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Returning to the Golden Rule of Balanced Budgets: The Institutional and Political Economy of Restricting Public Deficits and Debt

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Abstract

In the aftermath of the 2008 financial crisis, both politicians and public finance economists focused their attention on ways to control public budget deficits and debt. Around the world, detailed and precise regulations affected how governments could deal with public deficit and debt. The “golden rule” of public finance states that governments should borrow only to invest and not to fund current spending, and that the current budget must always balance or show a surplus. Yet implementing the “golden rule” is not a simple question of setting limits to deficits and debt. Using the case of Switzerland, this paper presents the political and institutional economics of budget constraints and develops recommendations for budget management at the subnational government level. How do we balance the needs of current expenditures with intergenerational equity? Does fiscal control over deficit or debt require top-down policies from higher levels of government, or is self-imposed control reasonable?

Keywords: budget management, budget rules, debt service, public deficit, sustainable indebtedness, public borrowing, subnational government debt

JEL codes: H61, H62

Returning to the Golden Rule of Balanced Budgets: The Institutional and Political Economy of Restricting Public Deficits and Debt

I. Introduction

In the aftermath of the 2008 financial crisis, both politicians and public finance economists focused their attention on ways to control public budget deficits and debt. Around the world, regulations were debated – and sometimes imposed – to control how governments deal with public deficit and debt.¹

In Canada, according to the 2017 *Fiscal Sustainability Report*: “For the subnational government sector as a whole, current fiscal policy is not sustainable over the long term. PBO [the Parliamentary Budgetary Office] estimates that permanent tax increases or spending reductions amounting to 0.9 percent GDP would be required to stabilize the consolidated subnational net debt-to-GDP ratio at its current level of 28.0 percent of GDP in the long term” (PBO 2017: 2). Yet the need for sound public finance is a perennial concern: looking at European countries, Hallerberg, Strauch, and von Hagen (2007: 339) asserted before the 2008 crisis, “The interest in fiscal rules is a reaction to the experience in many countries of rapidly rising debts levels and unsustainable deficits in the 1970s and 1980s.”

In the interest of regaining control over deficits and debt in the long term, this paper offers a new look at an old idea. The “golden rule” of public finance states that governments should borrow only to invest and not to fund current spending, and that the current budget must always balance or have a surplus. However, implementing the golden rule is not a question of simply setting limits to deficits and debt. This paper presents a new approach and recommendations for sound budget management in the public sector, focusing on the following questions.

- How do we balance the needs of current and capital expenditures with intergenerational equity?
- Does fiscal control over deficit or debt require top-down policies from higher levels of government, or is self-imposed control reasonable?
- What are the legal and technical requirements in the budgeting process to implement the rules?
- How should the accounting system be organized so that operations are effective, traceable, and accountable?
- How can one evaluate the outcome or performance of fiscal rules? Do the results correspond to expectations?
- Are governments really doing what they said they would do in terms of budget responsibility?

1 Schaechter et al. (2012) and Lledó et al. (2017) provide country-specific information on fiscal rules for 96 countries from 1985 to 2015.

- Is it accurate to say that the more stringent the fiscal rules, the better the government accounts and the more sustainable their debts?

This paper is concerned with one issue: fiscal rules for controlling government deficits and debt. In section 2, I review the positions – significant for this debate – of two European institutions, the Council of Europe and the European Union, which in the 1980s were – and still are – preoccupied with government deficits and debts.

In section 3, I analyse the fiscal position of the subnational government layers (cantonal and communal) in Switzerland over the period 1990–2015 to observe their budget balance and indebtedness. This paper is not intended to present a thorough analysis of the Swiss case: reference to the cantons and the communes serves to illustrate the step-by-step development of fiscal rules over time in terms of their legal, budgeting, and accounting processes. In the early 1990s, the introduction of fiscal rules at the subnational level (cantons and communes) was a question of common sense and a conservative approach to government finances, not so much concerned with the parallel, and often ignored, academic debate. The historical analysis also demonstrates that fiscal control over deficit and debt requires several years to reach a sustainable path and that new investment expenditures are the adjustment variable.

In section 4, I revisit the golden rule for balancing the budget and controlling debt, a determining principle at the Swiss cantonal and local government levels. The golden rule refers to the fiscal position of each government unit *per se*, outside macroeconomic considerations such as deficit and debt ratios to GDP. The focus is on the relationship between present and recurrent expenditures and resources in public budgets and accounts on the one hand, and intergenerational equity on the other.

Yet implementing the golden rule is complex. From “soft” to “hard” budget constraints, there are various degrees of severity. Badly designed rules open loopholes (Dafflon 1995; 1996). Section 5 presents six key indicators that have been used in Switzerland to compare the fiscal position of the cantons. The indicators make it possible to qualify the budget constraint as “soft” or “hard” based on whether it is self-imposed or imposed by a higher level of government. These indicators might help policymakers in other national fiscal environments examine their own budget management practices to determine whether or not they promote budget responsibility.

Section 6 details the rules that apply at the subnational level, using the canton of Fribourg as an example of self-imposed rules at the cantonal level, and at the communal level in the same canton, as an example that combines legal constraints with top-down imposed rules on debt limits.

This paper has four main messages. First, achieving fiscal responsibility to guarantee fiscal sustainability at the three government levels is possible. Second, fiscal rules must include operational and accounting details to work properly.

Third, with the implementation of strict rules for balancing the current budget, new investment expenditures become the adjustment variable. The expenditures reduce moderately over time; but the rule guarantees that existing investments are properly maintained. Fourth, the golden rule results in more responsible public budget management than the use of macroeconomic rules.

2. Where do we start from?

For the last three decades, many academic papers have examined the normative economics of public deficit and debt. Fewer papers have been devoted to actual practice. Buchanan's *Public Principles of Public Debt* (1958) re-introduced the golden rule of balancing the budget. In *The Theory of Public Finance*, Musgrave introduced the pay-as-you-use principle for financing public investment through borrowing (1959: 562–565). These were fundamental normative contributions.

Almost 30 years later, the first detailed study on the implementation of fiscal rules, their design, and performance was published (Advisory Commission on Intergovernmental Relations 1987 for the 50 U.S. states). Since then, fewer than 20 analyses have been produced (Schaechter et al. 2012; Yerly 2013: 67–111) that describe either institutional restrictions on (sub)national borrowing or the consequences of excessive deficits and debt and possible sanctions. The small number of contributions is explained by the fact that such analyses are time consuming, requiring details of the legislation on budget processes, a solid understanding of the accounting system, and knowledge of quantitative methods to appreciate the effects of the rules on government accounting results and indebtedness.

Different approaches to limiting the growth of deficit and debt have been proposed, in theory and practice. Generally speaking, they can be grouped into four main categories: (1) reliance on financial market discipline; (2) cooperative negotiation processes involving various government levels; (3) fiscal rules limiting government deficits and borrowing²; and (4) direct control exerted by central governments over subnational government borrowing (Rossi and Dafflon 2002: 25–28; Ter-Minassian and Craig 1997). Box 1 summarizes two main contributions in this domain.

3. The fiscal position of Swiss subnational governments through time

This section considers the annual public finance aggregate results of the two subnational government levels in Switzerland (cantons and communes) for the

² Schaechter et al. (2012: 7–9) describe in detail four types of fiscal rules focusing on debt, budget balance, expenditures, or revenues. Canuto and Liu (2010) focus on the impact of the global financial crisis on subnational debt financing.

Box 1: Two approaches to containing subnational deficits and debt

The following two institutional approaches represent different ways of attempting to contain subnational government deficits and debt.

The European Charter emphasizes budget regulation and self-control at the local level, with limited intervention by central governments (in other words: budget responsibility rather than top-down imposed discipline); it ignores the role of capital markets.

The Maastricht criteria are macroeconomic measures, expressed in the form of GDP ratios, founded partly on the hope that financial markets will sanction governments (national or subnational) that do not respect the rules.

European Charter on Local Self-Government

The European Charter on Local Self-Government (Council of Europe 1985) is an important treaty ratified by 47 member states. According to article 9, paragraph 8, “For the purpose of borrowing for capital investment, local authorities shall have access to the national capital market within the limits of the law.” Paragraph 8 and the subsequent Explanatory Report contain precepts for good governance – the text implies that borrowing is for investment, not for current expenditures – but provide no advice on legal design or implementation methods.

Twenty years after the Charter was established, the political economy of balancing the budget and controlling debt at the subnational level was still not adequately understood. In 2004 and 2005, the Committee of Ministers at the Council of Europe made two series of recommendations to member states on financial and budgetary management at subnational levels (Council of Europe 2006³). These recommendations are reviewed in section 4.

Maastricht criteria

Protocol No. 5 on the excessive deficit procedure, annexed to the Maastricht Treaty, prescribes that member countries may participate in the single currency area from January 1, 1999, if (a) the government deficit-to-GDP ratio does not exceed the reference value of 3 percent, and (b) the government debt-to-GDP ratio does not exceed the benchmark value of 60 percent. Three successive legal amendments (in 1997, 2001, and 2017) and 16 regulatory decrees from 1993 to 2013 complete the

³ See Recommendation 1, paragraphs 24 and 71, of the Committee of Ministers (2004) to member states on financial and budgetary management at local and regional levels; Recommendation 1, paragraphs 73 to 76, of the Committee of Ministers (2005) to member states on financial and budgetary management at the local and regional levels (Council of Europe, 2009, page 224ff).

initial rule.⁴ This is the benchmarked macroeconomic approach to sustainable government finance.

Yet before the Treaty entered into force, severe problems had already been identified (Dafflon and Rossi 1999; Laughland 1996⁵). In the 2000s, financial markets were irrational in that they did not include the price of risk in the form of higher interest rates on public borrowing for Euro countries that did not respect the deficit-to-GDP and/or the public-debt-to-GDP ratios (Rossi and Dafflon 2012).

Thereafter, five main operational failures were evidenced (Berset 2014; Dafflon 2002; Yerly 2013). First, macroeconomic targets do not provide the institutional design needed to make the rule operational. Second, the ordinary sanction procedure in the case of excessive deficit or debt has never been properly implemented. Third, the rule does not differentiate between current and capital expenditures and offers no precise line of amortization, a concept often confused with “debt installment.” Fourth, the distribution of the Maastricht criteria limits between the national and subnational governments is left to the discretion of member states, posing problems for local budget autonomy and accountability. Finally, the criteria leave several definitions open-ended: expressions such as “actual primary balance,” “overall balance excluding interest payments,” “required primary balance [typically a surplus] in order to reduce the debt ratio,” “sufficiently high primary surplus to regain budgetary room for manoeuvre in the medium term,” and “medium term” have not been operationally defined.

period 1990–2015, their indebtedness, and their deficit- and debt-to-GDP ratios relative to the Maastricht criteria.⁶ The time series analysis shows (1) how the introduction or reinforcement of balanced budget rules have influenced government finances in the long term; (2) that it takes several years to obtain a significant result; and (3) the consequences on the allocation of resources in the current versus investment budgets.

4 Berset (2014) gives a comprehensive political economy analysis of the Maastricht criteria, including the history of the legislation, interpretation, and implementation directives to prevent circumventing the rule.

5 “It cannot be emphasized enough that the Maastricht Treaty itself does not require the criteria to be respected strictly. Countries are allowed to qualify, for example, if their deficit is ‘close’ to 3% of GDP and ‘has declined substantially.’ And yet, despite secondary legislation in other related fields, no official attempt has been made to give any precise meaning to these elastic terms since it was signed in early 1992. This gives the impression that EU member states prefer to keep intact their political room for manoeuvre” (Laughland 1996: 7).

6 The position of the federal government will be considered only as needed to understand the issue.

3.1 Understanding the Swiss government system

First, however, I must highlight three central issues that influence government finances and are important in understanding budget rules. The first point relates to the institutional specificities of the Swiss federal system. The second concerns the perimeter of the “government” sector for which the rule applies. The third relates to the accounting system, which plays a crucial role in the operationalization of the rule.

The Swiss federal system⁷

Switzerland is a federation divided into 26 cantons (similar to the Canadian provinces), themselves the aggregation of 2,255 municipalities or communes (cities and villages).⁸ Its population (7.8 million) is unevenly distributed between the cantons, from almost 1.5 million people in the canton of Zurich to 16,000 in Appenzell Inner Rhode. The number of communes also varies from one canton to another, from three in Basel-Town (pop. 193,000) or Glarus (pop. 40,000) to 355 in Bern (pop. 1 million).

The Swiss federal constitution protects the autonomy of the cantons. The cantons are responsible for any new tasks deemed necessary. The federal government can assume new responsibilities only if a double majority of the voters and the cantons agree in a popular vote. Otherwise, duties are assigned top-down to municipalities in each canton according to its own requirements. The political system is strongly influenced by the direct participation of the people. In addition to participation in elections (every four or five years, depending on the canton), referenda and citizen initiatives are key elements of Switzerland’s democracy. Direct decision-making through a people’s assembly still exists in the canton of Appenzell Inner Rhode and in many other small municipalities.

In policy areas that either directly concern national sovereignty (the army, monetary policy, or external relations) or require special coordination (social security, environment, energy, or infrastructure), the federal level has exclusive powers or can promulgate framework legislation. The cantons implement federal legislation within their boundaries: there is no decentralized federal agency that does so. Cantons retain powers that are important for their identity (education, languages, sports and culture, and religion) as well as those related to social policy (health and social services). Municipal powers in service delivery vary from one canton to the next depending on how much decision or operational autonomy the various cantonal legislations give to the communes. The main commune responsibilities are nurseries, kindergartens, compulsory school (but only management, equipment, and investment – curriculum is in the hands of the cantons), sports and leisure, road building and maintenance, water production and

⁷ Information in this section is drawn from Linder (2010).

