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**Special report** 

# Assessment of public finances for 1990-2007 based on the new finance statistics models

Version 1.2

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## 1. Introduction

Finance statistics provide a general snapshot of the financial position of public budgets (federal government, cantons, municipalities and social security funds). 2008 saw a complete overhaul of the finance statistics, with all data being recorded, processed and evaluated in line with the new accounting models of the federal government (NAM) and the cantons (HAM2). The statistics have also been adjusted in line with International Monetary Fund (IMF) guidelines and the European Union (EU) system of national and regional accounts. The IMF and EU statistical standards, which are based on the UN System of National Accounts 1993 (SNA93), are mutually compatible. Any further updates will also be consistent with the International Public Sector Accounting Standards (IPSAS). Conformity to EU standards was required under the agreement on statistics concluded between Switzerland and the EU as part of the second round of bilateral agreements (Bilateral Agreements II). The revised finance statistics for the 2008 fiscal year were first published in 2010.

The purpose of the new finance statistics is to ensure international comparability of public finance data. The "FS Model" provides for data comparability within Switzerland. The FS Model is configured to the new Harmonised Accounting Model for the cantons and municipalities (HAM2). It also includes items from the New Accounting Model of the federal government (NAM) and the previous harmonised accounting model (HAM) for the cantons. The accounting standards and finance statistics have been aligned in consultation with the Swiss Public Sector Financial Reporting Advisory Committee. The "GFS Model", which is based on the IMF Government Finance Statistics Manual 2001 (GFSM2001), ensures the international comparability of finance statistics. Both the FS Model and GFS Model use the accrual basis of accounting which means that financial flows are allocated to specific accounting periods in accordance with commercial practice. The GFS Model differs from the FS Model primarily in respect of the definition of the profit and loss statement and the valuation of assets and liabilities. For example, the GFS Model makes a distinction between the operating balance and the balance of other economic flows (changes in value). Balance sheet transactions are also recognised separately. Instead of a statement of investments, the GFS Model maintains an asset account showing net acquisitions of non-financial assets (acquisitions less disposals and consumption of fixed capital). The GFS Model values inventories in accordance with the "true and fair view" principle (market value). Figure 1 shows how the new finance statistics are positioned within the system of international accounting and statistical standards.

**Figure 1:** National and international comparability of public finances within the new finance statistics framework<sup>1</sup>



To ensure that the changes in methodology precipitated by the finance statistics reforms undertaken in the 2008 fiscal year do not cause any major structural discontinuity in statistical results, data for the period 1990-2007 were allocated to the final accounting year under the old model in the FS and GFS Models and reprocessed in line with the new standards. This should ensure that the time series subsequent to 1990 is methodologically consistent. However, some of the changes stemming from the reforms may disrupt time series levels e.g. the new definition of "public sector" (sectorisation), which cannot be adjusted retrospectively due to the lack of information.

This report presents the results of this post-processing and assesses the plausibility and consistency of the results. The results of the finance statistics for 1990-2007 under both the FS and GFS Models will initially be presented in section 2. These results will then be compared in detail with previous statistical data and the FS and GFS Models compared in section 3. More detailed assessments will then made to establish whether there is a link between FS and GFS Model accounting results and economic performance. Trends in fiscal policy measures and expenditure by function will also be assessed.

Abbreviations: IPSAS: International Public Sector Accounting Standards SRS-CSPCP: Swiss Public Sector Financial Reporting Advisory Committee NAM: New Accounting Model of the federal government HAM2: new Harmonised Accounting Model for the cantons and municipalities SNA: System of National Accounts ESA: European System of Accounts GFSM: Government Finance Statistics Model

#### **1.1.** Finance statistics from 2008

The process of revising the finance statistics for the 2008 fiscal year has involved various conceptual changes, which have a number of consequences in terms of the comparability of different data series:

- 1. Firstly, the statistical results for 1990-2007 were aligned to the conceptual changes as far as possible, requiring a comparison of previous finance statistics with statistics based on the new methodology.
- 2. Secondly, the revised methodologies, new accounting rules etc. have caused a break in the data series between 2007 and 2008. However, some of these adjustments have only been implemented from the 2008 fiscal year and could not be extrapolated back to 1990 due to the lack of detailed information.

As the main focus of this report is on the issues highlighted in 1. above, the changes referred to in 2. are dealt with in this section. More specifically, the following differences in the methodologies used for the old and new finance statistics will be examined:

- Redefinition of the scope of the public sector (sectorisation)
- Revision of accounting models
- New approach to eliminating duplicate entries
- New approach to estimating municipal data
- Compilation of social security fund data

Other changes made in 2008, such as the transition to the new system of financial equalisation and allocation of functions, fall outside the scope of this report, given that these changes are unrelated to the revision of finance statistics.

#### 1.2. Sectorisation

Defining the scope of government budgets is one of the key concerns of finance statistics. In terms of data input and processing, there is the problem of major discrepancies in the basic budgetary definitions used in federal government, cantonal, municipal and social security fund accounts. In order to obtain a budgetary overview based on comparable results, it is therefore essential that uniform principles are applied wherever possible in allocating economic entities to the various categories of public budget (sectorisation).

In the course of implementing the Bilateral Agreements II with the EU, the classification by sector, or sectorisation, of the new finance statistics has been adjusted in line with the rules defined in the European System of Accounts (ESA95). In addition to the federal government, cantons, municipalities and social security funds, all other entities meeting the ESA95 criteria are included in the new finance statistics. For the purposes of finance statistics, government entities include any entities that are independent organisations under state control and which:

- collect taxes, or
- redistribute income and wealth, or

• fund less than half of their production costs through market sales.

Organisations not meeting these criteria are excluded or eliminated from the government accounts. As a result, public entities such as hospitals, residential homes, power stations, gas and water companies, district heating plants, waste incineration plants, public transport companies etc., which meet over half of their production costs by selling goods and services or by charging fees, do not fall within the definition of "public sector". In addition, the public sector does not include state-owned financial institutions and financial service providers, such as the Swiss National Bank, the cantonal banks or public sector pension funds. These are categorised as financial corporations.

The new definition of "public sector" can be described as the most important change to the finance statistics and has a considerable impact on the consistency of data series. Because certain entities included in the old statistics fall outside the definition of "public sector" from 2008, the adjusted sector classification explains to some extent the large decline in cantonal and municipal revenue and expenditure in 2008.

#### **1.3.** The new accounting models of the federal

#### government (NAM) and cantons (HAM2)

The finance statistics reforms are also closely related to changes in accounting principles for Swiss public finances. The federal government has changed its accounting basis by introducing the New Accounting Model (NAM). NAM entails a transition from cash to accrual accounting and uses a dual approach encompassing the financing perspective (cash view) and profit and loss view. Although the federal government launched the NAM in 2007, the new system has only been reflected in the finance statistics since the 2008 fiscal year. The Harmonised Accounting Model for the cantons and municipalities has also been changed (now known as HAM2). The changes were aimed at achieving maximum consistency between the cantonal and municipal accounting systems as well as the federal government NAM system. The accounting systems have essentially been brought into line with the International Public Sector Accounting Standards (IPSAS). These changes have a number of consequences:

• New recording principles and rules (e.g. accrual accounting)

As a result of the new rules, transactions after 2008 are entered, where possible, in the period to which they relate. From 2008, this new accrual accounting approach will be supported by the capacity to differentiate between transactions that have budgetary impact and those that do not. However, at cantonal level, the accrual basis for recording transactions is not new, as this was already built into HAM1.

• New schedule of accounts

Following the adjustments to the NAM and HAM2 accounts structure, some accounts relevant to previous finance statistics are no longer used, necessitating the creation of new accounts. Accordingly, some accounts may cease to be used after 2008, or will be replaced by other accounts. Other account groups, which cannot be accurately allocated following the retrospective reclassification of accounts back to 1990, are present in the new finance statistics in greater levels of detail. In addition, due to a lack of detailed information, some accounts have been recorded retrospectively in earlier years under the "nes" category (not elsewhere specified).

These changes may result in significant jumps in the time series for individual accounts and even whole account groups.

• New functional classification

The finance statistics reforms have also involved changes to the classification of functions of government. The new classification by function under the national finance statistics model (FS Model) corresponds to the functional classification under HAM2<sup>2</sup>. This is based on the international classification laid down in the IMF Government Finance Statistics Manual 2001 (GFSM2001). The new classification recapitulates previous functions, with some new functions added. As well as structural changes within the functional categories, some previous functions have also been adjusted and reallocated to other categories. The adjustments have also produced some structural discontinuity in the data under the functional classification, partly due to the reallocation of government functions, but primarily to the new classification by sector. Hospitals, for example, are excluded from government budgets after 2008, with the result that health spending in 2008 is significantly down on the previous year.

The functional classification under the GFS Model is based on the international standard "Classification of Functions of Government" (COFOG). However, it should be noted that the GFS functional classification differs from the FS functional classification. The "fiscal affairs and taxes" function under the FS Model, for example, has been completely recategorised under the COFOG heading of "general public services".

#### **1.4.** Duplicate entries

Duplicate entries are made in respect of transfers between "public sector" entities. Each transfer within a sub-sector or between two different government levels has a payer and payee unit. To avoid the double counting of transactions when consolidating several budgets, transactions are deducted where several budgets are aggregated. If for example the municipalities of a particular canton are shown as a single unit, all transfers between these municipalities will be eliminated. This ensures that consolidated revenue and expenditure are not overstated by the amount of these "internal" transfers. The new finance statistics have altered the way in which such payment transfers are recorded and balanced.

• Duplicate entry process

Duplicate entries were not previously made at all levels of government. For example, prior to 2007, social security funds were not counted as public sector (cf. section 2.5), so that transfers to these units were not recorded as intragovernmental flows but as transfers to third parties. However, since 2008 all such flows have been recorded.

