

# Germany after Qualification for EMU: A Disaggregated Approach to the Analysis of Structural Public Finance Developments

By Jana Kremer and Karsten Wendorff\*

**Summary:** This paper analyses the structural developments underlying the evolution of public finances in Germany after qualification for EMU. For this purpose, we extend a disaggregated approach to cyclical adjustment in a way that allows us *inter alia* to distinguish the impact of discretionary fiscal policy measures from other structural influences. Furthermore, we assess the relevance of the severe forecasting error with respect to macroeconomic developments after 2000 for deficit developments. Our analysis shows that positive transitory influences covered a structural deterioration between 1997 and 2000, while in the last two years negative transitory influences offset a slight improvement in the structural deficit ratio. A significant part of the structural worsening between 1997 and 2003 is not directly linked to recent fiscal policy decisions. Overall, the deterioration was mainly due to weak revenue side developments, while the expenditure side did contribute slightly to consolidation.

**Zusammenfassung:** In diesem Aufsatz wird die strukturelle Entwicklung der öffentlichen Finanzen in Deutschland nach der Qualifikation zur Währungsunion analysiert. Um die verschiedenen Einflüsse auf die Entwicklung der öffentlichen Finanzen zu unterscheiden und einzuordnen, wird eine erweiterte Version eines disaggregierten Ansatzes zur Konjunkturbereinigung von Haushaltssalden verwandt. Wir untersuchen außerdem die Bedeutung der erheblichen Fehleinschätzungen bezüglich der gesamtwirtschaftlichen Entwicklung in den vergangenen Jahren für die Defizitentwicklung. Die Analyse zeigt, dass die strukturelle Verschlechterung des Finanzierungssaldos in den Jahren 1997 bis 2000 zunächst von positiven, aber vorübergehenden Einflüssen überdeckt worden ist. In den letzten beiden Jahren hat sich die strukturelle Lage leicht verbessert. Allerdings standen dieser Entwicklung negative temporäre Faktoren entgegen. Über den gesamten Zeitraum 1997 bis 2003 erhöhte sich die strukturelle Defizitquote, was jedoch zu einem bedeutenden Teil nicht direkt durch finanzpolitische Entscheidungen aus diesem Zeitraum bedingt war. Insgesamt war die Erhöhung hauptsächlich auf die schwache Entwicklung der Einnahmenseite zurückzuführen, während die Ausgabenseite eher entlastend wirkte.

## 1 Introduction

In 1997 Germany qualified for participation in 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 economic development and for public finances was regarded at the time as favourable. This proved, however, to be a serious miscalculation. The economy performed disappoint-

\* Jana Kremer and Karsten Wendorff work as economists at the Deutsche Bundesbank. The views expressed in this paper represent the authors' personal opinions and do not necessarily reflect the views of the Deutsche Bundesbank. E-Mail: [jana.kremer@bundesbank.de](mailto:jana.kremer@bundesbank.de), [karsten.wendorff@bundesbank.de](mailto:karsten.wendorff@bundesbank.de)

ingly, 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 at the ESCB and the Bundesbank. However, the method has not only been used – in a traditional way – 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.

## 2 The Analytical Framework

The primary aim of this analysis is to examine the cyclically adjusted government revenue, expenditure and deficit ratios. It is based on the national accounts results according to ESA '95 as presented in the ESCB's and Deutsche Bundesbank's Monthly Report. In 2000, one-off receipts from the auction of UMTS licences (2.5% of GDP, reflected in the national accounts as negative expenditure) were removed.<sup>1</sup>

### 2.1 Cyclical Adjustment

For cyclical adjustment the disaggregated method developed in the ESCB is used. In this approach budgetary items are 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. In contrast to the ESCB's method, this paper uses a "nominal approach", i.e. the nominal macroeconomic bases, and not the real macroeconomic bases, of government revenue and expenditure categories are detrended. This approach seems to be particularly advantageous in the German context since budget planning in Germany is focused on nominal growth.<sup>2</sup>

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<sup>3</sup> (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 (num-

<sup>1</sup> National accounts data as of spring 2004.