⁸ The number of municipalities has decreased from 2,899 in 2000 to 2,255 in 2017 through voluntary amalgamations.

distribution, solid waste and wastewater management, local infrastructure, zoning, tourism, and forestry. Table A-1 in the Appendix presents the main domains of cantonal and local expenditures.

All three levels of government have the right to raise taxes and thus have a certain level of financial autonomy (see Table A-2 in the Appendix). Federal law harmonizes the cantons' direct taxation systems. The cantons make decisions on the amounts of tax deductions (within a closed federal list of deductions) and on their tax rate schedules. The municipalities control tax coefficients only in a piggyback tax system. They can also levy user charges in environmental policy (in accordance with the polluter-pays principle).

Local tax flexibility is important in ensuring the autonomy of local government. It not only allows municipalities to decide on land-use planning, infrastructure, services, or public utilities according to their own preferences, but also establishes responsibility on both sides of local government: authorities are held responsible for using their resources according to people's needs, and citizens have to contribute through taxation and charges to the services they demand. Fiscal responsibility and participatory democracy play an important role in containing subnational governments' deficits and indebtedness.

The accounting framework

Budget constraint rules require a suitable accounting legal and technical framework to operate efficiently. Although the rules are expressed in general terms, be they constitutional or captured in a financial budget law, the devil is in the details. General rules of fiscal deficit and debt control may give rise to various forms of creative accounting to circumvent the rules (Dafflon and Rossi 1999⁹; Ter-Minassian and Craig 1997: 166¹⁰).

Reliance on fiscal rules requires: (1) a well-defined framework to limit creative accounting and prohibit off-balance-sheet operations; (2) clear and comprehensive definitions of government deficits and debts; and (3) a modern government financial management information system to provide timely and reliable data on public finances. Fiscal responsibility and reliability depend on the quality of the accounting framework and the seriousness with which current and capital outlays and revenues are reported (Dafflon 1996).

9 Dafflon and Rossi (1999) demonstrate that creative accounting was used even before the Maastricht criteria came into force, in elections to the circle of Euro member states.

10 According to Ter-Minassian and Craig (1997: 166): "Such practices include, for instance: the reclassification of expenditures from current to capital, to escape current budget balance requirements; the creation of entities whose operations – albeit of a governmental nature – are kept off-budget, and whose debts are not counted against the debt ceilings; the use of state or local government-owned enterprises to borrow for purposes that should be funded through the relevant government budget; the use of debt instruments – such as sale and leaseback arrangements or the so-called private revenue bonds in the United States – that are not included in the debt limits; the resort to arrears to suppliers, which are typically difficult to monitor for inclusion in the public debt ceilings."

In Switzerland, this framework is given by the Harmonized Accounting Model for the cantons and municipalities, introduced in 1981 (HAM1), and revised in 2008 (HAM2).¹¹ The model supports the distinction between current and capital accounts, in order to evaluate and compare the fiscal positions of the public sector at the three levels and as government units.

Current public expenditures include the “normal” or “regular” amortization of immovable capital assets, usually calculated on a straight-line basis over the estimated useful lives of the related assets. Pure bookkeeping (non-monetary) entries are disregarded.¹² Thus, positive net surpluses correspond to a cash flow available either for financing new investments or accelerating the repayment of debt. Pay-as-you-use amortization links current and capital accounts. Moreover, as we shall see later, the division of public accounts into current and capital is essential for the implementation of a “revised golden rule,” as well as for qualifying the degree of stringency of a budget constraint and measuring its performance. With this division, amortization is the necessary link between capital accounts and investments written in the balance sheet for current accounts. Statistical data computed on this base are comparable over time and across cantons and communes.

Defining the “government sector”

In the analysis of deficits and debt limits and in assessing the long-term sustainability of indebtedness, the reference data are the net results of the public accounts. Yet, it is crucial to define clearly the “government sector,” since its extent influences both the measure of deficits and our understanding of the problem.¹³

11 HAM1 was used from 1981 onwards without major changes. HAM2, introduced in 2008, is regularly updated to meet the needs of the cantons and communes – not only in terms of accounting techniques, but also for policy reasons; for example, the introduction of user charges and tariffs in environmental policy. If necessary, it is also coordinated with the requirements of IPSAS [International Public Sector Accounting Standards] and ESA [European System of Accounts]. See Conférence des Directeurs cantonaux des finances (1997).

12 Subnational governments mostly use cash accounting. The only exception is for direct taxes, where accrual accounting is more common due to the postnumerando system of taxation (the 2017 definitive tax assessment occurs in early 2018, so that without accrual accounting the fiscal year would not correspond to the accounting year; for more information, see footnote 17). Pure bookkeeping entries are bookkeeping transfers within the various functional chapters of the same annual account in order to obtain the true costs of particular services. For example if the person occupied with road maintenance also works part-time for solid waste collection, the total monetary wages and social security contributions are entered under the function “roads,” but part of the wages would be imputed as a “receipt” under “roads” and as an “expense” under “solid waste,” because road maintenance is paid for through taxation, whereas solid waste is self-financed through the user-pays principle; for the latter, the true costs must be calculated.

13 In the following analysis, “public” is defined in accordance with ESA 2010, that is “sub-sectors S.1311 Central government, S.1312 State government, and S.1313 local government, excluding public social security S.1314” (European Commission 2013: 31).

In the Swiss case, the “government sector” does not include compulsory basic illness and accident insurance (S.128)¹⁴ nor compulsory individual pension funds (S.129), which are organized through private corporate entities. Public hospitals are also excluded when the public sector contributes directly less than 50 percent to their costs.¹⁵

3.2 Public sector net results, current and capital accounts, 1990–2015

Over the period 1990–2015, the share of the public sector in GDP varied between 30 and 35 percent (see Table A-3 in the Appendix). Since 2008, the ratio of total government expenditures to GDP has been stable at about 31 percent. Within this percentage, the respective shares of each government level are 33 percent for the Confederation, 44 percent for the cantons, and 23 percent for the communes.

In the current accounts, the remarkable feature is the almost constant and comfortable surplus in the net results for subnational governments (Figure 1).¹⁶ Capital account net results were almost constant in nominal value over the period 1990–2007, and increased slightly thereafter, but beyond the net cash flow of the current account, with a consequent increase in indebtedness.

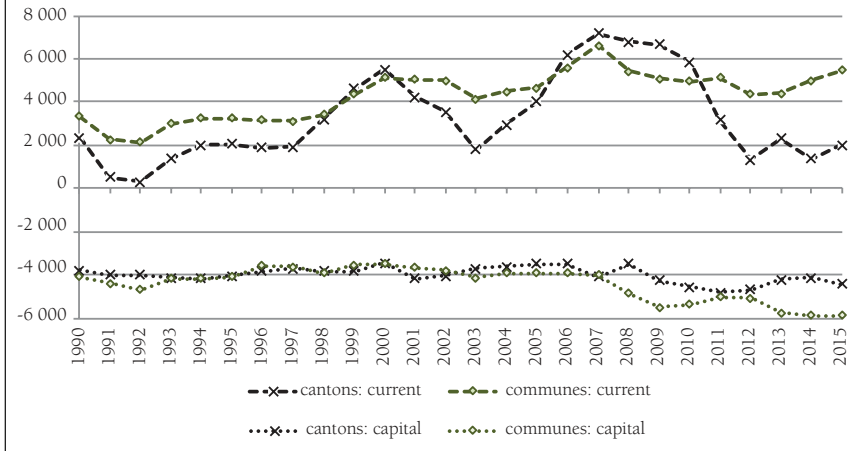
The 1998 to 2000 positive slopes mirror a growth rate of tax yields higher than the rate of public expenditure (see Figures A-1 and A-2 in the Appendix). The growth in direct taxation (personal income and business taxation) is mainly

14 Basic illness and accident insurance, professional and non-professional, is provided by private insurance companies. Individuals pay insurance premiums, which are deductible from taxable income. For the basic insurance, private insurance providers act under the control of the federal health administration.

15 Since 2008, public hospital expenditures are no longer included in the cantonal or communal public sector if hospital resources are more than 50 percent financed through external resources, that is, patient billing. Indirect public aid, either through subsidizing insurance premiums for individuals or families in financial need or through tax deduction, is not accounted for. Under ESA 2010, in order to decide whether an institutional unit producing under the control of government is in the “market” category, the 50 percent criterion must be applied. If the ratio of sales to production costs is above 50 percent, the unit is in principle “market” (ESA 2010, paragraphs 3.17 to 3.19). However, an assessment of its activity and resources remains necessary based on three restrictive qualitative criteria which, if respected, would maintain the unit in the “government” sector. For the market/non-market test, the 50 percent criterion compares sales (paragraph 20.30) and production costs (paragraph 20.31). In this test, ESA 2010 includes in production costs, the costs of capital which may in general be approximated by the net interest charge (European Commission 2014: 35–36). This last point is important, since before the 2010 change, the investment charges of public hospitals were not taken into account for assessing the 50 percent or more public financing level.

16 For the period 1970–1990, see Dafflon (2010).

Figure 1: Current and capital account, net results, 1990–2015, million CHF



Source: Author's calculations based on federal statistical data; see Table A-3 in the Appendix.

due to a change in the system of direct taxation.¹⁷ The increase of net surplus in the 2003–2007 period results largely from higher tax revenues due to the good general economic situation, with a 3.3 percent average annual increase in GDP and almost no inflation. The downward slope starting in 2008 for the cantons and the communes is due to changes in the statistical accounting system in reference to the European Systems of Accounts (ESA), which wrote off government-sector expenditures on hospitals and seniors' homes. Expenditures for social aid increased by 1,678 million and general administrative costs by 3,121 million CHF between 2009 and 2011. In the communes, 8,070 million CHF in hospital expenditures and 6,018 million CHF of revenues from fees charged to the patients were taken off the books.

17 The change, including the passage from praenumerando to postnumerando taxation, was the consequence of the harmonization of direct taxation at the federal level. The two federal laws of 14 December 1990 harmonized the federal direct tax and the cantonal and communal direct taxes. The law for the federal direct tax was implemented in 1995. The federal law for the cantons and the communes was introduced in 1993, for an eight-year period (ending in 2000) to adapt cantonal legislations. From 2001 onwards, the cantons can decide the amounts of the tax deductions (but the list of exemptions and deductions is given in federal law and cannot be modified by individual cantons) and the tax rate schedules. Praenumerando: taxable income of years $t-2$ and $t-1$ are assessed and paid in year t ; postnumerando: for taxable income of year t , monthly tax annuities are paid in year t , the definite taxable income is assessed in year $t+1$, the final tax minus annuities is due in year $t+1$.

3.3 Fiscal consolidation and the introduction of budget constraints

Today, the Confederation and 25 cantons apply fiscal rules and budget constraints. One canton, Appenzell Inner Rhode, does without – it has never had a deficit. Rules are not similar for all cantons and are not set in stone. They have been amended several times by cantonal parliaments, most often to close loopholes in budget procedures. Before the 1990s, when fiscal rules were introduced in the cantons, there was no debate on macroeconomic issues. The objective was conservative fiscal governance, founded on four basic principles: (1) spending should not exceed available resources; (2) paying for public services today with tomorrow's taxes was out of the question; (3) no borrowing, except for capital assets transmitted to the next generation with a loan to finance them; although (4) capitalization prior to investment is better than borrowing.

Confederation

The 1990s were characterized at the federal level by consolidation programs in response to rocketing deficits in the annual aggregate (current + capital accounts) net results during the 1980s and the 1990s (with the notable exception of the period 1988 to 1991). Federal fiscal consolidation programs were decided in 1992, 1993, 1994, and 1995. In 1995, the measures included the introduction of a value-added tax (VAT),¹⁸ new consumption, and the enlargement of existing direct taxes. Yet the cumulative results of the consolidations were disappointing. Structural measures were needed. They occurred in four additional steps: (1) introducing a qualified majority for decisions on new expenditures in 1995; (2) capping deficits to 2 percent of total federal revenue in 1998; (3) fixing constitutional rules for imposing brakes on indebtedness in 2001; and (4) reinforcing the rules in 2008.

Table 1 shows the high proportions of yes votes and, except for 1950 and 1995, the acceptance of these measures in all cantons. These results indicate a conservative approach to the management of public finances and a strong social dislike for deficit and debt. Since cantonal votes on financial issues align with the cantonal voters' positions on federal financial issues (Pujol and Weber 2003), these results are informative for the same issue at the subnational government level.

Cantons and communes

The robust budget positions of the cantons and the communes can be traced to the fact that 15 of them, at the cantonal level and for their communes, already respected budget constraints before 1990, and the others rapidly followed (Novaresi 2001; Yerly 2013). In all the cantons, budget constraints were decided by the cantonal parliament, either at the initiative of MPs or as the result of citizens' demand (popular initiative). The federal government never intervened in this matter. At the communal level, deficit- and debt-capping were imposed top-down by the cantons, normally in the finance-related chapters of laws on local government.

¹⁸ Message du 18 décembre 1991 concernant le remplacement du régime financier et les impôts de consommation spéciaux (FF 91.079).