• Netting duplicate entries

Unless transfers between consolidated units have the same values on the revenue and expenditure side (neutral balance), statistical discrepancies will arise. Discrepancies between transfer expenditure and revenue from transfers may arise, for example, as a result of differences in allocation or functional specification, variations in the definition of profit and loss and investment statements or fiscal year cut-off points. The new finance statistics therefore enable all

<sup>&</sup>lt;sup>2</sup> cf. <u>http://www.srs-cspcp.ch/srscspcp.nsf/wwBaseDocuments/PCSRS01?OpenDocument&Ing=de</u>

such transfers to be netted, ensuring that the values of transfers reported on the expenditure side of the payer budget and revenue side of the payee budget match precisely. In financial statistics, a consolidated time series is crucial. As a result of the new consolidation rule, statistical differences will arise compared with statistics for the period 1990-2007 due to the non-reconciliation of duplicate entries between the federal government and cantons, for example, or between cantons.

#### **1.5.** Method for estimating unrecorded municipalities

Not all Swiss public finance accounts are reflected in the finance statistics. Given the large number of municipalities in Switzerland (in excess of 2,600) it is impossible to record reliable expenditure data for all accounts consistently. As a result, the data recorded has to be limited to a specified number of municipalities per canton, requiring estimations or extrapolations for those municipalities that are not recorded.

In the process of revising the finance statistics, a new system of random sampling was established for conducting surveys of municipalities, which also reduces the workload in compiling data. This should ensure that in the selection of municipalities greater consideration is given to the canton in which the municipality is located and the municipality's size. However, with this method, as with any partial sample survey, there is also the risk of true values being missed. More specifically, any reduction in recorded budgets can cause degradation in the results: the smaller the random sample the greater the likelihood of the investigated attribute(s) deviating from the universe. Two trial spot checks were made to compare the new method with the values actually recorded for three cantons in a given year. The results of these test estimates varied only slightly (no more than 2%) from the values derived from the complete sample survey, confirming that the new estimation method is sound.

The random sample of municipal accounts will be incorporated into the new finance statistics on the basis of size and the canton to which the budgets relate. The process of selecting municipalities has therefore changed fundamentally, which may significantly affect the overall statistical results for the municipalities. The adjustment to the estimation method would also partly explain the discontinuity in the time series for municipal revenue and expenditure in 2008.

#### **1.6.** Social security funds

Until now, social security funds have only been used for international comparison purposes or for calculating fiscal or public spending ratios in response to requests for information from interested parties. From the 2008 fiscal year, there will be full statistical coverage and analysis of social security funds based on the new sector classification. As a result, it is not currently possible to compare FS Model results with the old finance statistics or FS Model with GFS Model results for years prior to 2008. Plans have been formulated to record and process social security fund statistics for the period 1990-2007 under both the FS and GFS models in the first half of 2011. The analysis of these results and those of the public sector will be published in "Finanzstatistik der Schweiz 2009 – Jahresbericht" (Swiss finance statistics for 2009 – annual report). All social security fund data published prior to 2007 were extrapolated from previous statistics. The social security fund data presented therefore involve specific statistical data collated at a very high level of aggregation.

The social security funds include the Swiss Federal Social Security Fund and Survivors Insurance (AVS), disability insurance, the income replacement scheme, family allowances paid to farmers, the unemployment insurance fund and maternity allowance fund for the canton of Geneva.

## 2. Overview of results

In this section, the results from the new Swiss finance statistics models will initially be presented without evaluating them against other comparative time series data. The main results (expenditure, revenue, net lending/borrowing, balance sheet and key measures) under the FS and GFS Models will be presented. Tables are provided in the format in which data will be published in future finance statistics reports.

#### 2.1. FS Model

Results for net lending/borrowing under the FS Model are shown in Table 1. It can be seen that the accounting results for the federal government, cantons and municipalities follow a similar pattern. For example, high deficits are generally evident at all three levels for the period 1990-1997, followed by a consolidation phase until the end of the decade, in which some positive results are also seen. In 2000, for example, all sub-sectors realised high surpluses. However, deficits are again recorded for the federal government sub-sector between 2001 and 2004. Only the municipalities report favourable accounting results overall in this period, although after 2005 some very high surpluses are again realised across all three sub-sectors.

	Federal govern- ment	Cantons	Municip- alities	Social security funds	General govern- ment
1990	-779	-1'785	-826	2'764	-1'027
1991	-4'044	-3'719	-2'153	2'357	-8'018
1992	-5'040	-4'109	-2'634	-369	-12'403
1993	-9'739	-5'344	-1'195	2'480	-14'089
1994	-6'918	-3'635	-895	449	-10'869
1995	-4'695	-1'858	-840	-447	-7'543
1996	-5'773	-2'053	-496	10	-7'893
1997	-5'530	-2'897	-578	-1'106	-9'955
1998	111	-787	-557	-1'456	-2'381
1999	-3'257	949	830	-516	-1'500
2000	3'786	2'810	1'469	1'282	9'617
2001	-1'700	1'438	1'324	-740	50
2002	-496	-110	1'153	-1'831	-1'387
2003	-3'773	-1'977	-8	-52	-5'933
2004	-3'711	-744	535	-1'487	-5'679
2005	379	514	760	-1'049	187
2006	5'410	2'241	1'674	-746	8'250
2007	4'580	3'679	2'565	500	10'908

 Table 1:
 Net lending/borrowing under the FS Model in CHF millions

Figure 2 shows the trend in individual sub-sector balances. Federal government balances are subject to the greatest fluctuation, while the cantonal curve is considerably flatter and municipal balances show relatively little fluctuation overall. The different shapes of the curve are also indicative of the economic sensitivities of different levels of government. However, this subject will be explored later in greater in depth.

It is also noticeable that of the government sectors investigated, the municipal accounts clearly show the best results. There is slightly greater variation in the evolution over time of social security fund accounting results than for federal government, cantonal and municipal results. They are also subject to greater volatility than the other sub-sectors.



Figure 2: Net lending/borrowing for the federal government, cantons and social security funds under the FS Model in CHF millions, general government as a percentage of GDP

#### 2.2. GFS-Model

Table 2 shows the results of the finance statistics under the GFS Model. Net lending/borrowing under the GFS Model is equal to the operating balance from the profit and loss statement (revenue ./. expenditure) less the balance of the asset account (cf. Figure 3 for detailed breakdown). The asset account balance is designated as "net acquisitions of non-financial assets" and is not comparable with net investment under the FS Model. While the statement of investments under the FS Model includes internal investments in non-financial assets, loans, equity interests and investment contributions, the asset account under the GFS Model only shows investments in non-financial assets. Loans, equity interests and contributions to other government sectors or budgets are recorded separately under balance sheet transactions.

#### Figure 3: Breakdown of net lending/borrowing under the GFS Model

Operating balance (= net operating balance)				
+	1	Revenue		
./.	2	Expense		

Net acquisitions of non-financial assets				
+	31.1	Acquisitions of non-financial assets		
./.	31.2	Disposals of non-financial assets		
./.	31.3	Consumption of fixed capital		

Net lending/borrowing				
+	1-2	Operating account		
./.	31	Net acquisitions of non-financial assets		

Net le	Net lending/borrowing				
+	1	Revenue			
./.	2	Expense			
./.	31.1	Acquisitions of non-financial assets			
+	31.2	Disposals of non-financial assets			
+	31.3	Consumption of fixed capital			

As in the FS Model, the highest volatility and sharpest fluctuation under the GFS Model occurs in the federal government time series. In contrast, changes in cantonal and municipal balances are much less pronounced. In general, the evolution of balances is more even, i.e. fewer points of inflection are evident (cf. Figure 4)

	Federal govern- ment	Cantons	Municip- alities funds		General govern- ment
1990	-434	-1'480	-878	2'764	-429
1991	-3'529	-3'521	-2'230	2'357	-7'381
1992	-4'613	-3'747	-2'761	-369	-11'741
1993	-6'737	-2'834	-1'391	2'480	-8'773
1994	-5'273	-2'262	-1'174	449	-8'131
1995	-4'604	-2'091	-1'083	-447	-7'929
1996	-5'118	-1'985	-575	10	-7'248
1997	-3'814	-1'936	-792	-1'106	-7'493
1998	-2'002	-723	-723	-1'456	-4'595
1999	-3'207	530	593	-516	-2'105
2000	4'235	1'103	1'127	1'282	8'018
2001	-985	-317	1'064	-740	-1'250
2002	-3'027	-651	963	-1'831	-4'650
2003	-2'613	-2'199	-289	-52	-5'275
2004	-2'306	-1'248	264	-1'487	-5'049
2005	81	124	215	-1'049	-1'045
2006	3'045	2'162	1'055	-746	5'188
2007	4'421	2'941	2'183	500	9'629

 Table 2:
 Net lending/borrowing under the GFS Model in CHF millions, general government as a percentage of GDP

Figure 4:Net borrowing/lending for the federal government, cantons and social security<br/>funds under the GFS Model in CHF millions, general government as a<br/>percentage of GDP



#### 2.2.1. Data consistency under the GFS Model

This section examines the consistency of data under the GFS Model. The entire GFS Model is based on a closed circuit system in which two levels of consistency must theoretically be met (cf. Table 3). Firstly, each value in the balance sheet in a given fiscal year must reflect the total values in the previous year as well as transactions carried out and other economic flows for the fiscal year. Secondly, in relation to current transactions, the operating balance, i.e. the net figure for expenditure and revenue, must reflect the net figure for balance sheet transactions (net lending/borrowing plus net acquisitions of non-financial assets). Because finance statistics, in contrast to the theoretical approach of GFSM2001, only report transactions at a basic level, consistency must be ensured through additional treatment. The new GFS Model therefore ensures data consistency between and within fiscal years. Any inconsistencies can be explained by variances in rounding or statistical treatment.



Figure 5: The closed circuit system of the GFS Model

## 3. Plausibility checks

To verify the plausibility of data, some comparisons are made below with a view to highlighting and accounting for any differences between data series under the different models.

