Problems associated with calculating "structural" budget deficits

Budget balances are among the most important fiscal policy indicators. It is of interest in analysing them to seek to clarify the extent to which the statistical result reflects the underlying orientation of fiscal policy. For that purpose, "structural" deficits are calculated by means of different approaches with the express intention to eliminate cyclical factors. It therefore seems appropriate to analyse their informative value, especially given the need for budgetary consolidation which continues to face many industrialised countries.

The following article deals with the methodological problems involved in such measuring concepts and introduces a simple adjustment procedure. Applied to Germany, it suggests that the deterioration in the budget situation since 1989, on an overall view, is attributable to non-cyclical factors. However, owing to their limited analytical efficiency, such calculations may be used at most as empirically substantiated "rules of thumb" and only as a supplement to existing analytical instruments. The overall financial balance of government activity has to remain the foremost gauge – also owing to its relevance for public sector borrowing requirements. In line with the Maastricht Treaty, it is also to be taken as the basis for deciding whether the fiscal policy deficit criterion has been met.

Public sector financial balance and the overall economy

Characteristics of the financial balance

The public sector financial balance is far more than a mere "residual" in the arithmetic of government receipts and expenditure. Situated at the interface between the real economic and financial spheres, it represents an important link between the goods and income cycles, on the one hand, and the flow of funds, on the other; it is not only a net flow variable but also, in respect of the public sector debt level, a stock-change variable. It reflects both the results of fiscal policy debate and decisions and the impact of changes in the macroeconomic environment. On the one hand, this data nexus may be marked fairly strongly by cyclical fluctuations or other exogenous factors, i.e. those factors which cannot be attributed to fiscal policy. On the other hand, it bears the imprint in particular of the chosen budget policy path and the underlying financial and economic policy course.

Cyclical factors

Particularly in the context of the cyclical trend, there is an interdependence between the economic ups and downs and the size of the budget deficit; for that reason, the financial balance has features both of a determinant and of a resultant. That makes it harder to identify the "true causes" when interpreting statistical financial balances. Thus it is possible, for example, that a basically weak public finance situation may be masked temporarily by a strong economic position, so that the budget balance statistics present too favourable a picture, whereas during a recession, conversely, the deficit is "overstated" on account of cyclical factors. In order to eliminate such rather short-term fluctutions and reveal the "hard core" of the budget balance, economists have repeatedly attempted to identify the cyclical elements on both the expenditure and revenue side, to assess them in terms of their fiscal weight and to deduct them and their net contribution to the deficit – together with any other temporary factors – from the overall financial balance.

Adjustment procedure

For that purpose, various special adjustment procedures have been elaborated and developed further.[1] Notwithstanding important differences of detail, these techniques all share the basic approach that they calculate that part of public sector receipts and expenditure which results from the (positive or negative) deviation of the macroeconomic trend from the "economic norm". For calculating a cyclically related balance defined in this way, two basic conceptual elements are required: a macroeconomic deviation indicator and a measure of budgetary responsiveness as an overall expression of built-in flexibility, i.e. of the sensitivity of the public sector budget management process to the deviation indicator.

Statistical basis

In addition, for empirical analyses it has to be decided in advance which real and/or finan-

1 See particularly Giorno, C. et al., Estimating Potential Output, Output Gaps and Structural Budget Balances, OECD Economics Department, Working Paper No. 152, Paris 1995; IMF, World Economic Outlook, October 1993, pages 99 ff; European Commission, Technical note: The Commission services' method for the cyclical adjustment of government budget balances, European Economy, No. 60, 1995, pages 37 ff; Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (German Council of Economic Experts), Den Aufschwung sichern – Arbeitsplätze schaffen, Jahresgutachten 1994/95, pages 151 ff.

cial transactions or, if necessary, what valuation and stock effects the statistical financial balance, which is the basic variable for calculating synthetic balances, should record in the first place and how the public sector is to be defined in institutional terms. Depending on the particular aim of the analysis, the specific advantages and drawbacks of the various statistical concepts and definitions have to be weighed against each other.

In the following study of Germany, the central, regional and local authorities – plus the social security institutions – have been recorded in their entirety, as appears appropriate for macroeconomic analyses; the official financial statistics are the data source for the overall public sector budget.[2] Although the official financial statistics are less well suited than the national accounts to analysing flow cycles, as a set of original statistics they are closer to the actual financial transactions and fiscal consolidation operations of the general government sector. In addition, the deficit as defined in the financial statistics is more closely related to new public sector borrowing, and thus to the trend in (gross) government debt (according to the Maastricht definition), than is the financial balance based on the national accounts. Incidentally, this choice of data source does not, in principle, preclude a rebasing of the calculations from the financial statistics to the national accounts, should the need arise (for example, for making an international comparison).

