

The development of public finances in Germany after the qualification for EMU

The origins of the excessive deficit

Draft

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1 Introduction

In 1997 Germany qualified for participation in the European Monetary Union because, among other things, it was deemed to have met the fiscal policy convergence criteria. The deficit ratio and the debt ratio, at 2.7% and 61% were slightly below/above the Maastricht ceiling, respectively. The deficit ratio decreased to 1.2% by 2000. On the whole, the outlook for the economic development and for public finances was regarded at the time as favourable. This proved, however, to be a serious miscalculation. The economy performed disappointingly, and a three-year period of stagnation set in, accompanied by a noticeable rise in unemployment – instead of the expected decrease. Government finances deteriorated severely. Deficits rose sharply, almost hitting 4% of GDP in 2003, and the debt ratio increased to more than 64% after having fallen temporarily below the 60% mark in 2001. In January 2003 an excessive deficit procedure was launched against Germany.

The present paper describes and analyses the development of public finances in Germany between 1997 and 2003. The main analytical tool is the disaggregated method of cyclical adjustment which has been developed in the ESCB and the Bundesbank. However, the method is not only – in a traditional way – been used to explain the evolution of the deficit. Moreover, it is the basis of a more detailed analysis of individual revenue and expenditure categories of the general government budget. The use of this method, combined with the assessment of fiscal policy measures and other structural developments, enables a comprehensive explanation of the development of public finances in Germany.

We find that the structural situation of public finances in Germany deteriorated considerably between 1997 and 2003. This deterioration already began in 1998 but was obscured up until 2000 by the favourable economy and other temporary influences. On the other hand, the rise in deficits in the years 2002 and 2003 were due exclusively to cyclical and other temporary factors while the structural position improved slightly over the last two years. Overall, the structural deterioration from 1997 to 2003 was due to revenue-side developments; by contrast, the level of the government expenditure ratio (adjusted for outsourcing activities) decreased somewhat, also because the interest expenditure burden eased.

When assessing public finance developments from today's perspective, it must be borne in mind that the 2001-2003 period of stagnation came as a general surprise. The sharp revision in the assessment of trend economic growth also led, ex post, to a significant change in the way the structural situation of government finances was viewed. On the other hand, Germany never did reach a structurally balanced budget over the period 1997-2003, even not from a "real-time perspective". If such a position had been achieved up to 2000 and if the government had not launched uncompensated and wide-ranging tax cuts in 2001, it would have been possible to keep the deficit ratio below the 3% limit despite the unexpected economic downturn and other negative influences that followed.

2 The analytical framework

This analysis makes use of the national accounts results according to ESA '95 as presented in the ESCB's and Deutsche Bundesbank's Monthly Report.² In 2000, one-off receipts from the auction of UMTS licences (2½% of GDP, reflected in the national accounts as negative expenditure) were removed.

Box A. Cyclical adjustment

In the approach employed in this paper budgetary items are cyclically adjusted individually. The trend of appropriate macroeconomic bases is estimated using a Hodrick-Prescott (HP) filter with a smoothing parameter $\lambda=30$ and the cyclical impact is assessed by applying elasticities to the trend deviation. The following budgetary components are adjusted (macro bases in brackets): wage taxes (gross wages and salaries per employed person and employment in the private sector), "profit-related" taxes or, more specifically, corporation tax, non-assessed tax on earnings, local business tax, interest withholding tax and assessed income tax (entrepreneurial and investment income), turnover tax (private consumption and private homebuilding investment), excise tax (real private consumption), social contributions (gross wages and salaries), unemployment-related expenditure (number of unemployed persons and persons in measures of active labour market policy) and statutory pension insurance payments (average gross wages and salaries per employed person in the two preceding years).

There are certain peculiarities which arise when revenue and expenditure of the pension insurance scheme is cyclically adjusted. Until 2003 the pension insurance scheme was, in principle, bound by law to balance its budget. Therefore, we assume that cyclical movements of expenditure and revenue have to be compensated by an endogenous change in the contribution rates. This is tantamount to the assumption that a "cyclical adaptation" of contribution rates makes sure that there is no cyclical deficit in the pension insurance scheme. The cyclical fluctuations of pension insurance revenues for a given contribution rate and the cyclical component of pension insurance expenditure within a year cancel out each other at least in part because both arise in connection with cyclical fluctuations of the compensation of employees. Therefore, adjustments to the contribution rate that become necessary due to cyclical influences are generally limited.

For an extensive description of the ESCB's cyclical adjustment procedure see Bouthevillain, C, P Cour-Thimann, G van den Dool, P Hernández de Cos, G Langenus, M Mohr, S Momigliano and M Tujuka (2001), *Cyclically adjusted budget balances: an alternative approach*, *ECB Working Paper, No 77*.

The primary aim of this analysis is to examine the cyclically adjusted government revenue, expenditure and deficit ratios. On the expenditure side, the cycle is reflected mostly in labour market-related expenditure and in pension payments out of the statutory pension insurance scheme. On the revenue side, taxes and social contributions are influenced by cyclical developments. The disaggregated method developed in the ESCB is used for cyclical adjustment. However, this paper uses a "nominal approach", ie the nominal macroeconomic bases, and not the real macroeconomic bases, of government revenue categories are detrended.³ This approach seems to be ad-

² In contrast to the figures shown by the Federal Statistical Office, totals for expenditure and revenue include (without affecting the deficit) customs duties, the EU share in VAT revenue and EU subsidies.

³ See Deutsche Bundesbank, *Cyclical adjustment of the public sector financial balance in Germany – a disaggregated approach*, Monthly Report, April 2000, pp 31-44 and Mohr, Matthias, *Ein disaggregierter Ansatz*

vantageous particularly in the German context. Compared to the real approach, it does not lead to any relevant differences in the results, but it makes the outcome intuitively more understandable given that budget planning in Germany is focused on nominal growth (for further details regarding the cyclical adjustment see Box A).

Besides the cyclical effects, two additional categories of temporary influences on public finances are captured. Firstly, temporary deviations of “profit-related” taxes (corrected for changes in tax law and for the cyclical influences calculated using our cyclical adjustment procedure) from their trend are calculated (see additional explanation in Box B). The sharp fluctuations in profit-related taxes go a long way towards explaining the post-1997 pattern of government deficits. The strong “swings” over that period should in our view be regarded for the most part as temporary; we therefore do not interpret them as fluctuations in the structural budgetary position.

