibility for short-term discretion. The fiscal policies of most of the EU member countries under the Growth and Stability Pact would fall into this region. Finally the “south-east” represents discretionary policies where policies are conducted without formal rules.

### **Expenditure rules in comparison**

An important feature of all expenditure rules is their aim to solve a time-inconsistency problem inherent to many political systems. Political decisions are often driven by short-run spending pressures leading to a lax fiscal policy during upswings and persistent overspending during downturns with the results of a gradual build-up of public debt (Hemming and Kell,

2001). Fiscal rules tackle the problem of expenditure overruns by constraining policy decisions via tailored institutional regulations.

Figure 3. Fiscal Rules: Trade-Off Between Long-Term and Short-Term Policy Goals



Given the differences in political systems and budget processes, expenditure rules vary substantially across countries. The expenditure rules in the Netherlands and Sweden aim at strengthening the role of the finance minister within the government, while in Switzerland the new fiscal rule attempts to limit the influence of parliament on expenditures (Table 2). The Swiss rule also relies on a one-year planning horizon compared to the multi-year budget plans in the Netherlands and Sweden.

The expenditure rule in the Netherlands is based on three pillars: (i) a rolling four-year cautious macroeconomic scenario; (ii) four-year real net expenditure ceilings tied to a trend forecast; and (iii) a formula for dividing up budget shortfalls or gains. With the cautious forecasting approach, the Dutch rule implicitly targets a budget surplus without committing to a specific value. Budget surpluses are divided into debt- reduction and tax cuts depending on the size of the surplus, while deficits are partly corrected through expenditure adjustments and partly through debt financing. The rolling planning horizon introduces inertia into expenditure growth and has significantly altered the political power constellation within the government. The influence of the finance minister on budget outcomes is improved through

the heightened emphasis of the rule on the planning process. On the other hand, the decision making power of individual ministries over current expenditures has been reduced and emphasis has shifted to adjustments of the time-path of expenditures. First experiences show a significant improvement of the budget balance, although the rule has so far mainly been tested against a backdrop of favorable macroeconomic conditions.

Table 2. Switzerland: Comparison of Expenditures Rules

	<b>Switzerland</b>	<b>Netherlands</b>	<b>Sweden</b>
Effective date	Proposed for 2003	Since 1998 coalition agreement	Since State Budget Act 1996
Fiscal Objective	Balance structural budget over cycle	Control expenditure growth and allow cyclical budget variations	Achieve long-run budget surplus of 2 percent
Level of Rule	Central government expenditures including public investments; no grouped spending ceilings	Central government expenditures less non-tax revenue and infrastructure fund; ceilings for social security, health care and general government	Central government expenditures less interest payments; ceilings for 27 spending categories with built-in safety margin.
Expenditure Ceiling	Annual nominal expenditure ceiling equal to one-year revenue forecasts adjusted for cyclical position of economy	Four year real expenditure ceilings based on cautious growth and revenue forecasts	Three year nominal expenditure ceiling based on macro and revenue forecasts
Deviations from rule	Anticipated exceptional overruns require a qualified majority in parliament; For unanticipated overruns a fictional account is kept; if deficits larger than 6 percent of expenditures then cuts are required	Unanticipated deficit or surplus: rule assigns excess funds or financing needs to revenue changes and budget imbalances; special provision for public wage overruns	Unanticipated budget overruns are financed through expenditure reallocation or new revenues
Sanctions	Judicial	Reputational	Reputational

Sources: Botschaft zur Schuldenbremse, Schweizer Bundesrat, July 2000; Netherlands: Staff Report for the 1999 and 2000 Article IV Consultations; and Sweden: Staff Report for the 1999 and 2000 Article IV Consultations.

The Swedish expenditure rule is also based on a multi-year framework, but specifies an explicit target of a 2 percent of GDP budget surplus. In a top-down approach, the finance

minister has the responsibility to draw up and update the multi-year macroeconomic forecast and to produce revenue forecasts. In a cabinet meeting, the ministers decide on individual expenditures bound by these forecasts. In effect this shifts political negotiations away from individual spending limits to the allocation of funds over expenditure categories. A built-in budget margin ensures that small spending overruns do not violate the overall expenditure goal. First assessments indicate that the tighter system of expenditure control has significantly contributed to recent favorable budgetary developments. A potential limitation is the rigidity of binding spending categories, which include cyclically sensitive categories.