In methodological terms, the national accounts and the financial statistics differ, in terms of the deficit, in that the national accounts record only real transactions, whereas the financial statistics also record financial transactions (for example, privatisations, the granting of loans) which have no (direct) effect on the public sector's net financial assets. In addition, timing differences in the statistical recording of transactions play a major role. A comparison of the two sets of statistics shows that there are sometimes considerable differences in the level of the financial balances recorded even though the trend is approximately similar. Taking the average of the last ten years, the deficit ratio of the Federal Republic of Germany based on the national accounts was consistently about ½ percentage point below that measured by the financial statistics; for 1995 and 1996, however, the figures were almost equal for both ratios (partly owing to high privatisation proceeds and a reduced amount of loans granted).

Output gap

The yardstick that is generally taken as a comprehensive measure of the degree of cyclical deviation is the "output gap", i.e. the difference between the actual and the normal utilisation of overall production capacity.[3] The overall production potential itself is that economic output which, on a given technological base, can be achieved by the available production factors labour and capital working at

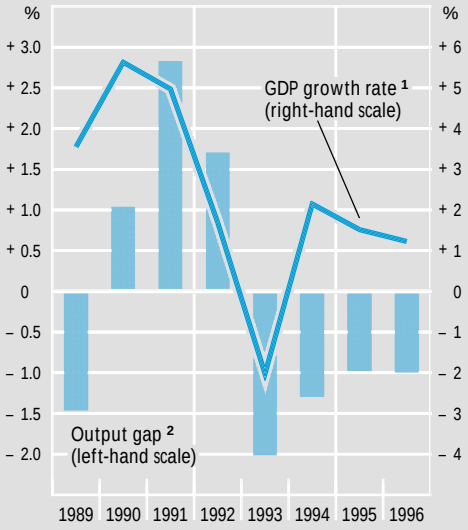
2 This analysis is based on the all-German deficit, since a breakdown into a west German part and an east German part is no longer statistically possible. The deficit is adjusted on the basis of the fiscal cyclical effects calculated for western Germany. This appears justifiable to the extent that the economic trend in eastern Germany in the period between 1989 and 1996 was characterised by structural, transformation-induced factors; in addition, it has not proved possible so far to adequately identify the possible cyclical factors in eastern Germany.
3 In the following, normal capacity utilisation is defined as having a value of 1.

normal intensity.[4] The absolute output gap indicates the extent to which, for a given period, the actual demand for goods (measured by real GDP) and the potential supply of goods (measured by the overall economic production potential) numerically coincide or diverge. The relative output gap, i.e. the absolute output gap in relation to the production potential, is an important macroeconomic indicator of tension in the real economy by means of which the economy's current position within the business cycle can be identified.

The methodological and statistical difficulties encountered in determining the production potential or the degree of utilisation, and the manner in which they are overcome, therefore also have an impact on the calculation of the "structural" deficit. However, the method chosen has a smaller effect on the measurement of the changes in capacity utilisation than on the level of utilisation as such. Accordingly, the annual changes in the "structural" deficit are likewise less model-dependent than are the figures recorded for its absolute amount.

The empirical output gaps determined in accordance with the Bundesbank's calculations are characterised by considerable fluctuations over time. The figures show that the (west) German economy was in a phase of growing capacity utilisation at the end of the eighties (see chart on this page). In 1990 the degree of utilisation of economic resources already exceeded the normal level, on an overall view, which owed something to the expansionary stimulus provided by the third

Trend in production and in the output gap in western Germany



1 Change in real gross domestic product from previous year in %. — **2** Deviation of real GDP from the production potential as % of the production potential.

Deutsche Bundesbank

stage of the income tax reform. The massive surge in demand in the west which occurred rapidly in the wake of German unification then squeezed the domestic supply potential further.[5] However, as the global economic environment, which had already deteriorated, continued to slacken, and domestic costs and prices increased considerably, retarding effects subsequently gained in importance, leading to a phase of recession in 1992-3. An economic revival from the beginning of 1994

4 In contrast to the statistically recorded gross domestic product, the production potential can only be calculated on the basis of theoretical concepts and empirical estimation methods. For details of the definition of the production potential used here see in detail: Deutsche Bundesbank, Production potential in Germany and its determinants, Monthly Report, August 1995, pages 39 ff.
5 To some extent, the demand induced by reunification stimulated production in other countries, too, which was reflected in the fact that the all-German current account moved into deficit.

to mid-1995 was followed by another slowdown, despite favourable monetary conditions. Not until the spring of 1996 did the expansionary cyclical forces reassert themselves without, however, being able to narrow the output gap in 1996 compared with 1995.