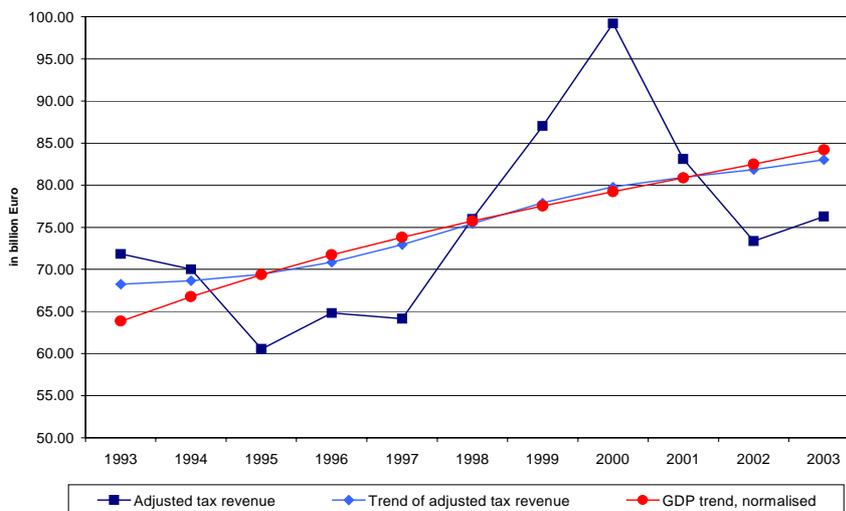
Secondly, other exceptional temporary influences on public finances are considered. These are clearly identifiable major revenues or expenditures which temporarily impact on government finances (eg the one-off bailout of Bankgesellschaft Berlin, the one-off payment of indemnification for wartime forced labour, additional expenditure caused by flood damage, temporarily exceptionally low transfers to the EU). The quantitative impact of this last category is relatively minor; it accounts for less than 0.1% of GDP in a particular year.

On the expenditure side changes in an expenditure category may occur, in particular, as the result of discretionary government measures (such as hiring additional staff). In addition, however, other structural factors not directly attributable to specific government measures may play a role (eg an increase in pension payments owing to an ageing society). In our analysis, we study developments of the different national accounts expenditure categories. We speak of a contribution to consolidation by the expenditure side if the cyclically adjusted expenditure ratio (cyclically adjusted expenditure divided by nominal trend GDP) declines. If the nominal growth of an expenditure category is lower than nominal trend GDP growth, this category contributes to the structural improvement of government finances. If expenditure growth can be held below trend GDP growth, then, *ceteris paribus*, the cyclically adjusted expenditure ratio, and thus the structural government deficit ratio, will both fall.

Box B. Calculating temporary deviations of profit-related taxes from their medium-term trend

Figure 1 shows revenue from profit-related taxes (corporation tax, non-assessed taxes on earnings, local business tax, interest withholding tax and assessed income tax) adjusted for cyclical influences and changes in tax legislation.⁴ Tax revenue adjusted in this way is subject to sharp fluctuations, a large percentage of which we consider to be temporary. With view on Figure 1 this interpretation seems to be intuitively plausible.

Figure 1: Profit-related taxes and their trend (corrected for changes in tax legislation, base year 2003, and cyclical influences)



To estimate the size of the temporary share we interpret the sum of the cyclical component determined according to the ESCB method T^c and the trend deviation of the taxes adjusted for this cyclical component and for changes in tax legislation T^{c+} to be temporary. In each case the trend deviation is calculated using a HP filter with a smoothing parameter of $\lambda=30$. To mitigate the endpoint problem the tax series is extended on the basis of the current official tax forecast. The resulting temporary part $T^c + T^{c+}$ roughly corresponds to the trend deviation of the profit-related taxes adjusted for changes in tax law.

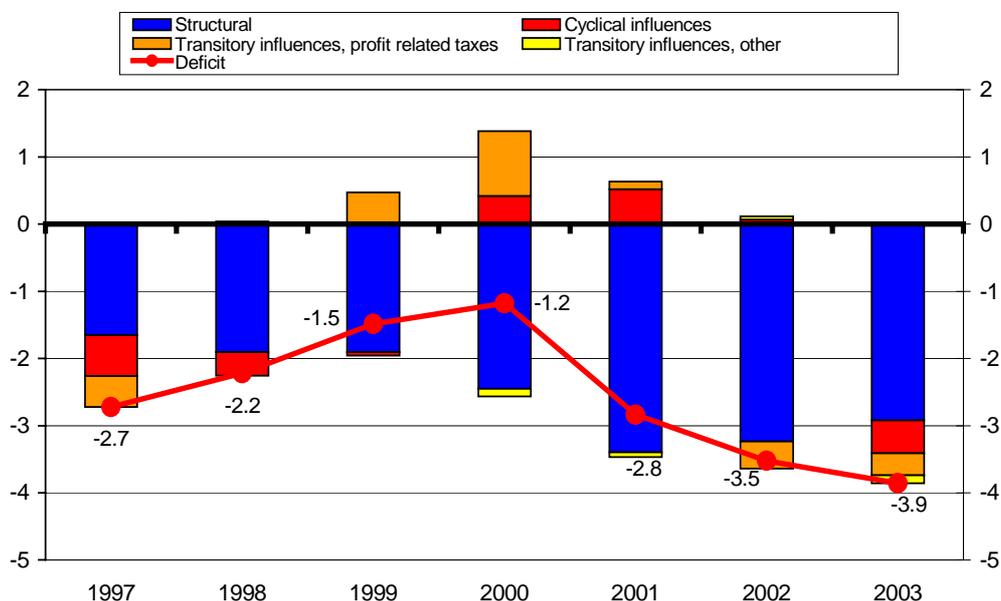
Figure 1 shows the “structural level” of profit-related taxes (“Trend of adjusted tax revenue”). Additionally, the (normalised) trend of GDP is mapped. A comparison of the structural tax revenue with trend GDP shows that both have similar growth rates in the period under review. The structural variable we use is thus consistent with the notion that the macro bases of profit related taxes and, thus, revenue from profit-related taxes should, over the medium term, grow roughly at the same rate as trend GDP. It should be noted when interpreting this result that the trend profile is influenced by the assumptions for the extension period. For that reason, the parallel course of trend GDP and trend tax revenue is likewise determined in part by these assumptions. This is especially true regarding the last years of the calculation.

⁴ Changes in tax legislation are mostly in line with the information provided by the German ministry of finance at the time the tax legislation change has been proposed.

In a mirror image of the expenditure side, the revenue side contributes to consolidation if the cyclically adjusted revenue ratio increases. If revenue over the medium term has a sensitivity to GDP of around 1, the cyclically adjusted revenue ratio should remain roughly constant in the absence of structural changes. On the revenue side, developments are largely determined by patterns of revenue from taxes and social contributions (which make up 92% of government revenue). When explaining changes in the cyclically adjusted revenue ratio we distinguish between changes caused by “fiscal drag”, changes caused by new legislation (tax rates etc), changes caused by deviations of the trend of the macroeconomic base from trend GDP⁵ and change caused by other structural factors (the method of calculating these various aspects of income patterns is described in Box C). Moreover, the impact of non-tax revenue on the revenue ratio is likewise examined.

