Reform of German budgetary rules

Government debt in Germany has steadily increased over recent decades. The debt ceiling of 60% of GDP established for euro-area countries has also been clearly exceeded for some years now. Owing to the ageing of society, the pay-as-you-go social security systems will place an additional burden on future generations. It is therefore widely recognised that a reform of the national budgetary rules is necessary in order to curb government debt. There are several different possible approaches to achieving this. With the adoption of the European Stability and Growth Pact, which provides an important basis for euro-area monetary policy, a first step was taken in favour of attaining a structural budget position that is at least close to balance. The impact of cyclical fluctuations can still be cushioned by the automatic stabilisers and the pact also allows more room for manoeuvre in exceptional circumstances. In order to strengthen the binding effect of the established limits, clear and comprehensible regulations in both the federal constitution and those of the individual states appear to be equally as important as transparent short and medium-term budget plans and explanations of deviations from the plan. Infringements could then be easily identified and, as a result, promptly corrected.

The development of government debt

Sharp rise in government debt...

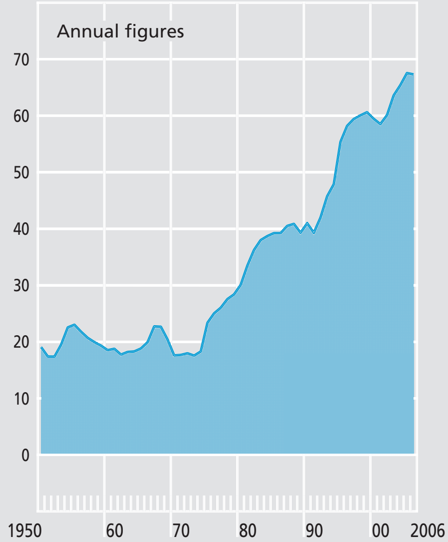
Government debt has increased significantly since the Federal Republic of Germany was founded. Starting from a level equivalent to €10 billion in 1950, it had risen to €64 billion by 1970. However, growth in gross domestic product (GDP) was somewhat stronger still, meaning that the debt-to-GDP ratio decreased slightly overall to just under 18%. In the years that followed, however, the debt ratio increased markedly. At the end of 1985, central, state and local government liabilities already amounted to nearly €390 billion, almost 40% of GDP. This ratio remained virtually unchanged until the end of the 1980s, after which it experienced a sharp increase in the wake of the unification of Germany. The reference value of 60%, which was introduced in 1992 in connection with the negotiations regarding European monetary union, was exceeded for the first time in 1998 (according to current data). The debt level then continued to increase steadily above this threshold with an interruption in 2000 and 2001, when the ample proceeds from the sale of UMTS licences were used to redeem part of the debt. Large government deficits in the years that followed caused the debt ratio to rise to almost 68% by 2005. In 2006, despite very strong growth in nominal GDP and a marked decrease in the deficit ratio, there was only a very limited reduction in the debt ratio and the debt level increased to almost €1,570 billion.

Debt evolution varied considerably on the various levels of government. Up until the early 1970s, local government liabilities rose significantly faster than those of central government, almost reaching the same level. Subsequently, debt growth accelerated – primarily in central government but also significantly in the federal states – while the development in local government was distinctly more subdued overall. The rate of increase diverged widely across the individual states. At €20,300, the debt level *per capita* in Bremen at the end of last year was six-and-a-half times as high as in Bavaria (including the local government level). However, just over three-fifths of government liabilities are currently attributable to the central government budget (including its subsidiary budgets), thus increasing central government's share by 20 percentage points compared with 1973.

... particularly in central government and certain federal states

Government debt ratio*

As % of GDP



* From 1970 GDP in accordance with ESA 1995. Up to and including 1990 excluding the east German states. From 1991 Maastricht debt definition (including volume of coins in circulation, social security funds and placeholder security transactions).