In Switzerland institutionalized expenditure restraints via budget rules have been in use for some time at the cantonal level and for various city budgets. The effectiveness of these fiscal frameworks on budget targets are well documented (Feld and Kirchgässner, 2001). Under the proposed rule for the federal government, spending limits are set by the government while the parliament is primarily allowed to make only compositional changes in expenditure. Level changes require a qualified majority in parliament. With these requirements, the Swiss government aims to shift the political debate away from spending ceilings towards a debate about long-term spending trends. In comparison to the rules adopted in the Netherlands and Sweden, the Swiss rule does not rely on medium-term macro-economic and revenue projections. Information about the future status of the economy is embodied in a mechanical estimate of next year's cyclical position of the economy. The choice of this approach has been justified by its heightened transparency and objectivity.

While the main objective of the expenditure rules in these three countries of imposing fiscal discipline in the political decision making process is similar, the chosen means differ substantially. In comparison, the Swiss rule appears the most stringent by relying on a one-year planning horizon, by constitutionally fixing its deficit and debt goal, and by tightly defining escape clauses from the expenditure ceiling.

#### **D. Is a Balanced Budget an Appropriate Long-Term Target?**

The new fiscal rule implicitly fixes federal debt, on average over the business cycle, at its current level. This translates into a long-term path for the debt-to-GDP ratio, which declines in line with the nominal growth rate of the economy. While a reduction of the debt ratio appears warranted, it is unclear by how much and how rapidly it should fall.

#### **Theoretical results and international experiences**

Theoretical analyses of an optimal debt level do not provide much practical guidance. The main considerations with respect to optimal debt policy are either based on efficiency losses from distortionary taxation or are related to the impact of debt reduction on national savings.<sup>9</sup> The implications of these approaches differ vastly across models. For instance, if taxation is

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<sup>9</sup> For example, see Becker (1979) and Aiyagari and McGrattan (1998).

distortionary, then government activities should be financed through earnings on assets implying a *negative* government debt target. On the other hand, if frequent changes in the tax code cause distortions, then an optimal policy would require tax smoothing over time implying an oscillating positive long-run debt level. Finally, models concentrating on the effect of debt on national savings highlight the positive effects of debt reduction on investment. The actual debt target level remains unclear and depends on parameters such as the time rate of preference, long-run growth rates, and population dynamics.

International experiences show that debt reduction is motivated to a large extent by a heightened awareness of future aging-related spending needs, a desire for inter-generational equity (stressed in popular debate in the USA), and more generally with a desire to provide more future room for maneuver for fiscal policy.<sup>10</sup> For example:

- New Zealand's fiscal management rules in the Fiscal Responsibility Act of 1994 state that public debt should be reduced to "prudent levels" in order to provide a "buffer against future adverse effects". The prudent level is defined by the government consistent with future financing needs and a desired revenue-to-GDP ratio. The initial target debt-to-GDP ratio of 30 percent was achieved in 1996. The government currently targets a debt-to-GDP ratio of 15 percent.
- In Denmark, current policy aims to gradually eliminate public debt through budget surpluses. The purpose is to free up resources for projected increases in pension expenditures through lower interest payments.
- A more flexible long-run debt policy is practiced by the United Kingdom. The government can borrow for public investments as long as net debt-to-GDP is held below a stable and prudent level, currently defined as 40 percent of GDP. By allowing new borrowing for investment projects, the budget excludes a sizeable part of expenditures from its balanced budget constraint and slows down or temporarily reverses the growth induced decline of the debt-to-GDP ratio.

Compared to these countries, the implied speed of decline of the debt-to-GDP ratio in Switzerland is in the middle range. With a balanced budget the federal debt-to-GDP ratio would be halved in about 24 years assuming a nominal growth rate of GDP of 3 percent a year. A golden rule approach with a deficit of one percent of GDP would stabilize the debt to GDP ratio in the long-run, but not reduce it. On the other hand, a targeted federal budget surplus of 1 percent would speed up the debt-reduction process and cut the current debt ratio in half in 10 years. Thus small variations in the budget target introduce considerable variation in reduction times for the debt-to GDP ratio.

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<sup>10</sup> The debt ceiling for European Monetary Union was set at 60 percent of GDP. While this level serves as a reference value for a sustainable fiscal position with a steady state budget deficit of 3 percent and a nominal GDP growth rate of 5 percent, the EU has never officially referred to the 60 percent ceiling as an optimal level of public debt.