To eliminate from our analysis, as much as possible, the expenditure- and revenue-reducing effect, which is attributable only to the outsourcing of fee budgets from the government budget, we calculate “modified revenue” and “modified expenditure”. For this government revenue from sales (usually revenue collected as fees), which are particularly affected by outsourcing, is deducted from both revenue (non-tax-related revenue) and expenditure (“budgetary management”).

Figure 2: Development of the budget balance (as a percentage of GDP)



⁵ The disaggregated approach makes it possible to capture fluctuations of individual macroeconomic bases of government revenue and expenditure separately and is not directly dependent on GDP. This means that, for instance, staggered fluctuations in individual bases in the business cycle are taken into account. However, if the trend growth of a base (eg total gross wages and salaries) is below trend growth of GDP, the result is a continuous decline in the structural revenue ratio, which in our analysis is tantamount to a structural deterioration in the state of public finances.

3 Development of government finances from 1997-2003

3.1 The development of structural deficits

Between 1997 and 2000, the deficit ratio in Germany fell distinctly (by $-1\frac{1}{2}$ percentage points), which on the surface seemed to indicate an improvement in the state of public finances (see Table 3 in the appendix). If temporary influences on the deficit ratio are subtracted, however, the assessment changes distinctly (see Figure 2). Negative cyclical factors and extraordinarily low revenue from profit-related taxes in 1997 caused government deficits to be at a high level. Those factors, however, turned around strongly in the following years, not least on the back of the “new economy” boom. The positive swing between 1997 and 2000 amounted to 1% of GDP for cyclical influences and, additionally, even as much as $1\frac{1}{2}\%$ of GDP for profit-related taxes. Adjusted for these factors and for the (small) other negative temporary influences, the structural deficit ratio did not decrease, but rather actually went up by $\frac{3}{4}$ percentage point.

In the years that followed, the deficit ratio then increased sharply (by 2.7 percentage points), reaching 3.9% in 2003. The structural deficit rose distinctly in 2001 (owing in particular to the first stage of the direct tax reform) but then went back down in 2002 and 2003. On balance, a structural deterioration ($-\frac{1}{2}\%$ of GDP) took place from 2000 to 2003. The withering away of the positive temporary influences, however, was the decisive factor for rising (unadjusted) deficits; in light of the relatively long period of stagnation, a distinctly negative influence (on the level) has even resurfaced in 2002 and 2003. On the whole, in the 2001-2003 period temporary factors contributed by $2\frac{1}{4}\%$ of GDP to the rise in the deficit (1 percentage point due to cyclical influences and $1\frac{1}{4}$ percentage points due to temporary influences on profit-related taxes).

3.2 Developments on the expenditure side

The cyclically adjusted expenditure ratio went down by 0.6 percentage points to 48.4% between 1997 and 2003, with the last two years, 2002 and 2003, being the decisive ones (see also Tables 1 and 2). If, however, the (statistical) outsourcing of fee budgets (eg in the area of sewage and refuse disposal) from the government sector is factored into the equation, the in such a way “modified” cyclically adjusted expenditure ratio has decreased only about half as much, even though the annual average growth of (modified) nominal expenditure, at slightly above 2%, has been very low by historical standards⁶. However, the trend growth of (nominal) GDP, which basically defines the scope for a deficit-neutral increase in expenditure, was slightly higher. This means that consolidation progress on the expenditure side (taking into account outsourcing) was ultimately very limited.

⁶ Average nominal expenditure growth amounted only to almost 2% from 1997-2003. Between 1970 and 1997 general government expenditure growth was only in two years (1983 and 1997) lower than 3%. Annual average expenditure growth was $7\frac{1}{2}\%$ between 1970 and 1991 and 4% between 1991 and 1997.

Table 1: Pattern of cyclically adjusted budget components
(ESCB method based on nominal tax bases¹)

	1998	1999	2000	2001	2002	2003	97-03
as a percentage of GDP							
Balance	-1.9	-1.4	-1.6	-3.4	-3.6	-3.3	-1.2
Expenditure	49.0	49.1	49.2	49.1	48.8	48.4	-0.6
<i>Change in percentage points</i>	<i>-0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.0</i>	<i>-0.3</i>	<i>-0.4</i>	<i>-0.6</i>
of which							
"Budgetary Management" ²	-0.2	0.0	-0.3	-0.2	-0.2	-0.5	-1.5
Old-age pension ³	0.2	0.4	0.2	0.1	0.2	0.0	1.0
Health care ⁴	-0.1	0.0	0.0	0.1	0.0	0.0	0.2
Labour market ⁵	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Other social expenditure	-0.1	0.0	0.0	0.0	0.2	0.0	0.1
Interest payments	0.0	-0.1	-0.1	-0.1	-0.2	0.0	-0.5
Capital transfers	0.2	0.0	0.1	0.3	-0.1	0.1	0.5
<i>Primary expenditure ratio</i>	<i>45.4</i>	<i>45.6</i>	<i>45.8</i>	<i>45.9</i>	<i>45.7</i>	<i>45.3</i>	<i>-0.1</i>
Revenue	47.1	47.7	47.6	45.8	45.2	45.1	-1.9
<i>Change in percentage points</i>	<i>0.1</i>	<i>0.5</i>	<i>-0.1</i>	<i>-1.8</i>	<i>-0.5</i>	<i>-0.1</i>	<i>-1.9</i>
of which							
Changes in tax legislation	-0.2	0.5	-0.1	-1.0	0.3	0.2	-0.3
Fiscal drag	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Decoupling, profit related taxes ⁶	0.5	0.4	0.5	-0.9	-0.5	0.0	0.0
Decoupling from tax base, others ⁷	-0.1	-0.1	-0.2	0.0	-0.1	-0.1	-0.6
Decoupling of tax base from GDP, others ⁴	-0.3	-0.1	-0.1	-0.1	-0.2	-0.2	-1.0
Non-tax-related revenue	-0.1	-0.1	-0.2	0.1	-0.1	-0.2	-0.5

Table 2: Pattern of cyclically adjusted budget components
(ESCB method based on nominal tax bases¹, modified by subtracting sales from non tax-related revenues and "Budgetary Management")