Determinants of the cyclically related deficit

Passive budget flexibility

There are multiple links between the output gap and the public sector budget position. In the following, however, only those changes in revenue and expenditure will be regarded as being cyclically induced which, given unchanged tax and social security regulations and expenditure parameters, can be attributed more or less automatically and direct to fluctuations in the degree of overall capacity utilisation (so-called passive budget flexibility). They need to be distinguished from those budget items which – although they bear some relation to cyclical movements (for example, the level of public sector investment) – are attributable to fiscal policy decision makers' actions or reactions to cyclical developments.[6] This confines the relevant budget section to the tax/transfer system.

Employment gap

The key factor in the transfer segment is the cost of unemployment caused by the output gap. The degree of closeness between output fluctuations and the level of employment is determined by a number of factors. Besides the cost of adjusting volumes to a changed sales situation, a major role is played by enterprises' expectations regarding the further course of economic development. To these must be added the underlying institutional and legal conditions or wage negotiation framework, such as notably the degree of regulation of the labour market and the precise nature of the various components of the social security system.

Of particular importance for determining the degree of sensitivity of the labour market to fluctuations in overall capacity utilisation is the (often substantiated) fact that not only employment but also working time, the propensity to work and labour productivity are largely synchronous, as a rule, within the business cycle, and so each of them absorbs a part of the overall goods market effect; given rising unemployment, for example, the measured productivity increase also normally declines, and both the average time worked and the participation ratio in the labour force are lower than their corresponding level in conditions of full employment. Hence, the cyclical adjustment burden is not borne solely by the quantitative employment component. The more the other factors act as "buffer variables" or "shock absorbers", the less the number of unemployed persons is affected by cyclical movements.

That distortions in the real economic equilibrium are not fully reflected in the level of unemployment is also demonstrated by the fact that the indicator of tensions in the goods market, i.e. the (relative) output gap,

6 In this context, it is irrelevant whether this reaction was prompted by a rule-bound code of action (so-called cycle-oriented formula flexibility) or by classifical discretionary (case-based) decisions of the legislature or administration.

generally displays sharper fluctuations than the indicator of tensions in the labour market, i.e. the unemployment ratio. Consequently, an increase in the degree of capacity utilisation in an upswing would be accompanied by a proportionately lower increase in the level of employment – just as, conversely, a cyclically related decline in output has only a moderate impact on the labour market.

"Okun's law"

Empirical analyses for (western) Germany based on various specifications of the so-called Okun approach[7] for the period from 1975 suggest that a change in the degree of overall capacity utilisation of 1 percentage point leads on average to a countermovement in the unemployment ratio of just over ⅖ percentage point. Reasoning inversely, this means that a decline in the rate of unemployment (relative to its trend value) of, say, 1 percentage point is accompanied by an increase in the degree of overall capacity utilisation of slightly more than twice the labour market reaction (so-called Okun multiplier).

However, such estimations should be regarded only as a rough "guideline". This caveat must apply if only because of the short-run dynamics of the variables tested. What is more, this study (like other calculations) is based on the simplified assumption that the strength of the labour market impact is independent of the particular cyclical phase the economy is in. There are namely indications that in an upswing employment does not respond as sharply as it does in a slowdown. Nevertheless, the above relationship gives a useful idea of the approximate magnitude of the typical labour market response to cyclical changes during the period under review.

Fiscal costs of cyclical unemployment in the public sector transfer system

Financial burdens

The strength of the cyclical component of public expenditure is determined, on the one hand, by the size of the output gap and the cyclical response pattern of the labour market, and, on the other, by the rules governing the entitlement to, amount of and duration of benefits claimable as social transfers by the unemployed.

Under the German social security system, unemployment is financed primarily by the Federal Labour Office; any deficit has to be borne by the Federal Government. Based on the concept of passive budget flexibility, it is mainly expenditure on unemployment benefit and short-time working benefit that is responsive to cyclical movements. Then there are the payments from the Federal budget, including means-tested unemployment assistance, which is the most important wage substitute in this context.