## **Long-run challenges for the federal budget in Switzerland**

Switzerland faces the challenges from an aging population sooner than most other countries. The old-age dependency ratio (fraction of people over age 60 to working age population) rises steeply after 2015, reaching a peak in 2030. While the social security system is better prepared than in many other countries—Switzerland's pension system rests on three pillars, only one of which depends on public contributions—Switzerland also has one of the highest life expectancy rates. Between now and 2045 life expectancy is projected to rise from 79.5 to 83.3 years. This compares to an average increase in the Euro area from 78.1 to 82.4 years. The two main expenditure categories affected by this transition are health care and pension payments.

The public retirement insurance (AHV) system represents the base pillar of the Swiss pension system and provides means tested benefits paying 20–40 percent of average life-time earnings. The pension fund is financed as a pay-as-you-go system with public sector subsidies amounting to 20 percent of expenditures of which 17 percentage points come from the federal government—1.7 percent of GDP in 1999—and the rest from the cantons. The health care system centers on compulsory insurance with limited competition among health care providers. Health care expenditures as a fraction of GDP are small compared to other countries, but have risen strongly over the last decade. Federal contributions have been stable at around 12 percent of total expenditures or 1.7 percent of GDP.

Long-term projections by the OECD (2000) show that both AHV pension and health care expenditures will put considerable pressure on the federal budget from 2010 onwards. Moreover, a shrinking labor force reduces the real growth rate of the economy and thereby lowers contribution payments. The full weight of changes in the population age-composition are projected to bear down on the social welfare system after 2015. The projections are sensitive to assumptions about economic growth, although the broad conclusions are not significantly affected. Higher labor force participation rates, more immigration, and a pick-up of the investment rate could bolster growth rates, but probably only to a small degree as Switzerland's participation rate is one of the highest by international standards and political pressure is mounting to limit immigration. There is also a risk that expenditure growth could be higher than assumed since health care expenditures may understate accelerating costs for those over 75 years old.

These considerations have important implication for the design of long-run fiscal policy. A more conservative assessment of the fiscal outlook could be made in support of stronger burden sharing of fiscal adjustment by the baby-boomer generation that will be placing the strains on social spending in the next few decades. Taxing the current working generation more, or making it forgo public goods, will free up interest savings that could then unburden the next generational cohort. However, this more ambitious fiscal goal—which would require fiscal surpluses over the medium term—would run the risk of becoming politically unsustainable as it could create undue pressures to cut discretionary expenditures or temptations to expropriate the surpluses. In a nutshell, targeting fiscal surpluses might not be

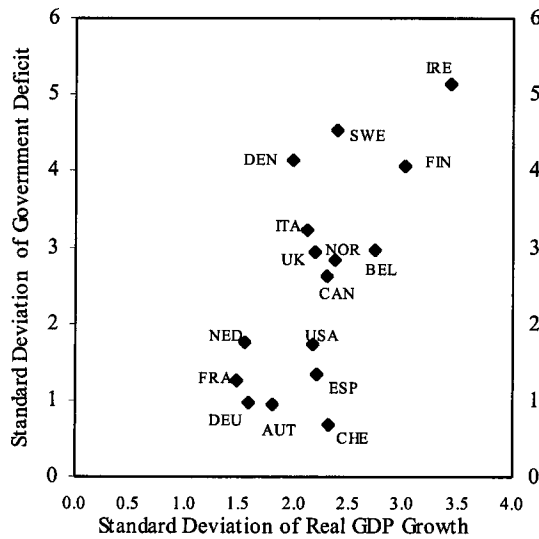
time consistent. There are also no compelling macroeconomic reasons to pursue a stricter budget target: the national savings rate is one of the highest by international standards and Switzerland has a large external current account surplus.

In sum, the objective of a balanced budget appears to be reasonable for Switzerland. By gradually reducing the debt ratio it will provide some room for future fiscal maneuver whilst not placing unrealistic—and hence perhaps self-defeating—pressures on the government. A balanced budget also an easy and transparent objective to communicate to the public.