	1998	1999	2000	2001	2002	2003	97-03
as a percentage of GDP							
Balance	-1.9	-1.4	-1.6	-3.4	-3.6	-3.3	-1.2
Expenditure	46.8	47.0	47.1	47.2	46.9	46.6	-0.3
<i>Change in percentage points</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>-0.3</i>	<i>-0.3</i>	<i>-0.3</i>
of which							
"Budgetary Management" ²	-0.1	0.0	-0.2	-0.2	-0.2	-0.4	-1.1
Old-age pension ³	0.2	0.4	0.2	0.1	0.2	0.0	1.0
Health care ⁴	-0.1	0.0	0.0	0.1	0.0	0.0	0.2
Labour market ⁵	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Other social expenditure	-0.1	0.0	0.0	0.0	0.2	0.0	0.1
Interest payments	0.0	-0.1	-0.1	-0.1	-0.2	0.0	-0.5
Capital transfers	0.2	0.0	0.1	0.3	-0.1	0.1	0.5
<i>Primary expenditure</i>	<i>43.2</i>	<i>43.5</i>	<i>43.8</i>	<i>43.9</i>	<i>43.8</i>	<i>43.5</i>	<i>0.3</i>
Revenue	45.0	45.6	45.5	43.8	43.3	43.2	-1.5
<i>Change in percentage points</i>	<i>0.2</i>	<i>0.6</i>	<i>-0.1</i>	<i>-1.7</i>	<i>-0.5</i>	<i>-0.1</i>	<i>-1.5</i>
of which							
Changes in tax laws	-0.2	0.5	-0.1	-1.0	0.3	0.2	-0.3
Fiscal drag	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Decoupling, profit related taxes ⁶	0.5	0.4	0.5	-0.9	-0.5	0.0	0.0
Decoupling from tax base, others ⁷	-0.1	-0.1	-0.2	0.0	-0.1	-0.1	-0.6
Decoupling of tax base from GDP, others ⁴	-0.3	-0.1	-0.1	-0.1	-0.2	-0.2	-1.0
Non-tax-related revenue	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.1

1 For further details on cyclical adjustment, see Box A. The calculation of fiscal drag and decoupling is described in Box C.

2 Comprises personnel expenditure, intermediate consumption, subsidies (excluding EU subsidies) and investment.

3 Expenditure of the statutory pension insurance funds, on civil servants' pensions, on transfers to Post Office pension funds.

4 Expenditure of the statutory health insurance funds and on health care benefits for civil servants.

5 Expenditure of the Federal Labour Office and on unemployment assistance.

6 Comprises the effect of the decoupling from the tax base and the decoupling of the tax base from GDP.

7 VAT, wage tax and social security contributions.

The relative lack of change in the modified expenditure ratio is due to different, and in some cases opposite, developments. Throughout the observation period, what we call “budget management” was visibly restrictive,⁷ contributing a total of 1.1% of GDP to consolidation. A distinct reduction in staff in the public sector (representing a cumulative 8% – outsourcing included) and a wage increase in the public sector which failed to match private sector pay hikes were the main contributory factors. In addition, a distinct decline in investment over time also became apparent, reflecting recently mounting strains on municipal budgets.

The aforementioned positive influence on deficits was offset almost completely by the sharp rise in expenditure on old-age provision (1.0% of GDP). Important factors were not only a noticeable rise in the number of retirees and pensioners but also the fact that the pension burden for former civil servants of the former Post Offices⁸ was largely assumed by the Federal Government, which increased government expenditure by around 0.3% of GDP per annum.⁹ Moreover, capital transfers by government, in particular, rose (0.5% of GDP). A main contributing factor was the grant to private home buyers/builders (Eigenheimzulage), which has continued to rise owing to the additional generations of recipients entering the system. The other social benefits (health, cyclically adjusted social benefits for unemployment and other – often nominally fixed – social transfers) increased slightly as a percentage of trend GDP.

Interest expenditure contributed to a 0.5 percentage point reduction in the expenditure ratio. Despite a distinct rise in debt, interest payments even went back down slightly in absolute terms. This is due to the sharp drop in the average interest on government debt, from about 6% in 1997 to just under 5% in 2003. Falling capital market rates, which made it possible to refinance maturing bonds at more favourable terms played the decisive role. Without this positive effect from the decrease of the average interest rate, interest expenditure would have been more than €14 billion or 0.7% of GDP higher in 2003. The cyclically adjusted, modified primary expenditure ratio (adjusted for interest expenditure) rose by 0.3 percentage point between 1997 and 2003.

⁷ We define “budgetary management” as the pattern of expenditure categories which can for the most part be influenced in a discretionary manner and mostly without major legislation changes by the subsectors of government. These categories are personnel expenditure, intermediate consumption, subsidies (excluding the EU subsidies), investment and active labour market policy. “Budget management” is deemed to be restrictive (expansionary) if the growth rate of this aggregate expenditure is below (above) the growth rate of the trend of nominal GDP. For the calculation of modified expenditure sales are subtracted from “budget management”.

⁸ These include pensioners from the Post Office, Telekom and Postbank.

⁹ The assumption of the pension burden by the federal government lead, *ceteris paribus*, to higher privatisation receipts upon their subsequent sale of shares of former Post offices; however, this is posted in a deficit-neutral manner as a financial transaction. In other EU member states, the assumption of the pension burdens in this area involved the postal services’ successor enterprises was combined with deficit-reducing payments to the government (the value of these enterprises, *ceteris paribus*, being lower as a result). While these transactions are largely the same from an economical point of view, they even though lead to considerable differences in statistical accounting with regard to the deficit.

3.3. *Developments on the revenue side*

The decline in the structural revenue ratio was the key reason for the distinct rise in the structural deficit. The ratio fell by 1.9 percentage points in the 1997-2003 period. If – as on the expenditure side – the revenue ratio is adjusted for the outsourcing of fee budgets, the decline still amounts to 1.5 percentage points.

Tax measures and law changes concerning social security funds, contributed on balance -0.3% of GDP to the fall in the revenue ratio. The main reason for this was a distinct reduction in the direct tax burden (-1.6% of GDP); the first stage of the tax reform, which took effect in 2001, played a particular role in reducing the burden. That contrasted, however, with a visible rise in indirect taxes (+1.3% of GDP), which was particularly the result of the “ecological tax reform”, as a result of which energy taxes were hiked sharply (in order to contribute to the financing the pension insurance). The changes in law that had influence on social contributions and, in particular, social contribution rates¹⁰ largely cancel one another out over time. After falling until 2001, in the past two years contribution rates to the statutory health insurance scheme and in 2003 also to the statutory pension scheme went back up distinctly against a backdrop of sluggish revenue.¹¹

Given progressive taxation, the observation period saw considerable “fiscal drag”¹² (a total of +0.7% of GDP¹³), though this fiscal drag was much weaker than in earlier years in the light of low nominal GDP growth rates. The fiscal drag, however, was more than offset by the fact that the trend for the macroeconomic bases of taxes and social contributions grew much more weakly than the trend growth of nominal GDP in the 1997-2003 period.¹⁴ The consequence of the latter, *ceteris paribus*, was for taxes and social contributions to go down in structural terms during the reporting period in terms of GDP, thus causing a structural decrease in the revenue ratio and a structural increase in deficits (-1.0% of GDP).