<sup>2</sup> For an extensive description of the ESCB's cyclical adjustment procedure and, in particular, a discussion of the choice of  $\lambda$  see C. Bouthevillain, 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. Frankfurt a. M. The reasoning applied there for the detrending of real macroeconomic time series can be carried over to the case of nominal time series. For an application of the nominal approach see Matthias Mohr (2001): *Ein disaggregierter Ansatz zur Berechnung konjunkturbereinigter Budgetsalden in Deutschland: Methoden und Ergebnisse*. Discussion Paper 13/01. Frankfurt a. M., Deutsche Bundesbank. To mitigate the end-point problem the macroeconomic series are extended by forecasts beyond the horizon of the analysis.

<sup>3</sup> Corporation tax, non-assessed tax on earnings, local business tax, interest withholding tax, assessed income tax.

ber 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). Since the pension insurance scheme was, in principle, bound by law to balance its budget until 2003 it is assumed that a “cyclical adaptation” of contribution rates ensures that there is no cyclical deficit in the pension insurance scheme.

The value of  $\lambda$  determines the smoothness of the implied trend with higher values leading to a smoother trend and, on average, to higher absolute values for the trend deviation. The value  $\lambda = 30$  is compatible with a cycle length of eight years and lies in the range of values that are proposed in the literature for yearly data. Since the cycle length corresponds to the period over which the cyclical components of the budget balance, it is in our view in particular suited for the analysis of medium-term fiscal developments. However, it is sometimes argued that it might lead to an underestimation of cyclical influences, especially in a period of prolonged weak growth as over the past few years in Germany. Therefore, we made a sensitivity analysis with  $\lambda = 100$  – a value that is relatively common<sup>4</sup> and that can be seen as an upper limit for the values typically applied. In this case the estimated growth rate of trend GDP is somewhat higher. While this leads to a more positive assessment of the structural developments on the expenditure side, the effects on the analysis of the revenue side are insignificant. Overall, the assessment of the structural development would, therefore, be somewhat more favourable but the main results of the analysis remain unchanged.

## 2.2 Transitory Influences on Profit-Related Taxes

“Profit-related” taxes adjusted for cyclical influences and changes in tax legislation<sup>5</sup> are subject to sharp fluctuations (see Figure 1). These “swings” go a long way towards explaining the post-1997 pattern of government deficits. In our view they reflect, for the most part, not structural developments but should be regarded as transitory. In addition to cyclical effects, we therefore also calculate transitory deviations of “profit-related” taxes adjusted for cyclical influences and changes in tax legislation from their trend. To do so, we use the 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.

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 base 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.

## 2.3 Other Transitory Influences

Besides cyclical influences and transitory influences on profit-related taxes other exceptional transitory influences on public finances are considered. These are clearly identifiable

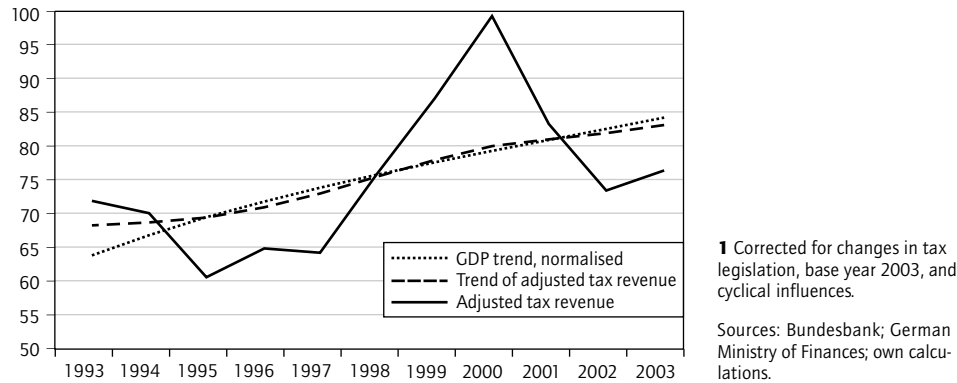
<sup>4</sup> See for example European Commission (2002): The Measurement of Cyclically-Adjusted Budget Balances. *European Economy*, No. 3, 47–48.

