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A disaggregated framework for the analysis of structural developments in public finances

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EUROPEAN CENTRAL BANK

WORKING PAPER SERIES

NO. 579 / JANUARY 2006

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**A DISAGGREGATED
FRAMEWORK FOR
THE ANALYSIS OF
STRUCTURAL
DEVELOPMENTS IN
PUBLIC FINANCES**

by Jana Kremer,
Cláudia Rodrigues Braz,
Teunis Brosens,
Geert Langenus,
Sandro Momigliano
and Mikko Spolander





EUROPEAN CENTRAL BANK



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WORKING PAPER SERIES

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A DISAGGREGATED FRAMEWORK FOR THE ANALYSIS OF STRUCTURAL DEVELOPMENTS IN PUBLIC FINANCES¹

by Jana Kremer²,
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Abstract

In this paper, we present a disaggregated framework for the analysis of past and projected structural developments in the most relevant revenue and expenditure categories and the fiscal balance. The framework, in particular, distinguishes between the effects of discretionary fiscal policy and of macroeconomic and other developments and is sufficiently standardised to be used in multi-country studies.

Here, it is applied to Belgium, Finland, Germany, Italy, the Netherlands and Portugal over the period 1998 to 2004. During this period the structural primary balance ratio clearly worsened in all countries except Finland. In Belgium, Italy and the Netherlands, both revenue and expenditure contributed to the deterioration of the structural primary balance. In Germany the large deterioration in revenue was partially offset by the decline in the structural primary expenditure ratio, while the opposite was true for Portugal. The analysis highlights the various factors that contributed to these developments.

Keywords: Structural budget balance, fiscal forecasting and monitoring, fiscal indicators

JEL classification: H20, H50, H60, E69

Non-technical summary

Public finances are influenced by a variety of factors related to the economic environment, the legal and institutional setting and policy decisions. The number and heterogeneity of these factors, coupled with the lack, in some cases, of standardised criteria to assess their effects, often reduce the transparency of the analysis of fiscal developments and hamper country comparisons. These problems are particularly relevant when individual components of revenue and expenditure are examined. Moreover, temporary influences on public finances significantly modify the path of fiscal variables and, if not properly taken into account, risk obscuring the underlying developments.

In this paper we present an integrated framework in which the various factors can be distinguished and the policy effects can be isolated. The framework is sufficiently standardised to be used in a multi-country analysis of public finance developments and allows for a detailed analysis of both past and projected developments. It aims at 1) identifying the structural path of the general government balance and the main expenditure and revenue categories, defined by excluding the transitory effects of the economic cycle and the temporary measures taken by governments, and 2) examining the impact of a few important factors, common to all countries, on the structural development of the fiscal aggregates and the fiscal balance.

On the revenue side, direct and indirect taxes, social contributions and non-tax-related revenue are distinguished. Changes in structural revenue ratios of taxes and social contributions are attributed to the following factors: (i) the fiscal drag, (ii) the decoupling of the tax base from GDP, (iii) discretionary fiscal policy measures of a permanent nature and (iv) residual developments. The first two factors show the impact of macroeconomic developments. The third factor identifies the impact of fiscal policy. The residual captures the effects of other, mostly country-specific factors that need to be explained on a case-by-case basis.

On the expenditure side, changes in the structural expenditure ratio are split into the contribution of interest payments, social payments, subsidies, compensation of public employees, intermediate consumption, government investment and an aggregate of other categories. Additional information is provided concerning changes in the number of public employees, health expenditure, old-age pensions, unemployment benefits and social transfers in kind. The method therefore represents a first step towards identifying the main factors affecting the structural expenditure ratio and quantifying their impact on the evolution of the fiscal balance.

The analysis is applied to six countries – Belgium, Finland, Germany, Italy, the Netherlands and Portugal, the home countries of the authors – over the period from 1998 to 2004, i.e. in the period which followed the year relevant for the qualification for EMU and in which public finances deteriorated significantly in most of the considered countries. As is illustrated for the case of Belgium, the approach also helps to increase the transparency of fiscal forecasts. Overall, the collection of country studies demonstrates that the framework provides a clear structure yet is also flexible enough to be applied in a multi-country setting. It can be put to use in the analysis and monitoring of past and projected developments in public finances. Furthermore, it allows for a continuous evaluation of forecasting tools.

As the analysis shows, the primary budget balance ratios worsened in structural terms in almost all of the six countries, even though the unadjusted budget balances do not display a common trend over the 1998-2004 period. The exception is Finland. Here, a significant reduction of the fiscal burden was more than compensated for on the expenditure side. The fall in the structural primary expenditure ratio was supported by the strong trend GDP growth. Also in Germany, both the structural revenue and primary expenditure ratios declined. Expenditure-side consolidation in the later years of the period was, however, not strong enough to offset the overall increase, in particular, in the social payments ratio and several adverse revenue-side developments. In the other countries, the structural primary expenditure ratios rose over the reporting period. Increases in the structural ratio of social payments to GDP played a role in Belgium, Italy and Portugal. Here, old-age and health-care-related expenditure were particularly relevant. Furthermore, compensation of employees increased as a percentage of trend GDP in Belgium, the Netherlands and Portugal. Only in Portugal was the deterioration on the expenditure side partly offset by a rising structural revenue ratio. It has to be noted, however, that the increase was, *inter alia*, related to public sector developments that are also reflected on the expenditure side. In Belgium, Italy and the Netherlands, the structural revenue ratio decreased. This was partly attributable to cuts in taxes and social contribution rates. However, other factors, too, contributed to the fall. For example, in the Netherlands and Italy, direct taxes payable by corporations adjusted for legislation changes grew, overall, significantly more slowly than trend GDP. In Belgium, in particular, the low trend growth in private sector wage income relative to GDP had a negative influence on the structural ratios of direct taxes payable by households and social contributions to GDP.

1. Introduction and overview

Public finances are influenced by a variety of factors related to the economic environment, the legal and institutional setting and policy decisions. The number and heterogeneity of these factors, coupled with the lack, in some cases, of standardised criteria to assess their effects, often reduce the transparency of the analysis of fiscal developments and hamper country comparisons. These problems are particularly relevant when individual components of revenue and expenditure are examined. Moreover, temporary influences on public finances significantly modify the path of fiscal variables and, if not properly taken into account, risk obscuring the underlying developments.

In order to enhance the transparency and effectiveness of economic analysis in this domain, there is a clear need to distinguish the factors that affect public finances in broad categories and apply, whenever possible, standardised methods to evaluate their impact. In particular, it is important to separate the effects of policy decisions from those of other factors and to exclude the effects of transitory elements, such as the impact of the economic cycle and temporary measures.

Starting at least from the fifties (Brown, 1956), a vast number of studies concerned with fiscal policies have corrected fiscal balances for the effects of fluctuations in economic activity. Many institutions – the European Commission, the IMF and the OECD among them – now regularly produce indicators of cyclically adjusted budget balances. The issue of discretionary measures with a temporary impact on the budget has come to the fore more recently, largely in the European context. In European Commission (2004) and in Koen and van den Noord (2005) it is shown that the effects of one-off measures have been substantial and persistent in some European countries in the last years. Recent stability and convergence programmes submitted by the European member states indicate that the resort to one-off measures continues to be substantial.

The literature shows that many factors, of a temporary and more permanent nature, may influence the development of public finances, together with government budgetary actions. What seems to be lacking is an integrated framework in which the various factors can be distinguished and the policy effects can be isolated. This paper endeavours to launch the process of filling this gap by proposing a framework of analysis that aims at 1) identifying the structural path of the general government balance and the main expenditure and revenue categories, net of their transitory component, and 2) examining the impact of a few important factors, common to all countries, on the structural development of the fiscal aggregates and the fiscal balance.² The framework is sufficiently standardised to be used in a multi-country analysis of public finance developments. It allows for a detailed analysis of both past and projected developments.

The framework can be applied to nominal government budget balances but also allows adjustment for transitory factors. Here, we focus on “structural” developments,³ defined as

² See Kremer and Wendorff (2004) for an application of a slightly different version of the method.

³ For a discussion of the concept of structural budget balances and its possible uses see, e.g. Boije (2004).

changes in the ratio of each individual budgetary category with respect to nominal trend GDP excluding the transitory effects of the economic cycle and the temporary measures taken by governments. Cyclical effects and temporary measures are usually the most important transitory factors.⁴ However, it should be borne in mind that the proposed adjustment does not capture all temporary influences on public finances. For example, the development in asset prices had significant transitory effects on budget balances in recent years.⁵ Since a number of problems make a precise assessment difficult even at the national level (frequent changes in legislation, implicit lags in tax rules), a standardised treatment is not proposed here. The assessment of cyclical effects on each budgetary category is based on the methodology developed within the European System of Central Banks (ESCB).⁶ Contrary to most other cyclical adjustment methods that focus on the aggregate output gap, i.e. the deviation of output from its potential level,⁷ it also corrects budgetary outcomes for the impact of cyclical fluctuations in the composition of aggregate demand and national income. Moreover, the ESCB approach is applied to individual revenue and expenditure categories – a prerequisite for the disaggregated analysis proposed here.

On the revenue side, a distinction is made between direct and indirect taxes, social contributions and non-tax-related revenue. Changes in structural revenue ratios of taxes and social contributions are attributed to the following factors: (i) the fiscal drag, (ii) the decoupling of the tax base from GDP, (iii) discretionary fiscal policy measures of a permanent nature and (iv) residual developments. The first two factors show the impact of macroeconomic developments. The third factor identifies the impact of fiscal policy. The residual captures the effects of other, mostly country-specific factors. Residuals need to be explained on a case-by-case basis and have an important role when assessing the consistency of fiscal forecasts.⁸

On the expenditure side, changes in the structural expenditure ratio are split into the contribution of interest payments, social payments, subsidies, compensation of public employees, intermediate consumption, government investment and an aggregate of other categories. Additional information is provided concerning changes in the number of public employees, health expenditure, old-age pensions, unemployment benefits and social transfers in kind. Thus, the method represents a first step towards identifying the main factors affecting the structural ex-

⁴ The Report “Improving the implementation of the Stability and Growth Pact” approved by the European Council of 22-23 April 2005 proposes the same correction to identify the adjustment effort of member states of the euro area or ERM II not satisfying the medium-term objective.

⁵ Various papers show the potentially major impact of asset price fluctuations on government revenue. Girouard and Price (2004) correct cyclical adjustment for these fluctuations for several countries, while Eschenbach and Schuknecht (2002) estimate the elasticity of tax revenues to asset price changes. They show that the asset price boom may have generated over 1% of GDP of excess revenue in 2001 compared to 1997 in several European countries.

⁶ For an extensive description of the ESCB’s cyclical adjustment procedure see Bouthevillain et al. (2001). A review of some alternative approaches to the cyclical adjustment of government budgets, as well as a discussion of the role of this indicator in the European context, can be found in Banca d’Italia (1999).

⁷ In particular, the estimates of structural balances that are regularly published by the European Commission, the IMF and the OECD are based on output gaps. A short description of this method, together with recent estimates of budgetary sensitivities, can be found, for example, in Girouard and André (2005).

⁸ Girouard and Price (2004) calculate residuals in a similar manner for a different set of countries. However, they restrict attention to the relationship between asset price cycles and residual developments, while the disaggregated calculations we provide here allow for a deeper analysis of the underlying causes of residuals.

penditure ratio and quantifying their impact on the evolution of the fiscal balance. In the case of expenditure, the budgetary effects of legislation changes are not identified here. Legislative acts on expenditure are usually numerous and the assessment of their effects often involves a number of arbitrary assumptions. Moreover, discretionary actions taken at the administrative level are often even more important than parliamentary legislation.⁹

The analysis is applied to six countries – Belgium, Finland, Germany, Italy, the Netherlands and Portugal – over the period from 1998 to 2004, i.e. in the period which followed the year relevant for the qualification for EMU. In all countries but Finland the structural primary balance ratio clearly worsened during the period, and the analysis contributes to shedding light on the causes and characteristics of these adverse developments. As is illustrated for the case of Belgium, the approach also helps to increase the transparency of fiscal forecasts.

In Section 2 the proposed framework of analysis is described in greater detail. In Section 3 we present an overview of the common features of the budgetary developments which emerge from the analysis, followed by six paragraphs, each dealing with a specific country. Section 4 concludes the paper. Tables with the structural levels of the analysed fiscal data, information on temporary influences and the underlying budget elasticities, and a graphical display of the structural developments in the various countries may be found in Appendix A. Appendix B contains the details of the calculations underlying the proposed framework, while Appendix C provides a summary of country specifics.

2. The analytical framework

The calculations follow a two-step procedure, and, for each country, the results of each step are summarised in a table.¹⁰ In the first step, the structural levels of revenue and expenditure categories are derived (Table 1, see Appendix A.3). In the second step, the changes in those corrected aggregates are attributed to a few relevant factors which are common to all countries (Table 2, see Section 3). Both tables first summarise the impact of the main adjustments made to construct the structural ratios, showing the effects of the cycle and of temporary measures.

2.1 Measuring structural balances

Table 1¹¹ identifies the structural levels of the main budgetary categories. For each budgetary category X the following calculation is performed:

$$\underbrace{X^s}_{\text{Structural level}} = \underbrace{X}_{\text{Unadjusted level}} - \underbrace{X^c}_{\text{Cyclical component}} - \underbrace{X^m}_{\text{Size of temporary measures}} .$$

For information, we show the unadjusted level of the fiscal balance, its cyclical component and the size of temporary measures as ratios to nominal GDP in the first part of Table 1.

⁹ The same asymmetry, which reasonably stems from similar difficulties, can be found in the analysis of the “structural effort” for France, discussed in Duchene and Levy (2003).

¹⁰ In Appendix C country-specific extensions of the framework of analysis are described.

¹¹ Note that Table 1 deviates from the ESA classification with regard to transactions between the national and the EU budget; see Appendix C.3.

For determining cyclical impacts, the harmonised ESCB method is used.¹² In this approach, revenue and expenditure categories are adjusted individually on the basis of the deviation from trend of the respective macroeconomic bases in real terms. The trend is estimated using a Hodrick-Prescott filter with a smoothing parameter of $\lambda=30$.¹³ The cyclical component of a specific budgetary category is calculated by applying a constant elasticity to the trend deviation (see Appendix A.1 for a summary of elasticities). On the revenue side, taxes and social contributions are adjusted; on the expenditure side, generally only unemployment-related expenditure is corrected. In the standard implementation the following budgetary categories are adjusted (with corresponding macroeconomic bases in brackets): direct taxes on private household income (average compensation of employees and employment in the private sector), direct taxes on corporate income (operating surplus), social contributions paid in the private sector (average compensation of employees and employment in the private sector), indirect taxes (private consumption), unemployment-related expenditure (number of unemployed persons). Average compensation of employees and private consumption are expressed in real terms using the private consumption deflator; for operating surplus the GDP deflator is used.

Concerning temporary measures, their effects on budgetary categories have been assessed by each of the authors for his or her own country, on the basis of the following precepts: first, effects on public finances are considered as temporary if they affect the budgetary outcomes for a limited number of years (in practice up to three years). The temporary influence can be either strictly one-off or self-reversing; in the latter case measures will be regarded as temporary even if the reverse effects take more than three years to unwind (e.g. a capital transfer in return for the assumption of pension liabilities). Second, only significant effects with a favourable or unfavourable budgetary impact of at least close to 0.1% of GDP are taken into account. In particular, the effects of uncoordinated decisions taken by regional or local authorities that are not themselves significant are excluded. Third, attention is restricted to government policy actions excluding events outside the control of governments. In general, the definition of a temporary measure requires a clear benchmark. Usually, this is particularly difficult to obtain for expenditure-side measures, and the major impact of the measures considered occurs on the revenue side.¹⁴ For information on the temporary measures included in the analysis see Appendix A.2.

The structural revenue and expenditure categories are expressed as percentages of nominal trend GDP. We use the nominal trend GDP, instead of its actual level, as the denominator to ensure consistency with the cyclically adjusted figures in the numerator.¹⁵ In this way, year-on-year changes in GDP ratios owing to cyclical fluctuations in GDP and the macroeconomic bases are eliminated. Nominal trend GDP is defined as the real trend GDP (estimated using

¹² Cf. Bouthevillain et al. (2001).

¹³ The choice of the value of the parameter is discussed in Bouthevillain et al. (2001).

¹⁴ Revenues from the sales of UMTS licences and real estate, which are classified as negative “acquisition of non-financial assets” and “investment”, respectively, form the major exceptions. Sales of UMTS licences improved the 2000 budget balance in Germany by 2.5% of GDP, in the Netherlands by 0.6% of GDP and in Italy by 1.2% of GDP. Sales of real estate improved the balance in Italy by 0.9% of GDP in 2002.

¹⁵ Indeed, the cyclical adjustment aims at bringing budgetary items to levels they would obtain with macroeconomic bases on trend.

the Hodrick-Prescott filter with a smoothing parameter of $\lambda=30$) multiplied by the actual GDP deflator.

2.2 Identifying the sources of changes in structural balances

The main output of the proposed framework is shown in Table 2, displaying the decomposition of **changes in the structural ratios**, as defined above, of the balance and the main budgetary categories. Country results are shown in Section 3.

Table 2 first summarises the impact of the main adjustments made to construct the structural ratios, showing the role of the changes in the effects of the cycle and temporary measures. These factors explain almost entirely the difference between the change in the **unadjusted balance ratio** (i.e. the unadjusted balance divided by nominal GDP) and the change in the **structural balance ratio** (i.e. the adjusted balance divided by nominal trend GDP). The impact of the different denominator (trend GDP instead of actual GDP) is usually negligible and therefore not shown.

In the next step, the interest payments are eliminated from the structural balance ratio:

$$\underbrace{\frac{B^p}{Y}}_{\text{Structural primary balance-to-GDP ratio}} = \underbrace{\frac{B}{Y}}_{\text{Structural balance-to-GDP ratio}} + \underbrace{\frac{I}{Y}}_{\text{Structural ratio of interest payments to GDP}},$$

where Y denotes the nominal trend GDP, B the structural balance, B^p the structural primary balance and I interest payments.

The resulting **structural primary balance ratio** is the starting point for analysing structural revenue and primary expenditure developments. Annual changes in interest payments are attributed to two factors: 1) changes in the average interest rate on public debt and 2) changes in the stock of debt. The contribution of the changes in the average interest rate is computed as

$$\frac{(i_t - i_{t-1})(D_{t-1} + D_t)/2}{Y_t},$$

where D_t denotes the debt level and $i_t = \frac{I_t}{(D_{t-1} + D_t)/2}$ the average interest rate on public debt. The contribution of the change in the stock of debt is computed as a residual.

This decomposition shows that the very favourable debt refinancing conditions in recent years have improved public finances significantly. The analysis could be deepened further by taking into account the impact of changes in the debt structure. Since this aspect is not the main focus of the framework presented here, it is left for future research.



2.2.1 Revenue developments

In the next part of Table 2 the changes in the **structural revenue ratios** are analysed. Taxes and social contributions, on the one hand, and non-tax-related revenue, on the other, are examined separately. Taxes are further broken down into 1) direct taxes payable by corporations, 2) direct taxes payable by households 3) social contributions and 4) indirect taxes. For the non-tax-related revenue the role of the EU transactions within this category is identified.¹⁶

The changes in the structural revenue ratios of taxes and social contributions are attributed to four factors: *fiscal drag*, *decoupling of the tax base from GDP*, *legislation changes* and a *residual*. Appendix B presents the full formula for the analysis. When computing the effects of the first two factors we apply the same macroeconomic bases and elasticities as in the ESCB methodology for cyclical adjustment. Thus we assume, in particular, that the response of taxes and social contributions to their macroeconomic bases is broadly captured by *constant* elasticities. As an additional piece of information, the table shows those parts of the first two factors which have an equal impact on both the revenue and expenditure side and therefore do not affect the balance, i.e. direct taxes and social contributions on the civil servants' wage bill and indirect taxes paid by the general government.¹⁷

Fiscal drag. The term *fiscal drag* usually refers to the increase in average tax rates in a progressive income tax scheme that comes about when nominal incomes rise over time – either by inflation or by real growth. Here, the term is used in a broader sense: it applies not only to progressive income taxes which have elasticities with respect to tax bases larger than one, but to all revenue items which have elasticities different from unity. As such, the fiscal drag associated with a positive income change can even be negative. This applies, for instance, to excise taxes: as they are volume-based, price increases may leave tax revenues unaffected or lead to revenue decreases while the corresponding nominal tax base would rise. Consequently, the ratio of excise taxes to the nominal trend base would decrease. The basic idea of the broader definition is to capture any change in the revenue ratio that arises automatically, i.e. without legislation changes and trend growth differentials between the tax base and GDP.

The contribution of *fiscal drag* in a revenue category to the change of the structural revenue ratio is generally computed as¹⁸

$$\frac{(\varepsilon - 1)g_t R_{t-1}}{Y_t},$$

where ε denotes the elasticity of the revenue category R with respect to its macroeconomic tax base, g the nominal trend growth rate of the base¹⁹ and Y the nominal trend GDP.

¹⁶ See Appendix C.3 for the derivation of this item in the case of Portugal.

¹⁷ Since separate information on taxes and social contributions paid by the government is not always available, these parts of taxes and social contributions might have been estimated. If separate information is available, not only public sector fiscal drag and decoupling but also the public sector part of the residual are included in the relevant memo item. Since the expenditure impact of changes in indirect tax payments by the government is often minor, in Table 2 it is not shown separately even though it is included in the overall effect.

¹⁸ The formula shown here is a simplification. The detailed version of the formula is presented in Appendix B.

¹⁹ Similarly to nominal trend GDP, the nominal trend of a macroeconomic base is calculated by multiplying its real trend with the respective deflator.

Decoupling of the tax base from GDP. In the absence of legislation changes, the ratio of a revenue category to nominal (trend) GDP might change even when the elasticity with respect to the macroeconomic base amounts to unity. This can happen when the (trend) growth rate of the tax base deviates from the (trend) growth rate of nominal GDP. This deviation is denoted as *decoupling of the tax base from GDP*.

Decoupling may occur for a variety of reasons. For example, direct taxes are linked to factor income. Therefore, deviations in the trend development of GDP and national income, for instance owing to changes in indirect taxes or in the balance of primary income from the rest of the world, might imply a decoupling. In addition, longer-term changes in the relative factor incomes can lead to decoupling. Because of size differences between the affected revenue categories, the decoupling for the different categories do not necessary offset each other. For indirect taxes, decoupling might occur due to different medium term development between private consumption, which serves as the basis of indirect taxes in the framework, and (partly) tax-exempt GDP components, such as private investment or exported goods.

Decoupling between the tax base and GDP has to be distinguished from the component of the revenue development that cannot be explained by the underlying “tax model”, for example because the available macroeconomic data does not match the actual tax base or because time-varying lags between the development in the revenue and in the base are not captured in the model approach. Discrepancies of this kind would be reflected in the residual.

The contribution of *decoupling of the tax base from GDP* to the change of the structural revenue ratio (for each revenue category) is generally computed as²⁰

$$\frac{(g_t - \gamma_t)R_{t-1}}{Y_t},$$

where, in addition to the notation introduced above, γ refers to the growth rate of nominal trend GDP.

Legislation changes. Usually, a significant part of the change in the structural revenue ratios is due to changes in tax and social contributions laws. Expressed as a percentage of nominal trend GDP, the estimated direct impact of such changes is given in the row *legislation changes*. To assess the impact of legislation changes, we rely in many cases on the government estimates that are provided during the legislative process. These were updated on the basis of ex-post information (like cash data or information concerning the development of the underlying tax base) when it seemed appropriate and feasible. In the absence of official estimates, the impact of legislation changes is calculated on the basis of the best available information. As such, when interpreting the presented results, it has to be kept in mind that the estimation of the fiscal effects of legislation changes is sometimes subject to considerable uncertainty.

²⁰ The formula shown here is a simplification. The detailed version of the formula is presented in Appendix B.

Residual. Changes in the structural revenue ratio not explained by the three factors above are attributed to the *residual*. The residual component is an important element of the proposed framework and may contribute in various ways to the analysis of public finances. It may help to understand better the past developments, indicating the quantitative importance of particular unsystematic events. It may show favourable or unfavourable tendencies in specific budgetary categories, requiring further analysis. It may also reveal a need to reassess the impact of legislation changes or biases in revenue elasticities. Finally, the residual component can be used to check the consistency of forecasts, and may thus be useful in evaluating and improving forecasting methods.

The country analysis of Section 3 shows that residuals are sometimes significant. They occur because the underlying “tax model” can only be an approximation of the actual development. For example:

- The high volatility in profit-related taxes is only partly reflected in the macroeconomic base (operating surplus which *inter alia* does not reflect write-offs on corporate balance sheets). This will lead to varying residuals over the years.²¹
- The composition of private consumption might change. With differentiated tax rates, the development of VAT revenue would then deviate from that of the macroeconomic base. The resulting change of the revenue ratio would be attributed to the residual.
- Tax collection lags might vary over time implying residuals that should roughly cancel out over several years.