¹⁰ Adjusted for changes in revenue caused by changes in contribution rates to the statutory pension insurance scheme that become necessary due to cyclical influences on the expenditure side; see Box A.

¹¹ The contribution rates to the nursing and unemployment insurance schemes stayed constant. In the nursing insurance scheme deficits were accepted because of assets still existing from the past. The balanced budget in the unemployment insurance scheme was achieved through transfers from the federal government budget.

¹² For more on calculating the fiscal drag and the decoupling from the bases and the decoupling of bases from GDP, see Box C.

¹³ This is offset here against the negative fiscal drag, which is the result of the specific excise taxes, which are designed mostly as specific taxes; see Box C.

¹⁴ The ratio of compensation of employees to national income remained roughly constant over the period under consideration. However, mostly owing to a growing share of indirect taxes less subsidies the ratio of national income to GDP fell about 1 percentage point between 1997 and 2003. Therefore, also the ratio of the compensation of employees to GDP fell during that period.

Box C. The relevance of macroeconomic trends for government revenue

The pattern of revenue from taxes and social contributions is determined in large part by the growth of their macroeconomic bases. To assess the impact of the macroeconomic framework, we assume, as in the cyclical adjustment, that a 1% rise in the base X of a revenue category T causes revenue to rise by ε percent: $\Delta T / T = \varepsilon \Delta X / X$. Therefore, if, for instance, the base rises faster than nominal GDP, or if the elasticity ε is greater than unity due to progressive taxation, the revenue ratio will rise even without being based on direct intervention by policymakers. We describe the first case as a **decoupling of the base from GDP**, and the second case as **fiscal drag**. We term the difference between the pattern of revenue adjusted for changes in tax legislation or contribution rates and the mechanistically calculated revenue pattern based on developments in macro bases and elasticities as the **decoupling of the revenue category from the base**.

We have excluded the cyclical aspect in the calculations for Tables 1 and 2. Basically, what we did was to replace the base and GDP with the respective trend variables. As in the ESCB's method of cyclical adjustment, we detrend using an HP filter with a smoothing parameter of $\lambda=30$.

A brief **example** shall be used here to clarify the fundamental procedure for ascertaining decoupling of the base from GDP and fiscal drag. It is assumed that trend GDP rises by 1% and trend total gross wages and salaries go up by 2%, with trend employment remaining constant. Given a per capita wage elasticity of wage tax revenue of 2, in this case the cyclically adjusted wage tax revenue would go up by a total of 4% ($=\varepsilon \cdot$ growth rate of the base). If wage tax revenue rises by 1%, the tax ratio would remain constant. Given the remaining rise of 3%, we would attribute 1 percentage point ($=$ growth rate of base – growth rate of GDP) to the positive decoupling of the base from GDP. The remaining 2 percentage points ($=$ ($\varepsilon - 1$) \cdot growth rate of the base) can be attributed to fiscal drag, as shown below.

$$\underbrace{4\%}_{\text{growth of wage tax}} = \underbrace{1\%}_{\text{constant tax ratio}} + \underbrace{2\% - 1\%}_{\text{decoupling}} + \underbrace{(2 - 1) \cdot 2\%}_{\text{fiscal drag}}$$

There are some peculiarities in the calculations for some of the revenue categories that shall be described shortly. Firstly, we can see a negative decoupling of the base of the **turnover tax** from GDP despite the fact that trend growth of private consumption is above trend growth of GDP during the reference period. This is because we include not only private consumption but also private housing investment and, contrary to the proceeding in the cyclical adjustment, parts of government consumption in the base. Taken together, these two components account for about one third of the turnover tax base. The trend growth of private housing investment and government consumption growth were both well below trend GDP growth.

Secondly, or **excise taxes** we determine the decoupling of the base from GDP using the difference between trend growth of *nominal* private consumption and trend nominal GDP growth. However, since excise taxes are mostly specific taxes, *real* private consumption seems more appropriate as base. We interpret the difference between nominal and real growth of private consumption as (negative) fiscal drag.

To calculate the fiscal drag in the case of **profit-related taxes** we use the same lag structure as we do for cyclical adjustment. The decoupling of the base from GDP is determined as the difference between the pattern which we would expect from the movement of the base (entrepreneurial income and investment income) given an elasticity of unity and taking into account the lag structure and the pattern which we would expect if tax revenue grew at the same pace as trend GDP growth.

The fact that turnover tax, wage tax and, above all, social contributions showed a considerably more unfavourable pattern than would have been expected given the changes in the macroeconomic bases, the usual sensitivities and the changes in laws and regulations, exerted a significant negative influence on government revenue (-0.6% of GDP throughout the 1997-2003 period). This is likely to be due in part to the fact that there was a certain decoupling from the base on account of tax evasion and usage of tax loopholes. As regards social contributions, an additional factor which does much to explain the phenomenon is that, owing to the option of leaving the statutory health insurance scheme from a certain gross salary on, a considerable number of insured persons has left the statutory health insurance scheme to join private health insurance plans¹⁵. The reduction of contributions of these insurees with high salaries is leaving a considerable dent in the revenue of the statutory health insurance plans. On the expenditure side, these leavers are having only a minor effect, since these are mostly younger, higher-earning people whose expenditure risk is relatively low. These departures are thus causing a marked deterioration in the structural financial situation of the statutory health insurance schemes.

The decoupling of revenue from profit-related taxes (decoupling from the base plus decoupling of the base from GDP) has, on balance, not affected the revenue ratio between 1997 and 2003. The previously discussed strong swings which caused massive fluctuations in the revenue ratio and which are interpreted as being temporary ultimately largely cancel one another out over time (see also Figure 1 in Box B).

The (modified) non-tax revenue went down slightly during the reporting period, which is *inter alia* attributable to Bundesbank profits being low recently, reflecting, in turn, the fall in interest rates as a mirror image to government interest expenditure.¹⁶

3.4. The severe forecast error in 2000

The previous chapters explained that, from today's perspective, public finances deteriorated distinctly in the 1997-2003 period, and listed reasons for this unfavourable pattern. When assessing fiscal policy, however, it should be noted that the general assessment of the status quo – including the structural situation – has changed significantly over time. It was generally assumed in 2000 that the favourable macroeconomic growth pattern would continue and that the cyclical situation was neutral and, for instance, that the level of profit-related taxes were approximately

¹⁵ At an average of nearly 200,000 insurees per year over the period 1997-2003.

¹⁶ In terms of actual cash flow, the pattern of Bundesbank profit is much more volatile than as defined in the national accounts, since in terms of actual cash inflow, an impact is made by considerable financial transactions (eg profit from the sale of foreign reserve assets).