#### 3.1. Comparison of FS Model with previous publication

The most pertinent comparison is to compare FS Model data with the data presented in "Öffentliche Finanzen der Schweiz", the former publication on Swiss public finances. Theoretically, the aggregated results of the old statistics should only differ marginally from FS Model results. The two models only differ at the level of individual accounts, account groups and duplicate entry rules, which should have a limited impact on the aggregated results. No graphical representation is provided here, given that there are only minor differences between government net lending/borrowing based on the old statistics and net lending/borrowing under the new FS Model.

It is also apposite for the purposes of analysing new FS Model data to compare finance statistics data with data provided in federal government financial reports. The differences between government finance statistics and the national accounts in terms of definition, scope of consolidation and accounting rules require further analysis. The special accounts of the federal government – ETH Domain, fund for large-scale railway projects, infrastructure fund and Swiss Alcohol Board – fall within the federal government sector under the FS Model, but not in the financial reports. This means that transfers between the accounts of the federal government as the "parent corporation" and these special accounts need to be adjusted to allow consolidated reporting of federal government revenue and expenditure. Lending to the AVS and losses on tax revenues (VAT and performance-related heavy vehicle fees) are specific statistical entries that are not shown in the financial reports. These differences are shown in Table 3.

#### Discrepancies between federal government financial reporting and the FS Model in Table 3: CHF millions

Federal government <sup>1)</sup>	1990	1991	1992	1993	1994	1995
Ordinary net lending/borrowing in accorda	1'058	-2'012	-2'863	-7'818	-5'102	-3'263
+ Extraordinary net lending/borrowing in accorc	-	-	-	-	-	-
Net lending/borrowing in accordance with	1'058	-2'012	-2'863	-7'818	-5'102	-3'263
+ Balance from special accounts of the federal $\epsilon$	-	-	-	-540	-212	-228
+ Balance from additional special accounts <sup>3)</sup>	-	-	-	-	-	-
+ Balance of special factors <sup>4)</sup>	-1'837	-2'032	-2'176	-1'381	-1'604	-1'204
Net lending/borrowing in accordance with	-779	-4'044	-5'040	-9'739	-6'918	-4'695

Federal government <sup>1)</sup>	1996	1997	1998	1999	2000	2001
Ordinary net lending/borrowing in accorda	-3'743	-5'269	-858	-2'352	3'970	-225
+ Extraordinary net lending/borrowing in accorc	-620	-	1'342	-288	582	-877
Net lending/borrowing in accordance with	-4'363	-5'269	484	-2'640	4'552	-1'102
+ Balance from special accounts of the federal $\epsilon$	-396	-261	-373	-617	-766	-598
+ Balance from additional special accounts <sup>3)</sup>	-	-	-	-	-	-
+ Balance of special factors <sup>4)</sup>	-1'014	-	-	-	-	-
Net lending/borrowing in accordance with	-5'773	-5'530	111	-3'257	3'786	-1'700

Federal government <sup>1)</sup>	2002	2003	2004	2005	2006	2007
Ordinary net lending/borrowing in accorda	-2'629	-2'801	-1'656	-121	2'534	4'127
+ Extraordinary net lending/borrowing in accorc	3'015	-	-1'121	1'350	3'203	754
Net lending/borrowing in accordance with	386	-2'801	-2'777	1'229	5'738	4'881
+ Balance from special accounts of the federal a	-881	-972	-934	-850	-328	-301
+ Balance from additional special accounts <sup>3)</sup>	-	-	-	-	-	-
+ Balance of special factors <sup>4)</sup>	-	-	-	-	-	-
Net lending/borrowing in accordance with	-496	-3'773	-3'711	379	5'410	4'580

1) In CHF millions

2) ETH Domain, fund for large-scale railway projects, infrastructure fund and Swiss Alcohol Board

3) Special accounts in accordance with the finance statistics (FINMA, Swiss Federal Institute

for Vocational Education and Training, Swiss National Science Foundation, Pro Helvetia, Switzerland Tourism) 4) 1990-1996: PKB surplus income, 2008: transition to the new system of financial equalisation

#### **Comparison of FS and GFS Models** 3.2.

In this section, GFS results are compared with results under the FS Model, focusing first on major differences in content. Some accounts for recorded budgets, for example, are relevant to the FS Model but not to the GFS Model, which means that they are not captured in data transfers from the FS to the GFS Model. The GFS Model records other accounts as "other economic flows" or balance sheet transactions, which means they are irrelevant to net lending/borrowing – the key reportable GFS value - and its components, i.e. government revenue and expenditure. The GFS Model makes a distinction between the operating balance and the balance of other economic flows (cf. Figure 5). While the operating side of the accounts can be controlled by fiscal policy and shows the net lending/borrowing used in the analysis, unpredictable flows, such as changes in market value, are entered as other economic flows. In addition, pure balance-sheet transactions are posted separately. Before comparing the separate FS and GFS data series, the main similarities and differences in approach between the two models will be discussed below.

#### **3.2.1.** Methodological differences between the two models

A fundamental difference can be seen in the components of net lending/borrowing. Net lending/borrowing under the FS Model consists of revenue, investment receipts, expenditure and investment expenditure. Net lending/borrowing under the GFS Model consists of the operating balance less net acquisitions of non-financial assets.

The flowchart in Figure 6 shows net lending/borrowing under both models together with their components and relevant reclassifications. Revenue under the FS Model consists of the revenue accounts recognised in net/lending borrowing and investment receipts. However, the GFS Model makes no distinction between transactions that are recognisable in net lending/borrowing and those that are not. This means that parts of FS revenue accounts that are not recognised in net lending/borrowing are reallocated to GFS revenue in addition to accounts that are recognised<sup>3</sup>, with investment receipts largely excluded. These are included in non-financial assets under the GFS Model and are recognised separately.

FS expenditure comprises the expenditure accounts recognisable in net lending/borrowing and investment expenditure. As with revenue, the components of the FS expenditure accounts that are both recognised and not recognised in net lending/borrowing are reallocated to GFS expenditure, with investment expenditure again largely excluded. Only investment contributions included in the statement of investments under the FS Model are recognised in expenditure or revenue under the GFS Model and designated as capital transfers. Public expenditure is calculated by adding net acquisitions of non-financial assets to GFS expenditure. Net acquisitions of non-financial assets and disposals and depreciation of non-financial assets.

<sup>&</sup>lt;sup>3</sup> The terms "revenue" and "government revenue" are used synonymously in the GFS Model.

**Figure 6**: Net lending/borrowing under the FS and GGS Models – components and reclassifications



Other differences between the two models are attributable to the following:

- Statement of investments: under the GFS model only investments in non-financial assets are entered to the asset account. As a result, some accounts pertaining to the FS statement of investments are reported as balance sheet transactions under the GFS Model and are therefore not factored into the results calculated. In Figure 6 these transactions are indicated on the expenditure side by arrows 6 and 7 and on the revenue side by arrows 2 and 3. The relevant transactions are loans, equity interests and investment contributions. The same applies to repayments of investment contributions and loans.
- Asset account: internal investments in non-financial assets are recorded in the "asset account" under the GFS Model (arrows 1 and 5). As with the statement of investments under the FS Model, this account type is shown separately from operating expenditure in the GFS Model and is used in calculating net lending/borrowing. This account differs from the statement of investments in that ordinary, justified depreciation is also deducted from the calculation of net acquisitions of non-financial assets. Depreciation constitutes a special case and is addressed more specifically below.
- Depreciation: the GFS Model focuses primarily on the profit and loss statement and only secondarily on net lending/borrowing, which means that that scheduled depreciation of non-financial assets has to be factored into the calculation of GFS expenditure (arrow 8). However, this is cancelled out again on calculating GFS net lending/borrowing as net acquisitions of non-financial assets are deducted from the operating balance.
- Other differences: exchange gains and losses (arrow 4) are not included in the GFS current account. The GFS Model defines these transactions as "other economic flows". Allowances in respect of investments in financial assets, allowances in respect of loans and interests in administrative assets, unscheduled and additional depreciation and fund deposits and special financing (none of these four values are included in the FS Model finance statement, so are not shown in Figure 6) are counted as "other economic flows" and thus fall outside the primary data analysed.

#### 3.2.2. Federal government

Having outlined the differences in approach used by the two models, the specific data series will be compared in the following sections.

Figure 7 shows federal government revenue and expenditure as reported in both models. There is a high degree of similitude between the 1990s revenue series in particular. The statistical outlier in 1998 is attributable to proceeds from the sale of Swisscom shares, which the FS Model records as extraordinary receipts, but the GFS Model categorises as balance sheet transactions and other economic flows (arrows. 3 and 4 in Figure 6). From 2000, FS and GFS revenue movements are also broadly similar, although major discrepancies are evident in 2001, 2002, 2005 and 2006. The discrepancy in 2001 is attributable to the repayment of a loan by the AVS, which the GFS Model records as a balance sheet transaction rather than as revenue (arrow 3 in Figure 6). In the other three years, 2002, 2005 and 2006, the disparity between FS and GFS Model revenues – as in 1998 – is mainly attributable to the sale of Swisscom shares. The greatest disparity between FS and GFS Model federal government revenue occurs in 2002 with a difference of 5.4 million, or 11% of FS Model revenue.



Figure 7: Federal government revenue and expenditure under the FS and GFS Models in CHF millions

The differences between the two models are more marked in relation to expenditure than in relation to revenue. Although the general trend is the same throughout the period, there are clear differences in fluctuation in some years. For example, expenditure growth under the FS Model clearly exceeds GFS Model growth. This is due to the loan granted to the AVS, which is recorded as a balance sheet transaction under the GFS Model and thus has no effect on public expenditure (arrow 7 in Figure 6). In the latter half of the 1990s, expenditure generally moves in the same direction in both models, albeit at different levels. A further difference can be seen at the turn of the millennium. Public spending under the GFS Model shows a steady trend at this point, whereas FS Model expenditure fluctuates due to miscellaneous loans and equity interests (including Swissair). The expenditure disparity between both models is greatest in 2001 (3.5 million or around 7% of the FS value).