Table 1: Constitutional votes on deficit and debt brakes, Confederation, 1951–2017

Federal vote	Purpose
1950, December 20, 69% of voters, 23 cantons	Constitutional amendment (art. 88 al. 2 and 3): qualified majority to decide a new public expenditure > 5 million CHF; recurrent public expenditure > 250 million CHF.
1974, December 8, 76% voters, all cantons	Constitutional amendment: any expenditures of year t greater than year t-1 requires a qualified majority on demand of the finance commission or of one-quarter of MPs in one of the two Chambers. Though accepted, this amendment was not enforced since it was coupled with an increase in various federal taxes, refused by voters the same day.
1993, November 23, 67% voters, 15 cantons	Constitutional amendment for the introduction of the VAT in place of a turnover tax, introduced in 1995 with a proportional rate of 6.5%.
1995, March 25, 83% voters, all cantons	Constitutional amendment (art. 159 al. 2 and 3): qualified majority to decide a new public expenditure one-time limit of 20 million CHF; recurrent public expenditure limit of 2 million CHF.
1998, June 7, 71% voters, all cantons	Constitutional amendment (art. 24): “Objectif budgétaire 2001” set a target of a deficit less than 2% of revenues with corrective measures if the target is not reached.
2001, December, 85% voters, all cantons	Debt brake (Constitutional art. 126) introduced 2001, implemented 2003.

Source: www.admin.ch/opc/fr/federal-gazette/year/index (indicate “year” in full numbers).

These two ways of introducing budget constraint rules correspond to the distinction between self-decided rules at the cantonal level or budget responsibility, and budget discipline imposed top-down canton by canton on their communes (Dafflon and Beer-Tóth 2009). Three cantonal examples are summarized in Table 2. Cantons St-Gallen and Fribourg are two examples of early fiscal rules operationalized within the budgetary procedure. Basel-Stadt is the only canton which applies a debt-to-GDP ratio.

To sum up, rules for balancing the budget and controlling debt have a historical basis in Switzerland. At the federal level, it was clearly the alarming deficits of the annual accounts which were at the origin of fiscal consolidation programs in the 1990s, followed by the constitutional rules of debt brakes. At the cantonal level, the “tradition” of sound public finance echoed the fiscal conservatism of voters (Dafflon and Pujol 2001). One reason is that in federal and cantonal parliaments,

Table 2: Three examples of cantonal deficit and debt brakes

Canton	Introduction	Budget	Account	Sanction
St-Gallen	1929, updated 1994	Current budget deficit cannot exceed 3% of revenues. Loans can only finance investments.	If the resulting account presents a deficit which cannot be covered with the existing financial reserves, the deficit must be compensated for in the next budget, also within the 3% limit. Excess revenue must be used exclusively for accelerating debt reimbursement.	If the deficit is not addressed, the canton has to adjust its direct tax coefficient. ¹⁹
Fribourg	1960, updated 1994, 2005	Current budgets must be balanced. Deficits are acceptable in the case of economic downturn or extraordinary event (both defined in law).	Current accounts must be balanced. Direct taxation can be reduced in the case of recurrent excessive surplus only.	If a budget or the resulting account presents a deficit higher than 2% (3% before the 2005 amendment), then the direct tax rate coefficient must be increased.
Basel-Stadt	1998, revised 2010	The cantonal constitution contains a debt brake mechanism (art. 120), but no requirement for a balanced budget. The “supportable” debt must not exceed 6.5% of the national GDP.		If this threshold is not respected (for year t accounts), the rate of growth of public expenditure (exclusive of amortization and federal legally related expenses) in the following budget (year t+2) cannot exceed the last annual growth of the Swiss price index (year t+1). If both conditions are not fulfilled, the budget decision requires a qualified two-third votes cast in parliament.

Source: Yerly 2013: 192,199, 216, updated Dafflon 2017.

¹⁹ In each canton, the progressive tax rate schedule for the income tax and the proportional rate on business profit are written in the tax law at a nominal value and a tax coefficient equal to 1. Cantonal tax laws or financial budget acts allow for a cantonal parliament to vary this coefficient, within upper and lower limits, in order to adjust the tax yield to the requirement of balancing the current budget. Outside the limits, varying the tax coefficient must be submitted to a referendum.

members hold office on a part-time basis. In this form of governance, right-wing MPs are concerned with moderating the intrusive power of the public sector on the private market economy; left-wing MPs are concerned with maintaining the sustainability of social insurance provisions at the federal level and social aid at the cantonal level, which largely depend on sound public finances. Furthermore, with sanctions automatically requiring an increase of the tax coefficient if the deficit limit is not attained, few MPs would risk proposing new expenditures or expanding existing policies that would increase the tax coefficient – particularly if a referendum is required.

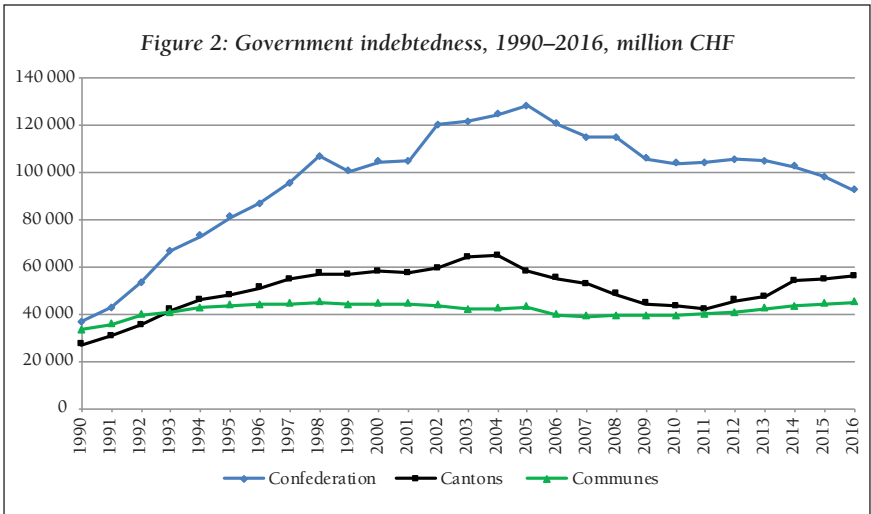
In sum, budget constraints have been substantially successful in curbing indebtedness both in absolute monetary terms and in proportion to GDP. As Yerly (2013: 387–391) concluded for the period 1987–2011: “The legal binding rules requiring a budget constraint in the Swiss cantons is a significant variable explaining the cantonal fiscal performance, controlling for all other variables.” This is evidenced in the next subsection.

3.4 Government indebtedness, 1990–2016

Within the Harmonized Accounting Model (HAM), government debts originate from two sources. First, public debts mirror the net aggregate results of current and investment accounts. Net surpluses in the current account serve as cash flow for financing investments. Second, they vary with book entries directly written into the balance sheet, resulting from loans to and reimbursement from external public institutions and special-purpose agencies. Only the first source is examined here; the second has a minor effect on government indebtedness.

At the federal level, we can identify three periods. From 1990 to 1997, net investment expenditures added to the deficit of the current accounts led to the growth of public debt (see Figure 2). This period coincides with the recurrent discussion in Parliament on fiscal consolidation and the introduction of deficit and debt brakes. Between 1998 and 2004, the results of the current account presented alternate surpluses and deficits, which together with investments resulted in a moderate growth of federal public debt. From 2005 onwards, due to the fiscal rules decided in 2001 and introduced in 2003, the annual aggregate results (current + investment) have been surpluses (2014 excepted), reducing federal debt substantially.

The cantons’ and the communes’ current accounts present net surpluses from 1990 to 2015 without interruption. At the cantonal level, the situation can be divided into three periods (see Figure 2). In the 1990–2004 period, the cash flow was not sufficient to finance investments in total, with a consequent increase in the cantons’ debt. Due to favourable economic conditions, the 2005–2010 period is characterized by a series of surpluses in the aggregate current and capital accounts, and a reduction in the nominal debt. From 2011 onwards, the results of the current accounts were not sufficient to finance investments, despite reduced capital spending, so the cantons’ debt increased again.



Source: Appendix, Table A-4.

The debt trend for the communes is similar to the cantonal trend, although lower and with nuances. From 1990 to 1998, the surpluses of the current accounts financed capital expenses only in part, resulting in debt increases. Ten years (1999–2008) of surplus followed, reducing debt. From 2009 onwards, local investment spending regained in nominal value (see Table A-3 in the Appendix); but with declining current surplus, the debt increased.

The situation presented above leads to five conclusions.

First, fiscal conservatism and the reluctance to allow successive deficits are at the origin of budget constraints. Constitutional or legal fiscal rules were implemented in times of public finance crisis, not during blue-sky periods.

Second, in the cantons, the objective of controlling debt is fixed in monetary terms, not in the form of ratios such as the Maastricht criteria. Basel-Town is the exception.

Third, net surpluses in the current accounts are important in that they generate cash flow for financing investments: governments do not rely exclusively on borrowing. This fact nuances the argument that investment should be financed through loans, in accordance with the pay-as-you-use principle, so that each beneficiary generation repays its part of the investment costs.

Fourth, time is necessary to stabilize or reduce indebtedness. For the Confederation, it took seven years from the first consolidation program (1992) to the first reduction of debt in nominal terms (1999) and another eight years from the first vote introducing a quantified deficit brake in the constitution (1998) to

the reduction of federal debt (2006). At the level of the cantons, indebtedness increased globally from 1990 to 2004, although the path varies from one canton to another (Yerly 2013). Local governments are the first to react to budgets in the red and to limit loan financing. Local aggregate indebtedness remained fairly stable in nominal terms throughout the analysed period.

Finally, dividing the analysis into three periods is instructive with regard to the rates of growth of public expenditures compared with GDP growth, because inflexions in the trends correspond to changes in the fiscal rules at the federal and cantonal levels and also to the general reduction in government debt.

Table 3: Public expenditures and GDP: average rate of annual growth, 1990–2015

	1990–2000	2001–2007	2008–2015
<i>Current</i>			
Confederation	5.0%	4.8%	2.0%
Cantons	5.3%	4.2%	3.2%
Communes	4.5%	2.3%	2.0%
<i>Net investment</i>			
Confederation	-2.1%*	-1.1%	-5.5%
Cantons	0.9%	-3.1%	-1.6%
Communes	1.3%	-2.0%	-5.3%
GDP growth rate	3.1%	3.3%	1.5%
*1991–2000			

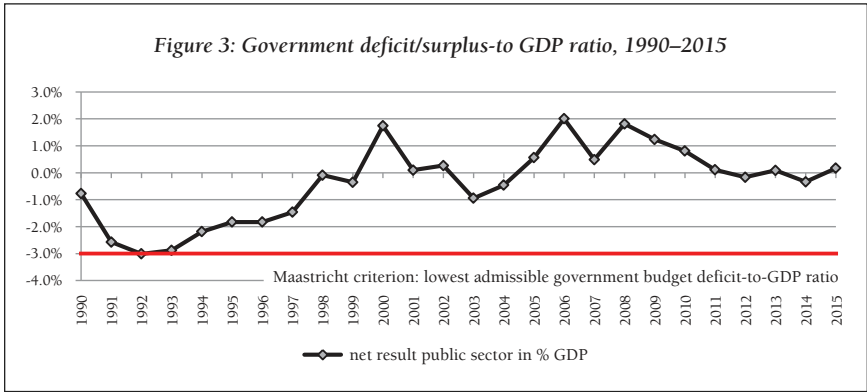
Source: Author's calculations.

Except for the communes in 2001–2007, the average growth rates for current expenditures were higher than GDP growth rates. In the first period, the reduction of federal investment expenditures resulted from the 1990s consolidation programs intended to curb deficit. From 2001 onwards, investment expenditures at the three levels of government were significantly reduced in proportion to GDP, and the trend even accelerated from 2008.

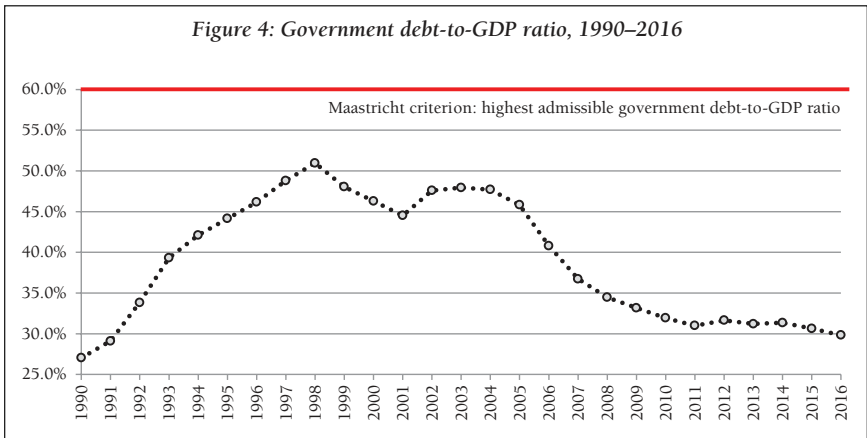
3.5 Comparison with the Maastricht criteria

Although Switzerland is not a EU Member State, and the usefulness of this comparison as a guidance for sound public finance management is questionable (Rossi and Dafflon 2012), Figures 3 and 4 present the long-term deficit-and-surplus-to-GDP ratios and the debt-to-GDP ratios. The two figures show that fiscal

control rules are stricter than the principles written in the European Stability Pact in the form of GDP ratios.²⁰



Source: Appendix, Table A-4.



Source: Appendix, Table A-4.