### E. Cyclical Responsiveness of the Expenditure Rule

A secondary goal of the new rule is to establish an effective counter-cyclical fiscal policy. Over the last 30 years the variability of Switzerland's federal government balance has been remarkably low by the standards of industrial countries (Figure 4). Several European countries, notably Austria, France, Germany, and Netherlands, have had larger variations in their budget balance while experiencing less real output variations. In addition, whatever fiscal variability that occurred often resulted in procyclical outcomes. Several different factors have contributed to this:

Figure 4. Switzerland: Standard Deviation of Real GDP Growth versus Federal Budget Balance as a Ratio of GDP, 1970–1999

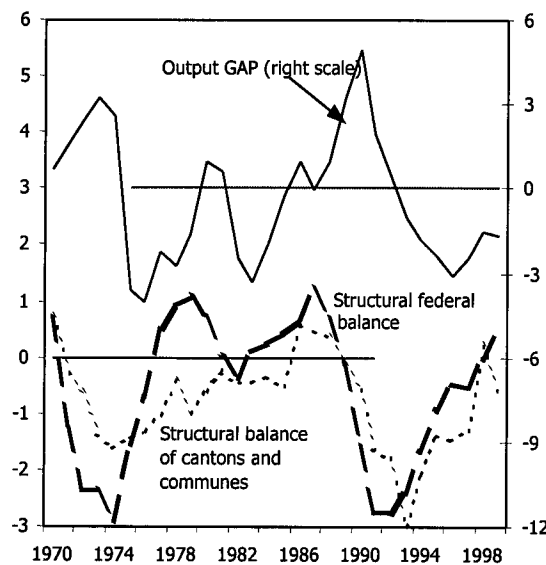


Source: IMF, World Economic Outlook.



- A main impediment in the past was an undisciplined discretionary fiscal policy. In the early 1970s, both the federal government and the cantons and communes ran sizeable deficits while the economy went through a phase of high economic growth (Figure 5). Likewise, at the end of the 1980s, all tiers of government ran small deficits while the economy was overheating. As fiscal positions subsequently deteriorated with the onset of prolonged slow growth in the 1990s, public concern about rising debt prompted the federal government to curb its growing deficits producing a negative fiscal impulse while the economy was still far below capacity.

Figure 5. Switzerland: Output Gap and Structural Budget Balance, 1970–1988



Sources: Eidgenössische Finanzverwaltung; and staff calculations.

- The automatic stabilizers have been hampered by long income tax collection lags. Up to 2001, most cantons and the federal government based income tax calculations on the average taxable income of the previous two years—the only exceptions were the cantons of Basel City, Geneva, Neuchatel, and Solothurn with combined tax revenue of 25 percent of all cantonal income tax. Beginning in 2001, the federal government as well as all but three cantons will assess income tax calculations on previous year income.
- Inadequate financing of the unemployment insurance system also fostered procyclical fiscal policy. The reserve funds of the unemployment insurance fund were limited to six times the previous year's benefit payments and triggered a cut in contribution rates if this level was exceeded. In the late 1980s, when unemployment was extremely low, this requirement led to a decline of both reserves and contribution

rates. In the following recession the available reserves were insufficient to meet growing benefit payments triggering a procyclical adjustment of contribution rates. Additional loans from the public sector were also needed. These were not anticipated by the federal government and prompted a tightening of the budget thereby offsetting the stabilizing effects of the unemployment insurance system.

- Finally, the high degree of decentralization in Switzerland impeded effective counter-cyclical fiscal policy. The federal government amounts to about one third of the public sector. The cantons and communes draw up their own budgets and issue their own debt. Currently, there is little fiscal coordination between the three levels of government despite a constitutional mandate requiring all levels of government to consider the business cycle when establishing their budgets.

### **Stabilizing elements of the new expenditure rule**

Given the procyclicality of fiscal policy in the past, a less discretionary policy approach is entirely understandable. The proposed rule-based framework seeks to facilitate a more cyclically sensitive fiscal policy through (i) unrestricted operation of the unemployment insurance and (ii) an explicit mechanism to vary the budget balance over the cycle.

As regards (i), the new rule stipulates that the unemployment insurance fund is financed outside the federal government budget. Legislation is currently crafted to set up a fund for extraordinary loans to the unemployment insurance system which would not fall under the spending ceiling of the expenditure rule. Moreover a gradual build-up of the unemployment insurance fund's reserves is planned to preempt the need for both procyclical rate adjustments and public transfers to the fund during recessions. The new law also redefines how contribution rate are adjusted to avoid procyclical responses as in the past.