A comparison of federal government net lending/borrowing in both models reveals that GFS Model balances have generally been higher over the last 18 years (Figure 8), with little significant variation. However, GFS balances are generally more stable throughout the period, while Figure 7 indicates consistently higher revenue and expenditure levels for the FS Model than for the GFS Model. However, as the discrepancy is greater for expenditure than for revenue, the FS Model balance is lower in most years. The disparities between FS and GFS balances are shown in Table 4.



Figure 8: Federal government net lending/borrowing under the FS and GFS Models in CHF millions

Federal government <sup>1)</sup>	1990	1991	1992	1993	1994	1995
FS net lending/borrowing	-779	-4'044	-5'040	-9'739	-6'918	-4'695
Balance sheet transactions <sup>2)</sup>	345	523	438	3'007	1'648	97
Other economic flows <sup>2)</sup>	-	-8	-11	-4	-3	-7
Accrual basis of recording <sup>3)</sup>	-0	-0	-0	-1	-0	-
GFS net lending/borrowing	-434	-3'529	-4'614	-6'738	-5'274	-4'604

Table 4: Differences between the FS and GFS Model for federal government in CHF millions

Federal government <sup>1)</sup>	1996	1997	1998	1999	2000	2001
FS net lending/borrowing	-5'773	-5'530	111	-3'257	3'786	-1'700
Balance sheet transactions <sup>2)</sup>	662	1'722	582	63	481	758
Other economic flows <sup>2)</sup>	-7	-6	-	-13	-31	-44
Accrual basis of recording <sup>3)</sup>	-	-	-0	-1	-0	-0
GFS net lending/borrowing	-5'118	-3'814	693	-3'208	4'235	-986

Federal government <sup>1)</sup>	2002	2003	2004	2005	2006	2007
FS net lending/borrowing	-496	-3'773	-3'711	379	5'410	4'580
Balance sheet transactions <sup>2)</sup>	1'065	1'160	1'405	1'050	832	470
Other economic flows <sup>2)</sup>	-6	-	-	-	-	-
Accrual basis of recording <sup>3)</sup>	-0	-0	0	-	-1	-0
GFS net lending/borrowing	563	-2'613	-2'306	1'428	6'241	5'050

1) In CHF millions

2) Other economic flows not included in GFS net lending/borrowing

3) Entries according to accrual accounting standards (included in the GFS balance), different revenue classification

#### 3.2.3. Cantons and municipalities

In relation to the cantons and municipalities, there is considerably less variation between the FS and GFS Models than in relation to the federal government. Cantonal revenue and expenditure trends are virtually identical over extended periods. However, in certain years, values vary by up to 5% of the equivalent FS Model totals. On the revenue side, the progression in GFS values is less dynamic between 1995 and 2002 especially. This is due to AVS loan repayments (arrow 3 in Figure 6), which the GFS Model records as balance-sheet transactions instead of revenue as in the FS Model. Variations in expenditure are more significant in the 1990s especially, rising to more than 5% of the FS Model total in 1993. The AVS loans (in this instance loan extensions) account for this disparity (arrow 7 in Figure 6). As in the case of the federal government, FS Model values for the cantons are also higher than GFS Model values, although the degree of divergence between revenue and expenditure is roughly comparable. In contrast to the federal government, no regular pattern is therefore observable in the discrepancies between balances. As Figure 10 shows, the FS balance is lower than the GFS balance mainly in the 1990s. By 2000, FS Model values are significantly higher, mainly due to AVS loan repayments, while in recent years the discrepancies have largely cancelled each other out, resulting in comparable balance totals. The evolution of the GFS Model balance is also slightly more even for the cantons throughout the observation period.





Figure 10: Cantonal net lending/borrowing under the FS and GFS Models in CHF millions



Municipal revenue and expenditure are essentially only distinguishable in terms of level and these differences are minimal. Expenditure varies between 110 and 360 million, reaching 0.9% of the FS total at the highest point. Variations in expenditure are slightly higher in certain years, peaking at 799 million in 2006, which is still only just under 2% of total revenue under the FS Model. With FS values consistently higher than GFS values and disparities in revenue greater than those in expenditure, the FS Model records a higher balance in all the years studied.

**Figure 11**: Municipal revenue and expenditure under the FS and GFS Models in CHF millions



**Figure 12**: Municipal net lending/borrowing under the FS and GFS Models in CHF millions



#### 4. Comparison with economic performance

In this section, accounting results under the FS and GFS models are compared with changes in gross domestic product (GDP), with the object of obtaining some preliminary indications on the extent to which account balances under both models are affected by and/or reflect economic growth. Net lending/borrowing under both models will therefore be compared below with changes in real GDP for the federal government and cantons overall and municipalities overall.

#### 4.1. Observations on the impact of GDP growth

Some preliminary theories were previously put forward on the extent to which economic growth impacts on the value and volatility of account balances based on economic sub-sector or model. It is assumed that the time series data for account balances generally reflect economic performance: during boom periods, public sector accounts are generally in surplus or exhibit small deficits. Conversely, as GDP growth slows or shrinks, the federal government, cantons and municipalities are likely to show smaller surpluses and larger deficits. This would suggest that the time series data for accounts follow economic cycles, although the economic impact is likely to vary from government sector to government sector. In addition, the choice of model will probably affect the degree of impact of GDP growth.

#### 4.1.1. General government sector

In general, public sector revenues are particularly sensitive to economic cycles. Tax revenue is one type of revenue that displays a procyclical pattern (higher GDP growth leads to higher tax yields). However, other revenue types are less susceptible to economic trends (fee income or transfers). Therefore the higher the ratio of procyclical revenue the more the economy impacts on balances. Where there is a high ratio of tax revenue to total revenue, some types of federal tax (e.g. VAT, withholding tax) exhibit significantly higher volatility than taxes at other levels of government. Federal government accounts are therefore likely to show the most significant fluctuation. At cantonal level, the ratio of less volatile revenue streams, such as transfers, to total revenue, is higher than at federal level. Although the economic impact on balances attributable to cantonal tax revenue can still be significant, there is likely to be much less fluctuation than at federal level. The economic impact should be less pronounced in the case of the municipalities. A high or low balance is much more likely to be the result of political decisions within a municipality. Transfers and fees in particular are also more important revenue sources than for the other sub-sectors, so that revenue is likely to be more immune to economic fluctuation than at other levels of government. The expenditure side generally shows more stable rates of change. Trends in government consumption, for example personnel and administrative expenses, are likely to last longer than an economic cycle. The ratio of consumption is lower at federal than cantonal or municipal level, while a proportion of government expenditure consists of federal taxes attributable to the cantons and social security funds, supporting the view that government balances are most susceptible to economic fluctuation.

#### 4.1.2. Model

The choice of model is another key differentiating factor in terms of the issues addressed in this section. The differences between the FS and GFS Models should be observable not just through direct comparison, but also by comparing the models with GDP growth. This would imply that the two models exhibit different degrees of correlation with GDP growth. GFS balances in particular are likely to be more closely tied to economic cycles than FS balances due to differences in the valuation and allocation of transactions (cf. section 3). The reasons are outlined below:

Pure balance sheet transactions and other economic flows are not factored into the calculation of net lending/borrowing under the GFS Model. This means that extraordinary transactions that are fully captured in the FS financial statement do not appear in the GFS financial statement or, depending on the nature of the transaction, are adjusted as pure balance sheet transactions. As a result, GFS balances at federal level will not necessarily reflect these transactions or any major

fluctuation. In addition, the GFS Model reports non-operating transactions as other economic flows, which means that these transactions are excluded from net lending/borrowing. Other economic flows include certain value adjustments that are highly resistant to the economic situation and distort the accounting results in the FS Model. GFS Model balances should therefore be highly correlated to economic growth.

Based on these observations, accounts within the finance statistics framework will later be compared with the rate of real GDP growth, highlighting distinctions based on the specific features of the "government sector" and "model" involved. Although a brief overview of the subject is provided here it is not within the scope of this report to undertake a comprehensive study of the effect of the economy on public sector balances. The relevant comparisons will solely be made on the basis of graphical representations of the data series and calculations of the correlation coefficients between balances and GDP growth.

#### 4.2. Federal government

The time series for federal accounts under the FS Model shows that over the longer term changes in net lending/borrowing reflect economic performance. Deficits were initially high when economic growth was weak at the start of the 1990s, followed by a period of rapid growth and improved results after 1993. The accounts levelled off on average between 1998 and 2001. By 2003, both series are in decline, increasing again in recent years.

Net lending/borrowing under the GFS Model follows a similar trend. The economic recovery starting in 1993 is traceable in both time series until 2000, with federal balances under the GFS Model subsequently remaining broadly in line with GDP growth. Following a decline between 2001 and 2003, they start to climb again from 2004/2005.

Figure 13: FS net lending/borrowing in CHF million and real GDP growth in percent: federal government



Figure 14: GFS net lending/borrowing in CHF million and real GDP growth in percent: federal government



It should be noted that both models show significant fluctuation in the time series for federal government balances. To some extent this can be attributed to the revenue components described above. At federal level, tax revenue accounts for a large part of total revenues, and tax revenue reacts more strongly to economic changes than other types of revenue.

However, discrepancies between the models are also evident. For example, high volatility is clearly less evident in the FS curve than for the GFS curve, which appears to follow GDP growth somewhat more closely. This may be due to the different treatment of balance sheet transactions and other economic flows, which are not necessarily reflected in GFS net lending/borrowing. This is also borne out by the correlation coefficients. The correlation between GDP and net lending/borrowing in the FS Model, for example, is lower than in the GFS Model. However, in general the differences between FS and GFS net lending/borrowing are relatively minor, as indicated by the small difference in the correlation coefficients.