In addition, the expenditure profile of the statutory pension insurance scheme is by no

7 This approach, which was used for the first time in 1962 in different versions by Arthur M. Okun and became known as "Okun's law", focuses on the statistical link between the output gap and the employment gap. In this context, however, only the cyclical links between the goods market and the labour market are recorded; the other causes of unemployment, as reflected, in particular, in the fact that the hard-core level of underemployment in western Germany has been growing for many years, cannot be "explained" by this approach.

means free from labour market risk (taking due account of the labour market situation in respect of occupational disability pensions and early retirement pensions owing to unemployment). Furthermore, part of the overall fiscal burden of unemployment is borne by the local authorities and the Länder Governments, above all in the form of social assistance, while another part is borne by the Federal Government and the Länder Governments in the form of housing allowances. But these additional financial requirements are primarily related to long-term forms of unemployment; by contrast, the risks of cyclically induced unemployment are concentrated on the Federal Labour Office – as the institution responsible for administering the unemployment insurance scheme – and on the Federal Government.

For the purposes of this analysis, the manifold and comprehensive payments made within the framework of active labour market policy are not regarded as being cyclically related. Unemployed persons have no automatic entitlement to such grants. These are, rather, discretionary labour market policy instruments which are designed primarily to overcome the problem of inadequate or inappropriate skills.[8]

Wage substitutes

The per capita amount spent on a recipient of wage substitutes is based on the last wage or salary he or she received, after deduction of customary taxes and social security contributions. Since 1994, the applicable payment rate has been 67 % for persons with dependent children (60 % for those with no children) in the case of unemployment benefit, and 57 % (53 %) in the case of means-tested unemployment assistance. Added to this are the social security contributions which have to be paid by the Federal Labour Office or the Federal Government in lieu of the employee's and employer's contributions to the statutory pension insurance and health insurance schemes and, since 1995, the new nursing insurance scheme.[9] As there is a limit on the length of time that anyone may receive unemployment benefit, graded according to the individual's age and previous employment record, many of the long-term unemployed graduate from unemployment benefit to the (lower) unemployment assistance. Finally, it should be borne in mind that not all persons who are statistically recorded as being unemployed meet the statutory preconditions for receiving wage substitutes.

Estimation results

Coupling the statistically computed average benefit payment rate with the estimate of the cyclically related component of unemployment, which can be derived under the Okun approach in connection with the output gap, yields a numerical variable indicating the extent of the direct increase (or decrease) in expenditure on wage substitutes arising from fluctuations in the degree of overall capacity utilisation. This indicates that, on a longer-term average, a change in the unemployment rate of 1 percentage point leads to an

8 The distinction made here between the classical "passive" wage substitutes, on the one hand, and the measures of active labour market policy, on the other, is not absolute as there may also be substitutional effects between these two factors.
9 These transfers, which are mainly contained within the social security sector, are booked in "gross" terms statistically; that is, initially a notional payment granted by the Federal Labour Office to the benefit recipient is assumed.

increase/decrease in wage substitutes of no more than 0.2 % of GDP.[10] Assuming that a change in the degree of utilisation of 1 percentage point is accompanied by an inverse change in the unemployment rate of just over ⅖ percentage point, the former results in a change in wage substitutes of about 0.1% of GDP. Viewed at the macroeconomic level – and this is also corroborated by other calculations – the cyclical responsiveness of overall public sector expenditure (defined in terms of passive budget flexibility) may thus be regarded as being relatively low.

The built-in flexibility of the taxation system

Cyclical movements and taxes

Whereas government expenditure shows an – albeit limited – anticyclical pattern of development, taxes and social security contributions, as a rule, respond more or less in line with changes in the output gap. In this context, the impact of cyclical movements on tax revenue grows – by and large – in proportion to the overall tax ratio and the aggregate revenue elasticity of the tax system.[11] Hence it follows that the intensity of the impact which the "cyclical lever" has is determined by the average tax burden as well as by the cyclical responsiveness of the individual types of taxes and their specific weight in the overall system of public sector receipts. Consequently, countries with a high burden of taxes (particularly direct taxes) and/or a high tax-induced redistribution of factor income typically also possess – as a by-product, as it were – a high degree of tax-related built-in flexibility. The cyclical responsiveness of each particular type of tax, in turn, mirrors, on the one hand, the degree of progression of the tax scale (known as scale elasticity or tax rate elasticity) and, on the other hand, the sensitivity of the tax base to changes in the overall level of economic activity (so-called tax base elasticity).