€ billion	1997	1998	1999	2000	2001	2002	2003
National accounts	4.5	5.6	5.5	3.3	5.8	6.0	4.3
Actual cash flow	4.5	12.3	8.3	3.9	8.4	11.2	5.4

“normal”. It was not assumed at that time that three years of stagnation (2001-2003) would ultimately ensue. The trend GDP growth rate and the level for nominal trend GDP assumed at that time was consequently much higher than from today’s (ex-post) perspective.

This reassessment affected significantly the appraisal of the expenditure pattern, for example. In 2000 the trend growth of nominal GDP was calculated (using our HP filter approach) to be about 3¼% p.a. in the 1997-2003 period while from today’s vantage point it is estimated to be about one percentage point lower.¹⁷ Therefore, it was assumed in 2000 that some consolidation had already taken place on the expenditure side from 1997-2000, while from today’s perspective expenditure growth exceeds trend GDP growth. In the years 2001-2003 we now find that a considerable reduction of the cyclically adjusted expenditure ratio of ¾ percentage points has taken place. However, based on the growth expectation of 2000 the expected expenditure ratio reduction was seen as being more ambitious. Thus, it was only discovered ex-post that actual expenditure growth, up to 2000 and as projected in 2000 for the coming years, was much too high if the structural expenditure ratio were going to be reduced noticeably.

Compared to the assessment from the perspective of 2000, the cyclical deficit ratio in 2000 was revised upwards by about +¾ percentage points of GDP, ie the cyclical adjusted deficit situation in 2000 is now seen to be ¾% of GDP worse as compared to the assessment of 2000. With the method described in Box C we can also roughly estimate the negative impact of the lower than expected growth in the macroeconomic bases and the unfavourable labour market developments on the deficit. If the macroeconomic development that was expected in autumn 2000 had actually come to pass the tax receipts in 2003 would have been 1¾% of GDP higher. The impact on the unemployment expenditure amounts to approximately ¾ percent of GDP. This adds up to an impact on the deficit ratio of roughly 2½% percentage points.¹⁸

The budgetary effect of the forecasting error with respect to the general economic development was exacerbated, above all, by a misconception of the structural level of profit-related taxes (see Figure 1) and the failure to accurately foresee the extent of the decoupling of taxes and social contributions from the base.

¹⁷ These numbers are consistent with an HP filter with smoothing parameter $\lambda=30$ and $\lambda=100$.

¹⁸ We exclude the other branches of the social security system because social contributions rates would have been adjusted if the revenue or expenditure were affected by economic developments.

Box D. German stability programmes and the forecasts contained therein

A look on the German convergence/stability programmes since 1996 clearly reveal the huge discrepancies between expectations and outcome with respect to the overall economic and fiscal trends, particularly in light of post-2000 developments.¹⁹

Compared with the convergence/stability programmes of 1996 and 1998, the deficit ratio turned out better than expected in the years from 1998 to 2000, as is shown by Figure 4. This is attributable particularly to the fact that the growth of profit-related taxes clearly surpassed the forecast. Real GDP growth did on average not diverge fundamentally from the underlying assumptions contained in the stability programmes. Assumptions regarding nominal growth of tax-revenue-rich private consumption and total gross wages and salaries tended to match actual developments, either. By contrast, nominal GDP growth, at an annual average of 2.7%, was considerably lower than expected (4½% and 3¾% according to the stability programmes of 1996 and 1998 respectively). This reflected the unexpectedly sluggish rise in the GDP deflator (by an annual average of 0.5% as against 2% and 1¾% according to the stability programmes of 1996 and 1998 respectively).

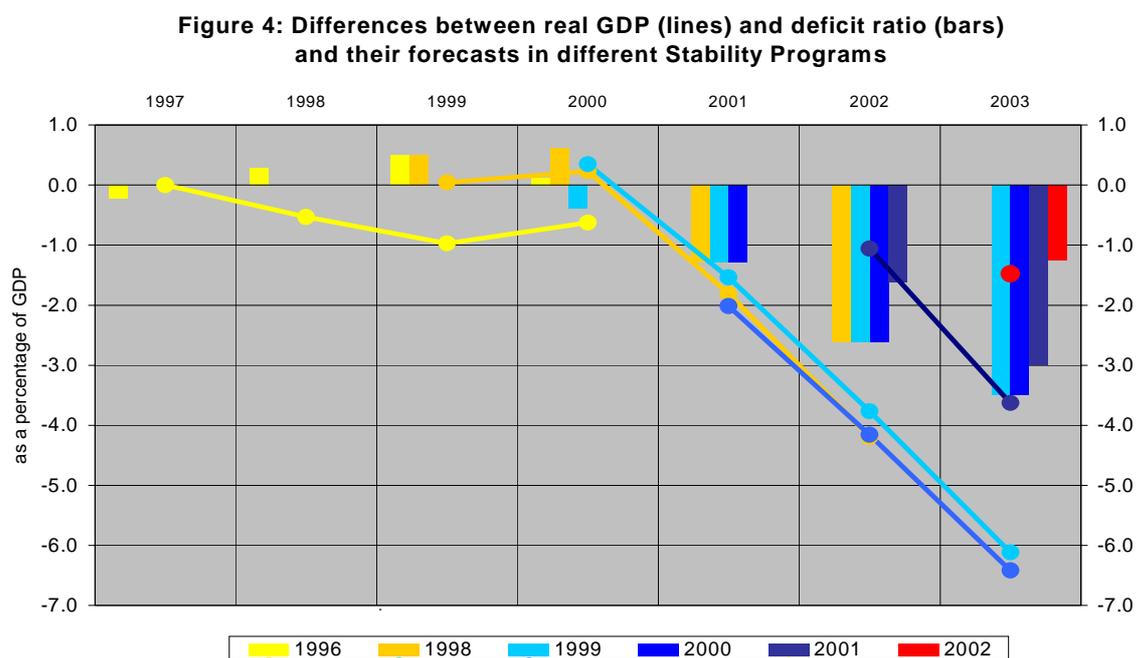
From 2001 to 2003, by contrast, the deficit ratios were much higher than announced in the stability programmes. The unexpectedly severe collapse in profit-related taxes and the unpredicted three-year period of stagnation were the key reasons. What also set this period apart from 1998-2000 was that real GDP growth rates were considerably lower, and the number of unemployed persons considerably higher, than the Federal Government had assumed. In that period, the GDP deflator likewise rose by less than predicted. Yet government forecasts of the overall economic development were still largely within the general estimation spectrum at that time.²⁰

As is suggested by Figure 4, apart from revisions in the assessment of the macroeconomic framework, a variety of other factors were instrumental in the revision of the deficit figures. Profit-related taxes fell more sharply and the growth of social contributions was significantly lower since 2000 than had been anticipated; this fall was also too sharp to be explained by macroeconomic developments (see Tables 1 and 2). On the other hand, there were additional efforts on the part of fiscal policymakers at budget consolidation, especially in 2002 and 2003. This was evidenced in particular by higher social contribution rates, a perceptible increase in indirect taxes and a postponing of the second stage of the income tax reform. Government spending (ignoring labour-market-related expenditure) also grew at a slower pace than had been estimated and announced in the stability programmes²¹.