**Table 5:** Correlation coefficients: federal government

Federal govern-ment	Correlation coeffizient between net lending/borrowing and real GDP growth
FS Model	0.74
GFS Model	0.79

An additional factor at federal level is the debt freeze introduced in 2003, which is aimed at keeping ordinary government net lending/borrowing level throughout an economic cycle. A cyclical factor, which is calculated annually, is used to balance out any revenue strongly impacted by the economy. This creates a spending ceiling, resulting in surpluses in years of high economic growth, or deficits in years of low economic growth. Alongside the impact of the economy on revenue, there is thus an institutional link between federal government balances and economic growth. However, it should be noted that the debt freeze has no effect on extraordinary expenditure, confuting the theory of any close link between the economy and net lending/borrowing. However, the relevant observation period is too short to allow any empirical conclusion as to the impact of the debt freeze on changes in net lending/borrowing.

#### 4.3. Cantons

As in the case of the federal government, FS and GFS Model balances at cantonal level follow a similar pattern to the GDP growth time series. Negative economic growth and high deficits between 1991 and 1993 follow a phase of economic recovery, inflating cantonal account balances and culminating in the high account surplus for 2000. The subsequent decline in growth until 2003 and the second economic upturn from 2004 are reflected in both cantonal and federal government account balances.

However, there are differences between the cantonal and federal government sectors. Although cantonal balances follow economic cycles, they are less sensitive in some years to sharp fluctuations in GDP growth than federal account balances. As suggested above, this is probably due primarily to the specific revenue components: although cantonal taxes account for most of the revenue generated by the cantons, income from federal government transfers or from the intercantonal financial equalisation scheme are also highly significant. Because these are much less susceptible to GDP growth than tax revenue, total cantonal revenue is much less volatile in

relation to GDP growth compared to federal government revenue. For the same reasons, the balance curve for the cantons is much flatter than for the federal government.

The differences between the FS and GFS Model balances are less pronounced than for the cantons (cf. section 3.2.3). However, even at cantonal level, GFS balances have higher correlation coefficients in respect of economic growth than FS Model balances. Compared to the correlation coefficients for the federal government, GDP growth evidently has less impact on net lending/borrowing under the FS Model.



Figure 15: FS net lending/borrowing in CHF million and real GDP growth in percent: cantons



Figure 16: GFS net lending/borrowing in CHF million and real GDP growth in percent: cantons

 Table 6: Correlation coefficients: cantons

Cantons	Correlation coefficient between net lending/borrowing and real GDP growth
FS Model	0.68
GFS Model	0.76

#### 4.4. Municipalities

Long-term economic trends are also reflected in FS and GFS balances at municipal level. Prior to 1993, low economic growth coincides with high deficits followed by a recovery phase until 1998, with rising GDP growth and smaller deficits in the municipal accounts. After 1999, municipal accounts at least balanced consistently, with growing surpluses in evidence more recently until 2007.

Compared to the federal government and cantons, the accounting results are less volatile, with municipal net lending/borrowing seemingly least affected by the economy, and the trends almost exclusively long term. As in the case of the cantons, the lower sensitivity to economic cycles in this sub-sector is partly due to the fact that a significantly larger proportion of revenue consists of relatively stable items such as fees or transfers than e.g. at federal level. This reduces

the proportion of tax revenue and thus the indirect economic impact. It is also reasonable to assume that any changes in revenue and expenditure components – and thus the accounting results - will be more affected at municipal level by isolated political decisions respecting individual (construction) projects or tax rates than at federal or cantonal level.

There is very little difference between municipal account balances under the FS and GFS Models, apart from a negative GFS balance in 2003, compared to a breakeven result under the FS Model. The correlation coefficients are virtually identical in both models.



**Figure 17:** FS net lending/borrowing in CHF million and real GDP growth in percent: municipalities





Table 7: Correlation coefficients: municipalities

Municip- alities	Correlation coefficient between net lending/borrowing and real GDP growth
FS Model	0.61
GFS Model	0.59

#### 4.5. Conclusions

The key findings on the impact of economic trends on FS and GFS Model account balances and possible influencing factors can be summarised as follows:

As expected, the accounting results of the federal government, cantons and municipalities are affected by long-term economic trends and changes. Thus, in periods of high GDP growth, accounting results tend to be better than during economic downturns.

There are differences in balance volatility as between the government sectors. Federal balances are most sensitive to fluctuations in GDP growth. Municipal balances are least affected by cyclical fluctuation. This may be attributable to the different revenue components for each sector

and their resulting sensitivity to economic cycles, given that tax revenues tend to be more cyclical than transfers and fees.

Differences are also observable between the models. GFS Model results correlate more closely with economic cycles than FS balances. One major reason for this might be that non-operating transactions (transactions entered in the accounts or certain extraordinary transactions) are not included in net lending/borrowing under the GFS Model. This means there are fewer distortionary factors affecting GFS balances. For the purposes of predicting future public finance trends, these results suggest that projections based on GFS Model time series will probably yield more accurate results than FS Model data.

#### 5. Comparison of measures

This section focuses specifically on trends in and comparisons between fiscal policy measures relating to public finances. The finance statistics concentrate predominantly on key economic ratios, which are also used in international comparisons. HAM2 is also mainly set up to calculate financial ratios for budget management purposes. This section will only address the key economic ratios that were regularly reported before the finance statistics reforms were initiated. Specifically, the following ratios will be studied:

- Deficit/surplus ratio: net lending/borrowing as % of GDP
- Debt ratio as defined by Maastricht criteria: gross debt as % of GDP
- Gross debt as defined by the IMF: debt as % of GDP
- Tax-to-GDP ratio: tax revenue as % of GDP
- Public spending ratio: expenditure as % of GDP

These measures are used primarily for comparison with other countries. Since the reforms were implemented, they have therefore only been reflected in the finance statistics in accordance with GFS Model principles as stated in IMF international standards. The only exception is the debt ratio as defined by Maastricht criteria, which is based on the EU/Maastricht definition of gross debt. The reason for this exception is that gross debt is mainly compared with EU member states, so consistency with the methodology used by other EU member states is the primary consideration in this instance.

As well as outlining trends in individual measures since 1990 under the GFS Model, this section compares GFS figures published to date with figures from earlier publications. No further consideration will be given to the FS Model in this section for two reasons: since the finance statistics reforms, the measures have only be published as stated in the GFS Model, so comparisons with the GFS Model are more relevant. Moreover, differences between the previous measures and FS measures are minor and can thus be disregarded. Differences between the FS Model and earlier calculations only occur on the expenditure side, where new duplicate entry rules produce slight deviations in level. However, this only affects the public spending ratio that measures expenditure and the deficit/surplus ratio, as account balances are affected by levels of expenditure. The tax-to-GDP ratio and debt ratio are identical based on previous statistics and the FS Model.

The time series for the five public budget measures are each outlined below. Ratios for the social security funds are the same under both models, as these were not captured in the GFS model for 1990-2007 but taken from the previous model. Finally, the previously published ratios will be compared with the recalculated figures and the differences between the data series explained with reference to the different methods of calculation. The differences will solely be assessed at general government level.

#### 5.1. Deficit/surplus ratio

The deficit/surplus ratio represents net lending/borrowing as a percentage of GDP. The accounting results for public budgets broadly reflect economic cycles (see section 4). Volatility is most pronounced at federal government level and with deficit/surplus ratios ranging between - 1.9% and +1.0%, greater variations are also found here than in the other sub-sectors. Strong fluctuation is also evident in the deficit/surplus ratio of the social security funds, while the cantons and municipalities show significantly less fluctuation with a flatter slope to the curves. The deficit/surplus ratio for the cantons thus ranges between -1.1% und +0.6%, while the range for the municipalities is narrower, between -0.8% and +0.4%.

	Federal govern- ment	Cantons	Municip- aties	Social security funds	General govern- ment
1990	-0.1%	-0.4%	-0.3%	0.8%	-0.1%
1991	-1.0%	-1.0%	-0.6%	0.7%	-2.1%
1992	-1.3%	-1.1%	-0.8%	-0.1%	-3.3%
1993	-1.9%	-0.8%	-0.4%	0.7%	-2.4%
1994	-1.4%	-0.6%	-0.3%	0.1%	-2.2%
1995	-1.2%	-0.6%	-0.3%	-0.1%	-2.1%
1996	-1.4%	-0.5%	-0.2%	0.0%	-1.9%
1997	-1.0%	-0.5%	-0.2%	-0.3%	-2.0%
1998	-0.5%	-0.2%	-0.2%	-0.4%	-1.2%
1999	-0.8%	0.1%	0.1%	-0.1%	-0.5%
2000	1.0%	0.3%	0.3%	0.3%	1.9%
2001	-0.2%	-0.1%	0.2%	-0.2%	-0.3%
2002	-0.7%	-0.1%	0.2%	-0.4%	-1.1%
2003	-0.6%	-0.5%	-0.1%	0.0%	-1.2%
2004	-0.5%	-0.3%	0.1%	-0.3%	-1.1%
2005	0.0%	0.0%	0.0%	-0.2%	-0.2%
2006	0.6%	0.4%	0.2%	-0.2%	1.1%
2007	0.8%	0.6%	0.4%	0.1%	1.8%

Table 8:	Deficit/surplus ratios for public budgets as a percentage of GDP
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As net lending/borrowing is calculated directly from expenditure and revenue, any changes in these values will affect the time series of balances as a percentage of GDP. As indicated above, the main reason for the difference between the GFS balance and balance based on previous statistics is that the GFS Model only recognises the operating account as relevant expenditure for net lending/borrowing and does not factor financial transactions (such as loans) or other economic flows (such as value adjustments) into net lending/borrowing (see section 2). The discrepancies between the two time series vary depending on the value and number of specific transactions not reflected on the revenue and expenditure side. However, net lending/borrowing levels in some years are still very similar, as sensitivity to economic cycles can be seen in both trends.