Findings for Germany

An empirical comparison shows that in Germany tax revenue is more prone to fluctuations than nominal gross domestic product. This is due to a pronounced "volatility" in the field of direct taxes, e.g. in respect of corporation tax and assessed income tax. But wage tax, too, which is the tax which yields the most revenue, not only has a higher growth rate than total gross wages and salaries on average, but, measured by the standard deviation, also shows disproportionately sharp fluctuations in growth rates. Whereas the main influence in the case of income tax is the progression of the tax scale, the key factor in respect of corporation tax is the actual level of profits, being an income and taxation variable that is decidedly susceptible to cyclical movements. This means at the same time that not just the output gap but also the distribution of national income and, incidentally, the structure of overall final demand have a direct impact on macroeconomic revenue elasticity.

Estimation problems

It is therefore difficult *per se* to make statistically significant statements on the value of the short-run elasticity of certain tax categories. What is more, there are considerable time

10 Short-time working benefits, too, were included in the calculation, apart from a structurally related permanent average balance.
11 The same basically applies to social security contributions.

lags between a particular cyclical movement and the inflow of assessed taxes, which do not follow any strictly defined pattern. The problem is compounded by the extensive and numerous changes in German tax legislation over the past few years which have continually punctured the endogenous dynamics of the tax revenue trend (a phenomenon which is reflected in structural breaks in the statistical estimation basis).

For the time being, therefore, empirical analyses for Germany have to rely on "makeshift solutions". One useful prop in this context is the fact that, in the longer term, overall tax revenue grows at a similar rate to nominal GDP, on average. If the "real" unknown elasticity is in the range between 0.95 and 1.1, the margins of error remain within tolerable limits.[12] Given an average tax ratio of just under 24 % of GDP (in the period between 1960 and 1995), the tax effect of an output gap of 1%, on these assumptions, is between 0.23 % and 0.26 % of GDP. The statement that the German tax system's built-in stabiliser has an order of magnitude of ¼ % of GDP appears quite plausible.

"Rule of thumb"

After including the social security contributions which, owing to unemployment, are likewise lost on balance to the overall insurance system, it can be said in summary, as a general "rule of thumb", that a fluctuation in overall capacity utilisation of 1 percentage point leads, on an average, to a change of just under ½ percentage point of GDP in the overall public sector budget.[13]

Components of the financial balance between 1989 and 1996

Ex post analysis

If these relatively simple model-based results are applied to trends in public finance in Germany in the period between 1989 and 1996 (see chart on page 40), the budget balance, after adjustment for fluctuations in capacity utilisation (as defined in the financial statistics), shows a slight surplus position in the first year of the period under review. But already in 1990 shortfalls in receipts caused by tax reforms coupled with a sharp rise in expenditure brought about a marked deterioration both in the statistical and especially in the "structural" balance ratio, despite a generally favourable cyclical constellation. Subsequently, the basic orientation of financial policy initially remained expansionary, against the background of unification-induced additional spending requirements, although fiscal policy makers took important steps, notably in the form of the Federal Consolidation Programme and the Retrenchment, Consolidation and Growth Programme, towards correcting the budget position on both the receipts and the expenditure side. It should be noted, however, that the underlying magnitude of the financial problems was overstated by the 1992–3 recession.

The year 1995 failed to bring about the hoped-for turn for the better, even though the consolidation efforts were maintained.

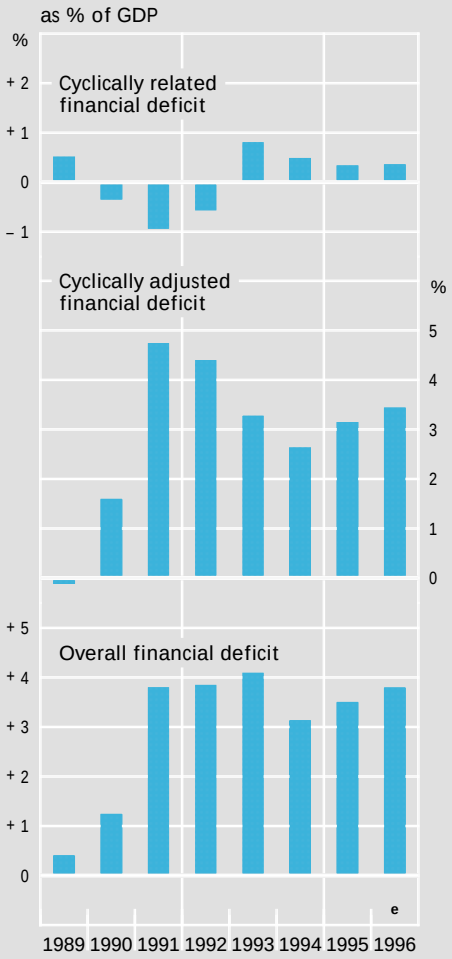
12 Using model-based calculations, the OECD, the IMF and the EC assume an aggregate revenue elasticity for Germany of similar proportions. The Council of Experts bases its calculations of the structural deficit on an elasticity of 1.
13 See also the formal overview in the Annex.