¹⁹ The data in the stability programmes is rounded to ½ percentage points. Consequently, the evaluation undertaken here is necessarily fuzzy to a certain degree. The programmes evaluated here are from October 1996 (“1996”), January 1999 (“1998”), January 2000 (“1999”), October 2000 (“2000”), December 2001 (“2001”), and December 2002 (“2002”), information in brackets indicating the respective heading in Figure 4.

²⁰ The difference of the government forecast for 2000-2003 vis-à-vis the EU commission’s forecast is also only marginally. See also Rolf Strauch, Mark Hallerberg und Jürgen von Hagen, Budgetary forecasts in Europe – the track record of Stability and Convergence Programmes, ESCB Working paper series No. 307, 2004.

²¹ Nominal expenditure (excluding unemployment related expenditure) grew on average by 1.5% from 1997-2003.



4 Conclusion

The state of public finances as measured by the here applied criteria has deteriorated significantly since 1997. Structural deficits and the debt ratio have gone up considerably, and there is a vast need for fiscal consolidation – statutory national and international upper deficit limits have been largely surpassed last year. The major uncertainty of consumer and investors regarding the sustainability of fiscal policies and the foreseeable burdens which demographic trends will place on future budgets underscore the urgent need to take action.²²

Until 2000 the structural deterioration of the budgetary situation had been obscured by favourable temporary influences (cyclical upswing, profit-related taxes), and the deficit ratio fell significantly. From 2000 to 2003, however, these temporary influences reversed themselves and caused the deficit increase due to comprehensive tax relief measures in 2001 to accelerate. The deficit ratio continued its rise in 2002 and 2003 and exceeded the Maastricht Treaty's upper deficit limit of 3% of GDP, despite a fiscal policy orientation that was aimed at consolidation.

²² The analysis of this paper does not take into account that today's fiscal policy decisions might have a considerable impact on future budgets that does not appear in the current figures. By using generational accounting it is possible to consider this aspect. However, the results of generational accounting suggest also that the situation of public finances between 1997 and 2003 worsened, although considerable improvement in 2003 mitigated the deterioration in the previous years. See Deutsche Bundesbank, Public finances in crises – the causes and the need for action, March 2004, pp 15-38.

German fiscal policymakers may be “excused” in a sense since generally all forecasts had failed to predict the post-2000 sharp economic slump and the collapse in profit-related taxes; the present structural development and situation have ex post turned out to be much worse than expected from the perspective of three years ago. Moreover, the rising deficits (even in an ex-post view) were attributable in large part to trends that were not (or at least not directly) created by active fiscal policy measures (increase of old age spending, decoupling of social contributions and taxes from their base). On the whole, we do not subscribe to the idea that (except for 2001, the year in which the first stage of the tax reform took effect) the structural deterioration is a reflection of the explicit intentions of fiscal policy makers to loose the fiscal position.

However, it must be stated that not only was a structurally balanced budget not achieved in the period under review from today’s perspective, but, in fact, the target was also not reached in terms of the information and expectations held in each respective year. Had such a position been achieved in 2000 and had the government not decided to enlarge the structural deficits in connection with wide-ranging tax cuts in 2001, it would have been possible to avoid the violations of the 3% limit despite the unexpected souring of the economy and the other negative influences which were exerted during that period. Had structural reform been launched earlier, and a consistent fiscal policy strategy been pursued, it might have been possible to avoid major uncertainty among consumers and investors regarding the sustainability of fiscal policy and the damage done to the credibility of the Stability and Growth Pact.

On the whole, we believe that some lessons may be learned from the development of public finances in Germany in the past few years. When assessing cyclically adjusted (structural) budget balances, it must be noted that (structural) trends are determined not only by discretionary, active fiscal policy measures, but also to a large degree by other structural factors not based on recent decisions. Therefore, it is possible that, despite restrictive fiscal policy measures (tax increases, for instance), the structural budgetary position may deteriorate, because (independently of fiscal policy measures) eg the old age dependency ratio may go up or the central bank’s profit down.²³ The method applied in this paper provide a tool to analyse structural developments in greater detail.

Trends of macroeconomic variables and cyclically adjusted budget balances depend on the economic assessment at the time at which they are calculated. If macroeconomic forecasts are revised in the light of additional information or turn out to be wrong ex post, this can lead to sig-

²³ An example of the misunderstandings which may arise in this context may be seen in the discussion at the European level on whether Germany has complied with the recommendation of the ECOFIN to take consolidation measures amounting to 1% of GDP in 2003 and whether this assessment contradicts the development of the cyclical adjusted balance.

nificant revisions in the assessment of macroeconomic trends and cyclically adjusted figures. Since the revisions are due to the fact that the assessment of the trend and the deviation of the current situation from trend depend on the assessment of future and thus (by their nature uncertain) macroeconomic developments, they cannot be avoided. Every fiscal policy recommendation will be conditioned on the (unknown) future development and may therefore be revised ex post if the expectations (eg concerning GDP growth) turn out to be wrong. Hence, in our view cyclically adjusted budget figures are an important tool for policy analysis in the framework of the Stability and Growth Pact despite the possibility of later revisions.

The rules of the Stability and Growth Pact should be taken seriously. A structural budget position which is close to balance provides scope for allowing the automatic stabilisers to work and to correct, in a timely manner, potentially faulty assessments of the structural macroeconomic situation and the structural budgetary position. Prudent assumptions with respect to the future macroeconomic developments and to the impact of fiscal measures should underlie the Stability Programmes.

When judging the consistency of fiscal policy with the Stability and Growth Pact, a distinction should be made between a country that intentionally expands its structural deficit and a country where the growth of such a structural deficit is for the most part only discovered ex post. However, critical review is necessary to find out whether the underlying assumptions might potentially have been overoptimistic. A country whose intention was ex ante to loose its fiscal policy and to withdraw from a balanced budgetary position or even to exceed the 3% limit should face a higher risk of a sanction, than a country which is in principle willing to consolidate. However, this is already reflected within the current rules.

While the assessment of the intentions of fiscal policy may differ, in the end the required steps necessary to reestablish a sound budgetary position remain the same. It is the responsibility of the countries concerned to adhere to the Maastricht Treaty's upper deficit limit of 3%, in the absence of exceptional circumstances (and, in the event of a violation of the limit, take the necessary adjustment measures). A simple and transparent criterion, such as the 3% rule, must be the cornerstone of a powerful and reliable international budgetary rule.

Public Finance Development in Germany
General government, national accounts, ESCB methodology.