In many cases, a specific reason for a residual can be given. However, a full explanation of past residuals is not always possible *ex post* because tax revenues are affected by various factors. In contrast to that, *ex ante* explanation of residuals in a forecasting exercise should be part of the “story” underlying the forecast.

2.2.2 Expenditure developments

The final part of Table 2 is devoted to the analysis of annual changes in the structural expenditure ratios from Table 1. It may be reminded that in the ESCB method for calculating cyclically adjusted balances – like in most of the other approaches – *unemployment-related expenditure* is usually the only expenditure category that is cyclically adjusted.

Except for background data on changes in the number of public employees and in health expenditure, the expenditure side of Table 2 does not deepen the analysis in Table 1. However, the breakdown into components already allows the main factors affecting the structural expenditure ratio to be identified and quantified and their effect on the evolution of the fiscal balance to be quantified. In this way, the breakdown helps to detect critical developments at an early stage.

²¹ The reasons for the generally poor fit of the elasticity (either econometrically estimated or derived from the tax rule) used for this category are documented in Bouthévilain et al. (2001). For an estimation of the effects of asset price changes on various taxes categories cf. Eschenbach and Schuhknecht (2002). The problem of assessing structural budget balances in the presence of asset price cycles is discussed in Girouard and Price (2004).

In principle, it is also possible to give some quantitative indication of the impact of legislation changes on the expenditure side. However, in contrast to the revenue side, a comprehensive estimation of the impact of legislation changes in the expenditure is not readily available, and it would necessarily lack homogeneity across countries.

2.3 The application of the disaggregated framework to fiscal forecasts

The disaggregated framework presented in this paper is not only useful to analyse past structural developments in public finances but also helps to assess the consistency and increase the transparency of fiscal forecasts. It allows us, in particular, to identify the residuals in the breakdown of the changes in the structural revenue ratio which the forecaster should, in principle, be able to explain, as they reflect exogenous deviations from the developments that would result from the macroeconomic environment, the underlying revenue elasticities and the fiscal measures (e.g. on the basis of “expert judgment”).

3. Analysing budgetary developments in individual countries

The results presented in this section cover the period from 1998 to 2004 for six countries: Belgium, Finland, Germany, Italy, the Netherlands and Portugal. The first subsection summarises some common features of the public finance developments in the various countries. In the following sections a detailed analysis for each country is provided.²² The box “Using the disaggregated framework to assess the consistency and increase the transparency of fiscal forecasts” illustrates the usefulness of the approach for the assessment of fiscal forecasts with the example of Belgium.

3.1 General remarks

Over the 1998-2004 period, the unadjusted budget balances of the six countries do not show a common trend. In three countries (Belgium, Finland and Portugal) the balance ratio improved while in the other three countries it worsened (Germany, Italy and the Netherlands). This picture changes drastically for the structural budget balance (see the following table). Finland is the only country with a significant improvement in its structural budget balance. The structural balance in Belgium improved by some 0.8% of GDP – significantly less than the unadjusted balance. The budget balance in Portugal worsened by 1.3 percentage points in structural terms, while improving by 0.7 percent of GDP in nominal terms.

The development of **structural primary balances** gives an even worse picture of budgetary developments as favourable refinancing conditions reduced **interest** payments as a percentage of trend GDP in all countries between 1997 and 2004, despite diverging debt developments. In all countries except Finland the structural **primary balance** ratio clearly worsened. The deterioration is particularly sizeable in Italy and the Netherlands, reaching nearly 6 and 4 percentage points of trend GDP respectively.

²² Adjusted revenue and expenditure ratios can be found in the tables of Appendix A.3.

Changes in structural fiscal components – summary of country results (as a percentage of trend GDP)¹⁾

<i>Belgium</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	1.2	-0.5	0.2	0.1	-0.2	-0.6	0.6	0.8
Interest payments	-0.4	-0.4	-0.1	-0.2	-0.7	-0.5	-0.5	-2.9
Primary balance	0.8	-0.9	0.1	-0.2	-0.9	-1.1	0.1	-2.1
Total revenue	0.4	-0.3	0.1	-0.0	0.1	-0.6	0.2	-0.1
Taxes and social contributions overall	0.4	-0.3	-0.1	-0.3	0.2	-0.5	0.3	-0.3
Non-tax-related revenue ²⁾	0.1	-0.1	0.2	0.3	-0.1	-0.1	-0.1	0.2
Total primary expenditure	-0.4	0.6	0.1	0.1	1.0	0.4	0.2	2.0
Social payments	-0.2	0.0	0.0	0.3	0.4	0.4	0.2	1.1
Subsidies	0.0	0.1	-0.1	0.0	-0.1	0.1	0.0	0.1
Compensation of employees	-0.1	0.2	-0.0	0.1	0.4	0.0	-0.2	0.3
Intermediate consumption	0.0	0.0	0.0	0.0	0.4	-0.1	-0.0	0.4
Government investment	-0.1	0.3	0.0	-0.2	-0.1	-0.0	0.1	0.0
Other ³⁾	0.0	-0.1	0.1	-0.1	0.0	-0.0	0.1	0.0
<i>Finland</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	1.8	0.4	4.8	-1.6	0.2	-2.1	-0.6	2.9
Interest payments	-0.6	-0.5	-0.2	-0.2	-0.6	-0.2	-0.1	-2.4
Primary balance	1.2	-0.1	4.6	-1.7	-0.4	-2.3	-0.7	0.6
Total revenue	-1.1	-0.5	2.3	-2.7	0.3	-1.5	-0.6	-3.8
Taxes and social contributions overall	-0.7	0.1	1.3	-2.6	0.3	-1.4	-0.6	-3.5
Non-tax-related revenue ²⁾	-0.5	-0.6	1.0	-0.0	-0.0	-0.1	-0.0	-0.2
Total primary expenditure	-2.3	-0.4	-2.3	-0.9	0.7	0.8	0.1	-4.3
Social payments	-1.1	-0.1	-1.4	-0.5	0.3	0.2	-0.0	-2.7
Subsidies	-0.2	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.6
Compensation of employees	-0.5	-0.1	-0.4	-0.2	0.1	0.2	0.2	-0.8
Intermediate consumption	-0.3	0.1	-0.2	-0.2	0.4	0.3	0.1	0.2
Government investment	-0.3	-0.1	-0.2	0.1	0.1	0.1	-0.1	-0.3
Other ³⁾	0.1	-0.0	-0.1	-0.0	-0.1	0.0	0.0	-0.1
<i>Germany</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	0.2	0.4	-0.2	-1.8	-0.5	0.2	0.3	-1.4
Interest payments	-0.0	-0.2	0.1	-0.1	-0.2	0.0	-0.1	-0.5
Primary balance	0.2	0.2	-0.1	-1.9	-0.7	0.2	0.2	-1.9
Total revenue	0.1	0.6	0.4	-2.0	-0.8	-0.3	-1.1	-3.1
Taxes and social contributions overall	0.1	0.6	0.5	-2.0	-0.7	-0.2	-0.8	-2.5
Non-tax-related revenue ²⁾	-0.1	-0.1	-0.1	0.1	-0.1	-0.1	-0.2	-0.6
Total primary expenditure	-0.1	0.3	0.5	-0.1	-0.2	-0.5	-1.3	-1.2
Social payments	-0.1	0.1	0.5	0.2	0.2	-0.1	-0.6	0.2
Subsidies	0.0	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.5
Compensation of employees	-0.2	-0.1	-0.0	-0.2	-0.1	-0.2	-0.2	-0.9
Intermediate consumption	0.0	0.2	-0.1	0.0	0.1	-0.1	-0.1	0.0
Government investment	-0.0	0.1	-0.1	-0.0	-0.1	-0.2	-0.1	-0.4
Other ³⁾	0.2	0.1	0.2	0.1	-0.1	0.1	-0.2	0.3
<i>Italy</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	-0.2	1.5	-0.5	-2.0	-0.2	-0.6	0.5	-1.5
Interest payments	-1.3	-1.5	-0.2	0.1	-0.7	-0.6	-0.2	-4.4
Primary balance	-1.5	-0.0	-0.7	-1.9	-0.9	-1.1	0.3	-5.9
Total revenue	-1.3	0.0	-0.5	-0.4	-0.8	-1.1	-0.1	-4.2
Taxes and social contributions overall	-1.4	-0.2	-0.1	-0.7	-0.6	-0.6	-0.2	-3.8
Non-tax-related revenue ²⁾	0.1	0.3	-0.4	0.2	-0.1	-0.5	0.1	-0.3
Total primary expenditure	0.2	0.0	0.3	1.5	0.2	0.1	-0.4	1.8
Social payments	-0.2	-0.1	0.1	0.2	0.3	0.1	0.2	0.6
Subsidies	0.0	-0.1	-0.0	0.0	-0.1	-0.0	-0.1	-0.3
Compensation of employees	-0.9	-0.0	0.1	0.2	-0.0	0.1	-0.1	-0.6
Intermediate consumption	0.1	0.1	0.1	0.1	-0.1	0.1	-0.2	0.2
Government investment	0.2	0.0	0.1	0.2	0.1	0.1	0.1	0.7
Other ³⁾	1.1	0.0	-0.2	0.8	0.1	-0.3	-0.3	1.1
<i>The Netherlands</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	-0.5	1.0	0.3	-2.6	-1.8	0.3	2.0	-1.3
Interest payments	-0.3	-0.3	-0.6	-0.5	-0.4	-0.2	-0.1	-2.4
Primary balance	-0.8	0.7	-0.3	-3.1	-2.2	0.1	1.9	-3.7
Total revenue	-0.7	1.3	-0.2	-1.9	-1.7	0.1	1.4	-1.7
Taxes and social contributions overall	-0.4	1.4	-0.4	-2.6	-1.3	0.3	1.4	-1.6
Non-tax-related revenue ²⁾	-0.3	-0.1	0.2	0.7	-0.4	-0.2	-0.0	-0.1
Total primary expenditure	0.1	0.7	0.1	1.2	0.5	0.0	-0.6	2.0
Social payments	-0.2	-0.2	-0.1	-0.0	0.3	0.2	-0.1	-0.2
Subsidies	-0.2	0.1	-0.1	-0.0	-0.0	-0.1	0.0	-0.2
Compensation of employees	0.0	0.2	-0.1	-0.1	0.1	0.1	-0.0	0.2
Intermediate consumption	0.1	0.3	-0.0	0.8	0.1	-0.0	-0.1	1.1
Government investment	0.1	0.1	0.1	0.3	0.2	-0.2	-0.3	0.3
Other ³⁾	0.3	0.2	0.3	0.2	-0.1	0.1	-0.1	0.8
<i>Portugal</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Balance	-0.1	-0.5	-0.8	-1.1	0.9	0.0	0.2	-1.3
Interest payments	-0.7	-0.2	0.0	-0.0	-0.2	-0.2	-0.1	-1.4
Primary balance	-0.8	-0.8	-0.8	-1.1	0.8	-0.2	0.2	-2.7
Total revenue	0.0	0.9	-0.3	-0.5	0.6	0.2	0.5	1.3
Taxes and social contributions overall	0.1	0.7	0.7	-0.6	0.1	0.0	0.9	1.9
Non-tax-related revenue ²⁾	-0.1	0.2	-1.0	0.1	0.5	0.2	-0.4	-0.6
Total primary expenditure	0.8	1.6	0.5	0.7	-0.2	0.4	0.3	4.1
Social payments	0.4	0.5	0.7	0.4	0.4	1.4	0.6	4.4
Subsidies	0.2	0.2	-0.6	0.4	0.0	0.1	0.0	0.3
Compensation of employees	0.4	0.7	0.7	0.1	0.1	-0.8	0.0	1.2
Intermediate consumption	-0.0	0.4	0.3	-0.1	-0.1	-0.7	0.1	-0.1
Government investment	-0.3	0.3	-0.3	0.1	-0.4	-0.3	-0.0	-1.0
Other ³⁾	0.2	-0.4	-0.3	-0.3	-0.2	0.6	-0.4	-0.8

1 Increasing +, decreasing -. – 2 Other current transfers receivable, sales and total capital revenue. – 3 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers.

In Belgium, Italy and the Netherlands both revenue and expenditure contributed to the deterioration of the fiscal balance. In Germany the large deterioration in revenue was partially offset by the decline in the structural primary expenditure ratio while the opposite was true for Portugal.

The breakdown of the change in taxes and social contributions into different components highlights important determinants of the change in the structural **revenue** ratio. Declining structural revenue ratios were mostly due to tax reductions. As a common feature, negative influences from **legislation** affected (in many cases to a considerable extent) direct taxes payable by households and social contributions. In a majority of countries, these were partly offset by sizeable increases in indirect taxes. Owing to progressive income taxation the positive **fiscal drag** in direct taxes payable by households is generally sizeable. The picture for the effect of **decoupling** of macroeconomic bases from GDP is mixed. At the extremes, this factor clearly contributes to a deterioration of the structural revenue ratio owing to the slow trend growth in compensation of employees in Germany over the 1998-2004 period, while in the Netherlands strong employment growth and substantial wage increases mostly in the period from 1998 to 2002 led to a significantly positive contribution of the decoupling.

There are sometimes considerable **residual** changes in the revenue ratio. In particular, this is the case for direct taxes payable by corporations and taxes on capital income included in direct taxes payable by households. This reflects the difficulty to define appropriate tax bases and elasticities for these taxes, partly because they are often collected with time lags of varying length. Significant positive residuals up to 2000 and negative residuals between 2001 and 2003 are common to Finland, Germany and Italy and reflect the boom and bust, in particular, on the stock market during the reporting period. Negative residuals in VAT development – another factor shared by most countries – can partly be attributed to changes in the composition of private consumption and to tax fraud and evasion.

On the **expenditure** side, an increase in the structural ratio of **social payments** to GDP contributed significantly to the deterioration in a majority of countries. Here, old-age and health-care-related expenditure were particularly relevant. **Compensation of employees** increased as a percentage to trend GDP in Belgium, the Netherlands and Portugal and decreased in Finland and Germany. In Italy, this budgetary category remained broadly stable, notwithstanding a significant increase in public employment.²³ Also, the development in the other, quantitatively less important categories was quite heterogeneous.

²³ The decline in compensation of public employees for Italy entirely reflects the impact of the 1998 reform, which substituted social security contributions with a new tax (IRAP).

Using the disaggregated framework to assess the consistency and increase the transparency of fiscal forecasts – the example of Belgium

The usefulness of the disaggregated framework for fiscal forecasts is illustrated for the Autumn 2005 projections for Belgium documented in the National Bank of Belgium's Economic Review (IV, 2005).²⁴ According to these projections, the balanced budget for general government attained in 2004 would be maintained in 2005 but turn into a significant deficit of 0.4% of GDP by 2006. This would be due partly to the reduced impact of temporary measures from 0.8% of GDP in 2004 to 0.5% of GDP in 2006 and the projected minor worsening in the economic environment, with the cyclical component deteriorating slightly by some 0.1% of GDP. The structural **balance**, which is corrected for these elements, is estimated to have improved by 0.5% of GDP in 2005 but is projected to worsen by the same amount in 2006. Since the ratio of **interest** charges to trend GDP would shed a further 0.7 percentage point in this period, the structural **primary balance** ratio is projected to drop by an additional 0.7 percentage point. This marked loosening of structural fiscal policy, which would be concentrated in 2006, is due to both revenue-side and expenditure-side developments.

The structural **revenue** ratio would edge up in 2005 but drop to a larger extent in 2006, reflecting the structural changes in taxes and social contributions and a minor increase in non-tax revenue over the 2005-2006 period.

The **2005** increase in the ratio of taxes and social contributions to trend GDP, by around 0.2 percentage point, is entirely due to the positive impact of the residual. The impact of **legislation** changes would be neutral as indirect tax hikes – mainly affecting mineral oils and tobacco products – would fully offset net reductions in both direct taxes on households (stemming from the additional impact of the gradual reform of the personal income tax system on tax settlements) and social contributions. The impact of trend **decoupling** is estimated to be neutral despite the fact that the real trend in the most important tax base, i.e. private-sector labour income, continues to lag that of GDP. The impact of this on the structural revenue ratio is however offset by price effects with the increase in consumer inflation (used to deflate labour income) significantly exceeding that in the GDP deflator. The minor positive impact of the **residual** is the net result of a positive residual in corporate taxes and, to a lesser extent, direct taxes paid by households, and a negative one in social contributions. The former is related to the fact that in the projections account was taken of the fact that, when the projections were finalised, the available monthly cash receipts for corporate taxes exhibited growth rates that significantly exceeded the pace that was expected on the basis of the macroeconomic parameters despite the absence of revenue-increasing measures.²⁵ The same phenomenon, albeit to a much lesser extent, applied to direct taxes on households. The negative residual in social contributions is also due to the information contained in cash receipts with the receipts for the first three quarters indicating a growth rate of social contributions that was below the one estimated mechanically on the basis of the macroeconomic environment and the legislation changes.

The decline in the structural revenue ratio in **2006**, by 0.6 percentage point, can be mainly attributed to **legislation** changes as the further reductions in direct taxes on households (with the tax settlements again being lowered by the delayed impact of the gradual reform of the personal income tax system) and social contributions are only partly offset by new increases in indirect taxes. The structural revenue ratio is also lowered by 0.2 percentage point due to the trend **decoupling** of tax bases and GDP. The latter is primarily due to the fact that weak trend growth of real private-sector labour income reduces the structural ratio of direct taxes from households and social contributions with respect to GDP. Unlike in 2005 this was not offset by price effects. The overall **residual**, finally, is zero but this is the result of a minor negative residual in indirect taxes and a minor positive one in direct taxes paid by corporations. The former could reflect the fact that excise duties only grow in line with real, rather than nominal, consumption which mechanically reduces the structural indirect tax ratio. The latter is due to the fact that the projections took account of the fact that tax settlements for corporate profits in previous years are expected to edge up by close to 0.1% of GDP in 2006; this shows up in the residual effect

²⁴ These forecasts were produced in the fall of 2005 as part of a biannual exercise carried out by the Eurosystem central banks. They reflect the macroeconomic and budgetary situation as it was known or considered then and only take into account fiscal measures that had already been announced or were specified in sufficient detail then. However, new information has become available since then and the forecasts are only used for illustrative purposes here.

²⁵ This could be due to improved tax collection or reduced tax evasion or fraud or could simply suggest that the macroeconomic estimates of corporate income in this forecast exercise significantly underestimate the actual tax base for corporate taxes.

as the cyclical adjustment does not include a lag structure for this tax category.

Spending policy would also contribute to the worsening of the structural fiscal stance in the 2005-2006 period as, corrected for cyclical and temporary elements, **primary spending** growth would exceed the increase in nominal trend GDP. While the indexation effects described in Annex C.1 are neutral in 2005 they would marginally increase the gap in 2006. Corrected for those effects, structural primary expenditure growth is around 0.25 percentage point higher than that of nominal trend GDP in both years. Among the expenditure items contributing to this loosening are subsidies, health care spending (included in social transfers in kind in the standard table) – albeit to a lesser extent than in previous years –, government investment (due to the electoral cycle with the next municipal elections scheduled for 2006) and current transfers to the rest of the world (included in “other” expenditure in the standard table) partly due to rising payments to the EU.

Belgium: Changes in structural fiscal components (as a percentage of trend GDP)¹⁾

	2005	2006	05-06
Unadjusted balance²⁾	0.0	-0.4	-0.4
Cyclical component	-0.2	0.1	-0.1
Temporary measures	-0.4	0.1	-0.3
Balance	0.5	-0.5	0.0
Interest payments	-0.4	-0.3	-0.7
<i>due to changes in average interest rate</i>	-0.2	-0.2	-0.4
<i>due to changes in debt level</i>	-0.2	-0.1	-0.2
Primary balance	0.1	-0.8	-0.7
Total revenue	0.4	-0.6	-0.2
Direct taxes payable by corporations	0.3	0.1	0.4
Fiscal drag	-0.1	-0.1	-0.1
Decoupling of base from GDP	0.1	0.1	0.2
Legislation changes	0.0	0.0	0.0
Residual	0.2	0.1	0.3
Direct taxes payable by households	0.0	-0.4	-0.4
Fiscal drag	0.0	0.0	0.0
Decoupling of base from GDP	0.0	-0.1	-0.2
Legislation changes	-0.1	-0.3	-0.5
Residual	0.1	0.0	0.1
<i>Memo item: included in expenditure³⁾</i>	0.0	0.0	0.0
Social contributions	-0.3	-0.3	-0.6
Fiscal drag	0.0	0.0	0.0
Decoupling of base from GDP	-0.1	-0.1	-0.2
Legislation changes	-0.2	-0.1	-0.3
Residual	-0.1	0.0	-0.1
<i>Memo item: included in expenditure³⁾</i>	0.0	0.0	0.0
Indirect taxes	0.3	0.0	0.3
Fiscal drag	0.0	0.0	0.0
Decoupling of base from GDP	0.1	0.0	0.0
Legislation changes	0.2	0.1	0.4
Residual	0.0	-0.1	-0.1
Taxes and social contributions overall	0.2	-0.6	-0.4
Fiscal drag	0.0	-0.1	-0.1
Decoupling of base from GDP	0.0	-0.2	-0.1
Legislation changes	0.0	-0.3	-0.3
Residual ⁴⁾	0.2	0.0	0.2
<i>Memo item: included in expenditure³⁾</i>	0.0	0.0	0.0
Non-tax-related revenue⁵⁾	0.2	-0.1	0.1
Total primary expenditure	0.2	0.2	0.4
(of which: due to automatic indexation)	(0.0)	(-0.1)	(0.0)
Social payments	-0.1	0.1	-0.1
of which old-age pensions	0.0	0.0	0.0
of which unemployment benefits	-0.1	0.0	-0.1
of which social transfers in kind	0.0	0.1	0.1
Subsidies	0.2	0.1	0.3
<i>of which EU⁶⁾</i>	0.0	0.0	0.0
Compensation of employees	0.0	-0.1	-0.1
Intermediate consumption	0.0	0.0	0.0
Government investment	0.0	0.1	0.1
Other ⁷⁾	0.2	0.1	0.2
<i>of which EU⁸⁾</i>	0.1	0.0	0.1
Memorandum items			
Health care ⁹⁾	0.0	0.1	0.1
Trend growth of real GDP	1.9	2.0	
Change in GDP deflator	2.3	2.4	
Change in hours worked by public employees	0.6	0.7	

1 In general: increasing +, decreasing -, i.e. balance: improving +, worsening -. – 2 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 3 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from the public sector. – 4 Also includes the change in the adjusted ratio of direct taxes not payable by corporations/households. – 5 Other current transfers receivable, sales and total capital revenue. – 6 Expenditure paid by the EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 Expenditure paid by the EC budget that is not spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated to the function of the provision of public health care services.

3.2 Belgium

From 1997 to 2004 general government improved its budget balance by some 2% of GDP.²⁶ This was partly due to a better cyclical environment, which explains around 0.4 percentage point of the change, and to a larger extent to a favourable contribution of temporary measures, that had marginally worsened the 1997 balances but improved them by about 0.8% of GDP in 2004. The structural **deficit**, i.e. the deficit corrected for cyclical influences and temporary measures, was cut from 1.4% of trend GDP in 1997 to 0.7% of trend GDP in 2004 while it approached the zero mark in 1998.

This improvement is due to the substantial fall in **interest** charges – attributable to both the trend reduction in the debt ratio and the decrease of the implicit interest rate on public debt – that was however largely offset by the strong decline, by more than 2% of trend GDP, in the structural **primary surplus**. This is almost entirely due to expenditure developments as the structural revenue ratio declined only marginally.

The structural **revenue** ratio has shed only 0.1 percentage point in the 1998-2004 period. The minor increase in **non-tax-related** revenue as a percentage of trend GDP was more than offset by a decrease in the structural tax pressure. The latter is caused by the net impact of legislation changes and the unfavourable decoupling effect, i.e. the trend decline of the macroeconomic bases for the most important taxes with respect to GDP. Those two elements were however partly compensated by favourable residuals, i.e. the change in the structural tax ratio that cannot be traced back to the factors explicitly identified in the legislation changes, decoupling and fiscal drag.

Legislation changes reduced the structural government revenue ratio by around 1.1 percentage point in the 1998-2004 period. As both the previous and the present government specifically aimed at reducing the tax pressure on labour in order to increase employment, direct taxes on households and social contributions saw significant tax cuts (of 0.8% of trend GDP in both cases). Direct taxes on households were negatively affected by the stepwise removal of the complementary crisis contribution and the gradual reform of the personal income tax system (the impact of which will continue to grow until 2007). Cuts in social security contributions mainly pertained to employers' contributions and to a lesser extent to employees' contributions. These tax cuts were however partly offset by several increases in indirect taxes (mainly on tobacco, mineral oils and financial products), which pushed up the revenue ratio by around 0.5 percentage point between 1997 and 2004.