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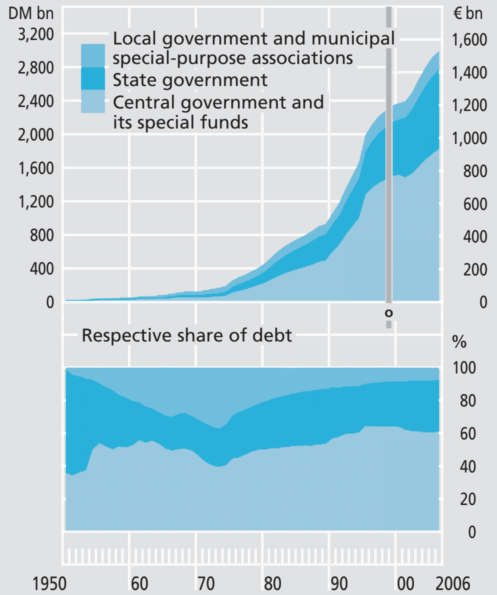
Opaque distribution of debt burden aids its increase

Both past experience and politico-economic rationale (see box on page 50) suggest that in political praxis government debt is frequently incurred on a scale that is later considered excessive. A particularly important factor in this regard is the fact that future burdens resulting from the incurrence of liabilities are often not fully reflected in calculations, thus placing an excessive strain on future generations of tax payers. In the run-up to elections, for instance, there is an additional incentive to satisfy the wishes of certain vested interest groups through increased borrowing. In this respect, establishing budgetary rules in advance can counteract the tendency towards credit financing. Introducing such budgetary rules can therefore be justified in a similar way to the transfer of monetary policy responsibility to an independent central bank.

Central, state and local government debt



Source: Federal Statistical Office. — o From 1999 data in euro.

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Existing rules to curb borrowing

Originally object-based rule for central government

The German Basic Law of 1949 already contained a rule for curbing central government borrowing, which was largely based on its forerunner in the Weimar Imperial Constitution. Article 115 of the Basic Law originally only permitted borrowing "in cases of exceptional need and, as a rule, only for expenditure having a productive purpose". The latter was to be understood as costs that would effectively finance themselves through higher central government revenue in the following years. Borrowing was thus always object-based. However, this provision was sometimes interpreted much more loosely than the legislators intended, not least by stretching the definition of "exceptional need".[1]

Current rule focuses on macroeconomic management

A standard borrowing limit linked to investment expenditure was then introduced in the late 1960s with the reform of the fiscal constitution. In addition, the management of macroeconomic activity based on Keynesian ideas was included as one of the constitutional objectives. Thereafter, the requirements for maintaining the macroeconomic equilibrium were to be taken into account in the budget pursuant to Article 109 (2) of the Basic Law. Success in overcoming an economic slowdown in the second half of the 1960s was a contributory factor in the legislators' decision when amending the Basic Law to allow the borrowing limit to be exceeded if this is necessary in order to avert a disruption of the

1 See W Patzig (1991), Haushaltsrecht des Bundes und der Länder. Kommentar zu den Rechts- und Verwaltungsvorschriften, A/115/9 (in German only).

Possible justifications for and necessary limits of government borrowing

Fundamentally the attainment of a fair balance of intergenerational burden-sharing can be seen as a justification for government borrowing. The argument behind this is that future generations will also benefit from a part of today's government spending and, therefore, should also contribute to its financing. In line with this argument, a policy which promotes growth and thus implies a deliberate expansion of economic output in the future could be used to justify the transfer of financial burdens to future generations. However, measures with positive growth effects cannot be reliably identified or their effects quantified.

The argument that government assets will be passed on to future generations has similar foundations. According to this idea, incurring debt in order to increase assets can be justified if the debt service can be offset against a corresponding benefit accruing from the stock of government assets accumulated. However, depreciation must also be subtracted from the value of the assets, so that net investment must be the variable that sets the ceiling for government borrowing. But it must be questioned whether the future generations obliged to service these debts really will be able to draw the benefit from these assets as is envisaged today. It must also be remembered that government purchases of non-financial assets tied to a specific use may not be easily resellable and that their operation may involve significant costs. In the case of financial assets it must be taken into account that the loan portfolio, for example, often contains promotional components and can only be sold at corresponding discounts. Finally, it should be noted that intergenerational burden-sharing is also subject to significant – countervailing – influences from other areas of the government budget (eg pay-as-you-go statutory social security systems).

Whilst the arguments mentioned above aim to justify structural borrowing, in the case of cyclically induced borrowing the debt is only incurred temporarily. In principle, it seems sensible not to offset cyclical fluctuations in revenue and expenditure by taking short-term countermeasures which may amplify the cyclical swings and distort allocation. This makes it possible to cushion the cyclical fluctuations by allowing government budgets to correspondingly grow and contract. In the case of a symmetric business cycle, the upward and downward influences on public finances largely cancel each other out on average, so that the debt level ultimately remains constant. While allowing the automatic stabilisers to take effect is generally supported, actively managing the economy using targeted measures to stabilise the macroeconomic development is often viewed more sceptically. Not least owing to the long lags between the occurrence of a disturbance, its diagnosis, the adoption of countermeasures and the effect of such measures, there is significant doubt as to whether it is possible to macro-manage the economy using active measures. Furthermore, it has been shown that expansionary impulses are generally more popular than making cuts during an upturn, which is likely to have contributed to the structural expansion of government debt in the past.