	1997	1998	1999	2000 ¹⁾	2001	2002	2003	97-03
in billion Euro								
Revenue	883	908	943	966	951	954	963	80
Taxes	438	459	490	512	488	486	491	52
Direct taxes	210	222	237	254	230	227	227	17
Indirect taxes	228	237	253	258	258	259	263	35
Social contributions	368	372	375	378	384	389	395	27
Sales	42	42	41	41	41	40	40	-2
Other revenues	34	35	36	35	38	39	37	3
Expenditure	934	951	973	989	1010	1028	1045	111
Compensation of employees	163	163	165	166	166	168	168	5
Intermediate consumption	72	74	76	78	81	84	85	13
Social payments	517	524	537	547	563	588	604	87
Transfers	374	379	388	394	405	425	435	61
Pension	227	234	241	249	256	266	272	45
Unemployment	57	55	55	51	53	59	62	5
Benefits in kind (mainly health)	142	145	148	153	158	163	168	26
Subsidies	40	42	42	41	40	37	36	-4
Interest	68	70	69	68	68	65	66	-2
Investment	36	36	38	37	36	34	31	-4
Capital transfers	23	27	27	30	36	35	37	13
Other expenditure	15	15	18	22	20	17	19	4
Balance	-51	-43	-29	-24	-59	-74	-82	-31
Central government	-30	-36	-31	-23	-28	-34	-38	-8
State government	-22	-14	-10	-7	-28	-31	-33	-11
Local government	0	4	5	5	0	-3	-4	-4
Debt								
	1142	1175	1210	1222	1233	1284	1366	224
as percentage of GDP								
Revenue	47.2	47.1	47.7	47.6	45.9	45.2	45.2	-1.9
Taxes	23.4	23.8	24.8	25.2	23.5	23.0	23.0	-0.4
Direct taxes	11.2	11.5	12.0	12.5	11.1	10.8	10.7	-0.5
Indirect taxes	12.2	12.3	12.8	12.7	12.5	12.3	12.4	0.2
Social contributions	19.7	19.3	19.0	18.6	18.5	18.4	18.6	-1.1
Sales	2.3	2.2	2.1	2.0	2.0	1.9	1.9	-0.4
Other revenues	1.8	1.8	1.8	1.7	1.9	1.8	1.7	-0.1
Expenditure	49.9	49.3	49.2	48.7	48.7	48.7	49.1	-0.8
Compensation of employees	8.7	8.5	8.4	8.2	8.0	7.9	7.9	-0.8
Intermediate consumption	3.8	3.8	3.9	3.8	3.9	4.0	4.0	0.1
Social payments	27.6	27.2	27.1	26.9	27.2	27.9	28.4	0.7
Transfers	20.0	19.7	19.6	19.4	19.5	20.1	20.4	0.4
Pension	12.1	12.2	12.2	12.2	12.4	12.6	12.8	0.7
Unemployment	3.1	2.9	2.8	2.5	2.6	2.8	2.9	-0.1
Benefits in kind (mainly health)	7.6	7.5	7.5	7.5	7.6	7.7	7.9	0.3
Subsidies	2.1	2.2	2.1	2.0	1.9	1.8	1.7	-0.5
Interest	3.6	3.6	3.5	3.4	3.3	3.1	3.1	-0.5
Investment	1.9	1.9	1.9	1.8	1.7	1.6	1.5	-0.4
Capital transfers	1.2	1.4	1.4	1.5	1.7	1.6	1.7	0.5
Other expenditure	0.8	0.8	0.9	1.1	0.9	0.8	0.9	0.1
Balance	-2.7	-2.2	-1.5	-1.2	-2.8	-3.5	-3.9	-1.1
Central government	-1.6	-1.8	-1.5	-1.1	-1.4	-1.6	-1.8	-0.2
State government	-1.2	-0.7	-0.5	-0.3	-1.3	-1.5	-1.6	-0.4
Local government	0.0	0.2	0.3	0.3	0.0	-0.1	-0.2	-0.2
Social security funds	0.1	0.1	0.3	0.0	-0.2	-0.3	-0.3	-0.4
Debt								
	61.0	60.9	61.2	60.2	59.5	60.8	64.2	3.2
growth rates in percent								
Revenue	1.3	2.8	3.9	2.4	-1.5	0.3	0.9	1.5
Taxes	0.8	4.7	6.9	4.3	-4.6	-0.5	0.9	1.9
Direct taxes	-0.3	5.8	6.8	7.0	-9.5	-1.2	0.0	1.3
Indirect taxes	1.9	3.7	7.0	1.8	0.2	0.2	1.7	2.4
Social contributions	3.4	1.0	0.9	0.7	1.4	1.4	1.7	1.2
Sales	-2.1	-1.3	-1.9	-0.6	-0.3	-0.5	-0.6	-0.9
Other revenues	-7.9	3.3	2.9	-4.0	10.2	0.4	-4.7	1.2
Expenditure	0.0	1.8	2.3	1.7	2.1	1.8	1.6	1.9
Compensation of employees	-0.2	0.1	1.3	0.2	-0.1	1.3	0.3	0.5
Intermediate consumption	-1.7	2.8	3.4	2.4	4.0	4.1	0.3	2.8
Social payments	1.5	1.4	2.5	1.9	3.0	4.4	2.6	2.6
Transfers	2.3	1.3	2.5	1.4	2.8	4.9	2.5	2.5
Pension	3.1	3.3	2.8	3.1	3.2	3.6	2.6	3.1
Unemployment	3.1	-3.9	-0.3	-6.3	3.7	10.5	5.8	1.4
Benefits in kind (mainly health)	-0.4	1.7	2.5	3.0	3.5	3.1	3.1	2.8
Subsidies	-6.6	3.7	0.8	-2.5	-1.2	-8.1	-3.6	-1.9
Interest	1.1	2.4	-1.3	-0.7	-1.0	-3.7	1.5	-0.5
Investment	-9.1	0.7	5.8	-2.2	-3.0	-4.3	-9.4	-2.2
Capital transfers	-2.0	17.5	-0.7	10.5	20.0	-4.0	5.9	7.8
Other expenditure	-0.3	1.1	18.7	22.6	-12.2	-14.4	12.1	3.7
GDP, real	1.4	2.0	2.0	2.9	0.8	0.2	-0.1	1.3
GDP, nominal	2.1	3.1	2.6	2.6	2.2	1.8	0.9	2.2
Private consumption, nominal	2.6	2.9	4.0	3.5	3.0	0.3	0.9	2.4
Gross wages and salaries	-0.2	2.1	3.0	3.4	2.2	0.7	-0.1	1.9
Employees	-0.2	1.1	1.2	1.8	0.4	-0.6	-1.1	0.5
Unemployed (ILO) in mio.	3787	3596	3334	3067	3111	3441	3848	

1) 2000 excluding UMTS licence receipts (2.5% of GDP).