The trend **decoupling** of tax bases from GDP also weighed on revenue developments in that period. Detailed calculations show that this is primarily due to a marked divergence between real private-sector tax bases, especially real private-sector labour income, and GDP. The contribution of both public-sector components of tax bases considered in the ESCB cyclical-adjustment methodology (public-sector wages and indirect taxes paid by government entities)

²⁶ This section is based on the national accounts data and projections available at the end of November 2005.

Belgium

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	1.3	0.3	0.6	0.6	-0.6	0.1	-0.1	2.1
Cyclical component	0.1	0.7	0.5	-0.1	-0.3	-0.3	-0.2	0.4
Temporary measures	0.0	0.1	-0.1	0.6	-0.2	1.0	-0.5	0.9
Balance	1.2	-0.5	0.2	0.1	-0.2	-0.6	0.6	0.8
Interest payments	-0.4	-0.4	-0.1	-0.2	-0.7	-0.5	-0.5	-2.9
<i>due to changes in average interest rate</i>	-0.1	-0.2	0.1	0.0	-0.6	-0.2	-0.2	-1.2
<i>due to changes in debt level</i>	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2	-0.3	-1.7
Primary balance	0.8	-0.9	0.1	-0.2	-0.9	-1.1	0.1	-2.1
Total revenue	0.4	-0.3	0.1	0.0	0.1	-0.6	0.2	-0.1
Direct taxes payable by corporations	0.5	-0.2	-0.1	0.2	-0.1	-0.3	0.3	0.3
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Legislation changes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Residual	0.6	-0.1	0.0	0.2	-0.1	-0.3	0.3	0.5
Direct taxes payable by households	-0.1	-0.4	0.3	0.0	0.0	-0.2	-0.1	-0.5
Fiscal drag	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2
Decoupling of base from GDP	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.3
Legislation changes	0.1	0.0	0.0	-0.1	-0.3	-0.2	-0.2	-0.8
Residual	0.0	-0.5	0.2	0.0	0.3	0.1	0.2	0.3
<i>Memo item: included in expenditure²⁾</i>	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Social contributions	0.0	-0.1	-0.2	0.0	0.3	0.0	-0.1	-0.1
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.2	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.4
Legislation changes	0.1	-0.1	-0.5	-0.1	0.0	-0.1	-0.2	-0.8
Residual	0.1	-0.1	0.2	0.1	0.4	0.2	0.2	1.1
<i>Memo item: included in expenditure²⁾</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indirect taxes	-0.1	0.4	-0.1	-0.5	0.0	0.0	0.3	0.0
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Decoupling of base from GDP	-0.1	-0.1	0.1	0.0	-0.1	0.0	0.0	-0.2
Legislation changes	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.5
Residual	0.0	0.5	-0.2	-0.6	0.1	0.0	0.0	-0.3
Taxes and social contributions overall	0.4	-0.3	-0.1	-0.3	0.2	-0.5	0.3	-0.3
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Decoupling of base from GDP	-0.5	0.0	0.2	0.1	-0.1	-0.2	-0.2	-0.7
Legislation changes	0.2	0.0	-0.5	-0.1	-0.4	-0.2	0.0	-1.1
Residual ³⁾	0.6	-0.2	0.2	-0.3	0.7	-0.1	0.6	1.6
<i>Memo item: included in expenditure²⁾</i>	-0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1
Non-tax-related revenue⁴⁾	0.1	-0.1	0.2	0.3	-0.1	-0.1	-0.1	0.2
<i>of which EU⁵⁾</i>								
Total primary expenditure	-0.4	0.6	0.1	0.1	1.0	0.4	0.2	2.0
(of which: due to automatic indexation)¹⁰⁾	(-0.1)	(0.1)	(-0.1)	(0.1)	(0.2)	(-0.1)	(-0.2)	(-0.1)
Social payments	-0.2	0.0	0.0	0.3	0.4	0.4	0.2	1.1
<i>of which old-age pensions</i>	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
<i>of which unemployment benefits</i>	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	0.0
<i>of which social transfers in kind</i>	0.0	0.2	0.2	0.2	0.0	0.3	0.3	1.2
Subsidies	0.0	0.1	-0.1	0.0	-0.1	0.1	0.0	0.1
<i>of which EU⁶⁾</i>	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1
Compensation of employees	-0.1	0.2	0.0	0.1	0.4	0.0	-0.2	0.3
Intermediate consumption	0.0	0.0	0.0	0.0	0.4	-0.1	0.0	0.4
Government investment	-0.1	0.3	0.0	-0.2	-0.1	0.0	0.1	0.0
Other ⁷⁾	0.0	-0.1	0.1	-0.1	0.0	0.0	0.1	0.0
<i>of which EU⁸⁾</i>	0.1	-0.1	0.1	0.1	-0.1	0.0	0.1	0.3
Memorandum items								
Health care ⁹⁾	0.0	0.1	0.1	0.2	-0.1	0.3	0.3	0.9
Trend growth of real GDP	2.3	2.3	2.2	2.1	2.0	1.9	1.9	
Change in GDP deflator	1.8	0.7	1.7	1.8	1.8	1.7	2.3	
Change in public employees	1.6	2.4	0.5	0.4	2.0	1.7	1.1	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from public sector. – 3 Also includes the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated into the function of the provision of public health care services. – 10 For price effects: see Appendix C.1 for documentation.

Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

and pure price effects²⁷ is relatively small and actually slightly reduces the overall decoupling. For instance, real private-sector labour income, the most important tax base for government revenue, posted an annual trend increase of 1.5% between 1997 and 2004 while trend activity grew by some 2.1% a year in the same period.

The **fiscal drag** was relatively neutral throughout the period under consideration as the positive drag in direct taxes on households (due to the progressive nature of the personal income tax system) was roughly offset by the negative effect of the econometrically estimated elasticities for both indirect taxes and corporate taxes being smaller than one.

Finally, **residuals** were, on average, positive in the 1998-2004 period and increased the revenue ratio by around 1.6 percentage points. Residuals increase direct taxes on corporations and social contributions and reduce indirect taxes. Relative to the size of the revenue item the largest residuals can be found in direct taxes on corporations which is not unexpected in view of the generally poor fit of the elasticity (either econometrically estimated or derived from the tax rule) used for this category. Large positive residuals for social contributions could be related to an overestimation of the impact of the frequent legislation changes. The large negative residual for indirect taxes, finally, mainly derives from the substantial 2001 VAT revenue shortfall which is partly related to a hike in tax reimbursements (for exports and investments) but not yet fully explained.

The contribution of primary **expenditure** to the worsening of the structural primary surplus was much larger than that of government revenue as, corrected for cyclical influences and temporary measures, the primary expenditure ratio grew by 2 percentage points. This is mainly due to the strong increase in social transfers in kind (primarily health care spending for which a real growth norm of 4.5% – i.e. far above the trend activity growth – currently applies) and, to a much lesser extent, **intermediate consumption, compensation of employees and subsidies**.

3.3 Finland

There are no temporary measures over the reporting period in Finland; hence structural and cyclically adjusted values are equal.

When analysing changes in structural revenue and expenditure ratios it should be kept in mind that the early years of the period were very special in the Finnish economy. The economy was still recovering from the huge recession of the early 1990s. While the private sector was rebounding from the previous slump and already growing fast, consolidation needs and spending controls dominated public sector developments. Additionally, the global ICT boom had a huge impact on the economy in 1998-2001.

²⁷ Price developments lead to a decoupling of government revenue from trend GDP growth if the evolution of the tax base deflators deviates from that of the GDP deflator.

Finland

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	2.9	0.5	4.9	-1.9	-0.9	-2.0	-0.5	3.1
Cyclical component	1.1	0.2	0.3	-0.5	-1.2	0.1	0.2	0.2
Temporary measures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance	1.8	0.4	4.8	-1.6	0.2	-2.1	-0.6	2.9
Interest payments	-0.6	-0.5	-0.2	-0.2	-0.6	-0.2	-0.1	-2.4
<i>due to changes in average interest rate</i>	-0.4	-0.3	0.0	-0.1	-0.5	-0.3	-0.1	-1.7
<i>due to changes in debt level</i>	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	0.1	-0.7
Primary balance	1.2	-0.1	4.6	-1.7	-0.4	-2.3	-0.7	0.6
Total revenue	-1.1	-0.5	2.3	-2.7	0.3	-1.5	-0.6	-3.8
Direct taxes payable by corporations	0.8	0.2	1.4	-1.5	-0.1	-0.8	0.1	0.2
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Legislation changes	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2
Residual	0.8	0.2	1.3	-1.5	-0.1	-0.8	0.1	0.0
Direct taxes payable by households	-0.7	-0.2	1.1	-0.6	0.1	-0.5	-0.3	-1.1
Fiscal drag	0.2	0.1	0.2	0.2	0.2	0.1	0.1	1.1
Decoupling of base from GDP	-0.4	0.0	-0.2	-0.1	0.1	0.1	0.0	-0.6
Legislation changes	0.0	-0.4	0.0	-0.7	-0.4	-0.4	-0.5	-2.4
Residual	-0.3	-0.1	1.2	0.1	0.3	-0.4	0.0	0.7
<i>Memo item: included in expenditure²⁾</i>	-0.2	-0.1	-0.3	-0.2	-0.1	0.1	0.1	-0.7
Social contributions	-0.5	0.0	-0.8	0.0	0.0	-0.2	-0.1	-1.6
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.4	0.0	-0.2	-0.1	0.1	0.1	0.0	-0.5
Legislation changes	0.1	0.2	-0.4	-0.4	-0.5	-0.1	0.0	-1.1
Residual	-0.2	-0.2	-0.3	0.5	0.4	-0.2	-0.1	0.0
<i>Memo item: included in expenditure²⁾</i>	-0.2	-0.1	-0.2	-0.2	-0.1	0.1	0.0	-0.7
Indirect taxes	-0.4	0.1	-0.4	-0.5	0.3	0.2	-0.2	-1.0
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.3	0.1	0.0	0.0	0.2	0.1	0.0	0.1
Legislation changes	0.1	0.1	0.0	0.0	0.0	0.0	-0.2	0.0
Residual	-0.1	-0.1	-0.4	-0.5	0.0	0.1	-0.1	-1.1
Taxes and social contributions overall	-0.7	0.1	1.3	-2.6	0.3	-1.4	-0.6	-3.5
Fiscal drag	0.2	0.1	0.2	0.2	0.2	0.1	0.1	1.1
Decoupling of base from GDP	-1.2	0.2	-0.4	-0.2	0.4	0.2	0.0	-0.9
Legislation changes	0.1	-0.1	-0.2	-1.1	-0.8	-0.5	-0.6	-3.4
Residual ³⁾	0.2	-0.2	1.8	-1.4	0.6	-1.2	-0.1	-0.5
<i>Memo item: included in expenditure²⁾</i>	-0.5	-0.1	-0.5	-0.4	-0.2	0.2	0.1	-1.4
Non-tax-related revenue⁴⁾	-0.5	-0.6	1.0	0.0	0.0	-0.1	0.0	-0.2
<i>of which EU⁵⁾</i>					0			
Total primary expenditure	-2.3	-0.4	-2.3	-0.9	0.7	0.8	0.1	-4.3
Social payments	-1.1	-0.1	-1.4	-0.5	0.3	0.2	0.0	-2.7
<i>of which old-age pensions</i>	-0.4	0.0	-0.5	-0.2	0.3	0.1	-0.1	-0.8
<i>of which unemployment benefits</i>	-0.4	-0.1	-0.4	-0.3	0.0	0.0	0.0	-1.2
<i>of which social transfers in kind</i>	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.6
Subsidies	-0.2	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.6
<i>of which EU⁶⁾</i>	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Compensation of employees	-0.5	-0.1	-0.4	-0.2	0.1	0.2	0.2	-0.8
Intermediate consumption	-0.3	0.1	-0.2	-0.2	0.4	0.3	0.1	0.2
Government investment	-0.3	-0.1	-0.2	0.1	0.1	0.1	-0.1	-0.3
Other ⁷⁾	0.1	0.0	-0.1	0.0	-0.1	0.0	0.0	-0.1
<i>of which EU⁸⁾</i>	0.1	0.0	-0.1	0.0		0.2	-0.1	0.0
Memorandum items								
Health care ⁹⁾	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.2
Trend growth of real GDP	3.7	3.7	3.6	3.4	3.2	3.1	2.9	
Change in GDP deflator	3.5	-0.2	3.2	3.0	1.3	-0.2	0.8	
Change in public employees	-0.3	0.5	1.1	1.4	2.2	0.9	0.5	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from public sector. – 3 Also includes the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated into the function of the provision of public health care services.

Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

The general government balance increased by 3.1 percentage points to 1.9% between 1997 and 2004.²⁸ Overall, cyclical influences were only of minor importance; also, the structural fiscal **balance** saw a 2.9 percentage point improvement, from a deficit of -1.1% of nominal trend GDP in 1997 to a surplus of 1.8% in 2004. The structural improvement was mainly driven by the steady decrease in **interest** payments in relation to the nominal trend GDP, amounting to -2.4 percentage points between 1997 and 2004. Two-thirds of the cumulated decrease in the ratio was due to the decrease in average implicit interest rate. The implicit interest rate on general government debt decreased from 8.0% in 1997 to 4.3% in 2004. The rest of the decrease in the ratio was due to the very moderate increase in the amount of debt.

The structural **primary surplus** ratio increased by 0.6 percentage point, from 3.2% of nominal trend GDP in 1997 to 3.7% in 2004. This improvement was totally attributable to the considerable decrease in the structural primary expenditure ratio; the -3.8 percentage point decrease in the structural revenue ratio was more than compensated for by the -4.3 percentage point decrease in the structural primary expenditure ratio between 1997 and 2004.

The structural total **revenue** ratio decreased by -3.8 percentage point between 1997 and 2004. The decrease was due to three factors: the tax cuts, the fact that tax bases increased on average slower than the nominal trend GDP and the impact of special events. By contrast, fiscal drag clearly contributed to the increase in the revenue ratio and compensated the decrease in the structural total revenue ratio.

The contribution of **tax cuts** amounted to -3.4 percentage points between 1997 and 2004. Cuts in income taxes and social contribution rates in the years 2001 to 2004 played a decisive role.

The contribution of **fiscal drag** amounted to 1.1 percentage point between 1997 and 2004, reflecting the highly progressive taxation of wages. Since profit-related and consumption-related taxation and social security contributions are strictly proportional, fiscal drag does not exist under these revenue categories.

The contribution of the **decoupling** of tax bases from GDP amounted to -0.9 percentage point between 1997 and 2004. Though limited, the contribution is still visible in all revenue categories. The negative annual contributions concentrated on the early years of the period – especially on 1998 – and were particularly high under wage-related revenue categories. They primarily reflected two factors. Firstly, average growth in public sector wages remained below nominal trend GDP growth between 1997 and 2001, while growth in operating surplus and private sector wages exceeded nominal trend GDP growth slightly. Therefore, if public sector wages are excluded, the contribution of the decoupling in wage-related revenue categories is close to zero. Secondly, the large negative overall contribution in 1998 mainly reflects the unequal composition of nominal GDP growth in the earlier years of the 1990s resulting from the strong growth of (low tax yielding) nominal operating surplus and the comparatively weaker growth of (high tax yielding) nominal compensation of employees (both private and public). This development was partially compensated for by reverse developments in subsequent years.

²⁸ This section is based on the national accounts data and projections available at the end of May 2005.

The **residual** contributed -0.5 percentage point to the decrease in the structural total revenue ratio. Annual residuals under direct taxes payable by corporations and social contributions add up to zero between 1997 and 2004. This is plausible because over a longer period of time the impacts of unsystematic developments should cancel out each other. By contrast, the residuals under direct taxes payable by households and indirect taxes add up to 0.7% and -1.1% of nominal trend GDP respectively. The reasons for these large cumulative residuals are unclear and require further analysis.

The annual contributions of residuals to the changes in structural total revenue ratio were fairly limited except from an anomalous impact in the years 2000 and 2001. It is, on the one hand, attributable to the exceptionally large 1998-2000 revenue gains from taxes on stock option income and capital gains during the ICT boom phase and the following stock price bubble. Consequently, corporations and households paid more direct taxes than explainable by the increase in their respective tax bases. However, it should be kept in mind that large changes in residuals under the profit-related taxes also reflect the fact that operating surplus is a bad proxy for the tax base and the complex system of e.g. the deduction of the previous losses from current and future profits makes the annual change in operating surplus an even worse proxy for the annual change in profit-related tax revenue.

Because of the lagged collection of taxes on stock option income, capital gains and unforeseen corporate profits of 1998-2000, the exceptional revenue from direct taxes payable by corporations and households gradually faded away in 2001-2003. In addition, a one-off extraordinary booking, shifting EUR 500 million (0.35% of nominal trend GDP) worth of revenue from 2001 to 2002, increases the negative residual of direct taxes payable by corporations in 2001 and decreases that in 2002.

The structural **primary expenditure** ratio decreased by -4.3 percentage points between 1997 and 2004. The decrease occurred in its entirety already in 1998-2001 and resulted from the combination of a limited increase in nominal primary expenditure and a rapid increase in nominal trend GDP. Later, as a result of accelerating nominal primary expenditure growth and decelerating trend GDP growth, the structural primary expenditure ratio clearly increased. However, the considerable decrease in interest payments constrained the increase in the structural total expenditure ratio.

The average annual increase in nominal trend GDP amounted to 6.0% in 1998-2001. In 1998, 2000 and 2001, when the decrease in the total expenditure ratio was especially rapid, nominal trend GDP grew at an average rate of nearly 7%. At the same time, the primary expenditure growth was subdued; in 1998-2000 it increased on average by only 2.4% annually in nominal terms and in real terms it remained unchanged. In 2001 nominal primary expenditure growth almost doubled, but it was still outweighed by the rapid increase in nominal trend GDP, and the primary expenditure ratio kept declining. The picture changed completely in 2002-2003 when nominal primary expenditure growth accelerated further to an annual average of 5.5% whereas nominal trend GDP growth halved to an annual average of 3.7%.

Primary spending growth was mainly nurtured by growth in **social payments, compensation of employees** and **intermediate consumption** accelerating from 2001 onwards, after a period with only moderate increases or decreases. For example, unemployment-related expenditure decreased year after year in 1998-2001 as a result of the shrinking number of unemployed. It clearly increased thereafter, however, because more money was allocated to active labour market measures and unemployment benefits were raised. On the other hand, the growth of social transfers in kind²⁹ was clearly higher than that of nominal trend GDP throughout the period. Finally, the ratio of subsidies decreased steadily year after year reflecting the fact that, apart from the level shift in 2000, their annual growth was zero.

3.4 Germany

Between 1997 and 2004, the general government budget balance ratio deteriorated by 1 percentage point.³⁰ Taking into account the positive cyclical impact of 0.4 percentage point and the zero impact of temporary measures, the structural **balance** ratio fell by 1.4 percentage points, reaching -3.4% in 2004. Owing to the significant drop in the average interest on government debt, the **interest** expenditure ratio declined by 0.5 percentage point despite a distinct rise in the debt ratio. The structural **primary balance** as a percentage of trend GDP decreased by 1.9 percentage points to -0.6%. Overall, the unfavourable development of public finances was due mainly to weak revenue side developments, while primary expenditure, in particular in 2003 and 2004, contributed noticeably to consolidation.

The structural **revenue** ratio fell by 3.1 percentage points to 43.2% in 2004 in the 1998-2004 period. Given progressive taxation, the observation period saw a **fiscal drag** of 0.7 percentage point overall. It was much weaker than in earlier years in the light of low nominal growth rates. The positive influence of fiscal drag was more than offset by the fact that, adjusted for cyclical influences, compensation of employees – the macroeconomic bases of wage taxes and social contributions – grew much more weakly than nominal GDP in the 1998-2004 period. Consequently, wage taxes and social contributions grew more slowly than GDP in structural terms, so that the structural revenue ratio declined. Overall, the impact of the **decoupling** of macro bases from GDP amounted to -1.4 percentage points.

Tax measures and **legislation** changes concerning social security funds, on balance, had a slightly negative influence on the revenue ratio. On the one hand, there was a distinct reduction in the direct tax burden (-1.6% of GDP); here the first two stages of the tax reform, which took effect in 2001 and 2004, played a particular role. That contrasted, however, with a perceptible rise in indirect taxes (+1.5% of GDP). This was, in particular, the result of the sharp hike in energy taxation in order to contribute to the financing of the pension insurance in the context of the “ecological tax reform”.

²⁹ To some extent, social transfers in kind resemble health care expenditure. Here, health care expenditure consists of social benefits, social transfers in kind and other current transfers that can be allocated to the function of the provision of public health care services.

³⁰ This section is based on the national accounts data and projections available at the end of November 2005.

Germany

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	0.5	0.7	2.8	-4.1	-0.9	-0.3	0.3	-1.0
Cyclical component	0.3	0.3	0.6	0.1	-0.4	-0.4	0.0	0.4
Temporary measures	0.0	0.0	2.4	-2.4	0.1	0.0	0.0	0.0
Balance	0.2	0.4	-0.2	-1.8	-0.5	0.2	0.3	-1.4
Interest payments	0.0	-0.2	0.1	-0.1	-0.2	0.0	-0.1	-0.5
<i>due to changes in average interest rate</i>	-0.1	-0.3	0.0	0.0	-0.1	-0.1	-0.2	-0.8
<i>due to changes in debt level</i>	0.1	0.1	0.0	-0.1	0.0	0.1	0.1	0.3
Primary balance	0.2	0.2	-0.1	-1.9	-0.7	0.2	0.2	-1.9
Total revenue	0.1	0.6	0.4	-2.0	-0.8	-0.3	-1.1	-3.1
Direct taxes payable by corporations	0.1	0.2	0.2	-1.1	0.0	0.2	0.2	-0.3
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Legislation changes	0.0	0.1	0.0	-0.5	0.2	0.0	0.1	-0.1
Residual	0.0	0.1	0.2	-0.6	-0.2	0.1	0.1	-0.3
Direct taxes payable by households	0.2	0.2	0.4	-0.3	-0.3	-0.3	-0.6	-0.8
Fiscal drag	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.9
Decoupling of base from GDP	-0.1	-0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.4
Legislation changes	-0.2	0.0	-0.2	-0.6	0.1	0.0	-0.6	-1.5
Residual	0.4	0.2	0.4	0.2	-0.5	-0.4	-0.1	0.2
<i>Memo item: included in expenditure²⁾</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social contributions	-0.2	-0.3	-0.2	-0.3	-0.2	-0.1	-0.2	-1.5
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.2	-0.1	0.0	-0.1	-0.2	-0.1	-0.2	-1.0
Legislation changes	0.2	0.1	-0.2	-0.1	0.0	0.2	0.0	0.1
Residual	-0.2	-0.2	0.1	0.0	-0.1	-0.1	-0.1	-0.6
<i>Memo item: included in expenditure²⁾</i>	0.0	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4
Indirect taxes	0.2	0.5	0.1	-0.3	-0.2	0.0	-0.2	0.1
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Legislation changes	0.1	0.4	0.2	0.1	0.3	0.2	0.0	1.5
Residual	0.1	0.1	-0.1	-0.4	-0.4	-0.1	-0.1	-1.0
Taxes and social contributions overall	0.1	0.6	0.5	-2.0	-0.7	-0.2	-0.8	-2.5
Fiscal drag	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Decoupling of base from GDP	-0.4	-0.2	0.1	-0.2	-0.3	-0.2	-0.3	-1.4
Legislation changes	0.1	0.5	-0.2	-1.1	0.7	0.4	-0.5	-0.1
Residual ³⁾	0.4	0.2	0.5	-0.9	-1.2	-0.5	-0.2	-1.7
<i>Memo item: included in expenditure²⁾</i>	0.0	0.2	-0.1	-0.1	0.0	-0.2	-0.2	-0.4
Non-tax-related revenue⁴⁾	-0.1	-0.1	-0.1	0.1	-0.1	-0.1	-0.2	-0.6
<i>of which EU⁵⁾</i>								
Total primary expenditure	-0.1	0.3	0.5	-0.1	-0.2	-0.5	-1.3	-1.2
Social payments	-0.1	0.1	0.5	0.2	0.2	-0.1	-0.6	0.2
<i>of which old-age pensions</i>	0.2	0.2	0.2	0.0	0.0	0.0	-0.1	0.5
<i>of which unemployment benefits</i>	-0.1	-0.1	0.1	0.1	0.0	-0.2	-0.1	-0.3
<i>of which social transfers in kind</i>	0.0	0.0	0.2	0.1	0.0	0.0	-0.3	0.0
Subsidies	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.5
<i>of which EU⁶⁾</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	-0.2	-0.1	0.0	-0.2	-0.1	-0.2	-0.2	-0.9
Intermediate consumption	0.0	0.2	-0.1	0.0	0.1	-0.1	-0.1	0.0
Government investment	0.0	0.1	-0.1	0.0	-0.1	-0.2	-0.1	-0.4
Other ⁷⁾	0.2	0.1	0.2	0.1	-0.1	0.1	-0.2	0.3
<i>of which EU⁸⁾</i>	0.0	-0.1	0.1	-0.2	0.0	0.1	-0.1	-0.2
Memorandum items								
Health care ⁹⁾	0.0	0.0	0.1	0.1	0.0	0.0	-0.3	-0.2
Trend growth of real GDP	1.7	1.6	1.5	1.3	1.1	1.0	1.0	
Change in GDP deflator	0.6	0.3	-0.7	1.2	1.5	1.0	0.8	
Change in public employees	-1.8	-1.5	-1.0	-2.1	-0.9	-0.8	-1.0	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from public sector. – 3 Also includes the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Expenditure of the statutory health insurance funds and on health care benefits for civil servants. Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

Social contributions and indirect taxes developed considerably less favourably than one would expect given the changes in macroeconomic bases, the usual sensitivities and the changes in legislation, exerting a significantly negative influence on government revenue. Overall, this effect, which is captured in the **residual**, led to a decrease in the adjusted revenue ratio of 1.7 percentage points between 1997 and 2004 (see Table 2a, Appendix C.2 for a delineation of categories in accordance with the following reasoning). For turnover tax, this is likely to be due in part to tax evasion and usage of tax loopholes. Moreover, the composition of private consumption may have been shifted to a structure yielding less tax revenue. The negative residual for excise taxes is mostly concentrated in 2004 when strong demand reactions to high energy prices and the tobacco tax rate increase led to falling demand for mineral oil products and taxed cigarettes, which is only partly reflected in the underlying macroeconomic base (real private consumption). 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. Since the drop-outs are mostly younger, higher-earning persons with relatively low expenditure risk, the structural financial situation of the statutory health insurance schemes deteriorated markedly. The residual in profit-related taxes is also negative overall with relatively strong swings between 1997 and 2004. This is due to the fact that the employed macroeconomic base entrepreneurial and investment income is only relatively loosely linked to the development of the true tax base over the period (e.g. deduction of depreciations is not taken into account). Moreover, lag structures linking revenue to the base are unstable over time.