Neither the deficit (current and capital accounts) nor the debt-to-GDP ratios ever reached the given thresholds. The aggregate results for a large part depend

²⁰ The Stability Pact was amended in 2005 “to take economic circumstances and country-specific characteristics better into account”; then in 2011 “following the onset of the economic and financial crisis in 2008 and the further experience with the concrete implementation of the Pact” (part of the package known as the Six Pack), “the package amended both Regulations and added a system of graduated enforcement mechanisms (financial sanctions), to address the weaknesses in the surveillance framework that the crisis exposed. In particular, the changes strengthened the preventive arm of the Pact to ensure that good economic times were used to pursue policies leading to healthy public finances.” European Commission 2017 (Box O.1 pages 12-13). Berset (2014: 102) gives the historical sequence of amendments and regulatory decrees.

on the federal situation. As noted before, the evolution can be described in three periods. The growth of debt was important from 1990 to 1998, until the federal fiscal consolidation programs developed fully and the newly introduced budget constraints in the cantons and communes came into effect. In the second period, between 1998 and 2003, two successive constitutional amendments slowed down borrowing from the Confederation. From 2004 onwards, the deficit and debt brakes took effect. Added to the growth of tax yields in the same period, indebtedness decreased at all three government levels.

There may be two lessons to be learned from these comparisons. First, it takes time and effort to curb deficits and reduce indebtedness if, at the same time, governments want to maintain public services in response to citizens' demands without dismantling or privatizing part of the public sector and without increasing taxation to unbearable levels. Second, the fact that the Swiss public sector did not suffer from the 2008–2011 financial crisis compared with other EU Member States was due to sound government finance on the eve of the crisis, thanks to the consolidation measures implemented years earlier. Controlling deficits and debt is a long-term task.

4. The golden rule and more²¹

There are two types of fiscal rules. One is founded on the golden rule. The other is the prescription of limits on borrowing and debt service.²² Rules can be self-decided (“budget responsibility”) or imposed top-down (“fiscal discipline”). Both the golden rule and the limits-based control can accommodate budget responsibility when self-decided. They also can be imposed top-down in cascade: on local governments by the senior government level (Province, Region, Canton, or Land) and on regional governments by the central government.

In the view of the Council of Europe, before their introduction, top-down “restrictions should be fair and discussed with local authorities” (Council of Europe 2006: 105, Rec. 75). The frontier between budget responsibility and fiscal discipline is not clear cut. Confronted with budget difficulties and severe deficits over a period of years, parliaments could decide to remedy the situation and introduce restrictive rules of budgeting and borrowing that apply to future years. Even when surpluses are realized, MPs may wish to prevent unsound future budget behaviour. Thus, decisions taken under “budget responsibility” in one year may later be experienced as unduly restrictive disciplinary rules when MPs try to soften the constraint.

21 This section is adapted from Dafflon (2010).

22 For example, in fixing the maximum ratio of total net debt to total tax revenues; the maximum ratio of debt service to total tax revenues; or the minimum cash flow for financing investment – which mirrors the maximum loan for the same investment (Conférence des directeurs cantonaux des finances 2007: 111, 113, 115).

Also, much depends on whether the rules are written into the constitution or into laws, or, as in some Swiss cantons, were initiated by the canton's electorate to prevent parliamentary politicians from engaging in logrolling to please their constituents. In other words, at one point, citizens may be responsible enough to respect the golden rule of local public finances, but they may fear that this will not be the case in the future; and therefore they decide to fix rules for the future management of their finances in the form of a hard budget constraint that forces future parliaments to respect budget discipline.²³

4.1 *Budget discipline or budget responsibility?*

Let us first consider rule-based controls from the perspective of the borrowing entity. Rules and sanctions are necessary but not sufficient conditions of sound budgeting and debt management. By their very nature, rules are *ex ante* restrictions that subnational governments must respect before taking any decision on borrowing. Sanctions are *ex post* reactions to situations of excessive deficit or indebtedness. Both can be part of sound debt management practices at the subnational government level. However, rules have limitations. They generally lack flexibility and, without detailed accounting prescriptions, incite subnational governments to get around the rules (Rattsø 2002; Ter-Minassian and Craig 1997). The instruments of direct, preventive control make subnational governments excessively dependent on support from higher authorities and induce moral hazard problems insofar as they impose a moral commitment on the latter to provide bailout measures in the case of local government default (Rossi and Dafflon 2002: 36–37).

Subnational governments can also be at the mercy of central governments that want to retain the total borrowing capacity of the public sector – the Maastricht criteria leave it to each member state to determine the distribution of the 3% and 60% GDP ratios between the centre and subnational governments. And even if rules and sanctions are efficient in preventing subnational governments from excessive borrowing and thus in protecting the higher government from fiscal imbalances that subnational governments can potentially induce, they cannot help local decision-makers determine how best to benefit from debt finance without running the risk of insolvency.

Budget discipline is a “negative” approach to obtaining a balanced budget at decentralized levels. The corresponding “positive” approach is viewing the balanced budget as the result of a prudent and proactive budget policy through which governments adjust their investment policies to their fiscal capacity and assess the costs and benefits of each capital program in advance, in order to avoid excessive debt. Box 2 summarizes the arguments.

23 On the aversion of citizens to excessive public expenditures and to high taxes, see Dafflon and Pujol (2001) and Pujol and Weber (2003).

Box 2: Budget responsibility versus budget discipline

Budget *responsibility* in the form of self-assessment

- Self-control in subnational government finances; proactive attitude
 - Best practices in planning and managing investment programs
 - Measuring real financial capacity and future (operating and maintenance) costs related to the investment
 - The budget is not an exercise of liability management and accountability, but is first and foremost a mirror of the public policies (expenditures and revenues) pursued by the government
-

Budget *discipline* in the form of rules and sanctions

- Institutional restrictions: deficit ceilings; regulatory frameworks for borrowing, accounting and reporting requirements; instruments of administrative control; and collaterals
- Sanctions against excessive debt: forced administrative procedures aiming at the correction of local government budgets in which deficits and debt are accumulated
- No bailouts

Shifting the emphasis from “discipline” towards “responsibility” does not imply that a regulatory framework is unnecessary. Rather, sound financial management requires that rules and sanctions be established at the subnational government level following rational deliberation by and the voluntary decision of policymakers. This is already a matter of course in federal countries where central regulations are kept to a minimum while regional and local governments can voluntarily introduce their own rules and sanctions.

In unitary systems, by contrast, central governments have been so far the only authorities to impose rules and administrative procedures concerning borrowing and debt. Central governments usually get the local fiscal discipline they deserve depending on whether they set the rules up correctly and observe similar rules themselves. Obviously, leaving decisions about control mechanisms to the discretion of subnational governments can work only if the latter are subject to a hard budget constraint with no prospect of bailouts from the centre and have a strong sense of responsibility for the welfare of their constituents. The golden rule lays the foundation of budget responsibility.

4.2 *The golden rule revisited*

The golden rule of public finance is that the budget should be balanced for reasons of equity as well as efficiency.²⁴ The efficiency argument is that elected members of parliament (or resident citizens in direct democracy) should bear the consequences of their policy decisions. Taxes are the correct price signal in doing so. The equity argument is that the generation that benefits from the services should pay for them. The golden rule revisited develops in four steps.

First, Buchanan's *Public Principles of Public Debt* (1958) re-established the golden rule in modern public finance: "Public debt issue has normally been conceived as appropriate only for the financing of genuine public investment. This conception has been based upon the classical theory of public debt which this essay re-establishes" (Buchanan 1958, reissued 1999: paragraph 2.12.19). In his view, the golden rule has the additional virtue of limiting the size of the state (Buchanan and Wagner 1977). But the debate remained largely within academic circles and the Public Choice School (see also Rowley 1987; Tollison and Wagner 1987). The approach was normative, focused on institutional issues, leaving aside the operational design of fiscal rules. In theory, the reference was the "government budget." In practice, the budgetary classification contained no distinction between current and capital expenditures. This was a major problem and too restrictive for financing investment expenditures at the subnational level. Or, to put it another way: the rule is suitable only with regular annual outlays in capital expenditures, a condition which is more easily respected at the national than at the local level.

Second, this problem can be circumvented through the pay-as-you-use principle of investment financing (Musgrave 1959: 558; 1963). Although the pay-as-you-use principle was developed from an intergenerational equity viewpoint, not in operational terms, it gave a first insight into the possible design of the rule. Almost 50 years later, the principle was encapsulated in Recommendation 73 of the Council of Europe (CoE 2006: 105): "Local authorities should be able to borrow in order to finance their capital expenditure projects. Such projects are intended to benefit future generations, and recourse to borrowing may therefore make it possible to spread the burden fairly among generations." Note, however, that the question of whether investments should ideally be financed on a pay-as-you-use (debt) or pay-as-you-go (current revenues) basis has long been a subject of scientific debate.²⁵

The combination of the golden rule for a balanced budget and the principle of pay-as-you-use finance requires a clear distinction between the current and the capital budgets. As a consequence, one important precondition to an effective implementation of the golden rule is the separation of current and capital budgets,

24 Dafflon (1996) and Rossi and Dafflon (2002) fully develop the pros and cons of this argument.

25 The controversy is summarized in Dafflon and Beer-Tóth (2009).

as well as precise definitions of key terms such as “investment,” “debt service,” or “amortization” (Dafflon 2002: 3ff).

It must be noted, however, that both the golden rule and the separation of the budgets have their opponents in the current debate on multi-level finance. Buchanan (1977: 133) suggested that Musgrave’s argument for a separate capital budget, which could be unbalanced, “seems much ado about nothing. If rates of spending on capital projects that are fully eligible for exemption from period-to-period budget balance requirements are roughly uniform over time, the operation of separate current and capital budget accounts, with only the first subject to the balance mandate, would not be different, in effect, from combination into a unified account – all of which is subject to the balance requirement.” Besides the fact that “roughly uniform” is an open door to abuses and strategic behaviour, Buchanan’s statement underestimates two points. First, subnational governments can rarely project investments year-to-year at the same level. Second, capital investments have different service lives that necessitate specific rates of amortization. Other fundamental divergences relate to the definitions, extent, and methods of amortization versus the concept of depreciation, and to the equivalence between the amount of amortization, depreciation written in the books, and effective debt installments (Rossi and Dafflon 2002).

Third, taking some distance from this debate, Dafflon (1995; 1996) proposed to reconcile the classical golden rule with Musgrave’s pay-as-you-use finance. Two key issues are the importance of separate current and capital budgets and the linking of capital expenditures and investments in the balance sheet to the current budget and account. Following the pay-as-you-use principle, the amortization policy contains two items that cannot be separated. One is the application of amortization rates that correspond to the economic uses of the assets.²⁶ To avoid political strategies, these rates should be those set by professional associations (architects, engineers, etc.). The other item is the importance of a correspondence between amortization and debt repayment, since the capital market may have different time horizons owing to the abundance or not of savings at any given time.

Fourth and finally, any borrowing government must have the future capacity not only to pay for the additional debt service, but also for future recurrent operating and maintenance costs resulting from a new investment. Dafflon and Beer-Tóth (2009) developed the model to its present status.

²⁶ Amortization methods are not discussed in this paper but must be considered. Straight-line amortization is well accepted as being clear and understandable; but leaves open the question of the amount to be amortized: historical value, replacement cost, or residual value net of possible grant-in-aid or external finance? Other methods are plausible (Dafflon 1998:179 ss.): amortization of the residual value written into the opening balance sheet accelerates the amount of amortization in the early years (equivalent to double-declining balance), whereas fixed installments combining debt interest and amortization allow regular annual repayments of the loan, but increase the risk and uncertainty linked to the evolution of the interest rates. Depreciation and obsolescence, especially for technical equipment, must also be considered.

In short, the “golden rule revisited” prescribes that:

1. Current expenditure must be paid by current resources, mainly taxation and user charges (see Council of Europe 2006: 105, Rec. 74); this provision corresponds to Buchanan’s re-initiated golden rule – with the restriction that it applies to the operating budget only.
2. Investment expenditures can be financed through loans (Council of Europe 2006: 105, Rec. 73).
3. Interest and amortization of the debt should be repaid out of current resources, since they are recurrent costs of new projects financed by loans. The second and third provisions together correspond to Musgrave’s pay-as-you-use principle.
4. Estimates of investment project costs should not overlook subsequent annual operating and maintenance costs, which should be incorporated into multi-year budget programming (Council of Europe 2006: 76, Rec. 71).

The golden rule can be expressed by a set of budget equations that give the flavour of the argument. The formulas are not intended to lay the groundwork for a mathematical model, but simply to draw attention to certain key issues.

The current budget is given by

$$(1) T - G = S$$

where $T =$ current revenue from taxation

$G =$ current public expenditure

$S =$ net savings on the current account, i.e., the primary balance on the current account minus interest payments and amortization of existing debt

In adopting the separation between current and capital accounts, we have to “transpose” the words of the ESA 95 to respect the same definitions (the ESA 95 does not distinguish between the two budgets). Thus, *primary balance* is the result of the current account prior to interest payments and the amortization of debt. *Gross savings* is the primary balance minus interest payments, and *net savings* is gross savings minus amortization (with the golden rule, amortization in the books = economic depreciation = actual debt installment).

If $T = G$, then the current budget is balanced. In this case, net saving is zero and, as we shall see below, there is no financial room for financing a new investment. In order to make this possible, the result needs to be $T > G$.

An additional investment can be financed from a mix of resources:

$$(2) \Delta I = \Delta B + F$$

where $\Delta I =$ additional investment

$\Delta B =$ additional borrowing

$F =$ other funding sources related to the planned investment program (e.g., taxes and fees, domestic and foreign grants-in-aid, donations)

The maximum amount the local government can borrow is given by the following general formula:

$$(3)\Delta B = \frac{S - [(M+E) - (R=O)]}{i+d}$$

- where
- M = maintenance costs in a given year, related to the new asset created by DI
 - E = current costs in a given year, related to the local public service that DI makes possible
 - R = revenues from the operation of the asset (e.g., user charges, sponsoring)
 - O = operating grants received from other government entities for the planned investment program
 - i = interest rate for DB (%)
 - d = depreciation rate of ΔI ; corresponds to the amortization rate of ΔB (%), according to the pay-as-you-use principle. If the useful life of the investment is 20 years, then $d = 0.05$

Following from (2) and (3), the additional investment can be calculated as:

$$(4)\Delta I = \frac{S - [(M+E) - (R=O)]}{i+d} + F$$

The equation raises the following important points.