As to (ii), the new budget rule builds in budget fluctuations that are designed to mimic the stabilizing effects of cyclical revenue variations.<sup>11</sup> Using the simplest formulation of the expenditure rule (abstracting from the adjustment factor  $A_t$ ), the actually prescribed balance at a fiscal position  $C$  can be written as:

$$GDR = \frac{G^c - R}{Y} = \frac{R}{Y} \cdot (C - 1)$$

where  $GDR$  denotes the government deficit ratio to GDP and  $G^c = R \cdot C$ . Given that the tax to GDP ratio ( $R/Y$ ) of the Swiss federal government is about 10 percent, and the maximum

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<sup>11</sup> The rule assumes that the output-gap elasticity of revenue is equal to one which roughly corresponds to the actually observed revenue response to changes in the real growth rate.

output gap from HP-filtered GDP time series data is about 5 percent, the feasible range for the government balance is then:<sup>12</sup>

$$GDR \in [-0.5, 0.5] \text{ percent of GDP}$$

A strict application of the expenditure rule in Switzerland would therefore only permit a deviation of expenditures from revenue by about 5 percent or a maximum cyclical deficit of about 0.5 percent of GDP.

Under an unanticipated severe recession, the permissible range for the GDR could perhaps reach a one-time maximum deficit of 1.5 percent of GDP. However this calculation assumes a serious prediction error for revenue—a 10 percent over-prediction of revenues—and a favorable overestimate of the output gap. The large forecast error would permit the substantially higher deficit, but at the same time would trigger the requirement to lower the deficit in the following years (see Appendix for details).

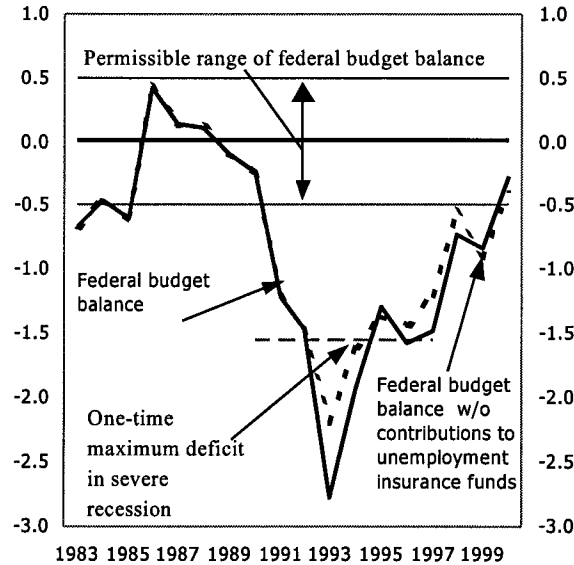
A strict application of the fiscal rule in the period 1987–99 would have further reduced the variability of the federal budget deficit—although compared to the procyclical nature of actual fiscal policy, this would at least in some periods have been an improvement. Only in the upswing period 1986–1990 would the federal budget have been within the 0.5 percent of GDP band (Figure 6). But in that period, budget surpluses were not large enough to prevent the economy from overheating and left the fiscal accounts in an insufficiently strong position when the subsequent downturn began. The prescribed expenditure restraint under the rule might have improved the situation somewhat, but would have fallen short of an effective counter-cyclical policy. Likewise the permitted fiscal deficits during the recession of the 1990s would have been significantly smaller than the actual deficits implying that the fiscal stance would have been much tighter under the proposed rule—even assuming the rule would have permitted a maximum short-run deficit of 1.5 percent of GDP.

The historical analysis leaves the impression that the small permitted budget variations under the proposed rule would have led to a rather tight fiscal policy during the prolonged recession of the 1990s. It is, however, difficult to gauge the actual effects of a strict application of the expenditure rule to this period, since GDP is endogenous. For example, if the rule had been in place before 1991, and larger surpluses would have been run, the economy might have experienced a smaller positive output gap and, subsequently, a less severe downturn than actually occurred. It should also be stressed that the burden of countercyclical policy is not borne by the federal government alone. Reductions of income tax collection lags on the cantonal level have strengthened the stabilizing effect of income taxation. Also, during the

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<sup>12</sup> The maximum output gap of 5 percent is based on annual real GDP data covering the period 1970–1999 using a standard smoothness parameter ( $\lambda=100$ ). As discussed in the following section variations in the smoothness parameter can increase or decrease the measured output gap. Production function estimates of potential output give a somewhat wider range of output gaps over the same period.

Figure 6. Switzerland: Federal Budget Balance and Limits Based on Rule  
(In percent of GDP)



Sources: IMF, World Economic Outlook; and staff calculations.