<sup>5</sup> 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 was proposed.

Figure 1

**Profit-Related Taxes and their Trend<sup>1</sup>**

In billion Euro



major revenues or expenditures which temporarily impact on government finances (e.g. the one-off bailout of Bankgesellschaft Berlin, the one-off payment of indemnification for wartime forced labour). The quantitative impact of this last category is relatively minor; it accounts for less than 0.1% of GDP in a particular year.

## 2.4 Expenditure Development

On the expenditure, side changes may occur 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 an important role (e.g. an increase in pension payments owing to an ageing society). In our analysis, we study developments in 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. This will be the case if expenditure growth can be held below trend GDP growth.

## 2.5 Revenue Development

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. Revenue side developments are largely determined by revenue from taxes and social contributions (which make up 92% of government revenue). Additionally, the impact of non-tax revenue on the revenue ratio is examined.

When explaining changes in the cyclically adjusted ratio of tax revenue and social contributions to GDP we distinguish between changes caused by new legislation (tax rates etc.), changes caused by “fiscal drag”, changes caused by deviations of the trend of the macro-

economic base from trend GDP<sup>6</sup> and changes caused by other structural factors. The latter three factors are derived from the development of the macroeconomic bases in an approach analogous to the disaggregated method of cyclical adjustment. More specifically, we assume a constant elasticity of a revenue category with respect to its base. Therefore, if, for instance, the base rises faster than nominal GDP, or if the elasticity is greater than unity due to progressive taxation, the revenue ratio will rise even without recent policy actions. 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*. In the calculations for this paper, we have excluded cyclical influences. Basically, what we did was to replace the macro base and GDP with the respective trend variables.<sup>7</sup>

## 2.6 The Effect of Outsourcing

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 is particularly affected by outsourcing, is deducted from both revenue and expenditure.

## 3 Development of Government Finances from 1997 to 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. If transitory 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 transitory influences, the structural deficit ratio did not decrease, but rather actually went up by  $\frac{3}{4}$  percentage points.

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 ( $-1\frac{1}{2}\%$  of GDP) took place from 2000 to 2003. The wither-

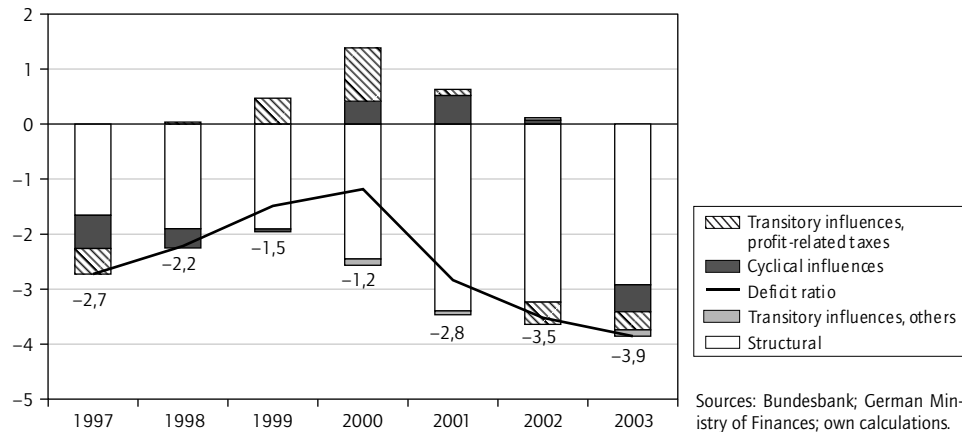
<sup>6</sup> The disaggregated approach makes it possible to capture fluctuations of individual macroeconomic bases of government revenue and expenditure separately and is not directly dependent on GDP. This means that, for instance, staggered fluctuations in individual bases in the business cycle are taken into account. However, if the trend growth of a base (e.g. 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.

<sup>7</sup> Further information on the procedure is available from the authors.