First, the equation starts with S , the net saving in the current account after deducting the financial costs (i.e., interest and amortization) of the existing stock of capital and the related debt installments. The costs incurred by earlier investments cannot be left out of consideration. Local governments can initiate new investment expenditures only insofar as the current account produces a surplus (or net saving) after payment of the recurrent costs from previous investments.

Second, future operating costs related to the maintenance of the new asset (M) and to the public service that the new investment allows (E) must be taken into consideration. There is no point embarking on a new investment if the budget capacity does not allow the government to pay for the future costs incurred by ΔI . This point may seem trivial at first glance, but it is often neglected in practice. In many cases investment project costs have not been included in the investment program, and work on the site begins without consideration of the related costs that will arise in the following periods. In future budgets, these costs will reduce S , and residual financial capacity, and may even push government finance into deficit. On the other hand, local governments may acquire extra revenues either on their own (e.g., entry fees, sponsorships – R in equation 3) or through other government entities that subsidize the operation of the asset in later years (O in equation 3). These revenues will reduce the costs resulting from the investment.

Equation (3) gives the possible limit to any additional borrowing. It depends on the net surplus of the current account and the future recurrent costs of the new investment. Taking into consideration that the current budget surplus S is realized only after payment of the financial and operating costs of past investments, there is no need for any sort of macroeconomic deficit or debt ceiling for a sustainable management of the public debt.

Equation (4) also shows that ΔB brings about additional financial costs $(i + d)$ that must be included in the future current account. If the investment is financed exclusively from debt ($F = 0$), and there are neither costs nor revenues attached to the project ($M, E, R,$ and O are zero), then ΔB is equal to $S/(i + d)$. This is a matter of concern. In the laws on local government organization and finance in several cantons, interest and amortization (i and d) must be included in investment project costs; but the laws are silent on other future recurrent costs (M and E), as if DI , the additional investment, would incur no cost – which is rarely the case. The model law in the HAM ignores this issue.

Take the example of a new cultural centre (ΔI). The net surplus of the current account (S) should be sufficient to cover:

- annual interest payments ($d \times \Delta B$)
- annual debt installments ($d \times \Delta B$)
- annual maintenance costs related to the building (wages and benefits for the maintenance team, heating, electricity, insurance, etc.) (M)
- annual current costs related to the cultural events offered in the building (E)
- minus entrance fees, revenues from sponsors (R), annual theatre grants (O), etc.

5. From concepts to practice: Six questions for the design of fiscal rules

One can endlessly debate what might be the “best” design and economic underpinnings of a “good” budget constraint. What ingredients make it work efficiently? Fiscal discipline, whether self-decided or imposed top-down, is not a simple question of having or not having rules limiting deficits and debt. From “soft” to “hard” budget constraints, there are various degrees of severity. Moreover, fiscal rules must anticipate various possible budget vs. account outcomes, as illustrated in Table 4. For example, forecasts in year t put the current budget of the next year $t+1$ in surplus (excess of revenues over expenditures in cash-accounting), yet the annual results in the closed account of year $t+1$ (evidenced in early year $t+2$) could be either a surplus, in balance, or a deficit (situations 1, 2, or 3 in account for the first line “budget surplus”). The same can happen to budgets in balance or in deficit.

Outcomes 1, 2, 4, and 5 do not create any problems: the account is as good as or better than the budget forecasts. Outcomes 1 and 4 do, however, raise two

Table 4: Possible outcomes in the current budget

		Account		
		Surplus	Balanced	Deficit
Budget	Surplus	1	2	3
	Balanced	4	5	6
	Deficit	7	8	9

Source: Dafflon (2010): 13.

questions: (1) the nature of the surplus – structural or due to economic upturns? – and (2) the use of the net result – additional debt repayments, additional expenditure policies, reduction of taxes, or financing a rainy day fund?

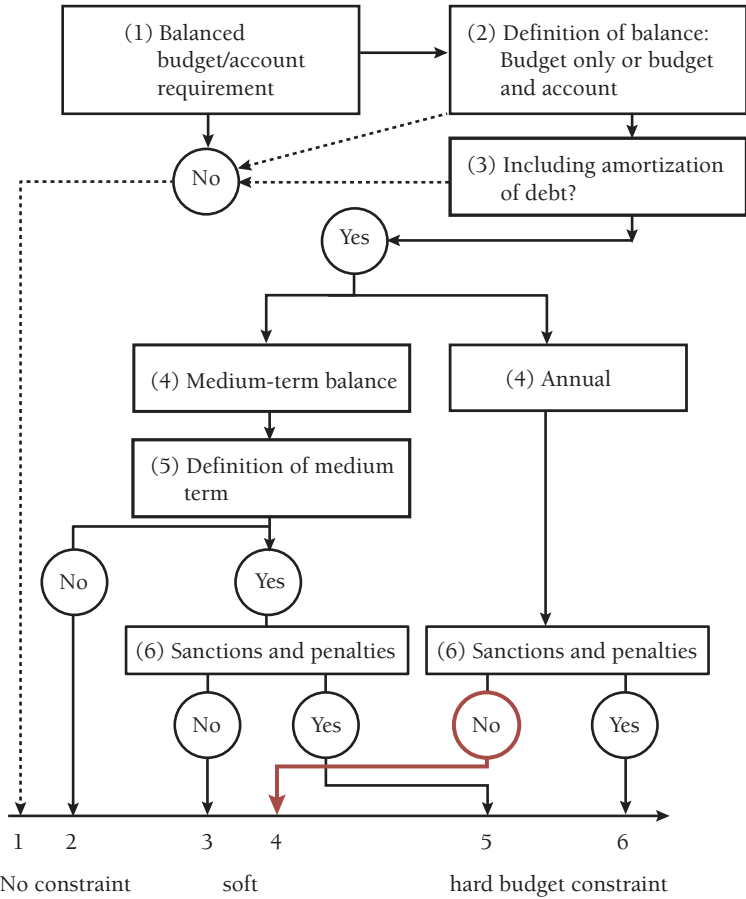
Outcomes 7 and 8 create problems: a deficit in the budget triggers the expenditure brake – but the forecast is not confirmed in the results: how will politicians react to pessimistic budgets, especially if they are repeated, which turn out to be false alarms?

Outcomes 3 and 6 require distinguishing the *ex ante* budget from the *ex post* results and closing account. The situation did not call for restraint in the budget process: the budget is in balance or in surplus. Yet outcomes 3 and 6 are inadequate and require remedy (and possibly sanctions). Negative outcomes require a precise and detailed legal framework if budget discipline is to be respected – from the point of view of political economy, there cannot be a unique and uniform legal rule for budget and account: *ex post* rules for outcomes 3 and 6 are distinct from *ex ante* legal regulations needed for a budget in deficit.

Outcome 9 is the worst scenario. It means that measures in the budget to restore balance have not been effective. Outcome 9 needs a hard solution in the form of a recovery and consolidation plan with fixed commitments and terms to restore the medium- and long-term sustainability of local public finances. In practice, the logic of “no deficit” expressed in the golden rule which underpins the possible outcomes of Table 4 requires fine tuning in the legal design of the rule.

To accommodate these nine possible outcomes to the revisited golden rule and make it operational, a procedure must formalize step by step the qualification of its four prescriptions into fiscal legal rules and a relevant accounting method. The method which serves as a starting point for this purpose is given in Figure 5 (Dafflon 1995; 1996 adapted). Six solutions are possible. Solution 1 corresponds to the absence of any constraint. The other solutions present increasingly tight constraints, with solution 6 having the strictest rules. The final position of a particular canton or commune depends on the answers to six questions.

Figure 5: The path from soft to hard budget constraint



Source: Dafflon 1996: 240, revised 2017.

1. Is a balanced budget required?
Is the requirement extended to the account?
2. If yes, the rules must define the extent to which balance is required: total (current + capital) budget or current budget only.

With the current balanced budget requirement, local governments can borrow to finance capital investments. During the immediate period of revenue, taxpayers are not charged the full costs of public projects that promise to yield benefits over several time periods. The intergenerational equity problem can be solved with appropriate amortization rules.

- | | |
|--|--|
| 3. Is amortization of the debt included in the outlays of the current budget (which must be balanced)? | If yes, taxpayers and beneficiaries in periods following the debt issue are faced with contractually committed interest and amortization charges that are offset by income- or utility-yielding public assets. The life of the capital public investment, and thus the duration of amortization, should be measured not in terms of physical depreciation but in terms of its economic usefulness following a pay-as-you-use path. |
| <hr/> | |
| 4. If the rule of a balanced budget/account is constitutionally or legally fixed, is this an immediate or a medium-term requirement? | Should each successive annual (current) budget/account be balanced, or is the balance required on average for several time periods, or is the balance to be recovered for the last annual exercise at a specific time?

The rule of annual balance produces a tighter constraint and leaves no intertemporal budget flexibility to smooth over irregular current outlays and revenues. If balance is required only on average over several current budgets/accounts in a row, it introduces more flexibility in budget policies, but also softens budget discipline and opens the door to political leeway and interest group strategies. Hence the importance of the next question. |
| <hr/> | |
| 5. In the case of a medium-term balance requirement, is the medium term properly delimited? | Limitations must make explicit the beginning of the time periods involved and the number of periods. Ideally, these should correspond to terms of office. If, on the contrary, the political time horizon and the balanced budget time horizon do not coincide, asymmetry introduces a premium for the former and debt illusion on deficits is likely. |
| <hr/> | |
| 6. What would be the sanctions and penalties? | The lack of sanctions and penalties weakens the budget constraint. Thus the inversion of the outcomes in lines 4 and 5, giving the stringency of the rule. A precisely defined medium term with a sanction represents a stricter constraint than an annual balance requirement that has no sanction if the requirement is not achieved. |

These six key questions correspond to the numbers given in Figure 5. This method of coding the design of fiscal rules serves four purposes. First, it offers a practical framework for analysing fiscal rules in terms of institutional economy. Second, it can be used to measure through time the fiscal performance of a government unit, when the rules change – that is, examining whether the budget/account performance is modified in a significant way following amendments in the law, whether they increase or relax the stringency of the rules, and measuring the time lag if any change is perceptible. Third, it gives a framework for benchmarking in a coherent manner various existing fiscal rules, either nationally or at the international level.²⁷ Fourth, scrutinizing the combination of benchmarking and institutional economic analysis provides insight for the design of fiscal rules and adequate accounting procedures.

6. Fiscal rules in practice

In this last section I present three cases, for each government layer, to offer insights into the implementation and working of fiscal rules, and examples of how to organize the analysis in terms of institutional economy. There are three variants of budget constraints. The federal brake mixes a macroeconomic measure, GDP, with budgeting rules. Balance is required in the medium term, using a clearing account. At the cantonal level, Fribourg applies a self-imposed constraint derived from the golden rule, with qualified exceptions, and sanctions in the case of non-respect. At the local level, communes apply a mix of fiscal rules and direct control.

6.1 Federal²⁸

The debt brake is a mechanism anchored in the Constitution, designed to prevent structural deficits and thereby an increase in debt. The cornerstone of the debt brake consists of a simple rule: expenditure may not exceed receipts over an economic cycle. The maximum amount for the (ordinary) expenditure ceiling is linked to the amount of (ordinary) receipts after adjustment, using a factor based on the long-term “structural” GDP trend [Federal Financial Law, art. 13]. When the actual GDP is higher than the GDP trend, surplus is required; inversely, when actual GDP is lower than GDP trend, a deficit is permitted.

27 This method of coding fiscal rules was originally conceived by Dafflon in 1995, and applied in 1996 at the local level in a Swiss canton. It was revised in 2002 by a team of 16 scholars for the analysis of deficits and indebtedness at the local level in 10 selected West European countries (Dafflon 2002). Over the period from 1987 to 1998, using the six key questions, Novaresi (2001) extensively studied the issues for the 26 Swiss cantons. Swianiewicz (2004) adopted the same catalogue for Central and East European countries. Yerly (2013) went a step further by proposing six statutory requirements deriving from this catalogue to measure the hardness of the cantons' fiscal rules, ranking them on a 1-to-100 scale, then testing the effective performance over 25 years, from 1987 to 2011.

28 Adapted from “The Debt Brake,” Federal Finance Administration, <https://www.efd.admin.ch/efd/en/home/themen/finanzpolitik/the-debt-brake.html>, retrieved November 8, 2017. Federal Financial Law, October 5, 2005 (RS 611.0). The articles of the law are given in the text.

Surpluses and deficits are recorded in “clearing accounts” which act as a “rainy day fund.” The adjustment variables are the government expenditures [art. 16], not taxation, for the very reason that the rates of the various federal taxes are fixed in the constitution and can be changed only with the double majority of votes and cantons – a difficult option.

Based on the six key questions previously discussed, the federal characteristics are the following:

- (1) The federal constitution [art. 126] and financial law [art. 12] require a balanced budget and account.
- (2) Balance is required for the total budget [art. 12].
- (3) Amortization is included [art. 10].
- (4) For both the budget and the account, balance is required in the medium term [art. 17]. But medium-term balance introduces a distinction between the “normal” budget and “extraordinary” revenues and expenditures [art. 17a].
- (5) For the “normal” budget, the medium term is three years, with some qualifications. For the “extraordinary” results, the time limit is six years.
- (6) No “self-inflicted” sanction is foreseen in the federal law. But measures must be taken in case of recurrent deficits.