The ratio of **non-tax-related** revenue to adjusted GDP went down by 0.6 percentage point during the reporting period. About 0.3 percentage point of this fall can be attributed to changes in government revenue from sales. Since these are attributable to a significant degree to the (statistical) outsourcing of fee budgets (for example in the area of sewage and refuse disposal), they are likely to be reflected in a decline in expenditure of similar size. In addition, the decrease of Bundesbank profits in 2003 and 2004 is a sizable contributing factor.

The **primary expenditure** ratio, adjusted for cyclical influences and temporary measures, went down by 1.2 percentage points to 43.7% between 1997 and 2004, with the last year being the decisive one. The annual average nominal primary expenditure grew below 2%. Though this is very moderate by historical standards, the growth in nominal trend GDP, which basically defines the scope for a deficit-neutral increase in expenditure, was only slightly higher. In 2004, however, despite even lower growth of nominal trend GDP the structural primary expenditure ratio fell distinctly, reflecting the restrictive spending stance (the health reform in particular).

The fall in the adjusted primary expenditure ratio is due to several, and in some cases opposing, developments. In particular, the distinct reduction in staff in the public sector (representing a cumulative 9%) and a wage increase in the public sector which failed to match private sector pay hikes led to no more than moderate growth in **compensation of employees**. Furthermore, a distinct decline in **government investment** over time also has become apparent, reflecting recently mounting strains on municipal budgets. Together with the decline in

subsidies, these factors contributed a total of about 2 percentage points to consolidation between 1997 and 2004. Since these expenditure categories can be influenced, for the most part, in a discretionary manner and mostly without major legislation changes by the subsectors of government, the decrease reflects the restrictive expenditure policy over the period.

The aforementioned positive influence on deficits was offset to a large extent by the increase in **social payments** (0.2 percentage point) and **capital transfers** (0.3 percentage point; included under “Other” in Table 2). A crucial factor was the strong rise in expenditure on old-age provision (0.5 percentage point) owing to an increase in old-age pensions as consequence of a noticeable rise in the number of retirees and pensioners and the fact that the pension burden for former civil servants of the former Postal Services (Post Office, Telekom and Postbank) was largely assumed by the Federal Government. The increase in capital transfers is mainly attributable to the grant to private home buyers/builders (*Eigenheimzulage*), which has continued to rise owing to the additional generations of recipients entering the system. In contrast to earlier years, in 2004 all expenditure categories contributed to consolidation. In particular, social payments fell distinctly. First, expenditure on old-age pension grew only moderately because the rise in the number of pension payments and the increase of individual pensions was moderate. Second, discretionary spending cuts in health care in 2004 (see memorandum item of Table 2) contributed considerably to consolidation in this year.

3.5 Italy

Between 1997 and 2004 the general government **balance** ratio in Italy showed a limited worsening (-0.4% of GDP; Table 2).³¹ However, excluding the improvement in the cyclical conditions registered over the period and the increase in the recourse to temporary measures reveals a significant increase in the structural deficit ratio, by 1.5 percentage points, from 3.3% of trend GDP in 1997 to 4.8%. The increase was limited by the large drop in **interest** payments (4.4% of trend GDP), which largely reflected the reduction in average rates.

The high structural **primary surplus** achieved in 1997, which allowed Italy to participate in the European Monetary Union, almost vanished, declining by 5.9 percentage points to 0.3% of trend GDP. The worsening in the structural primary balance was a feature of all years except for 1999 and 2004, when the changes were close to zero; over the entire period, two-thirds of the fall can be attributed to weak revenue developments and one-third to expenditure increases.

The structural **revenue** ratio fell by 4.2 percentage points in the years 1998-2004, to 44.1%. Direct taxes on corporations and on households and social security contributions declined, by 1.9, 1.3 and 2.6 percentage points respectively, while indirect taxes rose by 1.9 percentage points. With the exception of direct taxes on households, which remained virtually unaffected, these developments were influenced by the 1998 tax reform which introduced a new regional tax on productive activities (IRAP). While in official estimates released when the reform was introduced, IRAP was expected to have a neutral effect on total revenue, in the legislation

³¹ This section is based on the national accounts data and projections available at the end of November 2005.

Italy

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	-0.2	1.3	1.0	-2.4	0.3	-0.4	0.0	-0.4
Cyclical component	0.5	0.5	0.2	0.2	-0.3	-0.2	-0.2	0.6
Temporary measures	-0.6	-0.6	1.3	-0.6	0.9	0.5	-0.4	0.5
Balance	-0.2	1.5	-0.5	-2.0	-0.2	-0.6	0.5	-1.5
Interest payments	-1.3	-1.5	-0.2	0.1	-0.7	-0.6	-0.2	-4.4
<i>due to changes in average interest rate</i>	-1.1	-1.3	-0.1	0.3	-0.7	-0.4	-0.1	-3.5
<i>due to changes in debt level</i>	-0.2	-0.2	-0.1	-0.2	0.0	-0.2	-0.1	-0.9
Primary balance	-1.5	0.0	-0.7	-1.9	-0.9	-1.1	0.3	-5.9
Total revenue	-1.3	0.0	-0.5	-0.4	-0.8	-1.1	-0.1	-4.2
Direct taxes payable by corporations	-1.7	0.3	-0.2	0.2	-0.3	-0.1	0.0	-1.9
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Legislation changes	-0.9	0.1	-0.2	0.2	0.2	-0.2	-0.4	-1.3
Residual	-0.8	0.2	-0.1	0.0	-0.5	0.1	0.4	-0.7
Direct taxes payable by households	-0.1	0.0	0.0	-0.4	-0.3	-0.3	-0.2	-1.3
Fiscal drag	0.1	0.1	0.1	0.1	0.2	0.1	0.1	1.0
Decoupling of base from GDP	-0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.2
Legislation changes	0.1	-0.2	-0.6	-0.4	-0.1	-0.5	-0.1	-1.8
Residual	-0.3	0.0	0.4	-0.2	-0.5	0.0	-0.3	-0.7
<i>Memo item: included in expenditure²⁾</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Social contributions	-2.7	-0.2	0.1	-0.1	0.1	0.2	0.0	-2.6
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.3	0.0	0.1	0.1	0.1	0.0	0.0	0.1
Legislation changes	-2.2	-0.2	-0.2	-0.1	0.0	0.0	0.1	-2.5
Residual	-0.2	0.0	0.1	-0.1	0.0	0.1	-0.1	-0.1
<i>Memo item: included in expenditure²⁾</i>	-0.6	0.0	0.0	0.0	0.0	0.1	0.0	-0.4
Indirect taxes	3.1	-0.4	0.0	-0.3	-0.1	-0.4	0.0	1.9
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Decoupling of base from GDP	-0.1	0.1	0.1	0.0	0.0	-0.1	-0.1	0.0
Legislation changes	2.7	-0.3	0.1	0.0	0.1	0.1	0.1	2.8
Residual	0.4	-0.1	-0.2	-0.3	-0.3	-0.4	0.0	-0.8
Taxes and social contributions overall	-1.4	-0.2	-0.1	-0.7	-0.6	-0.6	-0.2	-3.8
Fiscal drag	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Decoupling of base from GDP	-0.4	0.2	0.3	0.1	0.1	0.0	0.0	0.4
Legislation changes	-0.2	-0.6	-0.9	-0.4	0.2	-0.6	-0.3	-2.7
Residual ³⁾	-0.8	0.0	0.4	-0.6	-1.2	-0.2	0.0	-2.4
<i>Memo item: included in expenditure²⁾</i>	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Non-tax-related revenue⁴⁾	0.1	0.3	-0.4	0.2	-0.1	-0.5	0.1	-0.3
<i>of which EU⁵⁾</i>								
Total primary expenditure	0.2	0.0	0.3	1.5	0.2	0.1	-0.4	1.8
Social payments	-0.2	-0.1	0.1	0.2	0.3	0.1	0.2	0.6
<i>of which old-age pensions</i>	0.2	-0.1	0.0	0.1	0.1	0.0	0.1	0.4
<i>of which unemployment benefits</i>	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1
<i>of which social transfers in kind</i>	0.0	0.1	0.3	0.2	0.0	0.0	0.1	0.6
Subsidies	0.0	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.3
<i>of which EU⁶⁾</i>	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Compensation of employees	-0.9	0.0	0.1	0.2	0.0	0.1	-0.1	-0.6
Intermediate consumption	0.1	0.1	0.1	0.1	-0.1	0.1	-0.2	0.2
Government investment	0.2	0.0	0.1	0.2	0.1	0.1	0.1	0.7
Other ⁷⁾	1.1	0.0	-0.2	0.8	0.1	-0.3	-0.3	1.1
<i>of which EU⁸⁾</i>	0.3	-0.1	0.0	0.0	0.0	0.1	0.0	0.3
Memorandum items								
Health care ⁹⁾	0.0	0.0	0.4	0.3	0.1	-0.1	0.3	1.1
Trend growth of real GDP	1.7	1.7	1.6	1.4	1.3	1.1	1.1	
Change in GDP deflator	2.7	1.6	2.2	2.6	3.1	2.9	2.6	
Change in public employees	-0.9	-0.1	0.7	2.6	0.8	0.1	-0.2	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 For direct taxes, decoupling associated with taxes paid by the public sector; for indirect taxes (not reported in the table, but included in the memo item referring to the "taxes and social contributions overall") and social security contributions, change in the ratio to GDP of, respectively, indirect taxes and employers' contributions paid by the general government to itself. – 3 Might also include the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated into the function of the provision of public health care services.

Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

effects shown in Table 2 we include a negative impact close to -0.5% of GDP. In our assessment, the reform implied reductions in social security contributions (-2.1% of GDP) and direct taxes on corporations (-0.9% of GDP), only partly offset by the increase in indirect taxes (+2.5%), where the new tax was classified.

Excluding the impact of the IRAP reform, over the period 1998-2004 there were limited reductions in indirect taxes and in social security contributions (in each case, around 0.5 percentage points) and more sizable ones in direct taxes on corporations and on households (1 and 1.3 percentage points, respectively). The decline in the overall taxes and social security contributions ratio (3.8 percentage points) essentially reflected legislation changes (-2.7 percentage points) and a large residual component (-2.4 percentage points). These factors were partly offset by the positive impacts of fiscal drag (0.8 percentage points) and decoupling (0.4 percentage points).

Concerning **legislation**, the changes implemented over the period 1998-2004 are estimated to have reduced revenue in 2004 by approximately 2.7% of trend GDP. The largest effect of legislation concerned direct taxes on households (-1.8% of trend GDP). Tax reductions were sizable in 1999-2000, when the favourable cyclical conditions and economic prospects led the Government to use what was called the “growth dividend”, and in 2003-04, when the slowdown prompted action aimed at helping the expected recovery. It should be emphasized that our assessment of the effects of legislation has to be considered as only broadly indicative. Indeed, the effects of a number of measures could not be assessed, lacking adequate information. Moreover, in many cases we could not perform an independent assessment but had to rely on government estimates.

Concerning the **residual** component, results for individual years can be partly explained by specific factors. The negative value in 1998 (0.8 % of GDP) is related to the reform of the taxation on financial assets, whose complexity has made it difficult to evaluate the impact on revenue. The reform was partly responsible for the fall in revenue from the withholding tax on interest revenue, from 1.8% of GDP in 1997 to 0.9% in 1998. Furthermore, the negative impact on revenue of the IRAP reform may have been larger than that included in our estimates. The positive residuals in 2000 are connected with the large amount of revenue from capital gains collected in that year (0.7% of trend GDP); in the following two years these extraordinary revenues vanished, resulting in negative residuals. The 2001-03 period was also affected, to an extent difficult to gauge precisely, by tax incentives for investment (Tremonti law). The large negative residual in the direct taxes paid by corporation in 2002 seem to suggest that our estimates (0.2% of GDP in 2002 and 0.1% in the previous and subsequent years) may underestimate the actual loss of receipts related to the incentives. The recourse in the years 2001-04 to temporary withholding taxes on extraordinary operations (essentially, revaluation of assets and sales of companies) at reduced rates also affected ordinary revenue, albeit to an extent which is difficult to measure. These extraordinary taxes, included in the temporary measures, cumulatively generated revenue amounting to 1.9% of trend GDP.

The effects of **decoupling** tax bases from GDP were particularly sizable and negative in 1998. In the following years they were initially positive and afterwards close to zero. Over the

period 1998-2004 this factor had a positive impact on the dynamics of the revenue ratio, equal to 0.4 percentage points. The favourable effect is related to the good performance of employment and consumption with respect to GDP.

The structural **primary expenditure** ratio rose by 1.8 percentage points between 1997 and 2004. The largest contributions to the increase came from social transfers in kind (0.6 percentage points), a part of health care included in social payments, and **investment** (0.7 percentage points). Overall, health care rose by 1.1 percentage points. The IRAP reform led to a reduction in social security contribution rates for public employees which was matched by the recording of payments for the new tax: the reform explains 0.7 percentage points of GDP of the reduction in **compensation of employees** and of the increase in the category “other” registered in 1998. The cost of public employees, net of the impact of the reform, remained broadly stable as a ratio to trend GDP over the entire period, notwithstanding the significant increase in their number from 2000 onwards. The cumulative growth in public employment in the period 2000-2004 (4 percentage points) largely offset the reduction which had taken place in the nineties.

3.6 The Netherlands

Between 1997 and 2004 the general government balance worsened by 1 percentage point.³² Over the whole period, the cycle contributed mildly positively to the change in the balance. In addition, there was minor recourse to temporary measures in 2004, amounting to 0.2% of GDP. Adjusted for these effects, the structural **balance** ratio worsened by 1.3 percentage points to -1.5%. These overall figures mark significantly different developments before and after 2001. Up to 2000, the structural general government balance improved, caused by falling **interest** payments. This, in turn, was caused by both lower average interest rates and a falling debt ratio. The structural primary surplus worsened slightly. The increase in the structural revenue ratio fell short of the increase in the structural primary expenditure ratio. 2001 marked a turnaround for the Dutch economy, and consequently, for public finances. Economic growth slumped and remained below its potential afterwards. This had a major impact on public finances, which gradually unveiled only later. **Interest** payments continued to decline, albeit at a more moderate pace as the debt ratio started to increase again. Refinancing conditions remained favourable, though. The structural **primary balance** decreased markedly in 2001 and 2002, when both revenue decreased and expenditure increased. Starting in 2003, consolidation measures started to take effect. The downward trend in the revenue ratio was stopped, while the expenditure ratio began to decrease. As a result, the structural primary balance started to improve again.

The structural **revenue** ratio declined by 3 percentage points between 1997 and 2002. Afterwards it increased by 1.5 percentage point. **Fiscal drag** contributed negatively in all years. This was mainly caused by social contributions, which are only levied over the two

³² This section is based on the national accounts data and projections available at the end of November 2005. The last revision of national accounts data for the Netherlands covers the years 2001 to 2004. For earlier years, no revised data are available yet. For these years, we have linked pre-revision national accounts data using growth rates.

The Netherlands

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	0.3	1.4	1.5	-2.4	-1.7	-1.2	1.1	-1.0
Cyclical component	0.8	0.4	0.6	1.0	-0.2	-1.4	-1.2	0.1
Temporary measures	0.0	0.0	0.6	-0.9	0.3	0.0	0.2	0.2
Balance	-0.5	1.0	0.3	-2.6	-1.8	0.3	2.0	-1.3
Interest payments	-0.3	-0.3	-0.6	-0.5	-0.4	-0.2	-0.1	-2.4
<i>due to changes in average interest rate</i>	0.0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-1.2
<i>due to changes in debt level</i>	-0.2	-0.2	-0.4	-0.3	-0.1	0.0	0.1	-1.1
Primary balance	-0.8	0.7	-0.3	-3.1	-2.2	0.1	1.9	-3.7
Total revenue	-0.7	1.3	-0.2	-1.9	-1.7	0.1	1.4	-1.7
Direct taxes payable by corporations	0.0	0.0	0.0	-0.1	-0.6	-0.5	0.2	-1.1
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Legislation changes	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Residual	0.0	0.0	0.0	-0.1	-0.6	-0.5	0.0	-1.1
Direct taxes payable by households	-0.3	0.0	0.0	-0.6	0.5	0.0	-0.1	-0.5
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Decoupling of base from GDP	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.4
Legislation changes	-0.2	-0.1	-0.2	-0.6	0.3	-0.2	0.0	-1.1
Residual	-0.2	0.0	0.1	-0.1	0.1	0.1	-0.1	0.0
<i>Memo item: included in expenditure²⁾</i>	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Social contributions	-0.2	0.8	-0.1	-2.4	-0.7	0.7	0.8	-1.0
Fiscal drag	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-1.4
Decoupling of base from GDP	0.3	0.3	0.1	0.2	0.1	0.0	0.0	0.9
Legislation changes	-0.1	0.2	0.0	-1.8	-0.1	0.8	0.3	-0.8
Residual	-0.2	0.5	0.1	-0.5	-0.4	0.1	0.7	0.3
<i>Memo item: included in expenditure²⁾</i>	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indirect taxes	0.0	0.5	-0.1	0.4	-0.4	0.1	0.4	1.0
Fiscal drag	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.3
Decoupling of base from GDP	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.3
Legislation changes	0.0	0.1	0.0	0.6	-0.2	0.3	0.2	0.9
Residual	0.0	0.4	0.0	0.0	0.0	-0.1	0.3	0.7
Taxes and social contributions overall	-0.4	1.4	-0.4	-2.6	-1.3	0.3	1.4	-1.6
Fiscal drag	-0.2	-0.2	-0.3	-0.4	-0.2	-0.2	-0.1	-1.5
Decoupling of base from GDP	0.4	0.4	0.1	0.1	0.0	-0.1	-0.1	0.8
Legislation changes	-0.3	0.2	-0.2	-1.8	-0.1	0.8	0.6	-0.8
Residual ³⁾	-0.3	1.0	0.1	-0.6	-0.9	-0.3	1.0	-0.1
<i>Memo item: included in expenditure²⁾</i>	0.1	0.1	0.0	0.0	0.1	0.0	-0.1	0.2
Non-tax-related revenue⁴⁾	-0.3	-0.1	0.2	0.7	-0.4	-0.2	0.0	-0.1
<i>of which EU⁵⁾</i>								
Total primary expenditure	0.1	0.7	0.1	1.2	0.5	0.0	-0.6	2.0
Social payments	-0.2	-0.2	-0.1	0.0	0.3	0.2	-0.1	-0.2
<i>of which old-age pensions</i>	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.1
<i>of which unemployment benefits</i>	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.3
<i>of which social transfers in kind</i>	0.1	0.1	0.1	0.2	0.5	0.2	0.1	1.3
Subsidies	-0.2	0.1	-0.1	0.0	0.0	-0.1	0.0	-0.2
<i>of which EU⁶⁾</i>	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	-0.2
Compensation of employees	0.0	0.2	-0.1	-0.1	0.1	0.1	0.0	0.2
Intermediate consumption	0.1	0.3	0.0	0.8	0.1	0.0	-0.1	1.1
Government investment	0.1	0.1	0.1	0.3	0.2	-0.2	-0.3	0.3
Other ⁷⁾	0.3	0.2	0.3	0.2	-0.1	0.1	-0.1	0.8
<i>of which EU⁸⁾</i>	0.2	-0.1	0.0	-0.1	-0.2	0.0	0.1	0.0
Memorandum items								
Health care ⁹⁾	0.0	0.1	0.2	0.2	0.5	0.2	0.1	1.3
Trend growth of real GDP	3.0	2.8	2.4	2.1	1.7	1.6	1.5	
Change in GDP deflator	1.7	1.6	3.9	5.2	3.8	2.5	0.9	
Change in public employees	3.1	0.9	0.8	1.8	2.1	0.4	-0.7	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from public sector. – 3 Also includes the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated into the function of the provision of public health care services.

Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

lowest tax brackets. This has a degressive effect which was particularly sizeable because of high nominal wage increases. For the other revenue categories, fiscal drag was only minor. As employment growth was strong and wages increased considerably in the years 1998-2003, the positive contribution of the **decoupling** of the base from GDP was substantial for both direct taxes payable by households and social contributions. Decoupling contributed negatively to indirect tax receipts, reflecting relatively sluggish private consumption growth.

With a new cabinet taking office in 1998, **legislation changes** contributed relatively little to the observed revenue changes up to 2000. On balance, the tax burden was relieved somewhat. The tax reform of 2001 had a major negative impact on revenues. On balance, it is estimated to have lowered tax revenues by 1.8% of GDP in 2001. The reform implied a shift from direct to indirect tax revenues. Income tax rates were lowered, the income tax base was broadened by eliminating various tax deductions, and social contribution rates were decreased. At the same time, the VAT rate was increased from 17.5% to 19%, and energy taxes were increased. After 2002, the tax and social contribution burden was increased again in an effort to redress public finance problems. In particular, social contributions and energy taxes were raised.

The overall **residual** component is mainly explained by direct taxes on corporations, with particularly substantial residual contribution in the years 2002 and 2003. The likely cause is the complicated relation between profits and corporate taxation. When calculating the cyclically adjusted corporate tax revenues, an elasticity with respect to gross operating surplus of 1 is assumed. This is a far cry from the compensation schemes available for corporations, enabling them to carry back and forward losses for many years when determining taxable profits. Furthermore, it seems likely that the downturn on the stock markets and the related substantial write-offs on corporate balance sheets impaired corporate tax revenues – effects which are not fully captured in the tax base and elasticities used here. Another factor in the residual development of corporate taxes is natural gas revenue, which partly accrues to the government in the form of corporate tax on Gasunie's profits. In 2001, this factor accounted for an increase in corporate taxes of 0.1% of GDP under the influence of rising (oil and) gas prices, but in 2003 it fell again by the same amount.

For other revenue categories, the overall residual was fairly small. In individual years, some sizeable residuals appeared though. For direct taxes payable by households, additional variations in tax receipts comes from the deduction of mortgage interest payments and pension premiums. Mortgage interest payments were increasing annually by 0.05% of GDP on average in the years 1998-2004. Pension premiums were lowered in the years 1999-2001, as the stock market boomed. As from 2002, premiums were increased again. For social contributions, the high residuals in some years may reflect inaccurate estimations of the elasticities and, especially in the years 2001-2002, of the effect of legislation changes. Further analysis would be required to explain the origin of these residuals. The **residuals** for indirect taxes may point to composition effects in private consumption. The boom in private consumption up to and including 2000 and the bust afterwards were mainly concentrated in durable consumption (home furnishing, white and brown goods, computer equipment). These goods are all subject to the regular VAT of 17.5/19%. Daily requirements like food, on the other hand, are subject to the lower tariff of 6%. This composition effect in private

consumption is not captured by the framework, and may partly explain the observed positive residuals up to 2000 and the negative residuals afterwards.