Figure 19: Deficit/surplus ratio for the general government sector as a percentage of GDP

#### 5.2. Debt ratio as defined by Maastricht criteria

Two major trends in gross debt as a % of GDP based on Maastricht criteria are evident at federal, cantonal and municipal level (Maastricht debt). The debt ratio increased exponentially in the early to mid-1990s across all public sectors, with the sharpest rise recorded by the federal government. The cantons have a similar, albeit flatter, curve. The debt ratios for the municipalities and social security funds remain relatively stable during this period, contrasting with more recent trends, which indicate a decline in federal, cantonal and municipal ratios up to 2007. The time series for the federal government also shows the highest rates of change during this time span.

Figure 20 shows the gross debt ratio based on new and old statistics. As the calculation of gross debt ratio in the new finance statistics is still based on Maastricht criteria, both time series are virtually identical.

	Federal govern- ment	Cantons	Municip- aties	Social security funds	General govern- ment
1990	11.5%	8.8%	11.3%	0.0%	31.6%
1991	12.7%	9.6%	11.6%	0.0%	33.9%
1992	15.5%	10.9%	12.5%	0.0%	38.9%
1993	18.7%	12.4%	12.5%	1.1%	43.6%
1994	20.5%	13.3%	12.6%	1.7%	46.4%
1995	22.0%	13.7%	12.8%	1.6%	48.5%
1996	23.5%	14.5%	13.0%	1.6%	51.0%
1997	25.3%	15.2%	12.7%	2.1%	53.1%
1998	27.7%	15.6%	12.8%	2.2%	56.1%
1999	25.4%	15.3%	12.4%	1.9%	53.1%
2000	25.6%	15.0%	11.6%	1.4%	52.2%
2001	24.8%	14.7%	11.4%	0.5%	51.0%
2002	28.2%	15.0%	11.2%	0.0%	54.4%
2003	28.3%	15.9%	10.6%	0.0%	54.9%
2004	28.1%	15.9%	10.4%	0.4%	54.4%
2005	28.1%	13.9%	10.4%	0.8%	52.4%
2006	25.2%	12.6%	9.2%	1.0%	47.0%
2007	23.2%	11.7%	8.6%	0.9%	43.4%

Table 9: Debt ratio as defined by Maastricht criteria for public budgets as a percentage of GDP



Figure 20: Debt ratio as defined by Maastricht criteria for the general government sector as a percentage of GDP

#### 5.3. Gross debt as defined by the IMF (IMF debt)

IMF gross debt as a % of GDP is based on the IMF definition of gross debt and comprises gross Maastricht debt plus some additional items. However, the most important items are included in both definitions, which means that the rates of change in IMF gross debt for public budgets are similar to those in the Maastricht gross debt ratio.

IMF gross debt as a % of GDP has only been calculated since the finance statistics reforms, which means that there is no comparable ratio under the old statistics. However, for the purpose of highlighting the differences between both ratio definitions, IMF gross debt may be compared with Maastricht gross debt, which only differs very slightly from the old statistics.

According to the Maastricht definition of gross debt, government debt only comprises liabilities in the form of *currency and deposits*, *debt securities* and *loans*. Other liabilities such as *provisions, financial derivatives* and *accrued expenses and deferred income* are not included. Debt is measured at nominal (face) value.

IMF gross debt comprises practically all balance sheet liabilities. Thus, in addition to the items included in the Maastricht definition, it covers *insurance and pension fund technical reserves* as well as *other liabilities* (including accrued expenses and deferred income). However, *shares and other equity* (in public corporations) and *financial derivatives* are not included in this definition of debt. IMF gross debt therefore tends to be higher than Maastricht gross debt. Debt is also valued on the basis of market values. This is why bonds and other debt instruments traded on markets, in particular, were at a relatively high level in recent years in comparison with their

nominal value, which has further inflated the difference between the two ratios. However, a low market valuation of government debts can result in a lower value for IMF gross debt than for Maastricht gross debt.

	Federal govern- ment	Cantons	Municip- alities	Social security funds	General govern- ment
1990	15.3%	11.0%	11.9%	0.0%	38.2%
1991	16.0%	11.7%	12.1%	0.0%	39.8%
1992	18.7%	13.2%	13.3%	0.0%	45.1%
1993	21.6%	14.8%	13.2%	1.1%	49.6%
1994	23.5%	16.0%	13.4%	1.7%	52.8%
1995	26.3%	16.5%	13.5%	1.6%	56.3%
1996	27.0%	17.6%	13.6%	1.6%	58.2%
1997	28.9%	18.3%	13.3%	2.1%	60.5%
1998	31.6%	18.6%	13.5%	2.2%	63.7%
1999	29.6%	18.1%	13.2%	1.9%	60.9%
2000	30.3%	18.4%	12.4%	1.4%	61.1%
2001	29.1%	19.3%	12.7%	0.5%	61.0%
2002	35.2%	20.3%	12.5%	0.0%	68.0%
2003	34.5%	20.8%	12.2%	0.0%	67.5%
2004	39.2%	20.7%	12.0%	0.4%	71.9%
2005	41.7%	18.5%	12.0%	0.8%	72.2%
2006	36.9%	16.8%	10.8%	1.0%	64.4%
2007	30.9%	16.2%	10.1%	0.9%	57.2%

Table 10: Gross debt as defined by the IMF for public budgets as a percentage of GDP



Figure 21: Gross debt as defined by the IMF for the general government sector as a percentage of GDP

#### 5.4. Tax-to-GDP ratio

The various public budgets show very different levels of tax revenue as a percentage GDP between 1990 and 2007. The highest level of fluctuation is evident in the federal government tax-to-GDP ratio, followed by the social security funds and cantons. In contrast, the municipal tax-to-GDP ratio shows very little movement. The largest increase also occurs in the federal government tax-to-GDP ratio in the period under review. The tax-to-GDP ratios for the social security funds and cantons only increase slightly, while the municipal ratio even remains stable. These difference are mainly attributable to the very different types of taxes at different government levels. Federal taxes, for example, such as VAT or withholding tax, are more volatile than taxes at other levels of government (chiefly income tax).

	Federal govern- ment	Cantons	Municip- alities	Social security funds	General govern- ment
1990	8.8%	6.4%	4.5%	6.0%	25.7%
1991	8.6%	6.3%	4.5%	6.2%	25.6%
1992	8.7%	6.4%	4.5%	6.4%	26.0%
1993	8.0%	6.6%	4.7%	7.1%	26.5%
1994	8.6%	6.6%	4.8%	6.9%	27.0%
1995	8.7%	6.6%	4.8%	7.5%	27.7%
1996	9.2%	6.6%	4.8%	7.5%	28.1%
1997	9.1%	6.5%	4.7%	7.3%	27.6%
1998	10.2%	6.5%	4.7%	7.1%	28.5%
1999	9.8%	6.8%	4.8%	7.3%	28.7%
2000	11.3%	6.8%	4.8%	7.3%	30.1%
2001	10.1%	7.0%	4.9%	7.6%	29.6%
2002	9.9%	7.3%	4.9%	7.6%	29.8%
2003	10.0%	7.0%	4.8%	7.5%	29.2%
2004	10.0%	7.1%	4.6%	7.0%	28.8%
2005	10.3%	7.3%	4.6%	7.0%	29.2%
2006	10.5%	7.2%	4.5%	6.8%	29.1%
2007	10.3%	7.3%	4.5%	6.8%	28.9%

Table 11: Tax-to-GDP ratio for public budgets as a percentage of GDP

When the time series for previous statistics are compared with the GFS series, it is clear that although both series follow a very similar pattern there are still differences in the methodologies used. Due to these changes in classifications and structure, the tax-to-GDP ratios from the old statistics are different from the GFS finance statistics. Regalia (state taxes and fines), licenses, casino tax and exemption tax have been reclassified as tax revenue under the GFS Model, which inflates the total GFS tax revenue figure. However, the majority of wealth taxes are not recorded as tax revenue, but as fees and services, in line with international standards.



Figure 22: Tax-to-GDP ratio for the general government sector as a percentage of GDP

#### 5.5. Public spending ratio

Public spending as a percentage of GDP increased exponentially in the early 1990s across all subsectors, rising to 36% of GDP by 1992. Federal government, cantonal, municipal and social security fund spending remained at this level until the end of the decade, indicating that public spending rose slower than GDP. In 2000, which was an exceptionally good fiscal year, public spending was as low as 34.2%. Following a further phase of recession ending in 2003, public spending as a percentage of GDP increased across all budgets. Between 2004 and 2007, public spending again fell from 37.9% – its highest value since 1990 – to 34.1%.

The cantons and social security funds were the most volatile sectors, with ratios throughout the period varying up to 3.1 percentage points (cantons), or by a maximum of 3.9 percentage points (social security funds). The maximum variation for the federal government was only 2 percentage points and as low as 1.3 percentage points for the municipalities.

	Federal govern- ment	Cantons	Municip- alities	Social security funds	General govern- ment
1990	9.4%	12.3%	9.1%	7.2%	31.0%
1991	10.1%	13.1%	9.6%	7.7%	33.2%
1992	10.5%	13.5%	10.1%	8.7%	35.2%
1993	10.5%	13.7%	10.2%	8.9%	34.9%
1994	10.8%	13.8%	10.2%	9.3%	35.3%
1995	10.7%	13.8%	10.2%	9.9%	36.4%
1996	11.2%	14.3%	10.2%	9.8%	35.5%
1997	10.8%	14.2%	10.0%	10.0%	35.2%
1998	11.4%	14.0%	9.9%	9.8%	35.0%
1999	11.2%	14.2%	9.8%	10.4%	35.9%
2000	11.0%	14.0%	9.5%	9.7%	34.2%
2001	11.1%	14.7%	9.6%	10.0%	35.0%
2002	11.3%	15.1%	9.8%	10.4%	36.3%
2003	11.3%	15.4%	10.0%	11.1%	37.9%
2004	11.2%	15.2%	9.8%	11.0%	37.5%
2005	11.0%	15.0%	9.7%	11.0%	37.2%
2006	10.6%	14.5%	9.3%	10.3%	35.4%
2007	10.2%	14.2%	8.9%	9.9%	34.2%

Table 12: Public spending ratio for public budgets as a percentage of GDP

A comparison of public spending under the GFS Model and public spending based on previous statistics reveals clear differences between the two time series. There is greater overall variation in the GFS curve, although this lies below previously reported public spending except in 1991 and 1992. There are considerable differences in both series between 1993 and 1998 in particular, although they exhibit similar rates of change before and after this period. The consistently lower level of GFS expenditure and thus GFS public spending is due to the narrower definition of public spending under the GFS Model – balance sheet transactions and other economic flows are not included in the GFS financial accounts (cf. section 3). This results in generally lower public spending under the GFS Model.