The annual balance is required for the “normal” budget and account [art. 12]. On the revenue side (more than 90 percent comes from taxes), earmarked investment revenues, concession and licensing revenues, and “extraordinary” revenues, if any, are not included in the calculation [art. 13]. Revenues are adjusted to the structural GDP trend to fix the expenditure limit that should have been respected; call it R^{adj} . On the expenditure side, possible “extraordinary” expenditures are not included; E is the total minus extraordinary expenditures. The definitional balance is $E=R^{adj}$. If $R^{adj}>E$, the surplus is credited into a clearing account (“*compte de compensation*”); if $E>R^{adj}$, the deficit is debited from the clearing account [art. 16].

The “clearing account” statistically records deficits and surpluses. Acting as a rainy day fund, it means that when the clearing account itself is in surplus, deficits can be deducted. Yet, if the overdraft in the clearing account exceeds 6 percent of the public expenditures recorded in the last account, the difference must be reduced within the next three budgets/accounts [art. 17].

Under the extended debt brake rule, which entered into force in 2010, deficits in the extraordinary budget must be offset in the medium term through the ordinary budget.²⁹ Another “clearing account” (“*compte d’amortissement*”) records

²⁹ The “extraordinary budget” consists of “off-account” exceptional expenditures justified either by deep economic downturns or natural catastrophes. It also includes payments concentrated in one single year because of the accounting system or due to changes in the accounting model. Experience shows that the two last items leave too much room for circumventing the debt brake. A 2008 legal amendment corrected this situation.

extraordinary receipts and expenditures and acts as a record of the extended debt brake rule [art. 17a]. If extraordinary expenditures exceed extraordinary receipts in this “clearing account,” the shortfall must be offset in the following six fiscal years through the ordinary budget [art. 17b]. Parliament can extend the amortization deadline under extraordinary circumstances if, and only if, these circumstances incur costs that are at least 0.5% of total expenditures ($E=R^{adj}$) [art. 15].

However, though the constitutional rule foresees both “clearing accounts” as rainy day funds, the federal finance law is more restrictive: surpluses of revenue exclusively serve to reduce the federal public debt; surpluses in one account year (t) cannot be used to finance budget shortfalls in following years (t+1 and next). Shortfalls in the closing annual account must be compensated for in future budgets within the next three years for the “normal” budget and within the next six years for the “extraordinary” budget (Groupe d’Experts 2017: 9).

6.2 Cantons (Fribourg)

The Swiss cantons apply a variety of fiscal rules, all derived and adapted from the golden rule, with the exception of Basel-Town, which uses a debt brake related to GDP (Yerly 2013). The following institutional economic analysis presents the deficit and debt brake in the canton of Fribourg.³⁰ It would rank as 5 in the stringency scale in Figure 5, that is, in the first quantile of hard budget constraints. This case study illustrates the complexities and the details in law and regulation that are necessary to attain some degree of efficiency in avoiding deficits and containing indebtedness. Figures 6 and 7 illustrate the complexities of the budgeting process, which in turn must be translated into the accounting system.

- (1) The annual budget, presented by the executive Council to the cantonal parliament (legislative) must be balanced [art. 40a].
- (2) The requirement extends to current and capital budgets and accounts [art. 39, 40a]. MPs cannot propose an additional expenditure to the budget presented by the executive without proposing the equivalent reduction in another expenditure line [art. 41]. MPs’ proposals to reduce revenues (in fact, only taxation would be eligible for reduction) are examined by the parliamentary financial commission and the executive government. If both are opposed, the proposal is void [art. 41].
- (3) Amortization of assets are included in the current budget [art. 27]. Rates of amortization are fixed in the application law (AL) and correspond to the economic lives of the assets; the annual debt installment must correspond to the amortization (depreciation) written in the books [AL 12].
- (4) The balanced budget requirement is immediate in normal circumstances; deficits are admissible only during economic downturns or for exceptional and unpredictable reasons [art. 40a]; the implementation decree explicitly fixes the

30 Loi du 25 novembre 1994 sur les finances de l’Etat (RS FR 610.1) and Règlement du 12 mars 1996 d’exécution de la loi sur les finances de l’Etat (RS FR 610.11). Articles of the law and the application law (AL) are given in the graphs.

definition of these two exceptions [art. 40b, 40c, AL 22a, 22b]. In an economic downturn [qualified in art. AL 22a and 22b], the deficit limit is fixed to a maximum of 2 percent of total effective revenues (without pure bookkeeping entries) [art. 40b]. In “exceptional circumstances” [qualified in AL 22c], the resulting expenditures are paid in the normal annual budget; there is no deficit limit, but an obligation to amortize in the following years; see (6) below. See Box 3 for definitions.

Box 3: Definitions of economic downturn and exceptional circumstances

Economic downturn [art. 40a, 40b, AL 22a, 22b]

One of the three following conditions is realized:

- (a) the trimestral variation of the canton’s GDP compared to the precedent trimestral is negative for two trimesters in row;
- (b) the rate of unemployment is higher than 5% or the rate of individual job demands not satisfied on the job market is higher than 7%;
- (c) the annual variation of fiscal bases and wages is negative.

Exceptional circumstances [art. 40a, 40c, AL 22c]

Exceptional circumstances are unique or uncommon events and situations (including catastrophes and natural disasters) with the following characteristics:

- (a) costs exceed 1% of total revenues (off pure bookkeeping entries);
- (b) they are unpredictable; financial provisions or reserves do not exist;
- (c) they are of significant importance for the population.

- (5) If the account for year t presents a deficit (as identified during account closure early in year $t+1$), the deficit must be reported in the following budget (year $t+2$), which has to balance; the deficit must be amortized in no more than five years in normal circumstances [art. 40a].

Pure bookkeeping entries and extraordinary revenues³¹ [qualified in art. AL 22d] are taken off the books before the results are assessed [art. 40d, 42].

Deficits due to economic downturns must also be made up within five years [art. 40d]. In exceptional circumstances, the time limit may be prolonged by two years for a total of seven years, but the decision belongs to Parliament and must be agreed to by a majority of its members [art. 40a, 40b, 40c].

- (6) If, with reported deficits (one-fifth annually in normal situations and economic downturns; one-seventh in exceptional circumstances) the next budget(s) cannot be balanced, then Parliament must increase the direct tax coefficient to recover the balance [art. 40a]. The maximum increase is

31 Extraordinary revenues [art. AL 22d] are non-budgeted revenues, which amount to more than 1 percent of total other revenues (not including pure bookkeeping entries), and originate from: (1) the sale of financial stakes and participation, (2) the sale of patrimonial assets, (3) donations and legacies, and (4) any other exceptional and unique monetary entry.

20 percent [art. 41]. If the deficit of the account is higher than 2 percent of total revenues (not including extraordinary revenues and pure bookkeeping entries), the increase of the direct tax coefficient is compulsory in the following budgets, and retained as long as is needed to return to balanced budgets.

Using the six key questions, Figure 6 illustrates the budget process in the canton of Fribourg. Figure 7 shows the resulting account. It offers as an illustration of the fiscal rule approach in practice. In institutional political economy, such graphs allow us to visualize the flows that characterize the specific institutional processes under scrutiny – in this case, budgeting and the parliamentary debate on the closing account. It reveals the complexity of the process, complexity which must be translated in clear and comprehensible wording in the law itself and in the application law – which normally contains details of a procedural and technical nature. The figure must also mirror the accounting model, which *de facto* supports the implementation of the rule, and makes it possible to verify compliance with the law and to measure performance. To ensure that the boxes in the figure accurately translate the words of the law, each box contains the relevant article number in the law and in the application law.

- (7) A seventh consideration, not in the catalogue above, deserves attention because it pertains to another situation: what happens with recurrent surpluses? This is not theoretical: the cantons of St-Gallen and Fribourg have envisaged this outcome. Surpluses may increase the capital in the balance sheet or reduce indebtedness. It would be helpful for the law to specify the use of surpluses just as it specifies the interdiction of deficit. At the federal level and in the canton of St-Gallen (see Table 2), surpluses have been used to accelerate the reimbursement of debts. In Fribourg, the financial law contains a legal provision [art. 42a] for “extraordinary” surpluses. The “extraordinary” qualification applies if the yield of direct taxation is 6 percent higher than the budgeted amount and, cumulatively, at least equal to 4 percent of total expenditures. The government must propose to Parliament in the first session after the closing account (normally in May) a direct tax reduction, paying attention to the tax position of families with children. This amendment is subject to an optional referendum if it falls outside the flexibility given to the parliament in the law.³²

32 Loi du 6 avril 2001 sur l'exercice des droits politiques, art. 102c (RS FR 115.1). In many cantons, a new law or an amendment to an existing law may be subject to an optional referendum if it modifies substantially the individual position of voters, taxpayers, or the beneficiaries of public services. The cantonal laws on the exercise of citizens' rights fix the number of citizens' signatures required for demanding a vote on the issue, the time for collecting the signatures, and the delay before the vote takes place. In the case of the canton of Fribourg, the demand must come from at least 50 citizens within 30 days of the publication of the law or the amendment in the *Official Journal*; such a referendum request would require 6,000 citizens' signatures (out of 200,922 citizens in 2017) within 90 days after validation of the demand in the *Official Journal*; the vote must be organized within the next 180 days of the validation of the referendum.

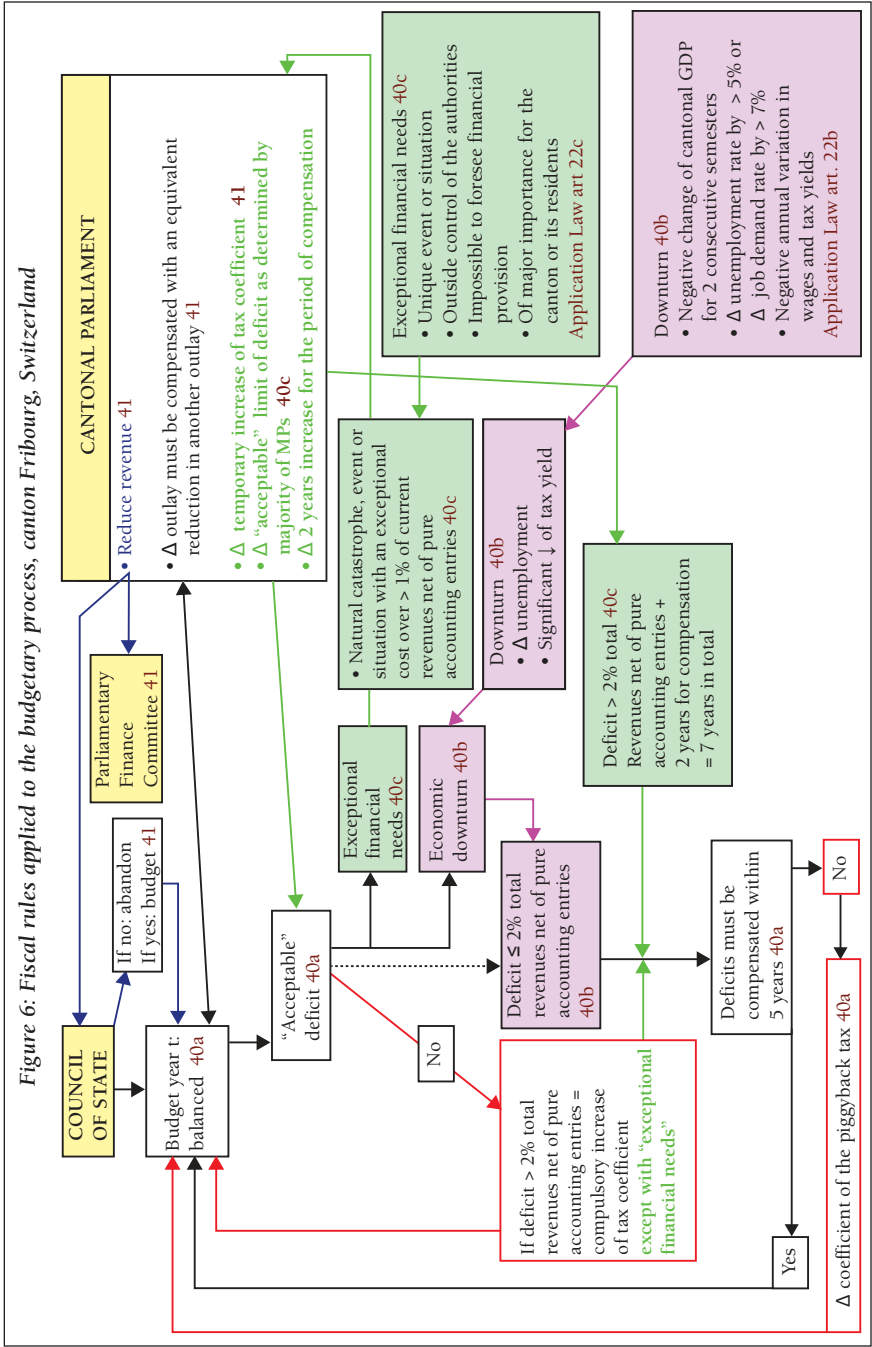
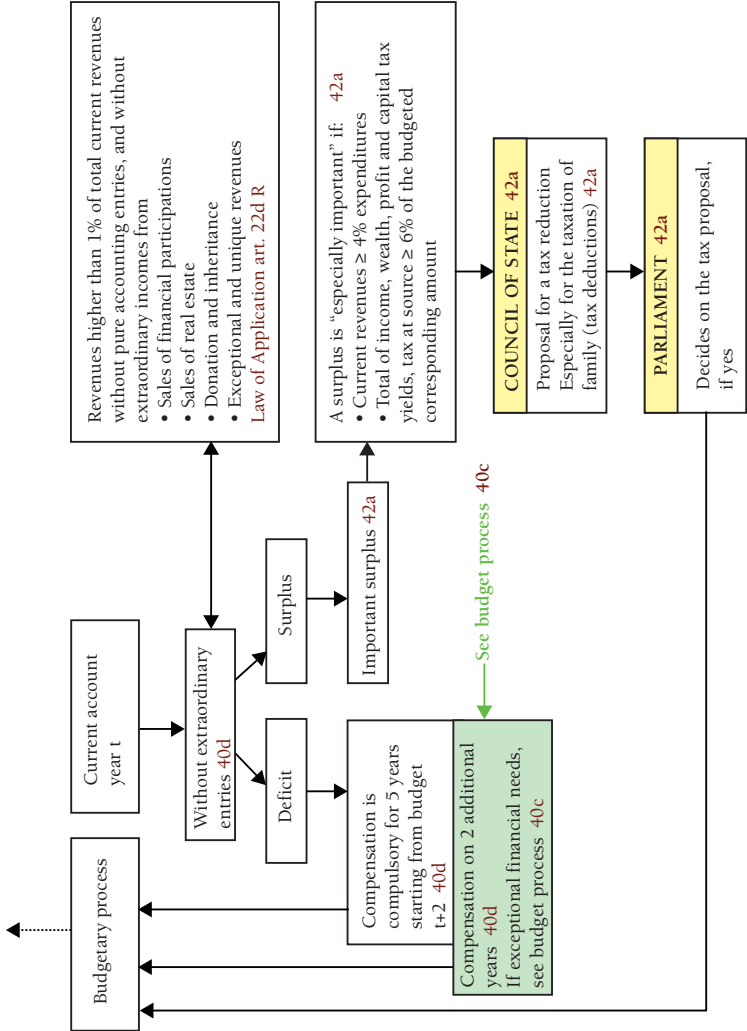