Primary expenditure increased up to 2002. Afterwards, a downward trend started. **Social payments** decreased up to 2001, supported by decreasing unemployment and rising participation rates. This was partly offset by increasing **compensation of employees** both due to rising public sector employment and public sector wages. Starting in 2000, health care expenditure growth accelerated, reflecting increasing wages and employment, and an effort to reduce waiting lists. In 2003, consolidation measures turned the upward trend of primary expenditure around. Public wages and social benefit increases were contained from this year onwards, and measures were taken to curb health care expenditure.

3.7 Portugal

Between 1997 and 2004, the general government balance as a percentage of GDP improved by 0.7 percentage point.³³ While the impact of the economic cycle was virtually nil in this period, the recourse to temporary measures was very significant in the 2002-2004 period. Adjusting for the effects of the economic cycle and for temporary measures, the structural **balance** as a percentage of trend GDP deteriorated by 1.3 percentage points, reaching -4.4% in 2004. This outcome resulted from a sizeable increase in the expenditure ratio (2.7 percentage points), which more than compensated the rise in the revenue ratio (1.3 percentage points). As interest expenditure as a percentage of trend GDP decreased by 1.4 percentage points, mainly due to the decline in the implicit interest rate on public debt, the increase in the primary expenditure ratio was very significant (4.1 percentage points). As a consequence, there was a considerable deterioration of the structural primary balance ratio (2.7 percentage points), which predominantly concentrated in the years from 1997 to 2001.

The rise in the structural **revenue** ratio in the 1998-2004 period resulted from strong increases in tax receipts and social contributions that more than outweighed the decline in non-tax related revenue. However, if the effects of tax receipts and social contributions recorded also on the expenditure side are netted out, the increase appears less pronounced. Indeed, the evolution of social contributions in this period stems predominantly from an increase in the social contributions of civil servants, which are recorded on the expenditure side under the item compensation of employees, and in imputed social contributions that are included in social payments and compensation of employees. Adjusted for these two items, which are treated as a residual in the current application of the methodology for Portugal, the overall tax and social contributions ratios increased only by 0.6 percentage point between 1997 and 2004.

In this period, **fiscal drag** represented 0.6 percentage point and stemmed from the positive effect of progressive taxation in direct taxes paid by households. It is worth mentioning that, although the elasticity of indirect taxes to its macroeconomic base used in the calculation of the cyclical component is slightly above one, due to shifts in private consumption toward a bigger share of goods and services taxed at the (higher) standard VAT rate in periods of strong growth (and the opposite during recessions), a nil fiscal drag was assumed. Indeed, the

³³ This section is based on the national accounts data and projections available at the end of May 2005.

Portugal

Table 2: Changes in structural fiscal components (as a percentage of trend GDP)

<i>Increasing +, decreasing -</i>	1998	1999	2000	2001	2002	2003	2004	98-04
Unadjusted balance¹⁾	0.4	0.3	0.0	-1.5	1.7	-0.2	0.0	0.7
Cyclical component	0.8	0.8	0.4	-0.1	-0.6	-1.2	0.0	0.1
Temporary measures	-0.4	0.0	0.3	-0.3	1.4	1.1	-0.2	1.9
Balance	-0.1	-0.5	-0.8	-1.1	0.9	0.0	0.2	-1.3
Interest payments	-0.7	-0.2	0.0	0.0	-0.2	-0.2	-0.1	-1.4
<i>due to changes in average interest rate</i>	-0.5	-0.1	0.0	-0.1	-0.3	-0.3	-0.1	-1.4
<i>due to changes in debt level</i>	-0.2	-0.1	0.0	0.1	0.1	0.1	0.1	0.0
Primary balance	-0.8	-0.8	-0.8	-1.1	0.8	-0.2	0.2	-2.7
Total revenue	0.0	0.9	-0.3	-0.5	0.6	0.2	0.5	1.3
Direct taxes payable by corporations	-0.2	0.4	0.1	-0.4	-0.1	-0.5	0.6	-0.1
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.6
Legislation changes	-0.2	0.0	0.2	-0.2	0.0	-0.2	0.1	-0.3
Residual	-0.2	0.2	-0.2	-0.2	-0.1	-0.4	0.5	-0.5
Direct taxes payable by households	-0.2	0.0	0.3	-0.1	-0.3	0.2	-0.1	-0.2
Fiscal drag	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.6
Decoupling of base from GDP	0.1	0.1	0.1	-0.1	0.0	0.0	0.0	0.2
Legislation changes	0.0	0.0	0.0	-0.3	-0.3	0.3	0.0	-0.3
Residual	-0.3	-0.2	0.2	0.2	-0.1	-0.2	-0.2	-0.7
<i>Memo item: included in expenditure²⁾</i>	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.4
Social contributions	0.1	0.1	0.5	0.1	0.2	0.3	0.4	1.7
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	0.0	0.0	0.0	-0.1	-0.1	0.1	0.1	0.0
Legislation changes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Residual	0.1	0.1	0.5	0.2	0.3	0.2	0.3	1.8
<i>Memo item: included in expenditure²⁾</i>	0.1	0.0	0.3	-0.1	0.2	0.3	0.4	1.3
Indirect taxes	0.4	0.2	-0.3	-0.2	0.3	0.0	0.0	0.5
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of base from GDP	-0.2	-0.1	0.0	0.0	-0.1	0.1	0.1	-0.2
Legislation changes	0.0	0.0	-0.6	0.3	0.7	0.5	0.1	1.0
Residual	0.6	0.4	0.3	-0.5	-0.3	-0.6	-0.2	-0.3
Taxes and social contributions overall	0.1	0.7	0.7	-0.6	0.1	0.0	0.9	1.9
Fiscal drag	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.6
Decoupling of base from GDP	0.1	0.1	0.2	-0.2	-0.2	0.3	0.3	0.6
Legislation changes	-0.2	0.0	-0.4	-0.2	0.4	0.6	0.2	0.4
Residual ³⁾	0.1	0.5	0.8	-0.2	-0.2	-1.0	0.3	0.3
<i>Memo item: included in expenditure²⁾</i>	0.2	0.1	0.5	0.0	0.2	0.3	0.4	1.7
Non-tax-related revenue⁴⁾	-0.1	0.2	-1.0	0.1	0.5	0.2	-0.4	-0.6
<i>of which EU⁵⁾</i>	0.0	-0.1	-0.7	-0.4	0.4	0.6	-0.6	-0.7
Total primary expenditure	0.8	1.6	0.5	0.7	-0.2	0.4	0.3	4.1
Social payments	0.4	0.5	0.7	0.4	0.4	1.4	0.6	4.4
<i>of which old-age pensions</i>	0.1	0.2	0.4	0.3	0.2	0.5	0.6	2.3
<i>of which unemployment benefits</i>	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.3
<i>of which social transfers in kind</i>	0.0	0.1	0.0	0.1	0.0	1.0	0.1	1.4
Subsidies	0.2	0.2	-0.6	0.4	0.0	0.1	0.0	0.3
<i>of which EU⁶⁾</i>	0.3	0.0	-0.4	0.2	0.1	-0.1	0.1	0.1
Compensation of employees	0.4	0.7	0.7	0.1	0.1	-0.8	0.0	1.2
Intermediate consumption	0.0	0.4	0.3	-0.1	-0.1	-0.7	0.1	-0.1
Government investment	-0.3	0.3	-0.3	0.1	-0.4	-0.3	0.0	-1.0
Other ⁷⁾	0.2	-0.4	-0.3	-0.3	-0.2	0.6	-0.4	-0.8
<i>of which EU⁸⁾</i>	0.0	-0.2	-0.3	-0.3	0.2	0.5	-0.4	-0.4
Memorandum items								
Health care ⁹⁾	-	-	-	-	-	-	-	
Trend growth of real GDP	2.9	2.6	2.3	1.9	1.5	1.2	1.1	
Change in GDP deflator	3.8	3.1	3.5	4.3	4.4	2.8	2.4	
Change in public employees	3.4	4.9	2.2	2.5	1.9	-5.9	-0.7	

1 Change in unadjusted balance, cyclical component and temporary measures as percentage of nominal GDP. Due to the different denominator the change in the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the change in the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures. – 2 Fiscal drag and decoupling associated with taxes and social contributions paid in the public sector. For social contributions and indirect taxes also the public sector residual might be included to fully reflect revenue from public sector. – 3 Also includes the change in the adjusted ratio of direct taxes not by corporations/households. – 4 Other current transfers receivable, sales and total capital revenue. – 5 Net receipts from EC budget if country is a net recipient from EC budget. Empty if country is net payer to EC budget. – 6 Expenditure paid by EC budget that is spent under category "Subsidies". – 7 Other current transfers payable, other net acquisitions of non-financial assets and capital transfers. – 8 If country is a net payer to EC budget: net payments to EC budget less expenditure paid by EC budget that is not spent under category "Other". If country is a net recipient from EC budget: expenditure paid by EC budget that is spent under category "Other". – 9 Social benefits, social transfers in kind and other current transfers that can be allocated into the function of the provision of public health care services.

Note: Due to rounding there might be deviations between aggregate numbers and the sum of individual numbers.

changes in the consumption pattern are essentially of a cyclical nature, not contributing to the improvement/deterioration of the structural indirect tax receipts ratio.

The effects of the **decoupling** of the tax bases from GDP were not particularly significant in the Portuguese case, with the exception of direct taxes paid by corporations. However, the decomposition of corporate income tax receipts is not straightforward given the difficulties associated with the choice of a proper macroeconomic base, the lagged effects resulting from the deduction of losses and the uncertainty of the estimates of the effects of changes in tax legislation. Indeed, the practical implementation of this framework to the Portuguese data showed that the estimated elasticity (6 with respect to real private GDP) is too high. As a provisional solution, the corporate income tax receipts elasticity used in the presented calculations is lowered to 4 but a deeper analysis of the question will be carried out later. Based on these assumptions, the effect of the decoupling of the tax base from GDP in corporate income tax receipts amounts to 0.6 percentage point in the period under analysis, although it is almost offset by a residual of the same magnitude with an opposite sign. Finally, a small decoupling effect occurred in personal income tax receipts, resulting on average from a growth of the wage bill above trend GDP in this period.

On taxes and social contributions overall, the effects of changes in **legislation** were not very significant between 1998 and 2004, and represented as a whole an increase of 0.4 percentage point. Nevertheless, the analysis by category of tax shows that the rises in indirect taxation, essentially VAT and tax on oil products, more than compensated the declines in direct taxation paid by both households and corporations.

Finally, the **residual** component appears to have had almost no effect in the change of the structural tax revenue ratio over the period 1998-2004 as a whole though it was sizeable in some years. However, if the part of social contributions that is also included in expenditure is subtracted, the residual becomes considerably negative (-1.4 percentage points). In fact, all taxes, direct and indirect, present negative residuals. In the case of indirect taxes, the positive contribution of the residual to fiscal consolidation between 1997 and 2000 basically relied on the structural increase of the average implicit VAT rate. This one can be explained by a more significant shift in the composition of private consumption towards more goods and services taxed at the standard rate and less at the reduced rates than the one assumed implicitly in the calculation of the cyclical component, the modernisation of the distribution circuits and some efficiency gains in tax collection. In 2001, with the beginning of the cyclical downturn, this behaviour is partially reversed, more than offsetting the previous favourable evolution, which may partly indicate an underestimation of the cyclical component elasticity. Regarding direct taxes payable by households, the negative residual can be explained by errors in the measurement of tax legislation changes and, in some years, by net reimbursements differing from what would be expected from the legislative changes and their reflection in the update of the withholding tables. Lastly, it should be mentioned that the overall positive contribution of the residual of social contributions to consolidation might be partly explained by efficiency gains in tax collection. The evolution of the residual over time is probably related to the pro-

cyclical behaviour of firms that in periods of low economic growth tend to delay the fulfilment of their legal obligations.³⁴

The ratio of **non-tax-related** revenue to trend GDP declined by 0.6 percentage point between 1997 and 2004, which can be almost entirely explained by the decrease in net receipts from the EU budget.

The increase in the **primary expenditure** ratio by 4.1 percentage points stems predominantly from the evolution of **social payments** and **compensation of employees** ratios, which rose by 4.4 and 1.2 percentage points, respectively, outweighing the decline in the **public investment** ratio (-1.0 percentage point). The behaviour of social payments is largely related to the increase in pension expenditure, both in the private sector and the civil servants pension system. It resulted from an expansion of the number of pensioners, related with the ageing of population in the private sector case, and a rise in the average pension, since the systems have not reached maturity yet. Part of the rise in compensation of employees is owing to the above-mentioned increase in social contributions of the civil servants pension system. Furthermore, it is a consequence of the rise in the number of civil servants, the effect of automatic promotions and extraordinary revisions in some specific carriers over the 1998-2001 period. From the middle of 2002 to 2004 the fiscal authorities implemented some measures in order to limit the growth of the civil servants wage bill. They consisted, essentially, in the control of the number of civil servants, the elimination of extraordinary revisions in carriers and an almost freeze in the update of the public employees wage scale in 2003 and 2004. Finally, it should be noted that the transformation of some public hospitals into public corporations in 2003 led to a shift in expenditure categories. More specifically, in that year a distinct increase in social transfers in kind was roughly offset by a decline in compensation of employees and intermediate consumption. If these hospitals had remained within the general government sector, social transfers in kind would have grown less strongly and compensation of employees and intermediate consumption would have recorded higher overall changes in their ratios to GDP.

4. Conclusions

In this paper, a disaggregated framework for the analysis of public finance structural developments was developed and applied to six countries. Structural balances, in this case computed by correcting the budgetary aggregates for the impact of the cycle and temporary measures, represent important indicators for fiscal sustainability and for medium-term fiscal developments. The application of this framework has shown the benefits of analysing structural developments which may significantly differ from the changes in unadjusted aggregates. In particular, it demonstrates the usefulness of the framework for the analysis and monitoring of past and projected developments in public finances in a multi-country setting.

In almost all countries examined the structural fiscal primary balance worsened. As the analysis reveals, in general both structural macroeconomic developments – via their impact

³⁴ Indeed, this residual increases by 0.1, 0.2, 0.3 and 0.1 percentage point of trend GDP in 1999, 2000, 2001 and 2002, and declines by 0.1 percentage point in both 2003 and 2004.

on revenue from taxes and social contributions – as well as policy measures contributed to this worsening. On the revenue side, fiscal drag, differences between the trend growth of GDP and the respective macroeconomic bases, and legislation changes – in particular cuts in direct taxes – explain in general a significant part of the changes in budgetary ratios. However, in individual years and in some instances also over longer periods, specific factors that are not necessarily linked to the macroeconomic development or recent policy decisions, had a significant impact on the structural revenue ratios. In many cases, these factors are identified. The analysis of the structural development of individual budget categories on the expenditure side shows the main driving factors underlying the expenditure stance. In the countries under review, the evolution of social payments, in particular old-age-related expenditure and health care, were particularly relevant for the fiscal worsening.

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Appendix A: Elasticities, information on temporary measures, tables on structural levels and figures on structural developments for individual countries

A.1 Elasticities underlying the cyclical adjustment and the breakdown of changes in the structural revenue ratio

Elasticity of:	with respect to:	Belgium	Finland	Germany ¹⁾	Italy ²⁾	The Netherlands	Portugal ³⁾
direct taxes payable by corporations	operating surplus	0.7	1.0	1.2	1.0	1.0	4.0
direct taxes payable by households	average compensation of employees	1.4	1.4	1.9	1.6	1.1	1.7
	number of employees	1.0	1.0	1.0	1.0	1.0	1.0
social contributions	average compensation of employees	1.0	1.0	1.0	1.0	0.7	1.0
	number of employees	1.0	1.0	1.0	1.0	1.0	1.0
indirect taxes	private consumption	1.0	1.0	0.9	0.9	1.0	1.1
unemployment-related expenditure	number of unemployed	0.9	1.1	0.8	1.0	1.0	1.0

¹ As described in Appendix C.2 the delineation of categories deviates from the standard proceeding. For profit-related taxes fixed lags between the development in revenue and the macroeconomic base of up to two years are assumed. – ² Time lag of one year for direct taxes payable by corporations. – ³ For indirect taxes an elasticity of 1.0 is considered in the breakdown of the structural revenue ratio.

A.2 Information on temporary measures³⁵

Year	Measure	Size (% of GDP)
Belgium		
1997	HST payments received from the Netherlands	0.2
1997/1999/2000	HST investment grants	-0.2/-0.1/-0.1
1998	Covering of exchange losses NMKN/SNC	-0.3
1999/2001	Reimbursement of Maribel reductions in social security contributions	0.1/0.1
2000	Exceptional expenditure due to the food contamination crisis	-0.2
2001/2002	Decreased withholding rates for marriage allowance	-0.1/-0.1
2001-2004	Insufficient indexation of tax brackets in 2001 and 2002 tax withholding	0.1/0.1/-0.2/-0.1
2001-2006	Real estate sales	0.1/0.1/0.1/0.2/0.1/0.2
2002	Personal income tax reduction in Flemish Region	-0.1
2003	Exceptional Belgacom dividend	0.1
	Exceptional subsidies De Post/La Poste	-0.1
	Reimbursement animal contributions (slaughterhouses)	-0.1
	Debt assumption Antwerp hospitals	-0.1
	Capital transfer in exchange for assumption of pension liabilities: Belgacom	1.8
2003/2004	Increased withholding rates for municipal taxes	0.1/0.1
2003/2004	Funding NMBS/SNCB	-0.4/0.4
2004	Capital transfer in exchange for assumption of pension liabilities: Biac	0.1

³⁵ A positive (negative) figure indicates a(n) improvement (worsening) of the budget balance.

	Increased withholding rates on replacement incomes	0.1
	Reimbursement stock exchange taxes	-0.1
	Exceptional pension contributions from local Authorities to Ethias	-0.1
2004/2006	Tax amnesty	0.2/0.1
2005	Aquafin VAT ruling	0.1
	Temporary reduction of energy costs paid by households	-0.1
2005/2006/2007	Securitisation of tax arrears	0.2/0.1/-0.1
<i>Germany</i>		
2000	Sale of UMTS licenses	2.5
	Compensation for NS forced labour	-0.1
2001	Equity injection for Bankgesellschaft Berlin	-0.1
<i>Italy</i>		
1997	Surcharge on personal income tax	0.3
	Tax and social contributions amnesty	0.1
	Shortening of payment lags for oil, methane and electricity taxes	0.1
	Lengthening of severance payment lags for public employees	0.1
	Advances on indirect tax revenue collection	0.2
	Bringing forward of taxation on severance payments	0.3
	Adjustment for swap/forward rate agreement	0.2*
1998	Temporary withholding tax on self-employed	0.1
	Tax and social contributions amnesty	0.1
	Bringing forward of taxation on severance payments	0.2
	Change in the timing of pension payments	0.3
2000	Securitization and sales of public real estate assets	0.1
	Sale of UMTS licenses	1.2
2001	Securitization and sales of public real estate assets	0.2
	Temporary withholding taxes on extraordinary operations at reduced rates	0.5
2002	Adjustment for swap/forward rate agreement	0.2*
	Securitization and sales of public real estate assets	0.9
	Temporary withholding taxes on extraordinary operations at reduced rates	0.5
2003	Securitization and sales of public real estate assets	0.2
	Temporary withholding taxes on extraordinary operations at reduced rates	0.3
	Tax amnesty (including on off-shore placements)	1.4

2004	Securitization and sales of public real estate assets	0.3
	Temporary withholding taxes on extraordinary operations at reduced rates	0.6
	Adjustment for swap/forward rate agreement	0.1*
	Tax amnesty (including building offences)	0.7

* relevant only for EDP deficit

The Netherlands

1997	Disputed treatment of interest on government debt	0.1
2000	Sale of UMTS licenses	0.6
2001	Redemption of rights of DSM-pension fund on part of natural gas revenue	-0.3
2004	Advancing various non-tax receipts	0.2

Portugal

1997	Transfer of <i>Banco Nacional Ultramarino</i> and Macau in exchange for future pension payments	0.4
2000	Sale of UMTS licenses	0.3
2002	Sale of the fixed telecommunications network to <i>Portugal Telecom</i>	0.3
	Sale of future toll rights	0.2
	Tax amnesty (on interest surcharges on the payment of arrears on tax and social security contributions)	0.9
2003	Additional effect of the previous year tax amnesty	0.2
	Transfer of the postal office in exchange for future pension payments	1.0
	Securitization of tax and social contributions arrears	1.3
2004	Transfers of <i>CGD</i> , <i>ANA</i> , <i>NAV</i> and <i>INCM</i> in exchange for future pension payments	2.3

Temporary measures (as a percentage of trend GDP)

<i>Belgium</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	-0.1	-0.2	-0.1	-0.2	0.4	0.2	1.2	0.8
Total revenue	0.2	0.0	0.1	0.0	0.1	0.1	1.8	0.3
Taxes and social contributions overall	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.1
Non-tax-related revenue	0.2	0.0	0.1	0.0	0.1	0.1	1.9	0.2
Total expenditure	0.3	0.2	0.2	0.2	-0.3	-0.1	0.6	-0.5
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2
Other	0.3	0.2	0.2	0.2	-0.2	-0.1	0.6	-0.2
<i>Finland</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taxes and social contributions overall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-tax-related revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total expenditure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Germany</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	0.0	0.0	0.0	2.4	-0.1	0.0	0.0	0.0
Total revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taxes and social contributions overall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-tax-related revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total expenditure	0.0	0.0	0.0	-2.4	0.1	0.0	0.0	0.0
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	-2.4	0.1	0.0	0.0	0.0
<i>Italy</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	1.1	0.6	0.0	1.3	0.7	1.6	2.1	1.6
Total revenue	1.0	0.2	0.0	0.0	0.5	0.6	1.8	1.3
Taxes and social contributions overall	0.3	-0.1	0.0	0.0	0.5	0.5	0.3	0.6
Non-tax-related revenue	0.7	0.3	0.0	0.0	0.0	0.1	1.5	0.7
Total expenditure	-0.1	-0.4	0.0	-1.3	-0.2	-1.0	-0.3	-0.3
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	-0.1	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	-0.1	-0.2	-0.9	-0.2	-0.3
Other	0.0	0.0	0.0	-1.2	-0.0	-0.1	-0.1	-0.0
<i>The Netherlands</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	0.0	0.0	0.0	0.7	-0.3	0.0	0.0	0.2
Total revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Taxes and social contributions overall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-tax-related revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total expenditure	0.0	0.0	0.0	-0.7	0.3	0.0	0.0	0.0
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	-0.7	0.3	0.0	0.0	0.0
<i>Portugal</i>	1997	1998	1999	2000	2001	2002	2003	2004
Deficit (-) or surplus (+)	0.4	0.0	0.0	0.4	0.0	1.4	2.5	2.2
Total revenue	0.4	0.0	0.0	0.0	0.0	0.9	2.5	2.2
Taxes and social contributions overall	0.0	0.0	0.0	0.0	0.0	0.9	1.5	0.0
Non-tax-related revenue	0.4	0.0	0.0	0.0	0.0	0.0	1.0	2.2
Total expenditure	0.0	0.0	0.0	-0.4	0.0	-0.5	0.0	0.0
Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subsidies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compensation of employees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Government investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	-0.4	0.0	-0.5	0.0	0.0