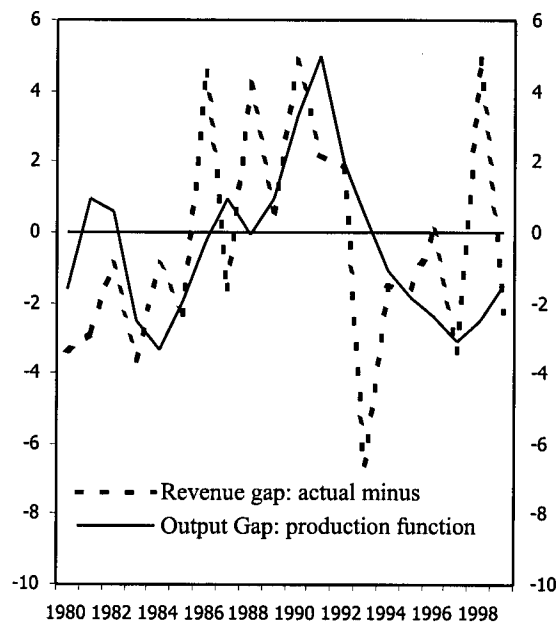
depth of the last downturn, the unemployment insurance fund recorded a deficit of about 0.7 percent of GDP, significantly augmenting the degree of budget variability on a consolidated government basis. Were the unemployment insurance fund to operate as an unimpeded stabilizer throughout the full business cycle, the low variability of the federal budget balance under the proposed rule would be a less pressing issue.

Rules based on longer-run planning horizons, as in some other countries, could generate more short-term variability in the budget balance than allowed under the proposed rule. In this vein, an analogous rewriting of the rule would be to base the expenditure ceiling on trend revenue rather than the one-step-ahead forecast of revenue. Since trend revenue tends to exceed actual revenue in a downturn, and trail behind it in an upturn (Figure 7), the range of possible budget variation could rise to  $\pm 1.3$  percent of GDP. This follows from a rewriting the rule as follows:

$$GBR_{\max} = \max \frac{R}{Y} \left( C \frac{RT}{R} - 1 \right) = 1.3$$

where  $RT$  is trend revenue and, based on HP-filter estimates, the maximum for  $C$  and  $RT/R$  are 1.05 and 1.08 respectively. An additional advantage of using trend revenue would be that it avoids significant revenue forecasting errors. Ex-post adjustments via  $A_t$  due to prediction

Figure 7. Switzerland: Output-Gap and Revenue Deviations from 1980–1999



Sources: IMF, World Economic Outlook; and staff calculations.

errors would be eliminated and potential procyclical effects through the built-in correction mechanism (discussed below) could be minimized. However, a downside to the approach would be the need to establish a transparent and reliable estimation method for trend revenue, especially when some revenue categories are highly variable.<sup>13</sup>

#### F. Implementation Issues

While on average the balanced budget rule can be expected to generate an improved fiscal policy, there are circumstances in which it could produce some unintended results.

##### **Protracted recessions and unanticipated surpluses**

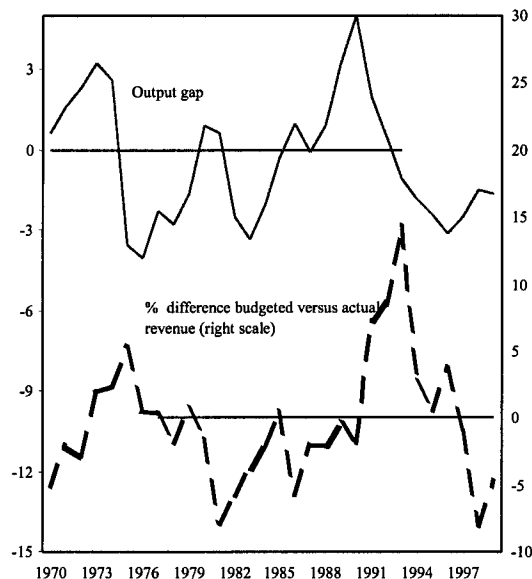
In order to avoid systematic revenue forecast errors or deliberate overspending the new rule imposes an error correction mechanism which requires an ex-post spending adjustment for failed targets. Past spending overruns need to be reduced via expenditure restraint to avoid a gradual build-up of debt. More specifically, if past spending overruns amount to more than 6 percent of revenue then the excessive balance on the fictional account must be brought

<sup>13</sup> For example, much of the volatility of revenues in Figure 7 stems from a high variability of receipts from the stamp duty and the withholding tax.

back below this threshold within three years. In a protracted recession when overspending is likely due to overly optimistic revenue forecasts, this mechanism can have a perverse effect. It could claw back expenditures at a time when the economy is still underutilized.