Figure 7: Fiscal rules applied on accounts, canton Fribourg, Switzerland



6.3 Communes (within the canton Fribourg)

At the local level, I am using communes in the canton of Fribourg as examples for four reasons. First, the choice is coherent with the cantonal example, so it will be evident if the fiscal rules the canton imposes on its communes are stricter than the ones it has for itself. Second, in this canton at the local level, the budget constraint is a mix of top-down fiscal rules, citizens' rights in decision-making and referenda, and direct control by the canton on the communes' borrowing. Third, the system changed in 1981 with a new (actual) law on communes for greater stringency (the addition of fiscal rules to direct control).³³ Fourth, direct control was softened in 1989 without a subsequent increase in deficits and debts.

The fiscal rules

- (1) The annual budget, presented by the Municipal Council (the executive) to the local parliament, or to the citizens in the communes with direct democracy, must be balanced [art. 87].
- (2) The requirement extends to the current budget [art. 87] and the account [art. 145].
- (3) Amortization of assets must be included in the current budget [art. 93]; the rates of amortization are fixed in the application decree and correspond to the economic lives of the assets³⁴; the annual debt installment must correspond to the amortization or depreciation written in the books [art. AD 52, 53].
- (4) The balanced budget requirement is immediate [art. 87].
- (5) If the budget in a particular year presents a deficit higher than 5 percent (not including pure accounting entries), the commune must increase its direct taxation coefficient [art. 87].

This item in the fiscal rules imposed by the canton on its communes is much less stringent – at least in the text of the law – than the rules it has imposed on itself. The cantonal deficit limit is set at 2 percent, compared with 5 percent for the municipalities (this corresponds to an additional budget every 20 years).

- (6) No sanction is mentioned in the law.

33 Loi du 25 septembre 1980 sur les communes (RS FR 140.1); Règlement du 28 décembre 1981 d'exécution de la loi sur les communes (RS FR 140.11).

34 The rates are 1 percent for real estate as financial wealth (distinct from administrative wealth, which includes all real assets necessary for delivering public services – school buildings, for example); 2 percent for lakes and river banks, and drinking water reservoirs; 3 percent for real assets of administrative wealth, such as school buildings, sport halls, leisure and cultural centres, communal administrative buildings, and similar structures; 4 percent for the drinking water network, sewage and wastewater purification plants, solid waste collection centres and landfill, roads, pavements, and pedestrian tracks; 7 percent for road surfacing; 10 percent for road development; and 15 percent for administrative and school equipment, technical equipment and machines (including technical equipment used in the production of drinking water, wastewater purification plant, etc.), and vehicles.

For capital expenditures, the law on communes extends the requirement [art. 3] in that the communes must elaborate a five-year financial plan that includes the annual costs of running and maintaining investments, and the operating costs of the services that the new investment permits [art. AL 43c]. This extension fully implements the golden rule revisited (in its four components) and corresponds to the rights given by law to citizens.

Citizens' rights and referenda

Each new investment project must be presented to the municipal legislative, direct assemblies, or local parliament, with a written report that must include [art. AL 48]:

- the object and objectives of the new investment (in a precise form: not “a” school building, but “this” specific school building, for example);
- the required financing: cash flow, capitalization, borrowing, investment contributions from third parties, etc.;
- amounts and duration of financial charges, interest, and amortization (Figure 8 Box [3]); and
- an evaluation of future maintenance and operating costs (Figure 8 Box [4]).

These four items are submitted to the municipal financial committee of the legislature, which makes a recommendation to the local parliament or assembly. If any of the information is omitted in the report, a positive decision of the local parliament or assembly would not be binding [art. AL 87]. That is, the investment would not be accepted; work cannot begin; and the report must be completed and submitted anew to the legislature.

Each new investment project and its financing (1) must be announced in the written convocation of the assembly or parliament [art. 12]; (2) the full dossier and report must be accessible to citizens at least 10 days before the session (at the municipal administration offices or online) [art. AL48]; and (3) each investment project must be voted on separately in the capital budget [art. 10]. If the decision is taken by a local parliament in place of the citizens' assembly, a yes-vote is subject to the option of a referendum [art. 52] if one-tenth of the citizens demands it (the commune with local parliament may reduce the one-tenth requirement in a local decree approved by the local parliament) [art. 52].

Cantonal direct control

The third piece in the mix concerns the control of the canton on two issues: (1) respect for the rules on balanced current budgets and balanced accounts [145]; (2) the accuracy of the investment report describe above, and the commune's capacity to support future recurrent costs in the medium term insofar that the commune needs to borrow above its credit line to finance the new investment [148]. This second control was introduced by an amendment in 1989. Before then, each investment financed through loan had to be approved by the canton. Since 1990,

Table 5: Definition of the credit line [“debt control”]

1	2	3	4	5	6	7	8
	Year of decision	Total cost	Earmarked investment revenues	Federal, cantonal, investment grants, if any	Annual amortization	Number of years	Residual value December 31, 2016
Investment 1							$3 - (4+5) - (6 \times 7)$
Investment 2							$3 - (4+5) - (6 \times 7)$
.....							$3 - (4+5) - (6 \times 7)$
Investment 9							$3 - (4+5) - (6 \times 7)$
The credit line is the residual value of the realized investments if investment revenues (4, 5, and 6) have reduced the total initial cost of investment and the amortization has been regularly recorded and the equivalent debt installment paid							Sum A
Net debt is the total external debt of the commune minus its monetary capital and savings							Sum B
Credit available							A-B

Source: Information obtained from the Department of Municipal Affairs, canton Fribourg, October 2017.

the new control is needed only if the new loan minus the available credit exceeds the credit line as defined in Table 5.

The cantonal authority requires the communes to establish their own “debt controls” together with the balance sheet and verifies all communal “debt controls.” If a municipality presents a situation in which the total net debt is higher than the credit line, the commune will receive a warning in the first year. The cantonal authority will reject the commune’s loan demand, which in effect stops new investments. The commune will have to present a consolidation program in the second year. If total net debt remains higher than the credit line for a third year, the cantonal authority requires the commune to increase its direct tax coefficient in order to return to a balanced budget and account. The measure holds as long as the balance is not achieved.

This sanction can be related to the 5 percent deficit line, if the deficit is not accidental. With deficits, the municipality will have difficulty respecting the rule that “amortization = debt installment.” If it records the amortization but cannot pay the equivalent debt installment in part or in total, the net debt will get closer to and eventually exceed the credit line, a situation which will trigger the procedure described above.

The “credit line” method offers new opportunities for debt management. One key problem is the potential discrepancy between the rate of amortization in the law, based on the economic lives of capital assets, and debt installments or loan repayment maturities in financial markets. Within its credit line, the commune can organize its debt with the most favourable mix of short-term, long-term, fixed, or variable loans, in order to reduce interest payment and volatility. The net debt (gross debt minus savings) also makes it possible to obtain long-term fixed loans at low interest rates and save the amortization-equivalent amount for repayment at maturity.

7. Concluding note

The design and the implementation of fiscal rules in order to guarantee sound public finances at the subnational government level are politically and technically possible, as demonstrated in the Swiss case. But the process is time consuming. Returning to the main message announced in the introduction, long-term government finances can be made sustainable. Success responds to the conjunction of political will and the existence of democratic institutions that support fiscal responsibility, the precise design of the budgeting and accounting systems, and a detailed legal framework for fiscal rules.

In Switzerland, the political mood of voters and taxpayers is expressed in a responsible manner. Thanks to their budget autonomy, subnational governments’ expenditure decisions must be financed through their own tax resources. And the electorate would never permit today’s government to spend tomorrow’s money. The financial consequences of today’s expenditures cannot be externalized to other government levels or postponed for future generations. These principles are supported by fiscal rules that approximate the revisited golden rule, varying somewhat from canton to canton.

Democratic institutions play a central role in the expression of fiscal responsibility. At the local level and in cantonal parliaments, the elected are not professional politicians, therefore they tend to manage government finances as they would their own businesses or households. This attitude is mirrored in the various cantonal legislations and extended top-down to local governments.

Second, in implementing the golden rule, budgeting and accounting processes must be precise enough to guarantee the traceability of expenditure and tax decisions and also to circumvent political and bureaucratic strategic behaviour. Three issues are important: the distinction between current and investment expenditures, the amortization policy that links investments recorded on the balance sheet to the current budget, and debt management.

Finally, fiscal rules must contain operational and accounting details in order to perform properly. The legal design is crucial: with three possible situations (surplus, balance, or deficit) in the initial budget and in the closing account, nine outcomes are theoretically possible. These possible outcomes need fine tuning in the law, which has to detail the step-by-step budgeting process, the requirements

for closing the account, corrective actions if needed, and sanctions when the rules are not respected. Words and concepts must not be ambiguous. Precise wording in the legislation gives clarity and prevents strategic behaviours or circumventing manoeuvres. Time horizons must be specified clearly. Exceptions to the rule, if any, must be detailed and measurable.

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9. Appendix

The author's calculations are based on data from the Federal Finance Administration of the Swiss Confederation, Bern (<https://www.efv.admin.ch/efv/fr/home/themen/finanzstatistik/berichterstattung.html>); consulted September 7, 2017.

<i>Table A-1: Functional government expenditures, 2015, million CHF</i>						
Function	Confederation		Cantons		Communes	
General administration	6,269	9.4%	7,805	8.8%	5,047	10.7%
Public security, police, justice	5,644	8.5%	7,864	8.9%	3,052	6.5%
Education	6,370	9.6%	24,212	27.3%	12,560	26.6%
Culture, sports, leisure	501	0.8%	1,758	2.0%	3,234	6.8%
Health	309	0.5%	12,379	14.0%	1,978	4.2%
Social security	22,162	33.3%	17,855	20.2%	8,928	18.9%
Traffic, roads, telecommunications	9,029	13.6%	6,259	7.1%	4,489	9.5%
Environment protection	1,008	1.5%	1,443	1.6%	4,346	9.2%
Public economy	5,393	8.1%	5,024	5.7%	1,616	3.4%
Finance and taxation	9,860	14.8%	3,955	4.5%	2,011	4.3%
Total expenditures	66,545	100.0%	88,553	100.0%	47,262	100.0%
Total in Table A-1 (current + capital)	65,015		88,297		47,142	
Difference	1,530		256		120	
Loan and participation not included in A-1	1,530		302		121	

**Returning to the Golden Rule of Balanced Budgets:
The Institutional and Political Economy of Restricting Public Deficits and Debt**

Table A-2: Categories of revenue, 2015, million CHF

	Confederation		Cantons		Communes	
Direct taxation	26,939	39.0%	41,756	48.7%	26,668	57.0%
Property taxes	0	0.0%	349	0.4%	789	0.2%
Consumption taxes	14,613	21.2%	2,260	2.6%	98	0.0%
V.A.T.	22,397	32.5%	0	0.0%	0	0.0%
Total taxation	63,949	92.7%	44,365	51.7%	27,555	58.9%
Patents and concessions	972	0.1%	2,380	2.8%	353	0.8%
Tariffs, user charges	1,629	2.4%	7,338	8.6%	8,395	18.0%
Financial and rental revenues	1,349	2.0%	2,772	3.2%	3,225	6.9%
Revenue sharing	0	0.0%	4,993	5.8%	771	1.6%
Contributions for services	20	0.0%	4,999	5.8%	748	1.6%
Fiscal equalization	0	0.0%	3,619	4.2%	1,510	3.2%
Transfers	221	0.3%	12,699	14.8%	2,529	5.4%
Extraordinary revenues	358	0.5%	84	0.0	35	0.0%
Various revenues	369	0.5%	394	0.4%	106	0.0%
Total current revenues	68,868	99.9%	83,641	97.5%	45,228	96.8%
Investment revenues	55	0.0%	2,175	2.5%	1,521	3.2%
Total revenues	68,923	100.0%	85,817	100.0%	46,749	100.0%