Unexpectedly large tax shortfalls, only partly attributable to cyclical factors, had a major impact; this was accompanied, however, by compensatory increases in other taxes and levies, a temporary surplus generated by the new nursing insurance scheme and relatively low costs of borrowing. However, in 1995 the previously massive credit requirements of the Treuhand agency ceased, with the result that, after including this subsidiary "special fund", the recourse to the capital market of the general government sector in the wider sense declined perceptibly compared with the previous year.[14]

Although the cyclical slowdown was overcome in 1996, no radical improvement occurred, on an annual average, which would have boosted the public sector budget position, too. Instead, public finance was marked by a pronounced weakness in revenue; besides the tax shortfalls arising from the 1996 Annual Tax Act, this owed something to the fact that the economic upturn was largely fuelled by exports, which yield no turnover tax receipts.

Conclusion

Seen over the entire period, the burdens imposed and the relief afforded by negative and positive cyclical movements virtually cancelled each other out. In other words, the deterioration of 3⅓ percentage points in the deficit ratio between 1989 and 1996, which was accompanied by an increase in the burden of taxes and levies and in the expenditure ratio, was apparently due to non-cyclical factors (about one-quarter was attributable to the interest burden, which rose with the debt ratio).



The role of cyclically adjusted deficits and built-in stabilisers

The indicative quality of "structural" deficits

Owing to the way they are designed, calculations concerning the cyclical adjustment of budget balances must be regarded merely as

14 In order to make a comprehensive analysis, account would have to be taken, too, of the fact that the state promotional banks also have high refinancing needs resulting from the performance of public sector tasks.

quantitative rules of thumb and general guidelines. As analytical ratios, they can help to supplement the other fiscal policy indicators and measuring concepts. The practice of calculating synthetic financial balances should therefore certainly not be interpreted as implying that the unadjusted overall balance somehow has an inferior indicative function. On the contrary, the latter provides key information on the size of the actually incurred financial deficit and thus on current real recourse to the credit markets. This is also of importance for monetary analyses. In addition, real borrowing is a key determinant of both overall saving and the trend in the debt ratio, and hence of the remaining room for fiscal policy manœuvre.

Problems of interpretation

The concepts for determining the structural budget balance should not be applied "mechanistically" either. Something which at the "current margin" might initially be interpreted as a negative cyclical influence may well turn out, *ex post*, to be a persistent factor which cannot be lastingly remedied without improving the underlying macroeconomic conditions. This may also present a challenge to fiscal policy makers. The adjusted balance should always be assessed in relation to the particular situation and against the background of the overall balance. Whether or not a given deficit is appropriate or tolerable in the given context and what level of public sector indebtedness is sustainable over the long term are questions that can only be determined on the basis of additional criteria; in this context, it will be necessary to consider also structural data (for example, the share of public investment in the budget volume) and level variables (such as the overall levy ratio).

The term "structural", in connection with the adjustment for cyclical effects, has to be interpreted critically for other reasons, too. For instance, the calculations focus exclusively on imbalances in the goods market. Distortions in the monetary field, particularly as they manifest themselves in the so-called price gap,[15] are disregarded;[16] the same applies – and this point needs to be emphasised – to deteriorations in supply-side conditions, i.e. the circumstances under which saving and investment decisions are made. In addition, factors of a temporary nature may also be reflected in the "structural deficit", calculated as it is as a residual, with the result that, in reality, a transitory deficit component would be included as well (although it could be taken into account only in individual cases). Moreover, interest factors may impair the informative value of the structural deficit, particularly in the case of heavily indebted countries. Thus a rapid decline in capital market rates or a phase of very low interest rates would give too favourable a picture of the consolidation efforts and the consolidation success. For obtaining a better assessment of the current budget policy stance – and only for such purposes – a more appropriate measure would therefore be provided, if need be, by the primary deficit adjusted for the interest burden. Calculations concerning the struc-

15 For the concept of the price gap see: Deutsche Bundesbank, The correlation between monetary growth and price movements in the Federal Republic of Germany, Monthly Report, January 1992, pages 20 ff.
16 In this context, it should be borne in mind that the price gap and the output gap are negatively correlated with each other.

tural deficit are based not least on the *status quo*; future long-term burdens, for example those arising from negative demographic changes, can be captured only by means of other, forward-looking model calculations.