Figure 2

**Development of the Budget Balance**

In % of GDP



ing away of the positive transitory 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 transitory factors contributed 2¼% of GDP to the rise in the deficit.

### 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 Table 1). If, however, the (statistical) outsourcing of fee budgets (e.g. 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 standards.<sup>8</sup> However, the trend growth of nominal GDP, which basically defines the scope for a deficit-neutral increase in expenditure, was only slightly higher. This means that consolidation progress on the expenditure side (taking into account outsourcing) was ultimately very limited.

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 “budgetary management”<sup>9</sup> was visibly restrictive, contributing a total of 1.1% of GDP to consolidation. A

<sup>8</sup> Average nominal expenditure growth amounted only to almost 2% from 1997 to 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 7½% between 1970 and 1991 and 4% between 1991 and 1997.

<sup>9</sup> “Budgetary management” comprises 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.

Table 1

**Pattern of Cyclically Adjusted Budget Components<sup>1</sup>**

In % of trend GDP

	1998	1999	2000	2001	2002	2003	1997–2003
<b>Balance</b>	<b>-1.9</b>	<b>-1.4</b>	<b>-1.6</b>	<b>-3.4</b>	<b>-3.6</b>	<b>-3.3</b>	<b>-1.2</b>
<b>Expenditure</b>	<b>49.0</b>	<b>49.1</b>	<b>49.2</b>	<b>49.1</b>	<b>48.8</b>	<b>48.4</b>	<b>-0.6</b>
Change in percentage points	-0.1	0.1	0.1	0.0	-0.3	-0.4	-0.6
Expenditure, modified <sup>2</sup>	46.8	47.0	47.1	47.2	46.9	46.6	-0.3
Change in percentage points	0.0	0.2	0.1	0.0	-0.3	-0.3	-0.3
Of which							
"Budgetary Management" <sup>3</sup>	-0.2	0.0	-0.3	-0.2	-0.2	-0.5	-1.5
Modified <sup>2</sup>	-0.1	0.0	-0.2	-0.2	-0.2	-0.4	-1.1
Old-age pension <sup>4</sup>	0.2	0.4	0.2	0.1	0.2	0.0	1.0
Health care <sup>5</sup>	-0.1	0.0	0.0	0.1	0.0	0.0	0.2
Labour market <sup>6</sup>	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
Primary expenditure ratio	45.4	45.6	45.8	45.9	45.7	45.4	-0.1
<b>Revenue</b>	<b>47.1</b>	<b>47.7</b>	<b>47.6</b>	<b>45.8</b>	<b>45.2</b>	<b>45.1</b>	<b>-1.9</b>
Change in percentage points	0.1	0.5	-0.1	-1.8	-0.5	-0.1	-1.9
Revenue, modified <sup>2</sup>	45.0	45.6	45.5	43.8	43.3	43.2	-1.5
Change in percentage points	0.2	0.6	-0.1	-1.7	-0.5	-0.1	-1.5
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 <sup>7</sup>	0.5	0.4	0.5	-0.9	-0.5	0.0	0.0
Decoupling from tax base, others <sup>8</sup>	-0.1	-0.1	-0.2	0.0	-0.1	-0.1	-0.6
Decoupling of tax base from GDP, others <sup>8</sup>	-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
Modified <sup>2</sup>	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.1

**1** For further details on the calculation of cyclical adjustment, fiscal drag and decoupling see Section 2.

**2** Modified by subtracting sales from non tax-related revenues and "Budgetary Management".

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

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

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

**6** Expenditure of the Federal Labour Office and on unemployment assistance.

**7** Comprises the effect of the decoupling from the tax base and the decoupling of the tax base from GDP.

**8** VAT, wage tax and social security contributions.

Sources: Bundesbank; German Ministry of Finances; own calculations.

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 Offices (Post Office, Telekom and Postbank) was largely assumed by the Federal Government, which increased government expenditure by around 0.3% of GDP per annum. Moreover, capital transfers by govern-

ment, 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 Euro 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.

### 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 of the pension insurance). The changes in law that had influence on social contributions and, in particular, social contribution rates<sup>10</sup> 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.