Historical data show that there is a systematic tendency to over-predict revenue in downswings and under-predict it in upswings. Revenue prediction errors are particularly large at the beginning of a new cycle (Figure 8).<sup>14</sup> Several episodes of large prediction errors can be identified. For example, budgeted revenue exceeded actual (ex post) by 7 to 10 percent at the height of the recession. The recorded spending overflows would therefore soon have reached the 6 percent threshold level and induced pro-cyclical expenditure restraint via the correction mechanism in the following years. A wider permitted deficit band or a loosened adjustment requirement for  $A_t$  could avoid such an outcome.

Figure 8. Switzerland: Output-Gap and Revenue Prediction Error, 1970–1997



Sources: IMF, World Economic Outlook; and staff calculations.

Another potential weakness of the new rule is the lack of provision to save unanticipated revenue gains. Contrary to the requirement to reduce a negative balance in the fictional account from past overspending there is no equivalent constraint in the case of an unforeseen surplus. This surplus would produce a positive entry in the fictional account and could be

<sup>14</sup> Revenue forecast errors are approximated by the percentage difference between the budgeted and actual revenue receipts in a given year. Average percentage deviations of the budgeted from actual revenue were 2.8 percent of revenue in the period 1970–1999.

used for spending purposes in the following year even though the output gap could still be positive. Past experience show that such a scenario is not unlikely. For example in 2000, revenues from stamp duty and the withholding tax were significantly higher than expected. The procyclical use of unanticipated revenues could be avoided through a modification of the expenditure rule by requiring that accumulated surpluses only be eliminated during periods when the economy has a declining or negative output gap.

### **The HP-filter and estimates of the cyclical position**

The method of measuring the cyclical position of the economy can also yield perverse results in some circumstances. While the proposed use of an HP-filter possesses some advantages—ease of calculation, transparency, and symmetric estimates of output gaps that would imply that budget surpluses and deficits cancel out over time—it also has drawbacks:

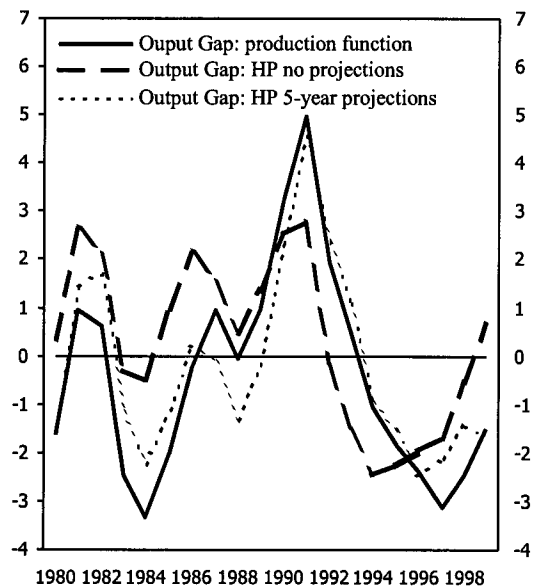
- The size of the output gap depends on the choice of an arbitrary smoothness parameter. A low smoothness factor leads to a more responsive trend component and therefore to smaller output gaps. A high smoothness parameter generates an unresponsive trend component and relatively large output gaps. Theoretical arguments that suggest the smoothness parameter should be based on the length of the business cycle are difficult to apply in Switzerland's case given the considerable variation in the length and amplitude of the business cycle.
- Predictions for the trend component of GDP are biased in the direction of recent output developments. As a result, trend and actual output move together and the cyclical factor  $C_t$  tends to lag behind the actual output gap and be less pronounced. In turn, this reduces the counter-cyclical effect of fiscal policy.
- Estimates of the output gap do not respond well to changes in the duration of the business cycle. During long periods of low growth, the HP-filter automatically downgrades the trend growth rate and predicts a smaller output gap. While this would be fine if trend growth rate actually had fallen, it could trigger a procyclical fiscal response in a protracted recession. For example, compared to production function estimate of the output gap, the HP-filter interpreted the very long economic downturn in the 1990s as a permanent downward shift in trend growth.

Some of these drawbacks can in principle be lessened by including forward-looking information on GDP growth when running the HP-filter. This can make trend output less sensitive to recent observations, as shown in the dotted line in Figure 9.<sup>15</sup> However, for the current output gap, any improvement is only as good as the quality of GDP projections. Better estimates of output gaps could be obtained with a production function or structural model approach. Compared to the HP-filter, structural approaches use information on internal and external demand developments, respond to expected changes in factor supplies

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<sup>15</sup> Each estimate of the output gap is based on historical data plus data for the next five years.