Significance of the built-in stabilisers

Some qualifications likewise have to be made in respect of the so-called built-in stabilisers – quite apart from the normal estimation uncertainties in the measurement process. It is true that, under certain conditions, fluctuations of the domestic product in the course of the business cycle can be dampened more or less automatically by passive budget flexibilities; considering only the pure fiscal policy effect (i. e. demand-oriented revenue/expenditure), they have a cycle-smoothing and steadying influence on the economic trend.[17] To that extent, a fiscal policy course which allows such cyclical changes in expenditure and revenue to take effect is to a certain extent potential-oriented. However, such a stabilising effect of the tax transfer system can emerge only if – leaving aside the problem of time lags – fiscal policy makers do not use the improvement in the budget position achieved in favourable cyclical periods in order to raise expenditure or lower taxes and levies. In addition, a capital market which is tense or whose confidence is shaken or an economy with a high degree of openness are scenarios in which only a relatively small built-in stabiliser effect may be expected, even given pronounced built-in flexibility. Having said that, it may nevertheless appear appropriate in the context of longer-term overall economic considerations to use periods of buoyant tax revenue to reduce the burden of levies.

A high degree of built-in flexibility is, moreover, an indication of a high, or progressively rising, burden of levies or of "generous" transfer arrangements, which, in turn, may hamper the full development of the expansionary forces. In addition, it should be borne in mind that the theoretical concept of built-in stabilisers was conceived for the "textbook" case of a typical cyclical economic course of development. But one must always consider whether a phase of economic weakness or a slack pace of economic recovery can be adequately described by the categories of traditional cyclical theory or whether, instead, deeper-rooted structural causes offer a better explanation. Nor, in the case of supply-side distortions, can significantly positive effects of the built-in stabilisers be expected *per se*. The same applies to the situation (which currently tends to be typical) of budget deficits and debt levels which are high anyway – quite apart from the fact that a reduction of high non-cyclically induced deficit ratios should be interpreted more as a removal of an expansionary stimulus than as a contractionary process. Contrary to "textbook wisdom", it is not possible in such a situation to exempt the cyclically dependent categories of revenue and expenditure from the outset from the need to consider whether perhaps they, too, are capable of making a contribution to the consolidation process.

Moving from the concept of measuring to setting targets

Merely measuring the balance that remains after cyclical and, if need be, interest rate and

17 This also implies that the cyclical effect of a given anti-cyclical measure decreases with an increasing degree of built-in flexibility. On the other hand, the need for discretionary actions decreases, other things being equal.

special factors have been eliminated tells us nothing about the scale of the measures which is sustainable or necessary on a lasting basis. Consolidation requires a standard that is to be achieved or a benchmark that is to be aimed at. The basic fiscal policy situation needs to be taken into account, as do the special problems of the country concerned. In this context, it is important to ascertain to what extent a reduction of debt or in the deficit is brought about by increasing the burden of taxes and levies or by lowering the government spending ratio. The more a country succeeds through a "qualitatively superior" consolidation effort in cutting consumption expenditure and subsidies durably and in favourably influencing long-term expectations as well as providing saving and investment incentives, the more likely it is that, over time, the positive effects of a fiscal consolidation policy course will have an early and major impact.

"Symmetric public finance policy"

In view of the already high public sector debt ratio and interest burden in Germany (and in a number of other countries, too) as well as the considerable current and future macroeconomic challenges that face us, the state must be expected to make a substantial contribution to solving the problem. The medium-term goal, set by the Federal Government in the context of its "symmetric public finance policy", of reducing the public sector deficit ratio (as defined in the national accounts) to 1½ % of GDP in the year 2000 and cutting it further in subsequent years provides a useful orientation for achieving that objective.

Necessary safety margin

Only sound public finance leaves sufficient leeway for the budgetary accommodation of cyclical fluctuations and, if need be, for cushioning non-cyclical shocks. The medium-term objective set by the European Council in Dublin in December 1996 of public sector budgets that are virtually balanced or even in surplus takes adequate account of this requirement – depending on the particular size of the debt level – without running the risk of breaching the ceiling of 3 % of GDP laid down in the Maastricht Treaty as the reference value for the government current deficit.