Furthermore, specific exceptional circumstances may justify borrowing. For example, major natural disasters may impose strains on public finances, the short-term correction of which requires tax rates to be significantly increased on a temporary basis. In order to avoid this and the associated macroeconomic distortions, the prefinancing of special expenditure burdens and the spread of the funding over several years by temporarily incurring debt seems justifiable in such a situation.

Essentially, however, the negative effects of high government debt and the resulting interest rate burden are always to be borne in mind. For example, a very high level of debt servicing resulting from debt accumulated in the past could raise doubts as to whether the government is still able to fulfil its tasks. The fear of future tax increases could significantly inhibit the propensity to invest and consume. In the event of spiralling government debt, the capital market will demand risk premiums (sometimes very abruptly) for government borrowing, thus increasing budgetary strains. In extreme cases, monetary policymakers may be pressurised to ease the debt service burden by permitting higher inflation. Monetary stability and economic growth would then both be seriously endangered.

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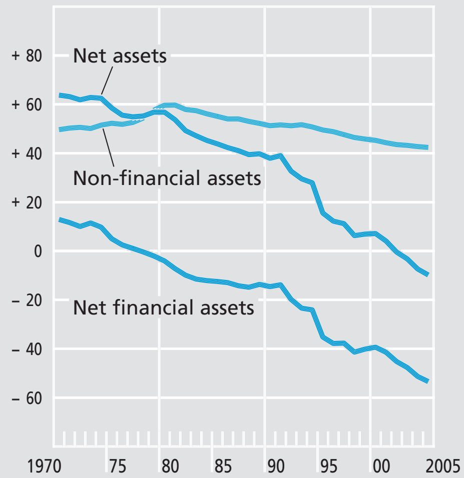
macroeconomic equilibrium. In boom phases in which there is a threat of strong price increases, the rule established in Article 109 (2) of the Basic Law should actually help to reduce government debt, thus preventing the situation from snowballing. However, the marked acceleration in the debt ratio growth of central, state and local government since the 1970s, which – as illustrated in the adjacent chart – was not accompanied by a rise in total assets and thus led to an almost continuous decrease in net assets, suggests that the introduction of this borrowing limit did not have the desired dampening effect (see the box on the shortcomings of Article 115 of the Basic Law on pages 52 and 53).

European rules for deficit and debt level

In addition to the requirements of the Basic Law, government budgets in Germany must also meet European fiscal rules. With the signing of the Maastricht Treaty in 1992 in preparation for monetary union, upper limits were defined for the participating countries' general government deficit and debt levels. A reference value of 60% was agreed upon for the debt-to-GDP ratio; should this be exceeded, it must be brought back towards the reference value at a satisfactory pace. The deficit, which is primarily calculated in accordance with the specifications of the national accounts, may not amount to more than 3% of GDP. If a euro-area country exceeds the deficit limit for several years running, the Council of Finance Ministers may impose a fine of up to 0.5% of GDP. In 1997, the European Stability and Growth Pact set down the aim of attaining over the course of the business cycle budgetary positions which were close to balance or in surplus, not least

Central, state and local government assets*

As % of GDP



Source: the Bundesbank's financial accounts and the Federal Statistical Office's stock accounts. — * Non-financial assets (excluding real estate) and financial assets at replacement or market prices. Data for years prior to 1991 partly based on estimates. From 1991 data for the whole of Germany.

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in order to ensure a sufficient safety margin below the 3% deficit limit. Given the moderate trend growth and the strains that will be placed on future budgets owing to the ageing of the population, Germany's express aim is to achieve a structurally balanced budget.[2]

The debate on redefining the central government borrowing limit

Transparency and binding nature of rules important principles

Experience over the past decades has shown that rules restricting government borrowing should be as clear and transparent as possible in order to restrict opportunities to circumvent them and to make monitoring compliance easier. The rules should state that the

2 See Federal Ministry of Finance (2006), German stability programme, updated version from December 2006.

Shortcomings of Article 115 of the Basic Law

The sharp increase in central government debt since the constitutional framework of the German public finance system was reformed at the end of the 1960s has been facilitated by the definition of the borrowing rule. Article 115 (1) second sentence of the Basic Law *(Grundgesetz)* specifies the investment expenditure envisaged in the budget plan as the net borrowing limit. This limit was only enshrined in law following the request of the Federal Constitutional Court from 1989. While the judges evidently had a stricter delimitation in mind, the definition in use at the time was selected as the standard. Thus the current borrowing limit is usually determined by the budget estimates for total expenditure on construction investment, acquisitions of tangible fixed assets and participating interests, loans, utilised underwriting commitments as well as investment grants to the public and private sector (the main categories 7 and 8 in the budget classification table).