Figure 9. Switzerland: Output Gap, Production Function Estimate, and  
HIP Filtered Estimates



Sources: Eidgenössische Finanzverwaltung; and staff calculations.

(labor and capital), and can also be adjusted for structural policy changes. The main drawback would be that such methods are less transparent and straightforward than mechanical filters.

### G. Concluding Remarks

A number of conclusions follow from the analysis of the proposed fiscal framework.

The proposed constitutional amendment to the balanced budget rule provides a transparent framework for shrinking the debt/GDP ratio and reducing procyclical tendencies in fiscal policy.

A more ambitious fiscal target might arguably be more inter-generationally equitable and free up interest savings to pay for some of the budget costs after 2015 of an aging population. But it may not be time consistent—governments would be tempted to expropriate the surpluses along the way. There are also no compelling macroeconomic reasons to run a tighter fiscal policy than a balanced budget.

As the rule alone does not provide much additional cyclical flexibility, it will be important to follow through with other measures. In particular, the finances of the unemployment insurance fund should be strengthened so that procyclical movements in contribution rates



can be avoided. Better coordination of fiscal policy across the levels of government would also help.

Some aspects of the fiscal rule could be strengthened—or at least require careful discretion during implementation. In particular, the feedback rule to eliminate unintended deficits may lead to procyclical budget cuts in a prolonged recession. Stronger safeguards could be put in place to ensure that unintended surpluses are saved. And, as a technical matter, mechanical methods to estimate the cyclical position of the economy could be avoided or supplemented with other information on the degree of capacity utilization.

**THE RANGE OF THE FEDERAL BUDGET BALANCE UNDER THE EXPENDITURE RULE**

Rearranging the expenditure rule to solve for the implied government deficit ratio (GDR) gives:

$$GDR = \frac{E_t(R_{t+1}) \cdot E_t(C_{t+1}) + A_{t+1} - R_{t+1}}{Y_{t+1}}$$

The most basic scenario assumes that revenues and the cyclical factor are predicted without errors ( $E_t(R_{t+1}) = R_{t+1}$ ;  $E_t(C_{t+1}) = C_{t+1}$ ) and that no adjustments are necessary ( $A_{t+1} = 0$ ). The permitted range of the budget balance as discussed in the main text defines a range within 0.5 percent of GDP.

However, estimates of  $E_t(R_{t+1})$ ,  $E_t(C_{t+1})$  are not necessarily accurate or unbiased, and revenue forecasts can differ substantially from actual revenue collection. Large short-run tax elasticities and frequent changes in the tax code impair the ability of accurate forecasts. A rough estimate of the prediction error,  $\pi$ , can be derived from past federal budget data. These data show an average percentage difference between budgeted and actual revenue of 3 percent of budgeted revenue. The largest differences in budgeted revenue were observed at the onset of the severe 1991 recession where revenues were over-budgeted by about 7 to 10 percent of overall revenue. Assuming the worst case scenario of a counter-cyclical revenue forecast error of 10 percentage points ( $\pi_{\max} = 0.1$ ) the actual GDR can be calculated as

$$GDR = \frac{R_{t+1}}{Y_{t+1}} ((1 + \pi_{\max})C_{t+1} - 1) + \frac{A_{t+1}}{Y_{t+1}}$$

Abstracting from the annual adjustment payments, the maximum permissible deficit in a severe and unforeseen downswing would be 1.55 percent of GDP. The error correction mechanism of the expenditure rule stipulates that large forecast errors must be corrected in particular if the accumulated overspending amounts to more than 6 percent of expenditures. A forecast error of 10 percent would likely lead to an immediate violation of the deficit limit and require an adjustment of the spending ceiling via a negative  $A_{t+1}$ . The size of the adjustment depends on the level of accumulated spending overruns in the past. Historically underestimation of revenues during growth periods has been comparably low at around 2 percent of revenue. Therefore only a small reserve can be expected in the fictional account to offset negative revenue prediction errors and therefore substantial expenditure cut backs are likely in recession years. In sum revenue forecast errors can in extreme cases allow a deficit of 1.55 percent of GDP, but based on the expenditure rule would immediately met by counteracting adjustment requirements pushing the deficit down to substantially lower levels.

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