Overall balance is decisive

Hence it is the overall balance that is decisive. Limiting the perspective to the structural deficit alone harbours the danger of underestimating the extent of the fiscal policy misalignment, especially as the methodological and statistical difficulties entailed in calculating structural deficits have so far led to very diverse results and interpretations.

The Annex to this article begins overleaf.

Annex

The cyclically related component of the financial balance

The deficit ratio (b) can be subdivided into a "structural" component (b*) and a utilisation-related component (b^c):

(1) $b = b^* + b^c$

The utilisation-related component of the measured deficit ratio (b^c) is derived from the response of public sector expenditure (h^c) and revenue (τ^c) to fluctuations in overall capacity utilisation; that is (in relation to GDP in each case):

(2) $b^c = h^c - \tau^c$

With δ as the overall parameter for the built-in passive budget flexibility, the formula can be condensed as follows:

(3) $b^c = \delta \cdot gap,$

where $\delta = \delta_h + \delta_\tau$

The relative output gap (gap) is defined as:

(4) $gap = (y - y^*) / y^*$

The output gap describes the deviation of actual real GDP (y) from potential GDP (i.e. the production potential) in relation to potential GDP (y*).

For the built-in stabiliser on the expenditure side (δ_h), the following applies on further specification:

(5) $\delta_h = \lambda \cdot \beta + k^c$

The term λ expresses what amount of wage substitutes, as a percentage of GDP, is associated on average with an unemployment ratio of 1 percentage point; the symbol k^c denotes the level of payments necessitated by cyclically related short-time working. In the sense of the budgetary responsiveness measure, λ captures, as it were, the "fiscal price component" of unemployment. The inverse Okun multiplier (β) shows, by contrast, to what extent the utilisation-related unemployment ratio varies in line with a change in the output gap of 1 percentage point. The "volume component" for wage substitutes occasioned by unemployment in equation (3) is therefore determined as a function of the combination of the cyclical labour market response parameter and the output gap.

The price component λ, in turn, can be divided into the factors compensation of employees as a percentage of GDP (ce), transfer ratio (tr) and beneficiary ratio (br):

(6) $\lambda = (ce \cdot tr \cdot br)/(1-u)$

The built-in flexibility on the revenue side (δ_τ) is composed of the following variables:

(7) $\delta_\tau = \tau \cdot \varepsilon + \tilde{s}\,(1 - \Theta)\,\beta$

where $\varepsilon = (1 + \varepsilon_{t,B}) \cdot \varepsilon_{B,Y}$

The term τ symbolises the average effective tax burden on the economy, whereas ε is a measure of the aggregate revenue elasticity of taxes in terms of GDP which, in turn, can be broken down in analytical terms into two partial elasticities (the tax rate elasticity $\varepsilon_{t,B}$ and the tax base elasticity $\varepsilon_{B,Y}$). The second summand, with $\tilde{s}$ as the (modified)

Symbols used

b	=	statistical financial balance as % of GDP
b^*	=	"structural" financial balance as % of GDP
b^c	=	cyclically related financial balance as % of GDP
h^c	=	cyclically related expenditure as % of GDP
τ^c	=	cyclically related taxes as % of GDP
τ	=	overall tax ratio
ε	=	tax revenue elasticity
$\varepsilon_{t,B}$	=	tax rate elasticity
$\varepsilon_{B,Y}$	=	tax base elasticity
δ	=	built-in flexibility parameter
λ	=	responsiveness of expenditure relative to the unemployment rate
ce	=	compensation of employees as % of GDP
tr	=	transfer ratio (average cost rate per benefit recipient as % of average gross wage and salary income)
br	=	beneficiary ratio (benefit recipients as % of unemployed persons)
k^c	=	cyclically related payments of short-time working benefits as % of GDP per 1 percentage point of the output gap
$\tilde{s}$	=	ratio of social security contributions relative to the size of the labour force
Θ	=	correction factor to take account of the contribution payments of the Federal Labour Office
β	=	inverse Okun coefficient
u	=	unemployment rate
y	=	real GDP
y*	=	real production potential
gap	=	relative output gap

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ratio of social security contributions and Θ as the correction factor, yields the net effect of cyclical variations on social security contributions.

The "structural" deficit in the wider sense (b*) can be derived direct as a residual on the basis of the above considerations. Using (1) and (3), and neglecting potential time lags, we obtain the following formula:

$$(8) \qquad b^* = b - \delta \cdot gap$$

The "structural deficit", as such, is a quite heterogeneous construct. Derived as a residual by the process of subtraction, it is, in a sense, the "collective term" for all other non-cyclical determinants of the deficit ratio.