A.3 Tables on structural levels

Belgium

Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹	-2.1	-0.8	-0.5	0.0	0.6	-0.1	0.0	-0.1
Cyclical component	-0.5	-0.4	0.3	0.8	0.6	0.3	0.0	-0.2
Temporary measures	-0.1	-0.2	-0.1	-0.2	0.4	0.2	1.2	0.8
Deficit (-) or surplus (+)	-1.4	-0.2	-0.7	-0.5	-0.5	-0.6	-1.2	-0.7
Total revenue	50.0	50.4	50.1	50.2	50.2	50.2	49.6	49.8
Total current revenue	49.6	50.0	49.6	49.7	49.7	49.7	49.0	49.2
Total capital revenue	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
Total expenditure	51.4	50.6	50.7	50.7	50.6	50.9	50.8	50.5
Total current expenditure	48.5	47.9	47.7	47.6	47.9	48.2	48.2	47.8
Total capital expenditure	2.8	2.7	3.0	3.0	2.7	2.7	2.7	2.7
Primary deficit (-) or surplus (+)	6.3	7.1	6.2	6.2	6.1	5.2	4.1	4.2
Deficit (-) or surplus (+)	-1.4	-0.2	-0.7	-0.5	-0.5	-0.6	-1.2	-0.7
Interest payable	7.7	7.3	6.9	6.8	6.6	5.8	5.3	4.9
Total current revenue	49.6	50.0	49.6	49.7	49.7	49.7	49.0	49.2
<i>Direct taxes</i>	16.9	17.4	16.8	17.1	17.3	17.1	16.6	16.7
of which payable by corporations	2.9	3.5	3.3	3.3	3.5	3.3	3.0	3.3
of which payable by households	13.9	13.9	13.4	13.7	13.7	13.7	13.5	13.4
<i>Indirect taxes</i>	13.6	13.5	13.9	13.8	13.3	13.3	13.4	13.6
of which VAT	6.8	6.7	7.2	7.2	6.9	7.0	6.8	7.0
of which taxes on energy	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.5
<i>Social contributions</i>	16.5	16.5	16.3	16.1	16.1	16.5	16.5	16.4
of which employers' actual social contributions	8.7	8.7	8.7	8.4	8.4	8.6	8.6	8.4
of which employees' social contributions	4.4	4.3	4.3	4.4	4.4	4.5	4.5	4.5
<i>Other current transfers receivable</i>	1.3	1.3	1.1	1.3	1.5	1.2	1.0	0.9
of which interest receivable	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.2
<i>Sales</i>	1.3	1.3	1.4	1.3	1.4	1.6	1.6	1.6
Total current expenditure	48.5	47.9	47.7	47.6	47.9	48.2	48.2	47.8
<i>Current transfers</i>	25.9	25.7	25.8	25.8	26.2	26.4	27.0	27.3
Social payments	22.8	22.5	22.6	22.6	22.9	23.3	23.7	23.9
of which old age pensions	8.7	8.6	8.6	8.6	8.6	8.7	8.7	8.7
of which unemployment benefits	2.5	2.5	2.4	2.4	2.4	2.5	2.5	2.5
Subsidies	1.5	1.6	1.6	1.5	1.6	1.5	1.6	1.6
Other current transfers payable	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8
<i>Interest</i>	7.7	7.3	6.9	6.8	6.6	5.8	5.3	4.9
<i>Compensation of employees</i>	11.8	11.6	11.8	11.8	11.8	12.2	12.2	12.0
of which: Employers actual social contributions	1.3	1.3	1.3	1.3	1.2	1.3	1.4	1.3
<i>Intermediate consumption</i>	3.2	3.2	3.3	3.3	3.3	3.7	3.7	3.7
Gross savings	1.0	2.1	1.9	2.0	1.8	1.6	0.9	1.4
Total capital revenue	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
of which capital taxes	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
Total capital expenditure	2.8	2.7	3.0	3.0	2.7	2.7	2.7	2.7
government investment	1.7	1.7	2.0	2.0	1.8	1.7	1.7	1.8
other net acquisitions of non-financial assets	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
capital transfers	1.1	1.1	1.0	1.1	0.9	0.9	0.9	0.9

¹ Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

Finland

Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹⁾	-1.3	1.6	2.2	7.1	5.2	4.3	2.3	1.9
Cyclical component	-0.1	1.0	1.2	1.4	1.0	-0.2	-0.1	0.0
Temporary measures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deficit (-) or surplus (+)	-1.1	0.7	1.0	5.8	4.3	4.5	2.4	1.8
Total revenue	56.2	55.1	54.6	56.9	54.2	54.5	53.1	52.4
Total current revenue	56.0	54.8	54.3	56.6	53.9	54.2	52.8	52.1
Total capital revenue	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total expenditure	57.3	54.4	53.5	51.0	49.9	50.0	50.6	50.6
Total current expenditure	53.9	51.1	50.4	48.0	46.8	46.9	47.4	47.5
Total capital expenditure	3.5	3.3	3.2	3.0	3.2	3.1	3.2	3.1
Primary deficit (-) or surplus (+)	3.2	4.3	4.2	8.8	7.0	6.7	4.4	3.7
Deficit (-) or surplus (+)	-1.1	0.7	1.0	5.8	4.3	4.5	2.4	1.8
Interest payable	4.3	3.6	3.2	2.9	2.8	2.2	2.0	1.9
Total current revenue	56.0	54.8	54.3	56.6	53.9	54.2	52.8	52.1
<i>Direct taxes</i>	18.7	18.9	18.8	21.4	19.3	19.3	18.0	17.8
of which payable by corporations	3.5	4.4	4.6	6.0	4.5	4.4	3.7	3.8
of which payable by households	15.1	14.4	14.2	15.2	14.6	14.8	14.3	13.9
<i>Indirect taxes</i>	15.1	14.7	14.8	14.3	13.9	14.2	14.3	14.1
of which VAT	8.6	8.4	8.4	8.5	8.2	8.4	8.6	8.5
of which taxes on energy	2.3	2.2	2.2	2.0	2.0	2.0	2.0	1.9
<i>Social contributions</i>	13.6	13.1	13.2	12.4	12.3	12.3	12.1	12.0
of which employers' actual social contributions	9.5	9.5	9.6	9.0	9.1	9.2	9.0	8.9
of which employees' social contributions	3.9	3.6	3.6	3.4	3.2	3.1	3.1	3.0
<i>Other current transfers receivable</i>	3.5	3.3	2.8	3.7	3.9	3.6	3.3	3.3
of which interest receivable	2.3	1.9	1.5	1.9	2.1	2.0	1.8	1.5
<i>Sales</i>	5.1	4.8	4.7	4.8	4.6	4.8	5.0	4.9
Total current expenditure	53.9	51.1	50.4	48.0	46.8	46.9	47.4	47.5
<i>Current transfers</i>	26.1	24.9	24.7	23.2	22.5	22.7	22.9	22.8
Social payments	22.8	21.7	21.6	20.2	19.7	20.0	20.2	20.1
of which old age pensions	12.1	11.7	11.7	11.2	11.0	11.3	11.4	11.3
of which unemployment benefits	3.1	2.7	2.6	2.2	2.0	1.9	1.9	1.9
Subsidies	2.4	2.3	2.2	2.2	2.1	2.0	1.9	1.9
Other current transfers payable	0.8	0.9	0.9	0.8	0.7	0.7	0.8	0.8
<i>Interest</i>	4.3	3.6	3.2	2.9	2.8	2.2	2.0	1.9
<i>Compensation of employees</i>	14.7	14.1	14.0	13.6	13.4	13.5	13.7	13.8
of which: Employers actual social contributions	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.1
<i>Intermediate consumption</i>	8.8	8.5	8.5	8.3	8.1	8.5	8.9	9.0
Gross savings	2.1	3.7	3.9	8.6	7.1	7.3	5.3	4.6
Total capital revenue	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
of which capital taxes	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Total capital expenditure	3.5	3.3	3.2	3.0	3.2	3.1	3.2	3.1
government investment	3.2	2.9	2.9	2.7	2.8	2.9	3.0	2.9
other net acquisitions of non-financial assets	-0.0	-0.1	-0.1	0.0	0.0	-0.0	-0.1	-0.0
capital transfers	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3

1 Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

Germany

Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹	-2.6	-2.2	-1.5	1.3	-2.8	-3.7	-4.0	-3.7
Cyclical component	-0.6	-0.4	-0.1	0.5	0.6	0.2	-0.2	-0.3
Temporary measures	0.0	0.0	0.0	2.4	-0.1	0.0	0.0	0.0
Deficit (-) or surplus (+)	-2.0	-1.8	-1.4	-1.6	-3.4	-3.9	-3.7	-3.4
Total revenue	46.3	46.4	46.9	47.3	45.3	44.5	44.2	43.2
Total current revenue	46.0	46.1	46.6	47.0	45.0	44.2	43.9	42.8
Total capital revenue	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total expenditure	48.3	48.2	48.3	48.9	48.7	48.4	47.9	46.6
Total current expenditure	45.3	45.1	45.2	45.7	45.4	45.2	44.9	43.7
Total capital expenditure	3.0	3.1	3.1	3.2	3.3	3.2	3.1	2.8
Primary deficit (-) or surplus (+)	1.4	1.5	1.7	1.6	-0.3	-1.0	-0.8	-0.6
Deficit (-) or surplus (+)	-2.0	-1.8	-1.4	-1.6	-3.4	-3.9	-3.7	-3.4
Interest payable	3.3	3.3	3.1	3.2	3.1	2.9	3.0	2.8
Total current revenue	46.0	46.1	46.6	47.0	45.0	44.2	43.9	42.8
<i>Direct taxes</i>	11.1	11.4	11.8	12.4	10.9	10.6	10.4	10.0
of which payable by corporations	1.2	1.3	1.5	1.7	0.6	0.6	0.8	0.9
of which payable by households	9.8	9.9	10.1	10.5	10.2	9.9	9.6	9.0
<i>Indirect taxes</i>	11.9	12.0	12.5	12.6	12.3	12.1	12.2	12.0
of which VAT	6.4	6.6	6.8	6.8	6.6	6.4	6.3	6.2
of which taxes on energy	1.8	1.7	1.9	2.1	2.1	2.2	2.3	2.2
<i>Social contributions</i>	19.2	19.0	18.7	18.6	18.3	18.0	18.0	17.8
of which employers' actual social contributions	7.7	7.6	7.6	7.5	7.4	7.2	7.3	7.2
of which employees' social contributions	7.0	7.0	6.9	6.8	6.7	6.6	6.6	6.5
<i>Other current transfers receivable</i>	1.6	1.6	1.6	1.5	1.6	1.6	1.5	1.3
of which interest receivable	0.5	0.4	0.4	0.5	0.5	0.4	0.4	0.4
<i>Sales</i>	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9
Total current expenditure	45.3	45.1	45.2	45.7	45.4	45.2	44.9	43.7
<i>Current transfers</i>	29.6	29.5	29.7	30.3	30.3	30.2	30.1	29.3
Social payments	26.6	26.5	26.6	27.2	27.4	27.6	27.5	26.9
of which old age pensions	11.4	11.6	11.7	11.9	12.0	12.0	12.0	11.9
of which unemployment benefits	3.2	3.1	3.0	3.1	3.2	3.2	3.0	2.9
Subsidies	2.1	2.1	2.1	2.0	1.9	1.8	1.7	1.6
Other current transfers payable	0.9	0.9	1.0	1.1	1.0	0.9	0.9	0.8
<i>Interest</i>	3.3	3.3	3.1	3.2	3.1	2.9	3.0	2.8
<i>Compensation of employees</i>	8.4	8.3	8.2	8.2	8.0	7.9	7.7	7.6
of which: Employers actual social contributions								
<i>Intermediate consumption</i>	4.0	4.0	4.1	4.1	4.1	4.2	4.1	4.0
Gross savings	0.7	1.0	1.4	1.3	-0.4	-1.0	-0.9	-0.9
Total capital revenue	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
of which capital taxes	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2
Total capital expenditure	3.0	3.1	3.1	3.2	3.3	3.2	3.1	2.8
government investment	1.8	1.8	1.9	1.8	1.8	1.7	1.5	1.4
other net acquisitions of non-financial assets	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
capital transfers	1.2	1.4	1.4	1.5	1.6	1.6	1.6	1.5

1 Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

Italy

Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹⁾	-2.9	-3.1	-1.8	-0.8	-3.2	-2.9	-3.3	-3.3
Cyclical component	-0.7	-0.2	0.3	0.5	0.6	0.3	0.1	-0.1
Temporary measures	1.1	0.6	0.0	1.3	0.7	1.6	2.1	1.6
Deficit (-) or surplus (+)	-3.3	-3.5	-2.0	-2.6	-4.6	-4.8	-5.4	-4.8
Total revenue	48.3	46.9	47.0	46.5	46.0	45.3	44.2	44.1
Total current revenue	48.2	46.7	46.6	46.3	45.9	45.0	44.1	44.0
Total capital revenue	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1
Total expenditure	51.6	50.5	49.0	49.0	50.6	50.1	49.6	48.9
Total current expenditure	47.9	46.6	44.9	45.0	45.9	45.2	44.8	44.5
Total capital expenditure	3.7	3.9	4.1	4.0	4.7	4.9	4.8	4.5
Primary deficit (-) or surplus (+)	6.2	4.7	4.7	4.0	2.1	1.1	-0.0	0.3
Deficit (-) or surplus (+)	-3.3	-3.5	-2.0	-2.6	-4.6	-4.8	-5.4	-4.8
Interest payable	9.6	8.3	6.8	6.6	6.7	6.0	5.4	5.1
Total current revenue	48.2	46.7	46.6	46.3	45.9	45.0	44.1	44.0
<i>Direct taxes</i>	16.5	14.7	15.0	14.8	14.6	13.9	13.5	13.2
of which payable by corporations	4.2	2.5	2.8	2.5	2.7	2.4	2.3	2.2
of which payable by households	12.2	12.1	12.1	12.1	11.7	11.4	11.1	10.9
<i>Indirect taxes</i>	12.7	15.8	15.4	15.5	15.1	15.0	14.6	14.7
of which VAT	5.8	6.2	6.1	6.6	6.4	6.4	6.1	6.0
of which taxes on energy	2.4	2.4	2.3	2.2	2.1	2.0	2.0	1.9
<i>Social contributions</i>	15.5	12.9	12.7	12.8	12.6	12.8	12.9	13.0
of which employers' actual social contributions	10.7	8.8	8.6	8.6	8.6	8.7	8.9	8.9
of which employees' social contributions	2.7	2.5	2.4	2.4	2.4	2.4	2.3	2.4
<i>Other current transfers receivable</i>	2.0	1.9	1.9	1.7	2.0	1.9	1.7	1.8
of which interest receivable	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2
<i>Sales</i>	1.5	1.5	1.6	1.6	1.6	1.5	1.4	1.4
Total current expenditure	47.9	46.6	44.9	45.0	45.9	45.2	44.8	44.5
<i>Current transfers</i>	22.1	22.9	22.6	22.7	23.1	23.3	23.2	23.4
Social payments	20.0	19.8	19.7	19.8	20.0	20.3	20.4	20.6
of which old age pensions	11.2	11.4	11.3	11.3	11.4	11.5	11.5	11.6
of which unemployment benefits	0.6	0.6	0.5	0.4	0.4	0.5	0.5	0.5
Subsidies	1.7	1.7	1.7	1.6	1.7	1.5	1.5	1.4
Other current transfers payable	0.4	1.3	1.2	1.2	1.5	1.5	1.3	1.4
<i>Interest</i>	9.6	8.3	6.8	6.6	6.7	6.0	5.4	5.1
<i>Compensation of employees</i>	11.6	10.6	10.6	10.7	10.9	10.9	11.0	11.0
of which: Employers actual social contributions	3.4	2.8	2.8	2.8	2.9	2.9	3.0	2.9
<i>Intermediate consumption</i>	4.7	4.8	4.9	5.1	5.2	5.1	5.1	4.9
Gross savings	0.2	0.2	1.7	1.2	-0.1	-0.1	-0.7	-0.5
Total capital revenue	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1
of which capital taxes	-0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Total capital expenditure	3.7	3.9	4.1	4.0	4.7	4.9	4.8	4.5
government investment	2.2	2.4	2.4	2.5	2.7	2.8	2.8	2.9
other net acquisitions of non-financial assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
capital transfers	1.4	1.5	1.6	1.5	2.0	2.1	2.0	1.5

1 Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

The Netherlands

Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹⁾	-1.1	-0.7	0.6	2.1	-0.1	-0.3	-2.0	-3.2
Cyclical component	-0.9	-0.0	0.4	1.0	2.1	1.9	0.4	-0.8
Temporary measures	0.0	0.0	0.0	0.6	-0.3	0.0	0.0	0.2
Deficit (-) or surplus (+)	-0.2	-0.7	0.2	0.5	-2.1	-3.8	-3.5	-1.5
Total revenue	46.4	45.7	47.1	46.9	44.9	43.3	43.4	44.7
Total current revenue	46.1	45.4	46.7	46.4	44.6	42.9	43.0	44.6
Total capital revenue	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.1
Total expenditure	46.6	46.4	46.8	46.4	47.0	47.1	46.9	46.3
Total current expenditure	44.0	43.6	43.7	42.9	43.1	42.9	42.8	42.6
Total capital expenditure	2.6	2.8	3.1	3.4	3.9	4.2	4.1	3.7
Primary deficit (-) or surplus (+)	4.7	4.0	4.6	4.3	1.2	-1.0	-0.9	1.0
Deficit (-) or surplus (+)	-0.2	-0.7	0.2	0.5	-2.1	-3.8	-3.5	-1.5
Interest payable	4.9	4.7	4.4	3.8	3.2	2.8	2.6	2.6
Total current revenue	46.1	45.4	46.7	46.4	44.6	42.9	43.0	44.6
<i>Direct taxes</i>	12.0	11.8	11.9	11.7	11.1	10.9	10.4	10.5
of which payable by corporations	4.2	4.1	4.1	4.1	4.0	3.4	2.9	3.1
of which payable by households	7.7	7.4	7.5	7.4	6.8	7.3	7.3	7.2
<i>Indirect taxes</i>	12.0	12.1	12.5	12.4	12.9	12.5	12.6	13.0
of which VAT	6.6	6.6	6.9	6.8	7.2	7.1	7.2	7.3
of which taxes on energy	0.4	0.4	0.5	0.6	0.7	0.6	0.6	0.6
<i>Social contributions</i>	16.1	15.9	16.7	16.7	14.2	13.5	14.3	15.1
of which employers' actual social contributions	1.7	4.5	4.5	4.5	4.2	4.1	4.2	4.3
of which employees' social contributions	13.3	10.4	11.2	11.1	9.0	8.5	9.2	9.7
<i>Other current transfers receivable</i>	2.7	2.4	2.2	2.3	3.0	2.6	2.3	2.5
of which interest receivable	0.7	0.6	0.6	0.7	0.8	0.6	0.6	0.6
<i>Sales</i>	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.5
Total current expenditure	44.0	43.6	43.7	42.9	43.1	42.9	42.8	42.6
<i>Current transfers</i>	23.4	23.2	23.2	23.0	23.0	23.1	23.1	23.1
Social payments	20.0	19.8	19.6	19.5	19.5	19.7	19.9	19.8
of which old age pensions	4.9	5.0	5.0	4.9	4.8	4.8	4.8	4.8
of which unemployment benefits	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.1
Subsidies	1.9	1.8	1.9	1.8	1.8	1.8	1.7	1.7
Other current transfers payable	1.5	1.7	1.7	1.8	1.8	1.6	1.5	1.6
<i>Interest</i>	4.9	4.7	4.4	3.8	3.2	2.8	2.6	2.6
<i>Compensation of employees</i>	9.7	9.8	9.9	9.9	9.8	9.9	10.0	9.9
of which: Employers actual social contributions	0.9	1.2	1.3	1.3	1.3	1.4	1.5	1.6
<i>Intermediate consumption</i>	5.9	6.0	6.3	6.2	7.1	7.1	7.1	7.0
Gross savings	2.1	1.7	2.9	3.5	1.5	-0.0	0.2	2.0
Total capital revenue	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.1
of which capital taxes	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3
Total capital expenditure	2.6	2.8	3.1	3.4	3.9	4.2	4.1	3.7
government investment	2.8	2.8	2.9	3.1	3.3	3.5	3.3	3.1
other net acquisitions of non-financial assets	-0.5	-0.7	-0.4	-0.2	-0.1	-0.1	0.1	-0.0
capital transfers	0.4	0.7	0.6	0.6	0.7	0.7	0.7	0.6

1 Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

Portugal

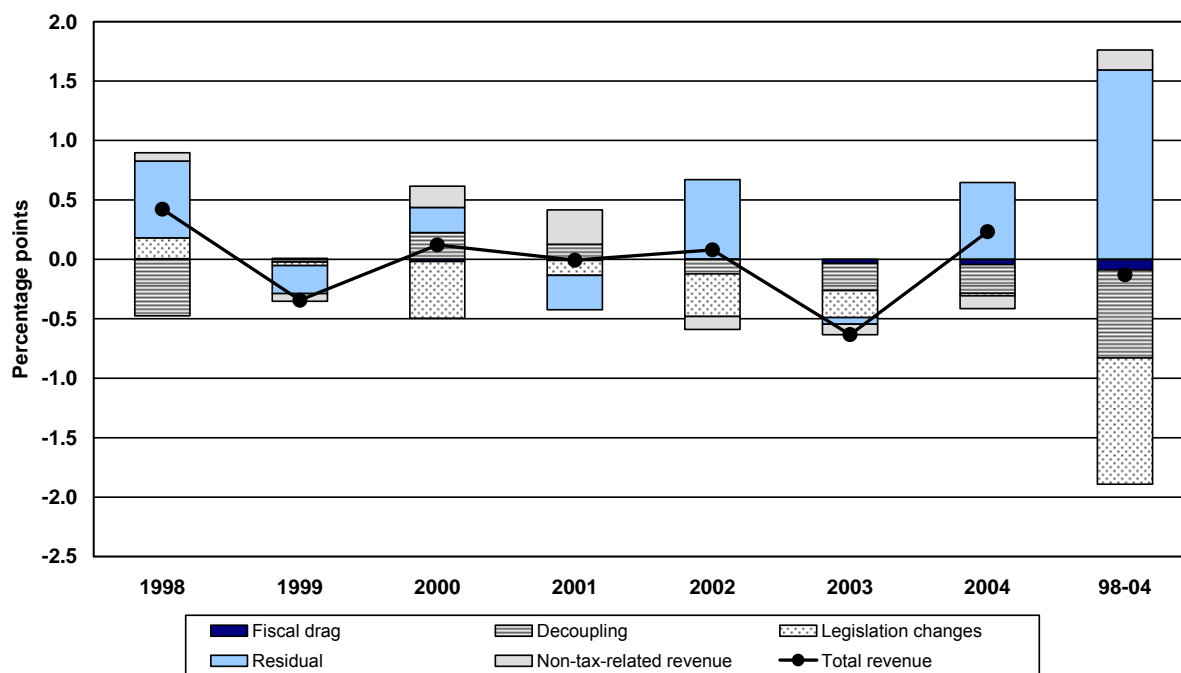
Table 1. Structural fiscal components (as a percentage of trend GDP)

	1997	1998	1999	2000	2001	2002	2003	2004
Unadjusted deficit (-) or surplus (+)¹	-3.6	-3.2	-2.8	-2.8	-4.4	-2.7	-2.9	-2.9
Cyclical component	-0.9	-0.1	0.8	1.2	1.1	0.4	-0.8	-0.8
Temporary measures	0.4	0.0	0.0	0.3	0.0	1.4	2.5	2.3
Deficit (-) or surplus (+)	-3.0	-3.1	-3.7	-4.5	-5.6	-4.6	-4.6	-4.4
Total revenue	42.3	42.3	43.2	42.9	42.4	43.0	43.1	43.6
Total current revenue	42.1	42.1	43.0	42.8	41.8	42.5	42.7	43.2
Total capital revenue	0.2	0.2	0.1	0.1	0.6	0.5	0.4	0.4
Total expenditure	45.3	45.4	46.8	47.3	48.0	47.6	47.8	48.0
Total current expenditure	38.0	38.3	40.0	41.3	42.1	42.3	42.2	42.8
Total capital expenditure	7.3	7.1	6.9	6.0	5.8	5.2	5.5	5.2
Primary deficit (-) or surplus (+)	1.1	0.4	-0.4	-1.2	-2.3	-1.5	-1.7	-1.6
Deficit (-) or surplus (+)	-3.0	-3.1	-3.7	-4.5	-5.6	-4.6	-4.6	-4.4
Interest payable	4.2	3.5	3.3	3.3	3.2	3.1	2.9	2.8
Total current revenue	42.1	42.1	43.0	42.8	41.8	42.5	42.7	43.2
<i>Direct taxes</i>	9.7	9.3	9.6	10.1	9.6	9.2	8.8	9.3
of which payable by corporations	3.6	3.4	3.8	3.9	3.5	3.4	2.9	3.5
of which payable by households	6.1	5.9	5.9	6.2	6.1	5.8	6.0	5.8
<i>Indirect taxes</i>	14.7	15.1	15.3	15.1	14.9	15.2	15.2	15.2
of which VAT								
of which taxes on energy								
<i>Social contributions</i>	11.2	11.3	11.4	11.9	12.0	12.2	12.5	12.9
of which employers' actual social contributions								
of which employees' social contributions								
<i>Other current transfers receivable</i>	4.5	4.2	4.1	3.2	3.0	3.5	3.8	3.3
of which interest receivable	0.4	0.4	0.3	0.4	0.5	0.3	0.3	0.3
<i>Sales</i>	2.0	2.2	2.5	2.6	2.4	2.4	2.4	2.4
Total current expenditure	38.0	38.3	40.0	41.3	42.1	42.3	42.2	42.8
<i>Current transfers</i>	16.4	17.0	17.8	18.1	18.9	19.3	20.9	21.3
Social payments	12.9	13.3	13.8	14.4	14.9	15.3	16.7	17.3
of which old age pensions								
of which unemployment benefits	0.5	0.5	0.6	0.7	0.8	0.8	0.8	0.8
Subsidies	1.9	2.1	2.3	1.7	2.1	2.1	2.2	2.2
Other current transfers payable	1.6	1.6	1.7	2.0	2.0	1.9	1.9	1.8
<i>Interest</i>	4.2	3.5	3.3	3.3	3.2	3.1	2.9	2.8
<i>Compensation of employees</i>	13.6	14.0	14.7	15.4	15.5	15.6	14.8	14.9
of which: Employers actual social contributions	2.1	2.2	2.2	2.3	2.2	2.4	2.5	2.9
<i>Intermediate consumption</i>	3.9	3.8	4.2	4.5	4.5	4.4	3.7	3.7
Gross savings	4.1	3.8	3.0	1.5	-0.3	0.2	0.5	0.5
Total capital revenue	0.2	0.2	0.1	0.1	0.6	0.5	0.4	0.4
of which capital taxes	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total capital expenditure	7.3	7.1	6.9	6.0	5.8	5.2	5.5	5.2
government investment	4.3	4.0	4.2	4.0	4.1	3.6	3.3	3.3
other net acquisitions of non-financial assets	0.1	0.1	0.0	0.1	0.0	0.0	-0.1	0.0
capital transfers	2.9	3.0	2.6	1.9	1.7	1.6	2.3	1.9