An assessment of the impact of the aforementioned expenditure on government assets shows that decisions regarding central government's financial investments are generally not made on the basis of maximising returns. For example, participating interests in development aid associations generate almost no financial returns and loans which are often granted for promotional purposes generally only lead to repayments that are significantly lower than the cost of financing. In the case of utilised underwriting commitments, a decline in the share of sovereign debtors appears to suggest that it is increasingly uncertain whether repayments can be expected at all. The growth in government assets, at least, clearly lags behind expenditure. Investment grants to enterprises cause a rise in value outside the general government sector. Investment subsidies for public entities, such as Deutsche Bahn (principal railways operator), raise government assets only slightly, if at all, owing to the limited market returns of the national rail infrastructure.

Another critical point is the fact that neither the depreciation of central government's stock of tangible fixed assets, which, while not recorded in the cameralistic accounting system currently used in the public sector, is ascertainable from the national accounts, nor the proceeds from asset sales are deducted in order to determine the borrowing limit. Hence such proceeds need not be used to repay old debt but are available to finance current expenditure. This creates an opening to circumvent the intention of the borrowing cap laid down in Article 115 of the Basic Law. Central government's recent extensive asset sales indicate that this opening is exploited to a considerable extent.

The exemption clause of Article 115 (1) of the Basic Law has also contributed greatly to the provision's fundamental ineffectiveness. It allows almost unlimited overshooting of the borrowing limit if this is deemed necessary to avert a disruption of the macroeconomic equilibrium. In its ruling from 1989, the Federal Constitutional Court demanded specific justifications for these cases. It said that evidence of a serious and prolonged disruption of the macroeconomic equilibrium, which is generally regarded as unstable, would have to exist and the additional borrowing – and hence the amount chosen – would have to be appropriate for stabilisation purposes. However, over the period from 2002 to 2004 alone the exemption clause was invoked four times without this notably improving the development of the German economy or the labour market. Against this background the Federal Constitutional Court, in its judgement from July 2007 on the 2004 Federal budget, declared the existing borrowing limit to be broadly ineffective overall. The majority of the judges felt that they could rule out neither the existence of a disruption of the macroeconomic equilibrium that merits action nor the suitability of central government measures to avert such a disruption. While the credit financing of an accelerated tax cut could still be regarded as an active measure in the 2004 regular budget, simply maintaining this course was reason enough for the court to approve the supplementary budget with a planned overshooting of the borrowing limit by a total of €18 billion.

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An additional cause for concern is that, pursuant to section 18 (3) of the Federal Budgetary Regulation *(Bundeshaushaltsordnung)*, borrowing authorisations that have not yet been used remain valid until at least the end of the following financial year and, in the budget implementation process, are often used first to pre-empt their expiry. In 2004 the reserve of residual borrowing authorisations which had accumulated over the previous years was further topped up by invoking the exemption clause. The extensive use of these borrowing authorisations (approximately €9 billion) in the course of implementing the 2005 Federal budget meant that it was unnecessary to re-invoke the exemption clause so as to avert a disruption of the macroeconomic equilibrium. This was possible because the constitutional limit for central government borrowing relates explicitly to the budget adoption stage. If funding gaps occur when implementing the budget as a result of revenue shortfalls or unforeseen expenditure arising from benefits based on a legal entitlement, these can be plugged by using residual borrowing authorisations without having to submit a supplementary budget which would require justifications for overshooting the borrowing limit. Such a buffer of residual borrowing authorisations means that policymakers can evade consolidation pressure by deliberately overstating revenue and understating expenditure on benefits. The leeway available, without violating the budgetary principles of completeness and truthfulness enshrined in Article 110 of the Basic Law, is considerable.