Given progressive taxation, the observation period saw considerable “fiscal drag” (a total of +0.7% of GDP<sup>11</sup>), though it was much weaker than in earlier years in the light of low nominal 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.<sup>12</sup> The consequence of the latter was for taxes and social contributions to go down in structural terms during the re-

**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 Section 2.

**11** This is offset here against the negative fiscal drag, which is the result of the excise taxes, which are designed mostly as specific taxes.

**12** 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.



porting period in terms of GDP, thus causing a structural decrease in the revenue ratio and a structural increase in deficits (−1.0% of GDP).

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 between 1997 and 2003). 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, a 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 left the statutory health insurance scheme to join private health insurance plans (an average of nearly 200,000 insurees per year between 1997 and 2003). 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) did not, on balance, affect 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 transitory ultimately largely cancel one another out over time (see also Figure 1).

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 of government interest expenditure.

### 3.4 The Severe Forecast Error in 2000

The previous sections 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 was approximately “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 perspective.

This reassessment significantly affected the appraisal of the expenditure pattern. In 2000 trend growth of nominal GDP was calculated to be about 3¼% p.a. while from today's perspective it is estimated to be about 1 percentage point lower.<sup>13</sup> Therefore, it was assumed

**13** These numbers are consistent with the HP filter with smoothing parameter  $\lambda = 30$  and  $\lambda = 100$ .

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 see a considerable reduction of the cyclically adjusted expenditure ratio ( $\frac{3}{4}$  percentage points). 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 in 2000, the cyclical deficit ratio in 2000 was revised upwards by about  $+\frac{3}{4}$  percentage points, i.e. the cyclically adjusted deficit situation in 2000 is now seen to be  $\frac{3}{4}\%$  of GDP worse. With the method described in Section 2 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  $1\frac{3}{4}\%$  of GDP higher. The impact on the unemployment expenditure amounts to approximately  $\frac{3}{4}\%$  of GDP.<sup>14</sup>

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.

### 3.5 German Stability Programmes and the Forecasts Contained Therein

A look at the German convergence/stability programmes since 1996 reveals the huge discrepancies between expectations and outcome with respect to the overall economic and fiscal trends, particularly in light of post-2000 developments.<sup>15</sup>

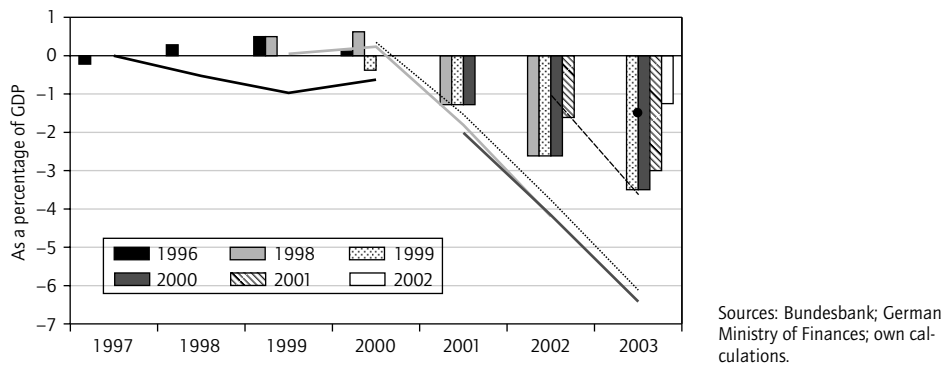
Compared with the convergence/stability programmes of 1996 and 1998, the deficit ratio turned out better than expected in the years from 1998 to 2000 (see Figure 3). This is attributable particularly to the fact that the growth of profit-related taxes clearly surpassed the forecast. Real GDP growth, on average, did 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 as well. By contrast, nominal GDP growth, at an annual average of 2.7%, was considerably lower than expected ( $4\frac{1}{2}\%$  and  $3\frac{3}{4}\%$  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  $1\frac{3}{4}\%$  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.

<sup>14</sup> We exclude the other branches of the social security system because social contributions rates would have been adjusted if the revenue or expenditure had been affected by economic developments.