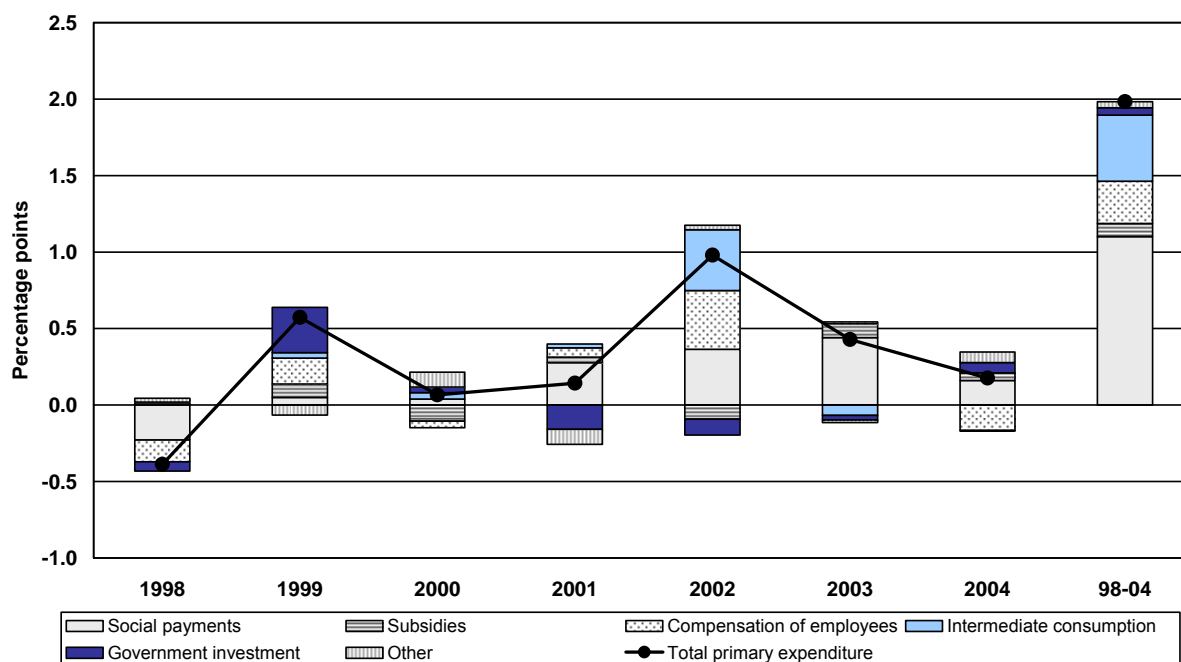
1 Ratios of unadjusted balance, cyclical component and temporary measures with respect to nominal GDP. Due to the different denominator the ratio of the adjusted balance to trend nominal GDP might deviate slightly from the ratio to nominal GDP of the unadjusted balance less cyclical component less temporary measures.

A.4 Structural developments for individual countries

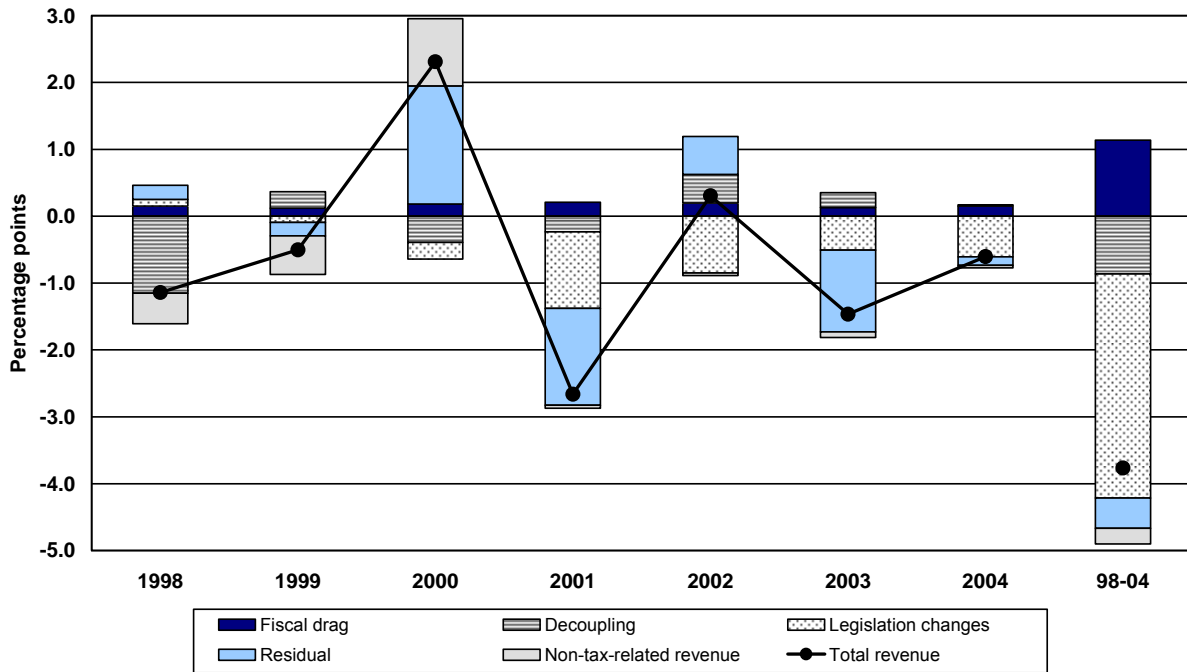
Belgium: Change in the structural revenue ratio



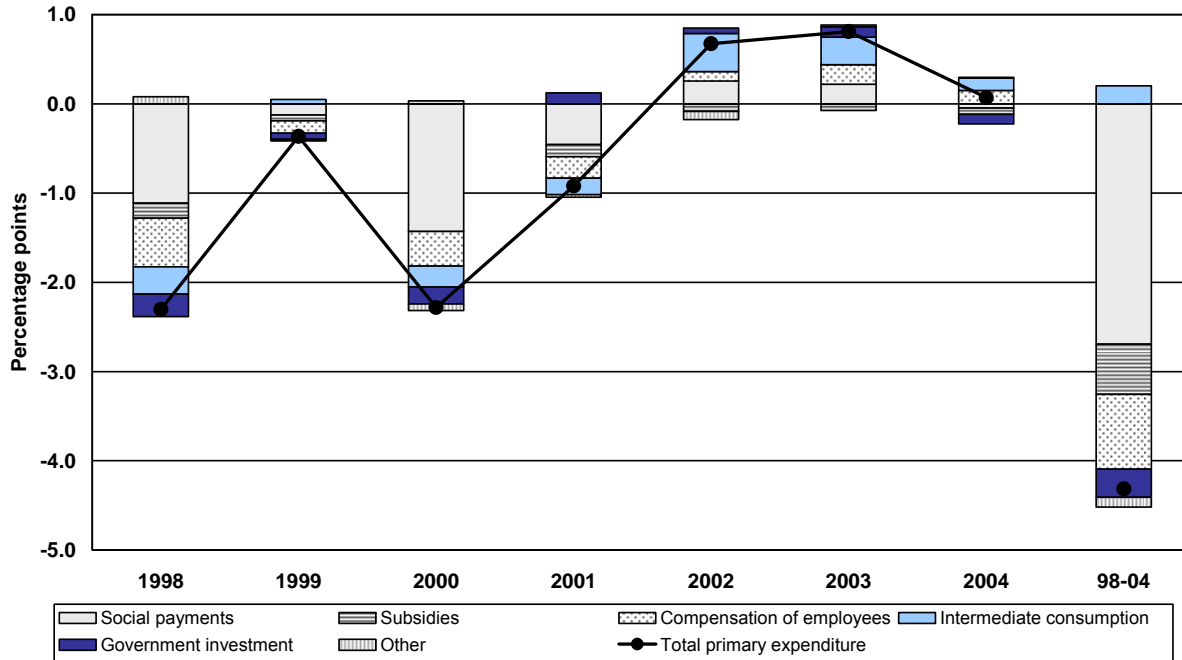
Belgium: Change in the structural primary expenditure ratio



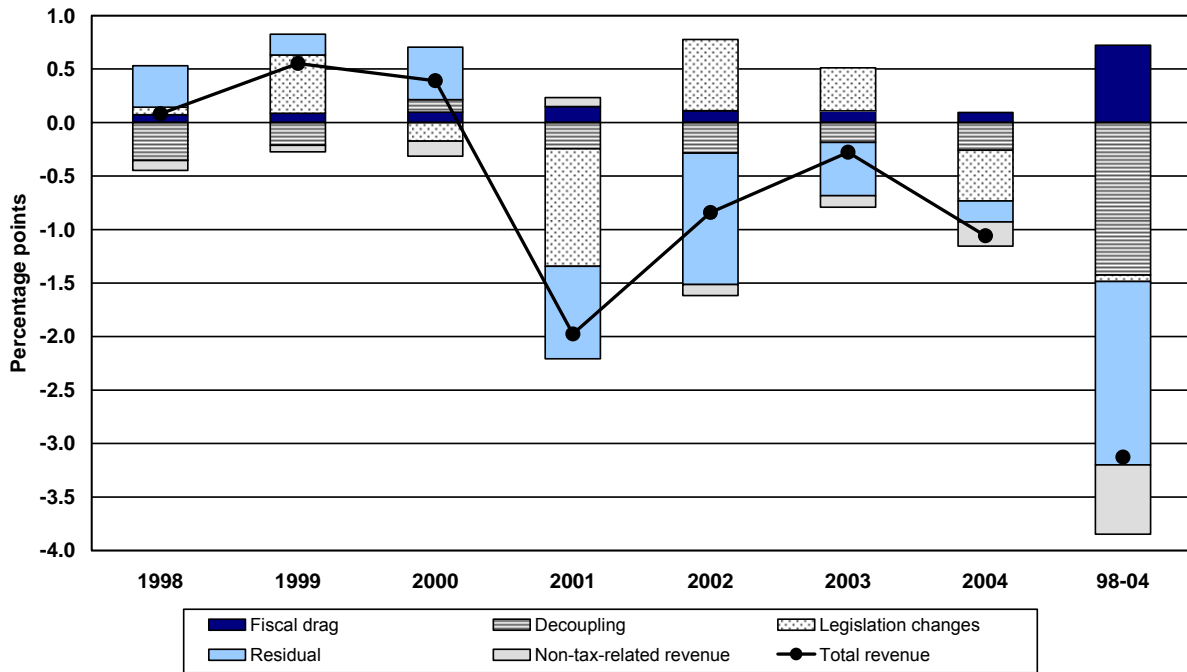
Finland: Change in the structural revenue ratio



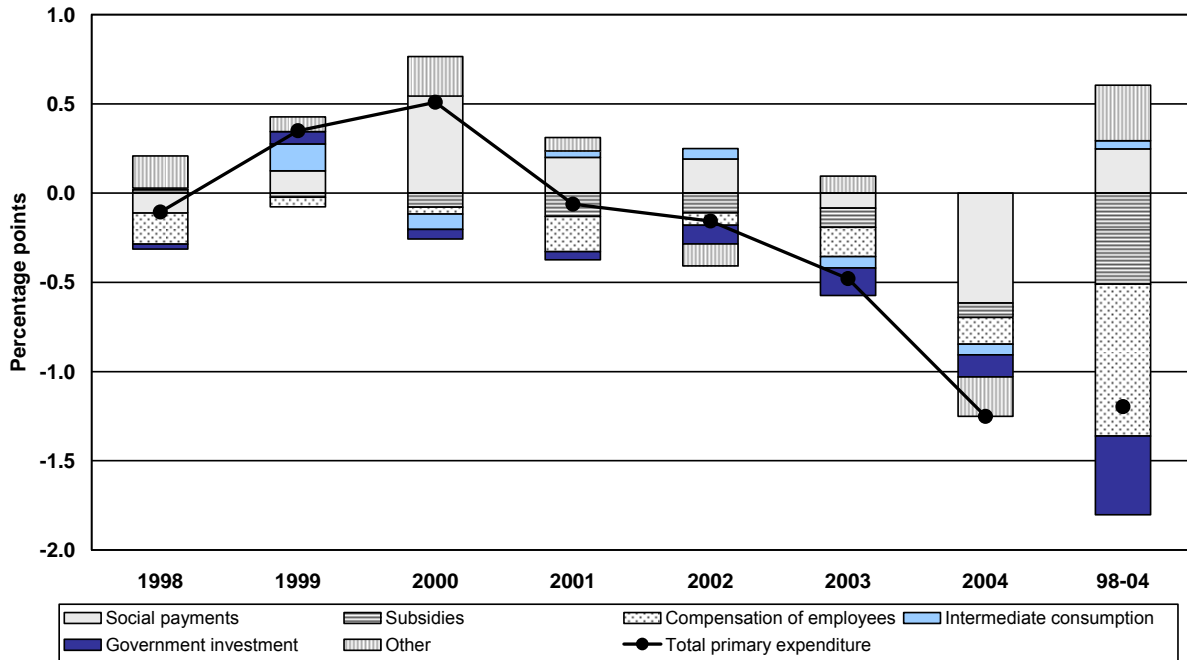
Finland: Change in the structural primary expenditure ratio



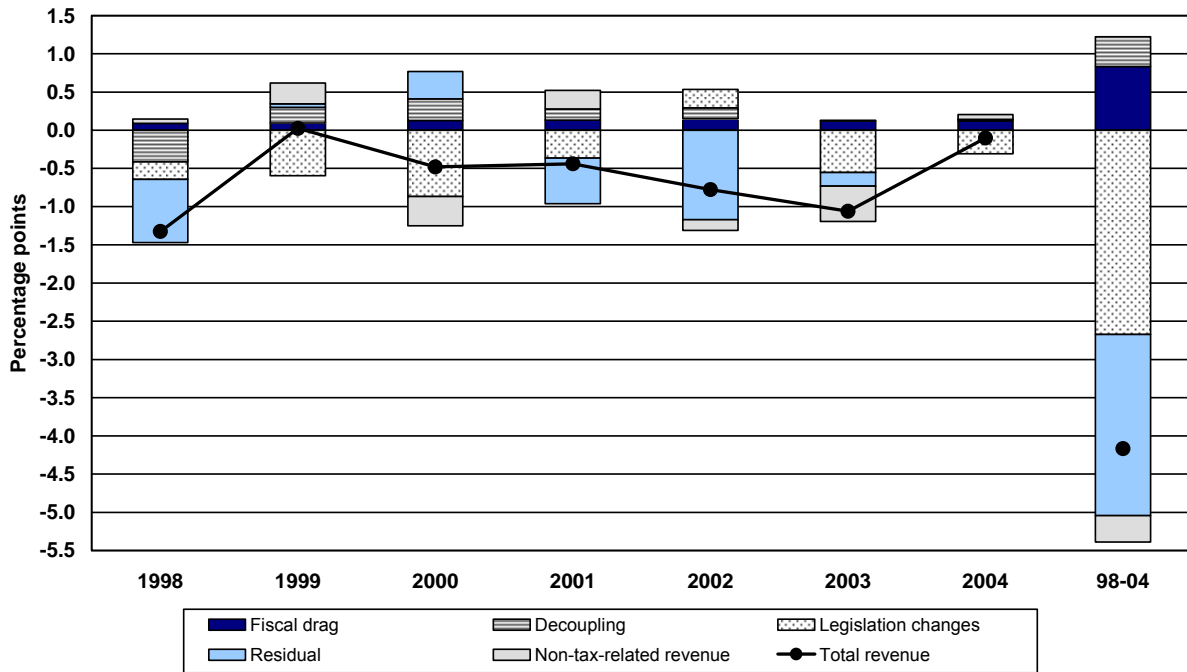
Germany: Change in the structural revenue ratio



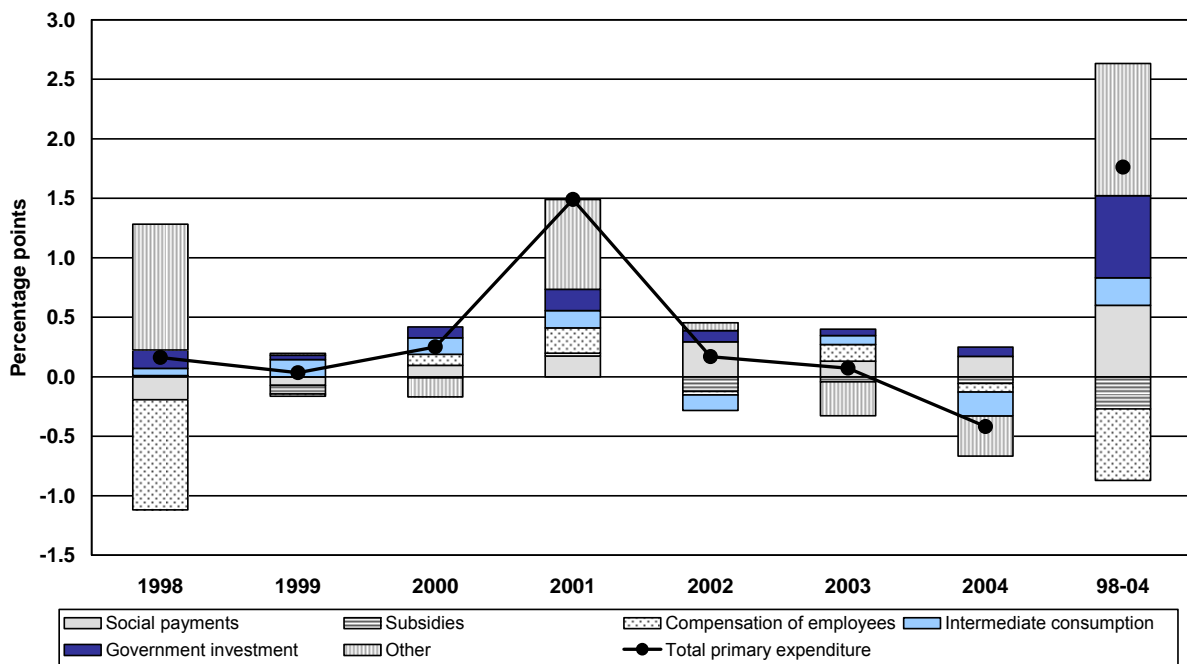
Germany: Change in the structural primary expenditure ratio



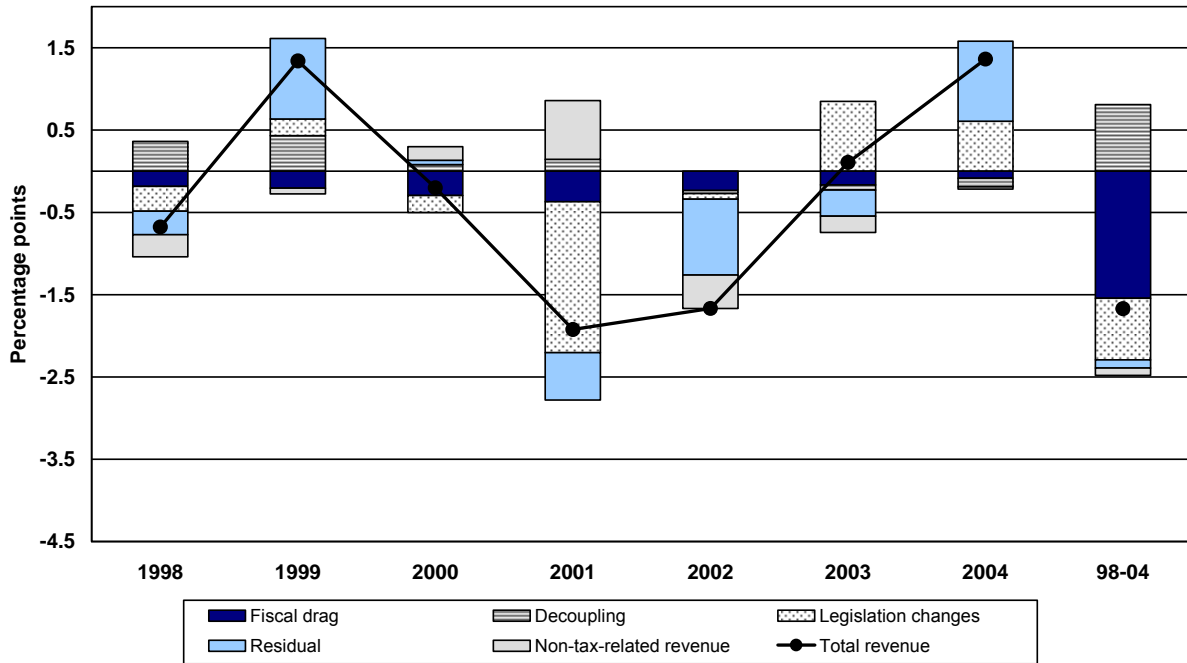
Italy: Change in the structural revenue ratio



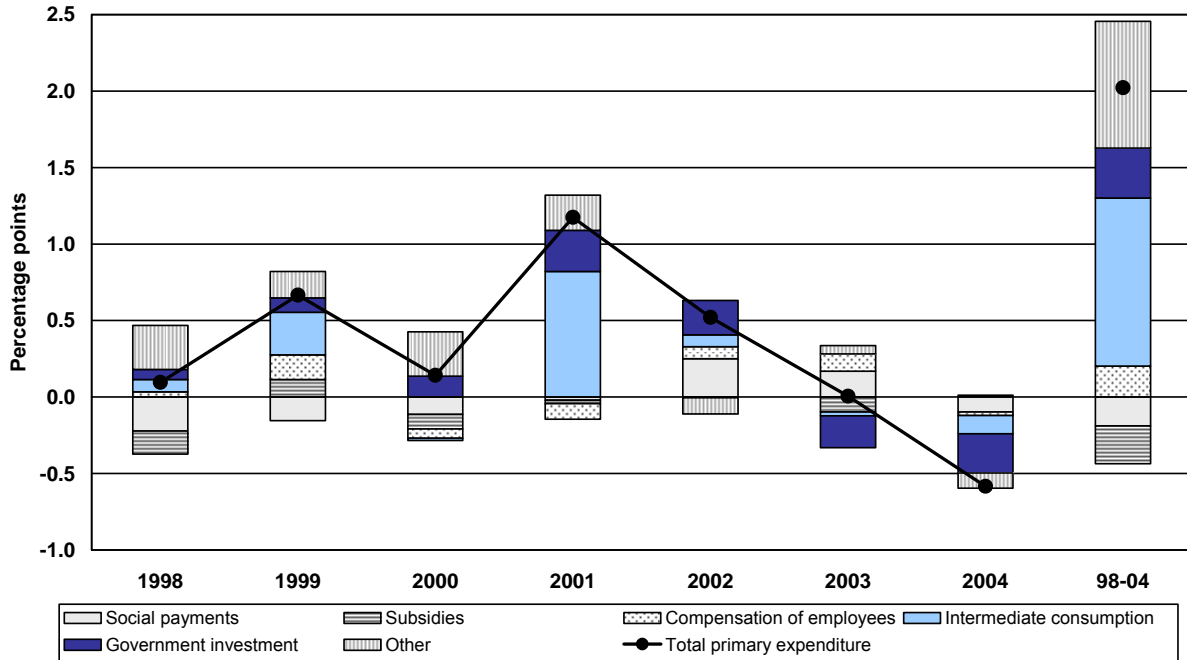
Italy: Change in the structural primary expenditure ratio