Table A-3: General result of the government sector, current and capital, 1990–2015, million CHF

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Current account													
Expenditures													
Confederation	28,115	31,117	33,651	33,978	35,861	36,317	38,803	37,800	40,673	40,554	42,082	43,033	44,197
Cantons	34,534	38,687	41,331	42,870	43,907	44,897	47,383	48,353	49,179	50,821	52,809	56,337	58,687
Communes	24,420	27,128	29,587	31,206	31,893	32,551	33,195	33,161	33,689	34,434	35,359	36,461	37,237
Revenues													
Confederation	30,746	31,388	32,593	31,294	34,537	35,547	37,167	37,474	45,613	42,056	50,740	46,692	49,624
Cantons	36,907	39,211	41,625	44,264	45,934	46,944	49,286	50,266	52,405	55,448	58,306	60,549	62,216
Communes	27,761	29,413	31,707	34,215	35,161	35,807	36,344	36,274	37,105	38,799	40,496	41,479	42,218
Net result													
Confederation	2,631	270	-1,058	-2,684	-1,323	-769	-1,636	-326	4,940	1,502	8,658	3,659	5,427
Cantons	2,373	523	294	1,394	2,027	2,047	1,903	1,913	3,226	4,627	5,496	4,212	3,529
Communes	3,341	2,285	2,120	3,009	3,267	3,256	3,149	3,113	3,416	4,364	5,137	5,018	4,981
Investment account													
Expenditures													
Confederation	3,090	3,799	3,632	4,056	3,970	3,868	3,664	3,531	4,294	4,739	4,435	4,666	4,863
Cantons	6,205	6,700	6,628	6,927	7,106	6,843	6,688	6,526	6,683	6,852	6,529	7,262	7,056
Communes	5,736	6,038	6,263	5,794	5,889	5,804	5,348	5,190	5,514	5,197	4,981	5,134	5,181
Revenues													
Confederation	26	8	88	7	23	40	190	49	46	43	41	65	5
Cantons	2,404	2,693	2,638	2,790	2,951	2,817	2,862	2,838	2,863	3,031	3,104	3,103	3,017
Communes	1,643	1,650	1,565	1,632	1,743	1,739	1,783	1,578	1,612	1,672	1,497	1,466	1,391
Net result													
Confederation	-3,065	-3,791	-3,544	-4,049	-3,947	-3,829	-3,475	-3,482	-4,247	-4,697	-4,394	-4,600	-4,857
Cantons	-3,801	-4,007	-3,990	-4,138	-4,154	-4,026	-3,826	-3,687	-3,821	-3,822	-3,425	-4,159	-4,040
Communes	-4,093	-4,388	-4,697	-4,161	-4,145	-4,065	-3,565	-3,611	-3,902	-3,525	-3,484	-3,668	-3,790

<i>Table A-3 (continued): General result of the government sector, current and capital, 1990–2015, million CHF</i>													
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total net result													
Confederation	-434	-3,521	-4,602	-6,733	-5,270	-4,598	-5,111	-3,808	693	-3,194	4,264	-942	569
Cantons	-1,428	-3,483	-3,695	-2,744	-2,127	-1,979	-1,923	-1,774	-595	806	2,071	53	-510
Communes	-752	-2,103	-2,577	-1,152	-878	-809	-415	-498	-486	840	1,653	1,350	1,191
GDP	338,996	354,060	361,424	369,351	378,471	404,130	407,410	415,948	427,658	435,464	438,779	470,214	469,338
Ratio total expenditure/GDP	30%	32%	34%	34%	34%	32%	33%	32%	33%	33%	32%	33%	33%
Current account	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Expenditures													
Confederation	44,551	45,987	45,885	47,085	56,076	51,151	51,318	52,705	56,314	55,108	56,835	56,894	58,389
Cantons	60,940	62,186	63,815	65,088	68,181	66,691	67,197	68,888	73,526	75,660	76,391	78,709	81,628
Communes	38,484	38,890	39,800	40,584	41,161	34,943	36,052	36,353	37,364	38,216	38,721	38,969	39,764
Revenues													
Confederation	46,772	48,579	52,724	58,256	57,844	64,170	62,847	63,049	64,301	64,183	65,502	64,593	68,868
Cantons	62,752	65,144	67,817	71,284	75,350	73,469	73,858	74,751	76,679	76,997	78,682	80,065	83,641
Communes	42,634	43,354	44,476	46,174	47,782	40,383	41,136	41,288	42,507	42,593	43,116	43,983	45,228
Net result													
Confederation	2,221	2,593	6,839	11,171	1,769	13,018	11,529	10,344	7,987	9,075	8,667	7,698	10,478
Cantons	1,812	2,958	4,002	6,196	7,169	6,778	6,660	5,863	3,153	1,337	2,291	1,356	2,012
Communes	4,150	4,465	4,676	5,590	6,621	5,440	5,084	4,934	5,143	4,377	4,395	5,014	5,464
Capital account													
Expenditures													
Confederation	4,837	4,750	5,304	4,814	5,527	6,110	6,341	6,551	6,498	6,179	6,207	6,411	6,625
Cantons	6,751	6,521	6,297	6,220	6,960	6,106	6,496	6,841	7,167	7,142	6,505	6,220	6,605
Communes	5,550	5,357	5,187	5,188	5,273	6,263	6,846	6,730	6,433	6,542	7,080	7,230	7,377
Revenues													
Confederation	24	4	22	44	831	50	86	172	706	55	1,389	152	55

Table A-3 (continued): General result of the government sector, current and capital, 1990–2015, million CHF

Current account	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cantons	3,035	2,925	2,823	2,715	2,870	2,625	2,230	2,294	2,376	2,478	2,277	2,106	2,175
Communes	1,411	1,441	1,256	1,283	1,286	1,400	1,348	1,390	1,418	1,490	1,322	1,354	1,521
Net result													
Confederation	-4,814	-4,745	-5,282	-4,770	-4,697	-6,060	-6,255	-6,379	-5,792	-6,124	-4,818	-6,259	-6,571
Cantons	-3,716	-3,596	-3,474	-3,505	-4,090	-3,481	-4,266	-4,547	-4,791	-4,663	-4,228	-4,113	-4,431
Communes	-4,139	-3,916	-3,930	-3,905	-3,988	-4,863	-5,498	-5,339	-5,016	-5,052	-5,759	-5,876	-5,856
Total net result													
Confederation	-2,593	-2,153	1,557	6,401	-2,928	6,958	5,274	3,965	2,195	2,951	3,849	1,439	3,907
Cantons	-1,905	-639	528	2,691	3,079	3,297	2,394	1,316	-1,638	-3,326	-1,938	-2,757	-2,418
Communes	11	549	745	1,685	2,633	578	-415	-405	127	-675	-1,364	-862	-392
GDP	474,015	489,369	507,463	538,125	573,080	597,381	587,061	606,146	618,325	623,611	634,776	643,784	645,556
Ratio total expenditures/GDP	34%	33%	33%	31%	32%	29%	30%	29%	30%	30%	30%	30%	31%

Table A-4: Government debt, 1990–2016, million CHF

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	96,920	108,936	129,263	153,570	168,545	178,841	188,338	202,916	217,963	209,235	212,682	209,284	223,590
Confederation	36,643	42,611	53,466	66,695	73,209	81,069	86,918	95,427	107,003	100,563	104,542	105,018	120,375
Cantons	26,925	30,596	35,257	41,867	46,245	48,249	51,025	54,739	57,220	56,785	58,024	57,611	59,518
Communes	33,352	35,728	39,867	40,908	42,691	43,724	44,194	44,549	44,941	44,086	44,415	44,335	43,687
Social security	0	0	674	4,100	6,400	5,800	6,200	8,200	8,800	7,800	5,700	2,320	10
Per capita, in francs	14,343	15,920	18,615	21,449	23,101	24,502	25,721	27,438	29,362	28,116	28,731	28,525	30,569
% GDP	27.0%	29.1%	33.8%	39.3%	42.1%	44.1%	46.2%	48.8%	51.0%	48.0%	46.3%	44.5%	47.6%
GDP	358,506	374,437	382,225	390,608	400,253	405,145	407,993	415,825	427,756	435,507	459,447	470,218	469,788
Resident population (1000)	6,757.2	6,842.8	6,908.0	6,968.6	7,019.0	7,062.4	7,081.3	7,096.5	7,123.5	7,164.4	7,204.1	7,255.7	7,313.9

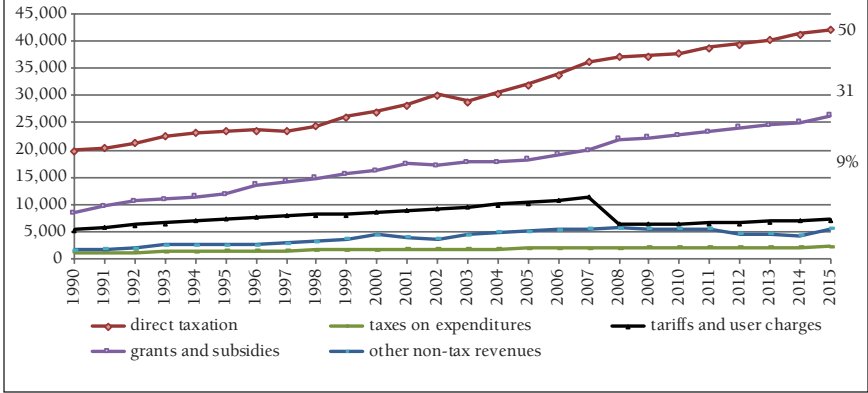
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Table A-4 (continued): Government debt, 1990–2016, million CHF

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total	227,872	233,802	233,181	220,439	211,564	206,967	195,467	194,411	192,505	198,224	199,153	203,629	200,267	196,567
Confederation	121,727	124,634	128,203	120,704	114,948	114,904	105,908	104,048	104,202	105,415	104,854	102,537	98,236	92,693
Cantons	64,197	64,822	58,204	55,036	52,827	48,375	44,534	43,363	42,154	45,887	47,548	54,076	54,881	56,199
Communes	41,948	42,346	42,975	39,899	38,988	39,539	39,407	39,583	40,119	40,672	42,332	43,304	44,510	45,119
Social security	0	2,000	3,800	4,800	4,800	4,148	5,617	7,417	6,030	6,250	4,418	3,713	2,640	2,556
Per capita, in francs	30,943	31,261	30,752	28,718	27,044	26,147	24,218	23,584	23,239	23,850	23,766	24,147	23,583	22,886
% GDP	47.9%	47.7%	45.8%	40.8%	36.7%	34.5%	33.2%	31.9%	31.0%	31.6%	31.2%	31.3%	30.6%	29.8%
GDP	475,270	490,143	508,900	540,289	576,088	600,431	589,213	608,831	621,256	626,414	638,177	649,718	653,735	658,977
Resident population (1000)	7,364.1	7,415.1	7,459.1	7,508.7	7,593.5	7,701.9	7,785.8	7,870.1	7,954.7	8,039.1	8,139.6	8,237.6	8,327.1	8,419.5

Source : Federal Finance Administration (<https://www.bfs.admin.ch/bfs/fr/home/statistiques/administration-finances-publiques/depenses-dettes.html>), retrieved September 2, 2017.

Figure A-1: Categories of revenues of the cantons, 1990–2015, million CHF

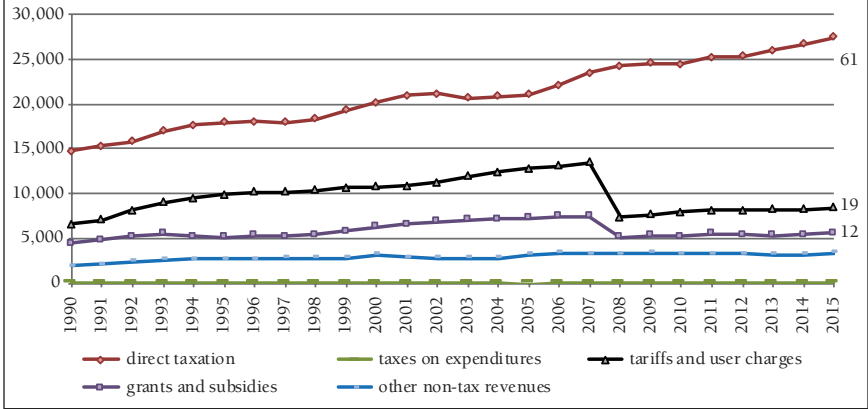


Direct taxation: Income and wealth, poll tax, profit and capital, inheritance and gifts, lottery winnings, property gains, real estate, real estate transfers, stamp duty, lottery.

Taxes on expenditures: motor vehicles, boats, dog licences, entertainment.

Tariffs and user charges: administrative fees, parents' contribution to nursery care and kindergarten, hospital billing, homes for elderly people, water distribution, evacuation and treatment of wastewater, solid waste collection and treatment, urban public transportation.

Figure A-2: Categories of revenues of the communes, 1990–2015, million CHF



Direct taxation: Income and wealth, profit and capital, inheritance and gifts, lottery winnings, property gains, real estate, real estate transfers, stamp duty, lottery.

Taxes on expenditures: dog licences, entertainment.

Tariffs and user charges: administrative fees, parents' contribution to nursery care and kindergarten, hospital billing, homes for elderly people, water distribution, evacuation and treatment of wastewater, solid waste collection and treatment, urban public transportation.

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