The decoupling of rates of change in both ratios between 1993 and 1998 is caused by high levels of AVS lending by the federal government and the cantons during this period, which were recorded in the old statistics as lending to public corporations and thus as expenditure, as in the FS Model. Lending under the GFS Model is recorded as a purely financial transaction, which has no effect on public spending and hence net lending/borrowing.



Figure 23: Public spending ratio for the general government sector as a percentage of GDP

#### 6. Expenditure by function

This section focuses on expenditure by function. The functional classification displays the amounts spent on discharging specific government functions. It is an important mechanism in terms of managing the attribution of overall budget spending to the main functions of government. This section compares trends in the functions performed by the federal government, the cantons and municipalities under the FS Model with trends based on the old finance statistics and those under the GFS Model.

#### 6.1. Functional classification: overview of results

Table 13:	Breakdown of FS Model expenditure by the federal government, cantons and
	municipalities in 2007

	Federal		Carlan				<b>T</b> . L . L	
In CHF millions / in percent	government		Cantons		Municipalities		Iotal	
0 General public services	4'467	8%	4'567	6%	3'983	9%	12'742	9%
1 Public order, safety and defence affairs	5'126	9%	6'041	8%	2'413	5%	13'214	9%
2 Education affairs and services	4'487	8%	18'545	25%	9'776	21%	28'385	19%
3 Recreational, cultural and religious affairs	458	1%	1'410	2%	2'764	6%	4'529	3%
4 Health affairs and services	272	1%	13'845	19%	9'422	20%	21'072	14%
5 Social security and welfare affairs	14'983	28%	14'296	19%	7'795	17%	30'685	21%
6 Transportation	7'542	14%	6'742	9%	3'543	8%	14'312	10%
7 Environmental protection, housing and community	834	2%	1'382	2%	3'629	8%	5'266	4%
8 Economic affairs	4'379	8%	4'017	5%	675	1%	6'206	4%
9 Fiscal affairs and taxes	11'610	21%	3'673	5%	2'542	5%	9'830	7%
TOTAL	54'159	100%	74'519	100%	46'542	100%	146'241	100%

A total of CHF 146.3 billion was spent by the central government, cantons and municipalities in 2007. The federal government spent around CHF 54 billion primarily on "social security and welfare affairs" (28%), "fiscal affairs and taxes" (21%) and "transportation" (14%). The CHF 74.5 billion in cantonal spending is mainly allocated to "education affairs and services" (25 percent), "health affairs and services" and "social security and welfare affairs" (both 19%), while municipal spending is allocated to "education affairs and services" (21%) and services" (21%), "health affairs and services" (20%) and "social security and welfare affairs" (17%). The municipalities spent most of the CHF 28.4 billion allocated to "education affairs and services" on "compulsory education" (87%), "special schools" (8%) and "basic vocational training" (3%).

Federal									
in CHF millions / in percent		government		Cantons		Municipalities		Total	
701 General public services	17'989	34%	8'185	11%	6'508	14%	22'994	17%	
702 Defence	4'226	8%	219	0%	210	0%	4'227	3%	
703 Public order and safety	866	2%	5'473	7%	2'200	5%	7'778	6%	
704 Economic affairs	10'877	21%	10'921	15%	4'185	9%	15'173	11%	
705 Environmental protection	789	1%	1'097	1%	3'036	7%	3'240	2%	
706 Housing and community amenities	45	0%	242	0%	529	1%	547	0%	
707 Health	272	1%	13'832	19%	9'408	20%	20'181	15%	
708 Recreation, culture and religion	458	1%	1'409	2%	2'749	6%	3'777	3%	
709 Education	2'499	5%	18'516	25%	9'767	21%	24'283	18%	
710 Social protection	14'983	28%	14'246	19%	7'722	17%	30'404	23%	
Total	53'004	100%	74'140	100%	46'316	100%	132'603	100%	

## **Table 14:** Breakdown of GFS Model expenditure by the federal government, cantons and<br/>municipalities in 2007

In some sub-sectors, the COFOG-based expenditure follows a particular pattern in terms of functional attribution within sectors. For example, alongside general public services, which is a major item of expenditure across all sectors, federal government social protection spending was highest in 2007 at 28%. Economic affairs (agriculture, transportation etc.) represent the next most significant function at 21%, followed by defence spending (8%), which is only incurred at federal level. In contrast, education accounts for a quarter of total cantonal expenditure, followed by social protection and health (both 19%). Education (21%), health (20%) and social protection (17%) are also the most significant functions for the municipalities.

#### 6.2. Functional classification: FS Model and previous

#### publication compared

Based on the FS Model and old finance statistics, federal government, cantonal and municipal expenditure by function produces identical or symmetrical curves. The adjustments made to bring the national Finance Statistics Model (FS-Model) in line with the functional classification under the Harmonised Accounting Model for the cantons and municipalities (HAM2) and the New Accounting Model of the Confederation (NAM) has nevertheless produced some discrepancies within the top level functions "general public services" and "public order, safety and defence affairs". These discrepancies are attributable to the reclassification of the old "foreign relations" item from "general public services" to "public order, safety and defence affairs". Minor differences in the "economic affairs" category are also apparent in the 1990s.

A detailed analysis shows that the discrepancies within the "economic affairs" functions mainly result from the combined "miscellaneous" sub-item under the old statistics. Both models also have different values for "agriculture" in 1993. In contrast, spending under the FS Model and

the old finance statistics is identical for "tourism" and symmetrical for "energy", although the FS Model spending level is lower. In addition, "industry, commerce and trade" under the FS Model is asymmetric to the old finance statistics in 2000, 2003 and 2004. Figure 24 shows the significant variation between functions, although no chart is provided showing the identical curves of both models.

# **Figure 24:** Federal government, cantonal and municipal expenditure by function under the FS Model and previous finance statistics in CHF millions (where differences are apparent)



# 6.3. Functional classification: FS and GFS Models compared

As previously stated in section 3.2, there are differences in content between the FS and GFS Models. Some FS items are not transferred while others are recorded as balance sheet transactions or other economic flows. Public spending under the GFS Model is the sum of

expenditure and net acquisitions of non-financial assets. Figure 25 shows lower expenditure under the FS Model than under the GFS Model.

Since 1990 total expenditure by function for the federal government, cantons and municipalities has increased from CHF 87 billion under the FS Model, or CHF 86 billion under the GFS Model, to CHF 146 billion under the FS Model, or CHF 144 billion under the GFS Model. From 1992 onwards, the FS Model expenditure curve keeps at a slightly higher level than under the GFS Model. FS expenditure initially peaks in 1993, flattening out at roughly CHF 11 billion until 1995, when it starts to climb again. After a brief decline in 1999, expenditure rises sharply. There is a gradual increase in GFS Model expenditure throughout the time series, except for a brief period in 1997 when spending holds steady at CHF 112 billion.



**Figure 25:** Federal government, cantonal and municipal expenditure under the FS and GFS Models in CHF millions

The international standard for classifying public spending by government function "Classification of Functions of Government" (COFOG) was developed by the Organisation for Economic Co-Operation and Development (OECD) and published by the United Nations Statistical Division. The categories describe the broad objectives of government. However, it should be noted that the ten broad objectives of "general public services", "defence", "public order and safety", "economic affairs", "environmental protection", "housing and community amenities", "health", "recreation, culture and religion", "education" and "social protection" do not accord entirely with the functions defined under the FS Model. The "fiscal affairs and taxes" function under the FS Model, for example, has been completely recategorised under the COFOG heading of "general public services".

Figure 26 compares both models in terms of spending trends by function in relation to the federal government, cantons and municipalities. However, it should be noted that the different

definitions of function make any spending-by-function comparison between the two models difficult.

Figure 26: Federal government, cantonal and municipal expenditure by function under the FS Model ("FS function") and GFS Model (COFOG), in CHF millions

- General public services (FS function 0) + Fiscal - Public order, safety and defence affairs (FS affairs and taxes (FS function 9) function 1) - General public services (COFOG 701) - Defence (COFOG 702) + Public order and safety (COFOG 703) 30'000 14'000 25'000 13'000 20'000 12'000 15'000 11'000 10'000 10'000 5'000 - FS Function 1 COFOG 702 and 703 -FS Functions 0 and 9 COFOG 701 - Education affairs and services (FS function 2) - Recreational, cultural and religious affairs (FS - Education (COFOG 709) function 3) - Recreation, culture and religion (COFOG 708) 5'000 30'000 27'000 4'600 24'000 4'200 3'800 21'000 3'400 18'000 3'000 15'000 1994 1995 1996 1997 1998 1998 990 . 66 266 66 2000 2001 2002 2005 2005 2005 2005 2005 - FS Function 3 COFOG 708 FS Function 2 COFOG 709 - Health affairs and services (FS function 4) - Social security and welfare affairs (FS function - Health (COFOG 707) 5) - Social protection (COFOG 710) 22'000 35'000 20'000 30'000 18'000 25'000 16'000 20'000 14'000 15'000 12'000 10'000 10'000 1990 1992 1993 1995 1995 1997 1997 1998 1998 2000 2001 2003 2004 2005 2006 2006 000 990 66 66 66 66 66 66 000 00 200 00 COFOG 710

- FS Function 4

- COFOG 707

FS Function 5



In the area of "public services", GFS expenditure is symmetrical with FS expenditure, albeit at a higher level on account of the different definitions of functions. Based on the international classification standard, the "public services" function also includes expenditure on "fiscal affairs and taxes", which is a separate function in the FS Model.