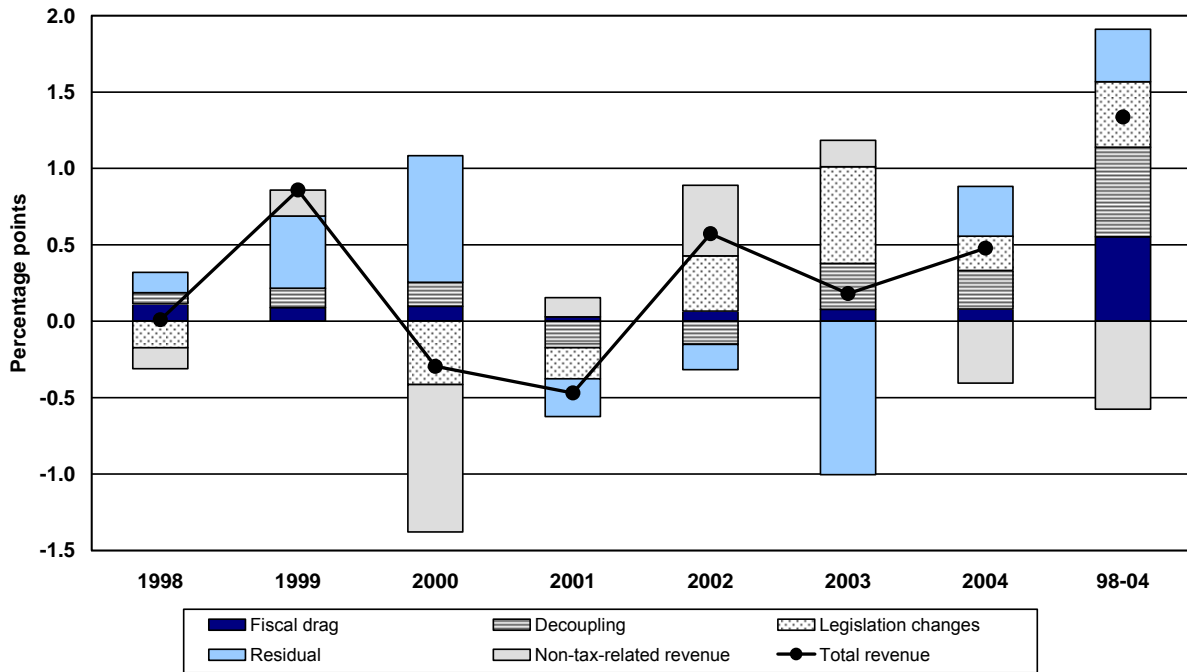
The Netherlands : Change in the structural revenue ratio



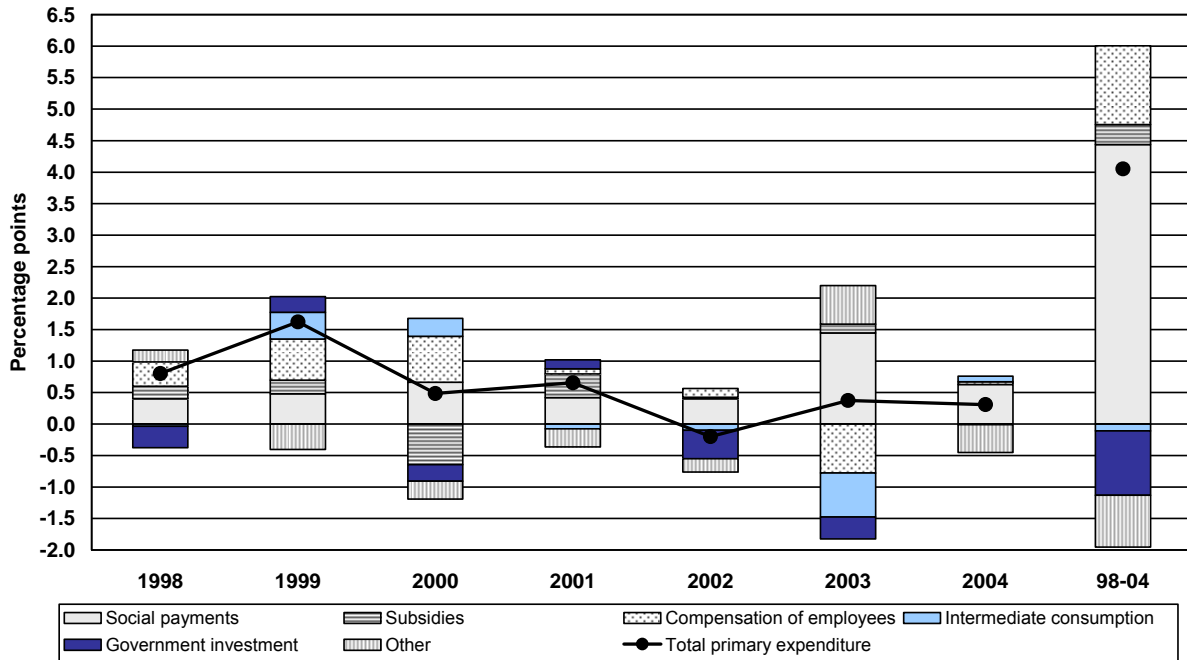
The Netherlands : Change in the structural primary expenditure ratio



Portugal: Change in the structural revenue ratio



Portugal: Change in the structural primary expenditure ratio



Appendix B: Breakdown of growth in revenue from taxes and social contributions

This appendix shows how the various factors that contribute to a change in the structural ratio of taxes and social contributions to GDP are derived. The following notation is used:

R	Revenue category
R^i	$i=p$: private part, $i=g$: public part of R ($R = R^p + R^g$)
m^i	Macro base for R in real terms, i as above
P^m	Deflator for m (as in ESCB cyclical adjustment)
ε^i	Elasticity of R^i with respect to m^i for $i=p,g$; elasticity of R with respect to P^m for $i=d$
R^l	Impact of legislation changes
Y	Nominal GDP
y	Real GDP
P	GDP deflator
g_t^X	Growth rate of a variable X
$\Delta X_t = X_t - X_{t-1}$	
X^c	Cyclical component of a variable X
X^T	Cyclically adjusted value of a variable X ($X^T = X - X^c$)

Direct taxes on household income, direct taxes on corporate income, indirect taxes and social contributions are treated separately, such as in the ESCB method for the computation of cyclically adjusted budget balances. Following the ESCB approach, the same macro bases are used, and the cycle is assumed to arise from real developments in the private sector. For the purpose of a broader analysis of structural developments, the impact of the change in public sector employment on income taxes or of growth of government consumption (via intermediate consumption, social benefits in kind) on turnover taxes can also be assessed here. In addition, as tax payments are in many cases linked to the *nominal* growth of macro bases, a “deflator effect” can also be calculated.

The calculation proceeds in three stages. First, the breakdown is derived on the basis of the unadjusted growth of the macroeconomic base. Second, the parts of the cyclical component that can be attributed to fiscal drag and decoupling are derived and subtracted from the unadjusted figures. Finally, ratios to nominal trend GDP are taken.

1. Breakdown of development in unadjusted revenue

A change in the revenue category R can be decomposed into three factors:³⁶

$$\Delta R_t = \underbrace{\Delta R_t^l}_{\text{Change due to legislation change}} + \underbrace{\Delta R_t^n}_{\text{Normal change}} + \underbrace{\Delta R_t^r}_{\text{Residual (narrow)}} \quad (1)$$

³⁶ This equation implicitly defines a residual (“narrow”) as the difference between the left-hand side of this equation with the two first terms on the right-hand side. This “narrow” residual might deviate from the residual given in Table 2 because there are some components of taxes that are regarded as unconnected to the macroeconomic development. Those are excluded at this stage of the calculations and are added later on to the residual given in Table 2.

In this formulation, “normal” change denotes the change in the revenue category that would have been expected on the basis of the development in the macro bases and the elasticities in the absence of changes in legislation. In principle, we allow for different elasticities for the private sector and public sector parts of the revenue category and for the deflator. In particular, the deflator effect might be zero ($\varepsilon^d = 0$) as in the case of excise taxes. The normal development is defined as follows:

$$\underbrace{\Delta R_t^n}_{\text{Normal change}} = \underbrace{\varepsilon^p g_t^{m^p} R_{t-1}^p}_{\text{Private sector, real}} + \underbrace{\varepsilon^g g_t^{m^g} R_{t-1}^g}_{\text{Public sector, real}} + \underbrace{\varepsilon^d g_t^{P^m} R_{t-1}}_{\text{Deflator effect}}$$

To derive the fiscal drag and the decoupling of the macroeconomic base from GDP, the normal change is decomposed further. The revenue change that would lead to a constant ratio to GDP is termed a “neutral” change. The decoupling from GDP arises if the growth rate of the base differs from the growth rate of GDP. Finally, fiscal drag occurs if the elasticity differs from one. Summing up, this decomposition can be calculated as follows:³⁷

$$\begin{aligned} \underbrace{\Delta R_t^n}_{\text{Normal change}} &= \underbrace{g_t^y R_{t-1}}_{\text{Neutral change, real}} + \underbrace{g_t^p R_{t-1}}_{\text{Neutral change, deflator effect}} + \underbrace{(g_t^{m^p} - g_t^y) R_{t-1}^p}_{\text{Decoupling of the base from GDP, private sector, real}} + \underbrace{(\varepsilon^p - 1) g_t^{m^p} R_{t-1}^p}_{\text{Fiscal drag, private sector, real}} \\ &+ \underbrace{(g_t^{m^g} - g_t^y) R_{t-1}^g}_{\text{Decoupling of the base from GDP, public sector, real}} + \underbrace{(\varepsilon^g - 1) g_t^{m^g} R_{t-1}^g}_{\text{Fiscal drag, public sector, real}} + \underbrace{(g_t^{P^m} - g_t^p) R_{t-1}}_{\text{Decoupling of the base from GDP, deflator effect}} + \underbrace{(\varepsilon^d - 1) g_t^{P^m} R_{t-1}}_{\text{Fiscal drag, deflator effect}} \end{aligned} \quad (2)$$

2. Cyclical adjustment and changes in R

In the ESCB methodology the cyclical adjustment only concerns the private sector and real macroeconomic bases. Since the disaggregated approach requires that neutral change, fiscal drag and decoupling terms for the private sector be adjusted separately for cyclical influences, the cyclical component R^C is decomposed analogously to normal change in revenue in (2):

$$R^C = \varepsilon^p \frac{m^{pC}}{m^p} R^p = \frac{y^C}{y} R + \left(\frac{m^{pC}}{m^p} - \frac{y^C}{y} \frac{R}{R^p} \right) R^p + (\varepsilon^p - 1) \frac{m^{pC}}{m^p} R^p$$

The various terms of the above equation are then assigned to the different components of the normal change:

Cyclically adjusted ...

... neutral change: $g_t^y R_{t-1} - \Delta \left(\frac{y^C}{y} R \right) \approx g_t^{y^T} R_{t-1}$

³⁷ Note that VAT and excise taxes have to be considered separately since the elasticity with respect to the deflator is different. For progressive direct taxes payable by households, it is assumed that fiscal drag occurs only with respect to the growth in the average compensation. In the case of a lagged relationship between macroeconomic base and tax revenue this will show up in the fiscal drag and decoupling terms. The fiscal drag is divided according to the relative weight of the elasticities for different time lags.

... decoupling:
$$(g_t^{m^p} - g_t^y)R_{t-1}^p - \Delta \left(\left(\frac{m^{pC}}{m^p} - \frac{y^C}{y} \frac{R}{R^p} \right) R^p \right)_t \approx (g_t^{m^{pT}} - g_t^{y^T})R_{t-1}^p$$

... fiscal drag:
$$(\varepsilon^p - 1)g_t^{m^p} R_{t-1}^p - (\varepsilon^p - 1)\Delta \left(\frac{m^{pC}}{m^p} R^p \right)_t \approx (\varepsilon^p - 1)g_t^{m^{pT}} R_{t-1}^p$$

3. Change in the structural revenue ratio

In a first step the change in the cyclically adjusted revenue ratio is calculated as follows (note that the neutral change vanishes in the decomposition of the structural revenue *ratio*):

$$\Delta \left(\frac{R^T}{Y^T} \right)_t = (g_t^{R^T} - g_t^{Y^T}) \frac{R_{t-1}^T}{Y_t^T} = \frac{\Delta R_t^T - g_t^{Y^T} R_{t-1}^T}{Y_t^T} = \underbrace{\frac{\Delta R_t^I}{Y_t^T}}_{\text{Contribution of legislation change}} + \underbrace{\frac{\Delta R_t^{nT} - g_t^{Y^T} R_{t-1}^T}{Y_t^T}}_{\text{Contribution of normal change}} + \underbrace{\frac{\Delta R_t^r}{Y_t^T}}_{\text{Residual (narrow)}}$$

The contribution of the normal change to changes in the structural revenue ratio derives from fiscal drag and decoupling. The first term on the right-hand side below is approximately zero and is set to zero in the actual calculations:

$$\begin{aligned} \frac{\Delta R_t^{nT} - g_t^{Y^T} R_{t-1}^T}{Y_t^T} &= \underbrace{\frac{g_t^{Y^T} R_{t-1}^T + g_t^P R_{t-1}^P - g_t^{Y^T} R_{t-1}^T}{Y_t^T}}_{\approx 0} + \underbrace{\frac{(g_t^{m^{pT}} - g_t^{y^T})R_{t-1}^p + (\varepsilon^p - 1)g_t^{m^{pT}} R_{t-1}^p}{Y_t^T}}_{\text{Private sector, real}} \\ &+ \underbrace{\frac{(g_t^{m^g} - g_t^y)R_{t-1}^g}{Y_t^T} + \frac{(\varepsilon^g - 1)g_t^{m^g} R_{t-1}^g}{Y_t^T}}_{\text{Public sector, real}} + \underbrace{\frac{(g_t^{P^m} - g_t^P)R_{t-1}^P + (\varepsilon^d - 1)g_t^{P^m} R_{t-1}^P}{Y_t^T}}_{\text{Deflator effects}} \end{aligned}$$

In the case of a common elasticity ε , with $m^i / m = R^i / R$, $i = p, g$, and making use of the approximation above, this equation simplifies to

$$\frac{\Delta R_t^{nT} - g_t^{Y^T} R_{t-1}^T}{Y_t^T} = \underbrace{\frac{(g_t^{m^T} + g_t^{P^m} - g_t^{y^T} - g_t^P)R_{t-1}^T}{Y_t^T}}_{\text{Decoupling}} + \underbrace{\frac{(\varepsilon - 1)(g_t^{m^T} + g_t^{P^m})R_{t-1}^T}{Y_t^T}}_{\text{Fiscal drag}}$$

Appendix C: Description of country-specific extensions of the approach

This appendix summarises adaptations of the standard approach for individual countries.

C.1 Belgium

Price effects in the evolution of the revenue and primary expenditure ratio

In Belgium nearly all public wages and replacement incomes are automatically indexed to consumer prices. Whenever a moving average of the monthly “health index” – i.e. the national index of consumer prices excluding certain products which are considered “harmful” such as gasoline, tobacco and alcohol – exceeds a threshold (which is always 2% higher than the previous threshold), wages and replacement incomes are increased by 2%. For public wages and public-sector pensions, this happens two months after the threshold has been exceeded. For other replacement incomes, the delay is only one month. As the resulting automatic increase of public wages and replacement incomes is not necessarily identical to the increase of the GDP deflator (due to terms of trade effects, the delay in the indexation, the use of the health index, etc.) for each year, the primary expenditure ratio can be (significantly) affected by this indexation scheme.

It is important to isolate these automatic changes in the primary expenditure ratio from other spending developments. First, roughly similar changes affect the revenue ratio as most private-sector wages are also indexed in some way to consumer inflation. This implies that the ratio of income taxes and social contributions is equally affected by differences between the wage indexation and the increase in the GDP deflator. Hence, these price effects are thought to be relatively neutral for the government balance. Second, this indexation is built into the legal framework and does not result from actual spending decisions. Hence, the true spending stance during any given year is better measured by an indicator excluding this price effect.

The proposed calculation of the indexation effect is straightforward: the difference between the growth in public-sector wages and replacement incomes due to the automatic indexation and the increase in the GDP deflator, multiplied by the share of these spending items in trend GDP.

Also the (structural) revenue ratio changes if price developments affect the budgetary categories in a different way than GDP. This is the case for VAT, for example, which is linked to private consumption. If the private consumption deflator grows more strongly than the GDP deflator, the (structural) ratio of VAT to GDP *ceteris paribus* increases. Furthermore, we use the private consumption deflator to derive real compensation of employees, the macroeconomic base of wage taxes and social contributions. Therefore, part of the decoupling of the tax base from GDP is owing to price developments. The same holds for fiscal drag. The change in the structural revenue ratio owing to these factors is currently not assessed separately.

C.2 Germany

Categorisation of taxes according to their link to macroeconomic bases

For the cyclical adjustment procedure and the calculation of the breakdown of the development in tax revenue and social contributions in the disaggregated approach, the categorisation differs from the ESA 95 categories underlying Table 1. The rearrangement is motivated by the idea of matching the revenue categories with the appropriate macroeconomic base. More specifically, wage taxes are linked to employment and average compensation of employees. For the newly defined category “profit-related taxes” (corporation tax, non-assessed tax on earnings, local business tax, interest withholding tax and assessed income tax), we use entrepreneurial and investment income as the macroeconomic base. The development in VAT is connected with private consumption and private homebuilding investment. For social contributions, we only consider contributions paid by employers and employees and exclude, for example, payments of the Federal Employment Agency. In general, there are parts of taxes and social contributions that are excluded in the calculation with the disaggregated approach since they are assumed to be unconnected to the macroeconomic development.

Germany

Table 2a: Change in tax revenue and social contributions, adjusted for cyclical influences and temporary measures¹⁾
(as a percentage of trend GDP)

	1998	1999	2000	2001	2002	2003	2004	98-04
Wage taxes	-0.1	-0.1	-0.1	-0.4	0.1	0.0	-0.6	-1.2
Fiscal drag	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.9
Decoupling of tax base from GDP	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.4
Legislation changes	-0.3	-0.1	-0.3	-0.6	0.0	0.1	-0.6	-1.8
Residual	0.1	-0.1	0.0	0.1	0.0	-0.1	0.0	0.1
<i>Memorandum item: included in expenditure</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Social contributions	-0.1	-0.1	-0.1	-0.3	-0.2	-0.1	-0.2	-1.1
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of tax base from GDP	-0.2	-0.1	0.0	-0.1	-0.2	-0.1	-0.2	-1.0
Legislation changes	0.2	0.1	-0.1	-0.1	0.0	0.2	0.0	0.3
Residual	-0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.1	-0.5
<i>Memorandum item: included in expenditure</i>	<i>0.0</i>	<i>0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.4</i>
Profit-related taxes	0.4	0.6	0.7	-1.3	-0.3	0.0	0.2	0.2
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Decoupling of tax base from GDP	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Legislation changes	-0.1	0.2	0.2	-0.5	0.4	0.0	0.0	0.2
Residual	0.5	0.3	0.5	-0.7	-0.8	-0.1	0.1	-0.3
VAT	0.2	0.2	0.0	-0.2	-0.2	-0.1	-0.1	-0.3
Fiscal drag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decoupling of tax base from GDP	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.2
Legislation changes	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.4
Residual	0.0	0.0	-0.1	-0.2	-0.1	0.0	0.0	-0.5
<i>Memorandum item: included in expenditure</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>-0.1</i>
Excise taxes	-0.1	0.1	0.0	0.2	0.1	0.1	-0.2	0.3
Fiscal drag	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.3
Decoupling of tax base from GDP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Legislation changes	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.9
Residual	0.0	0.0	-0.1	0.0	0.0	0.0	-0.2	-0.3

¹ The categories considered here deviate from ESA 95. They are chosen to link tax components to appropriate macro bases.

The categorisation that is actually used in the calculations underlies the presentation of results in Table 2a. In Table 2 for Germany the categories are regrouped according to the system given in Table 1. Furthermore, the parts of social contributions and tax revenue that are assumed to be unconnected to the macroeconomic development and are, therefore, not contained in Table 2a, are added to the residual of the respective categories in Table 2. Therefore, the change of the revenue that is explained in Table 2a deviates from the total change of social contributions and tax revenue as given in Table 2.

Cyclical adjustment of the pension insurance scheme

In Germany, the pension payments of the statutory pension insurance depend on the growth of average compensation of employees. Roughly speaking, each individual pension is raised in the middle of a year t by the growth rate of the gross average compensation of employees in the year $t-1$. Therefore, pension payments are considered as an additional expenditure category in the cyclical adjustment procedure. As the macroeconomic base, average gross wages and salaries per employed person in the two preceding years is employed. Since the pension insurance scheme was, in principle, bound by law to balance its budget by 2003 it is assumed until 2003 that a “cyclical adaptation” of contribution rates ensures that there is no cyclical deficit in the pension insurance scheme. The cyclical adaptation is given as the difference between the cyclical impact on pension payments and the (hypothetical) cyclical impact on social contributions to the pension insurance scheme for fixed contribution rates. Starting with 2004, the cyclical impact on the social contributions to the pension insurance scheme are calculated under the assumption that contribution rates are independent of the cycle – as also in the other branches of the social insurance system.

Cyclical adjustment of legislation changes

In the calculation of the cyclically adjusted legislation changes we have taken into account the assumption made with respect to the cyclical adjustment of the pension insurance scheme. As was mentioned above, we assume that until 2003 a “cyclical adaptation” of contribution rates ensures that there is no cyclical deficit in the pension insurance scheme. To adjust for cyclical influences, we subtract the change in the cyclical adaptation from legislation changes.

C.3 Portugal

Personal income tax

To take into account the impact of inflation on the growth of personal income tax receipts, the following formula is used to calculate the normal change in receipts (trend growth rates of macroeconomic bases for receipts raised in the private sector incomes and the actual ones for receipts raised on public sector incomes):

$$\Delta R_t = [\varepsilon * (\underline{w} - \underline{e} - \underline{u}) + \underline{e} + \underline{u}] * R_{t-1}$$

where \underline{w} is the nominal growth of the wage bill (private or public), \underline{e} the growth rate of employment (private or public) and \underline{u} the update of the limits of the tax brackets and other parameters of the tax. This formula tries to capture the fact that the progressivity of the tax only works when nominal wages grow above the update of the parameters of the tax. It is worth referring that in the absence of legislation changes in the personal income tax, the \underline{u} corresponds to the update of the limits of the tax brackets and other parameters considered in the State Budget (October of the previous year), which in the last few years is equal to the expected inflation also taken into account in the Budget. This growth rate is normally used in the update of the withholding tables (February/March of the current year).

Highlighted EU transactions in Table 2

The following table shows the definition of the “of which EU” categories for Table 2 in the case of Portugal in the third column. The first two columns show the categorisation as underlying Table 1 together with the adjustments in comparison to the ESA95 classification.

Portugal: Definition of EU transactions for Table 2

	Adjustments to ESA95	Items to be highlighted as EU transactions in Table 2
Total current revenue		
Indirect taxes	+ (D.2) Indirect taxes received by EU budget	
Other current transfers receivable	- (D.74+D.75) Current transfers paid by EU budget to government + net receipts from EU budget (net recipient +)	+ Net receipts from EU budget (net recipient +)
Total current expenditure		
Subsidies	+ (-D.3) Subsidies paid by EU budget	+ (-D.3) Subsidies paid by EU budget + (D.74+D.75) Current transfers paid by EU budget to government (the part included in subsidies, including 'neutrality effects')
Other current transfers payable	- (D.75) Miscellaneous current transfers paid by government to EU	
Total capital revenue	- (D.9) Capital transfers paid by EU budget to government	
Total capital expenditure capital transfers	+ (-D.9) Capital transfers paid by EU budget to non-government	+ (-D.9) Capital transfers paid by EU budget to non-government

	Adjustments to ESA95, general case
Total current revenue	
Indirect taxes	+ (D.2) Indirect taxes received by EU budget
Other current transfers receivable	- (D.74+D.75) Current transfers paid by EU budget to government + net receipts from EU budget, if country is a net recipient
Total current expenditure	
Subsidies	+ (-D.3) Subsidies paid by EU budget
Other current transfers payable	+ (D.75) Current transfers paid by EU budget to non-government - (D.74 + D.75) Current international co-operation and miscellaneous current transfers paid by government to EU budget + net payments to EU budget, if country is a net payer
Total capital revenue	- (D.9) Capital transfers paid by EU budget to government
Total capital expenditure capital transfers	+ (-D.9) Capital transfers paid by EU budget to non-government - (-D.9) Capital transfers paid by government to EU budget

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