<sup>15</sup> The data in the stability programmes is rounded to  $\frac{1}{2}$  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 indicates the respective heading in Figure 3.

Figure 3

**Differences between Real GDP (Lines) and Deficit Ratio (Bars) and their Forecasts in Different Stability Programmes**  
In % of GDP



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.<sup>16</sup>

As is suggested by Figure 3, 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 Table 1). 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 programmes.

#### 4 Conclusion

The state of public finances in Germany as measured by the criteria applied here 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 were largely surpassed last year. The major uncertainty of consumers and investors regarding the sustainability of fiscal policies and the foreseeable burdens

<sup>16</sup> The difference of the government forecast for 2000–2003 vis-a-vis the EU commission's forecast is also only marginally. See also Rolf Strauch, Mark Hallerberg und Jürgen von Hagen (2004): *Budgetary Forecasts in Europe – The Track Record of Stability and Convergence Programmes*. ESCB Working Paper Series No. 307. Frankfurt a. M.

which demographic trends will place on future budgets underscore the urgent need to take action.

An assessment of transitory influences is crucial for understanding of evolution of public finances in Germany. As we have argued, not only cyclical influences but also the distinct fluctuations in profit-related taxes must be taken into account. The main methodological contribution of this paper is to provide a tool for a relatively disaggregated analysis of public finances. In particular, it allows disentangle the impact of discretionary fiscal policy measures from structural developments that are unrelated to recent fiscal policy decisions.

Applying this method to the German case, we have shown that apart from discretionary fiscal policy measures, in particular the uncompensated income tax cut in 2001, trends were to a large extent determined by structural developments that are unrelated to recent active decisions. Most notable in this regard were the rise in the cyclically adjusted ratio of old-age related expenditure to GDP and the decoupling of tax receipts and social contributions from their macro bases. We find that the structural situation of public finances in Germany deteriorated considerably between 1997 and 2003. This deterioration began as early as 1998 but was obscured until 2000 by the favourable economy and other transitory influences. On the other hand, the rise in deficits in the years 2002 and 2003 was due to cyclical and other transitory factors while the structural position improved slightly over the last two years. Overall, the structural deterioration from 1997 to 2003 in Germany was due to revenue-side developments; by contrast, the level of the government expenditure ratio (adjusted for outsourcing activities) decreased somewhat.

The method employed in this paper also allows us to assess the impact of the significant revisions in the macro variables after 2000 on the budget balance. Most forecasters failed to predict the post-2000 sharp economic slump and the collapse in profit-related taxes; the structural development and the present situation have *ex post* turned out to be much worse than expected from the perspective of three years ago. However, it must be mentioned 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.

Our analysis, which is based on cyclically adjusted figures (and, thus on trends of macroeconomic variables), depends on the economic assessment at the time of the analysis. If macroeconomic forecasts are revised in the light of additional information, this can lead to significant 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 trend deviation 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 future development and may therefore be revised *ex post* if the expectations (e.g. 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.

As Germany's experience over the past few years has shown, the rules of the Stability and Growth Pact should be taken seriously. A structural budget position which is close to balance provides scope for the automatic stabilisers to work and allows to correct, in a timely manner, potentially faulty assessments of the structural macroeconomic situation and the structural budgetary position without breaching the Maastricht deficit limit. Additionally, prudent assumptions with respect to the future macroeconomic developments and the impact of fiscal measures should underlie the Stability Programmes.

Given the uncertainty of macroeconomic and other structural developments, a distinction should be made between a country whose intention was *ex ante* to deviate from the rules and a country which is in principle willing to consolidate when judging the consistency of fiscal policy with the Maastricht Treaty and Stability and Growth Pact. That is, in principle, already the case with the current rules. However, a critical assessment of the underlying assumptions is required to make sure that they are not overoptimistic. While the assessment of the intentions of fiscal policy may differ, the steps necessary to reestablish a sound budgetary position remain the same. Finally, it is the responsibility of the national governments to adhere to the fiscal rules of the EU and the EMU.