Expenditure on "defense" and "public order and safety" are shown separately in the GFS Model, but are merged into a single function in the FS Model. The combined expenditure under both GFS categories follows a similar trend to the FS category "public order and safety, defense" but is slightly lower. Expenditure on the GFS "education" category is almost identical to FS "education affairs and services" spending. In respect of the GFS category "recreation, culture and religion", the development of both curves is similar. Only from 2001-2002 is FS expenditure above that of the GFS model. In the health sector, by contrast, both curves are congruent in all years.

"Social protection" spending levels vary from FS spending levels for the equivalent function between 1992 and 1993 and in 1995, 1996 and 1997. As stated above, the discrepancies are due to the different methods of recording expenditure. For example, AVS lending is entered as a balance sheet transaction in the GFS Model.

The aggregated spending curve for FS categories "transportation and communication affairs" and "economic affairs" is flatter than the GFS spending curve for "economic affairs" from 1998 onwards. In addition, the GFS categories "environmental protection" and "housing and community amenities" are reported separately, but are subsumed under a single function "environmental protection, housing and community amenities" in the FS Model. Aggregated spending for the two GFS categories again matches FS expenditure, with the aggegated COFOG curve dipping only briefly in 1996.

## 7. Summary and outlook

## 7.1. Purpose and implementation of finance statistics reforms

Public finance statistics in Switzerland underwent a major revision between 2003 and the end of 2008. The methods, bases and procedures for recording, processing and evaluating data have been substantially changed. The finance statistics reforms were necessary for a number of reasons, the main one being the need to improve the <u>national and international comparability</u> of budget data.

The standards for compilation and presentation of statistical data laid down in the IMF Government Finance Statistics Manual 2001 (GFSM2001), applied in the context of traditional Swiss accounting standards, have played an important role in this process. A further objective was to create the necessary framework for reporting finance statistics in line with the European System of Accounts (ESA95) adopted by the European Union. Conformity to EU standards was required under the agreement on statistics concluded between Switzerland and the EU as part of the second round of bilateral agreements (Bilateral Agreements II).

Now that the project phase is completed, results under the national FS and international GFS Models are available, which has produced some inconsistencies between the new results and previous data series. Because of the adjustments brought by the reforms, including changes to sector classification, there is a lack of a common base from which to compare the time series from the old finance statistics with the post-reform results. However, it is essential for statistical analysis purposes for time series data to be as consistent as possible, necessitating the transfer of old finance statistics from 1990 to 2007 to the new models. This also requires analysis and comparison of data with previous results, verification of the plausibility of these results, and the checking of the consistency of time series interfaces against recently collated data for 2008. This report was commissioned to undertake these tasks.

One of the methodological adjustments to the revised finance statistics will only be implemented after the 2008 fiscal year. It is not possible to adjust data from the 1990-2007 period because of the lack of detailed information, although the following methodological adjustments have been made:

- Redefinition of the scope of the public sector
- Revision of accounting models
- New approach to netting double entries
- New approach to estimating municipal data
- Compilation of social security fund data

The revision of the finance statistics has therefore created a break in the data series between 2007 and 2008.

#### 7.2. Results for 1990 – 2007

Since the finance statistics reforms, two models have been used to report statistical results: the FS (national) and GFS (international) models. Because of the different approaches used, the two models are assessed separately. In making this assessment, it is particularly useful to compare the FS Model with old public finance statistics and GFS Model results with FS Model results.

#### 7.2.1. Comparison of revised and old finance statistics

There are only minor differences between the <u>aggregated results</u> under the FS Model and the old statistics. The main differences between the two models are at the level of individual accounts and account groups and in relation to the duplicate entry rules, owing to the way in which data is transferred to the FS account structure. This only has a marginal effect on the aggregated results. It should also be emphasised that the more significant changes to the new statistics (redefinition of the scope of the public sector, new approach to estimating municipal data) could not be applied to pre-2008 data due to the lack of base data.

## 7.2.2. Comparison between FS and GFS Models and economic performance

The differences in content between the FS and GFS Models are greater than they are between the FS Model and the old statistics. The GFS Model is subdivided into operating transactions, the asset account, "other economic flows" and balance sheet transactions. While the operating side of the accounts can be controlled by fiscal policy and shows the net lending/borrowing used in the analysis, unpredictable flows, such as changes in market value, are entered separately. This means that the components of the key measures under the models (net lending/borrowing, government spending etc.) are also very different.

However, it is not possible to draw any general conclusions about these differences. Net lending/borrowing under the FS Model may be higher or lower than the GFS Model both at subsector and general government level, irrespective of the specific components to which any increase or decrease in the balance is attributable. For example, extraordinary transactions that are fully reflected in the FS Model finance account, may not be reflected in GFS net lending/borrowing (irrespective of the specific transaction type). However, as the FS Model ordinarily factors more transactions into its calculation of net lending/borrowing than the GFS Model, FS net lending/borrowing is generally more volatile and fluctuates more sharply than the GFS Model, as shown in the diagrams in this report. The greater volatility in the FS Model is due, for example, to extraordinary transactions that are highly infrequent and involve high volumes.

Non-operating and extraordinary transactions may fluctuate and distort accounting results notwithstanding the economic situation. This would suggest that GFS model balances are more highly correlated to economic growth than FS Model results.

#### 7.2.3. Measures

Rolling out the GFS Model has facilitated the calculation of economic measures used in international comparisons in relation to the public finance statistics. The measures concerned primarily involve IMF, EU or OECD ratios. As these measures were regularly reported prior to the finance statistics reforms, it is possible to compare the revised measures with earlier time series,

which were calculated approximately in line with the international definitions. Only five ratios are represented in the finance statistics:

- Deficit/surplus ratio: net lending/borrowing as % of GDP
- Debt ratio as defined by Maastricht criteria: gross debt as % of GDP
- Gross debt as defined by the IMF: debt as % of GDP
- Tax-to-GDP ratio: tax revenue as % of GDP
- Public spending ratio: public spending as % of GDP

These ratios as presented in the finance statistics are based on the rules defined in the GFS Model except for Maastricht debt. This is based on the EU/Maastricht definition of gross debt, which provides a more relevant frame of reference for comparing gross debt.

Disparities with previous statistics are most apparent in the GFS public spending and deficit/surplus ratios. This is because, as described in this report, the definitions of public spending in the GFS model differ from those in the FS Model and thus from previous finance statistics. These definitions affect expenditure levels and the size of balances and thus the corresponding ratio values. In contrast, there are hardly any discrepancies between the tax-to-GDP and gross debt ratios and earlier time series, as the methods for calculating tax revenues and Maastricht debt have changed very little. Gross debt as defined by the IMF was not previously reported, precluding any comparison.

#### 7.2.4. Functional classification of expenditure

There is also very little variation in federal government, cantonal and municipal spending by function under the FS Model and old statistics. Aligning the FS Model with the functional classification under the Harmonised Accounting Model for the cantons and municipalities (HAM2) and the New Accounting Model of the Confederation (NAM) has only resulted in a few reclassifications. The GFS Model uses the international classification of outlays by function of government set out in the "Classification of Functions of Government" (COFOG). However, the COFOG categories do not accord precisely with the functional classifications in the FS Model. As a result, there is significant variation between expenditure by function under the FS and GFS Models, as has been demonstrated by the analysis of finance statistics elsewhere in this report.

#### 7.3. Outlook

The adoption of the "New Accounting Model" (NAM) as the new federal government accounting system from January 2007 and the Harmonised Accounting Model of the cantons and municipalities (HAM2), as recommended by the Conference of Cantonal Finance Directors in 2008, paved the way for the finance statistics reforms that have now been carried out. Building international standards into the GFS Model for finance statistics will enable the Federal Finance Administration in future to supply the Swiss Federal Statistical Office (FSO) with ESA95 compatible data. At present, the statistical results for the general government sector are not yet fully harmonised either in the Swiss National and Financial Accounts or the Swiss public finance statistics. The recent finance statistics reforms have not yet eliminated all discrepancies, while some disparities only became apparent once the results were available. These involve a few specific transactions and the valuation of certain balance sheet items. Different results can be

obtained in respect of balance sheet items in particular, depending on whether the items are viewed through a legal or economic lens. Harmonisation of the GFS Model with the Swiss National and Financial Accounts can only be undertaken and completed in 2012 in the context of the partial revision of the Swiss National Accounts. This will also provide an opportunity to review the underlying methods used for finance statistics.

ESA95 is also being revised following the adoption of the new "System of National Accounts 2008" (Volume 2) in spring 2009 by the Statistical Commission of the UN Economic and Social Council. The FSO is therefore planning comprehensive changes to the Swiss National Accounts to ensure consistency with the upcoming ESA2010, with the first publication due in 2014 in line with EU member states. However, GFSM2001 has already anticipated many of the changes affecting the public sector defined in SNA2008. As a result, it is unlikely that any fundamental changes will be required in relation to the GFS Model. However, there will be level shifts affecting certain aggregates. For example, under SNA2008 and ESA2010 guidelines, the purchase of major weapon systems (such as military aircraft) by the government may no longer be reported as government consumption but as investment in plant and equipment and recognised in the balance sheet as non-financial assets.

Pursuant to Annex B, as amended, of the agreement on statistics with the EU (Bilateral Agreements II), the Federal Finance Administration will also prepare quarterly data on government revenue and expenditure from 2012, which is already the established practice in most EU member states and Norway. From 2011, in addition to the current balances and measures, government deficit and debt (as defined by Maastricht criteria) will also be determined for comparison purposes. Data on Switzerland is also due to be published for the first time in the Eurostat finance statistics in 2011.