To date the Federal Constitutional Court has never detected a violation of the borrowing limits in a Federal budget. However, effective sanctions against a violation do not appear possible either. By the time a ruling by the Federal Constitutional Court has been promulgated, the budget in question has long been adopted and the implementation can no longer be stopped. Public interest usually focuses on more current issues, meaning that the possible political fallout is likely to remain limited. The court can, admittedly, tighten the standards for future budgets. If the opposition parties are confident that they will gain power then the incentive for such a procedure is limited, however. Thus in the past, parliamentary motions against budgetary acts have occasionally been dropped following a change of government.

Another severe shortcoming of Article 115 of the Basic Law is the second paragraph which revokes the borrowing limits for special Federal funds without qualification. This paragraph was originally intended to provide enterprises that are managed in this form with a relatively large degree of freedom. In the case of Deutsche Bundespost (Federal post office), the debts were later assigned to its successor enterprises. By contrast, Deutsche Bahn's liabilities of almost €40 billion were transferred to the Federal Railways Fund in the mid-1990s and taken over by central government in 1999. In addition, at the beginning of the 1990s, the "German Unity" Fund and the Treuhand agency were established to provide the necessary financial resources for the injection of start-up funds into state and local government in eastern Germany and for the privatisation of GDR state-owned enterprises, mainly by means of debt financing. In 1995 the Treuhand agency, which was recorded outside the general government sector, was likewise integrated into a special Federal fund – the Redemption Fund for Inherited Liabilities – with debts totalling over €100 billion with the intention to repay the debt from the Federal budget within one generation. In mid-1999 central government took on joint responsibility for these liabilities and they thus became central government debt. The liabilities from the "German Unity" Fund, which were to be partly serviced by the state governments, were also integrated into central government debt from 2005 (with an exception clause for possible remaining debt) as part of the reform of the state government revenue-sharing scheme. In 2007 central government also took on the debts from the ERP Special Fund. These actions were not regarded as central government borrowing under the current budgetary rules. The possibility of circumventing borrowing limits by forming special funds or – as is the case of the ERP Special Fund – by integrating both the debts and the realisable assets into the Federal budget reduces the pressure to consolidate but only for a limited time. However, the consequence of this is lastingly higher debt levels.

overshooting of limits must be reversed in order to prevent an undesirable lasting increase in debt levels and strategic behaviour in the budget process. Rule-based adjustment mechanisms that aid in reducing deficits and debt could also be helpful in this context. In order to prevent the budgetary rules from forcing policymakers to act procyclically and to ensure that they have some radius of action in particularly turbulent times, permitting a limited margin of debt incurrence in certain situations would seem advisable. Transparent and meaningful short and medium-term budget plans as well as statements of account regarding deviations from said plans are of particular importance both as a basis for parliamentary decisions and in providing the general public with information.

Asset-based debt rule difficult to implement

A tightening of the borrowing limit set in Article 115 of the Basic Law, whereby only investment expenditure that leads to a net increase in government assets would be taken into account when determining maximum permissible net borrowing, is currently being considered with a view to curbing the long-term accumulation of central government debt.[3] Proceeds from asset sales and the depreciation of tangible fixed assets would thus need to be deducted and rises in the market value of the stock of government assets might have to be added. In addition, at least investment grants made to non-government entities as well as the utilisation of underwriting commitments and the granting of loans that have an important promotional element would have to be excluded. The acquisition of equity stakes would be fully countable as investment only if a normal market rate of return was expected. Such a definition would exclude a large part of past investment expenditure.

Strict implementation necessitates surplus

If the investment expenditure of €24.3 billion contained in the draft federal budget for 2008 is adjusted, in a simplified way, for participating interests (€0.8 billion), loans to other entities (primarily development aid, €1.7 billion in total), the utilisation of underwriting commitments (€1.1 billion) and grants to other entities (especially enterprises and foreign entities, €8.3 billion in total), just over €12 billion remain. If the proceeds from asset sales (€1.5 billion in loan repayments and €10.8 billion in privatisation proceeds) are then also deducted, there is no scope left at all to run a budget deficit. If, following a strict interpretation of the net investment concept, the total is additionally adjusted for the depreciation of central government's tangible fixed assets – which, according to the latest national accounts figures, will amount to around €5 billion – a surplus of the same magnitude would actually be required in order to prevent a further deterioration in the central government asset position (see the chart on page 55 for the fiscal year 2006). Sizeable depreciation of tangible fixed assets acquired using investment transfers to other levels of government would likewise have to be subtracted.

Definition of investment open to interpretation

The introduction of a stricter, basically investment-oriented deficit limit would be a significant step forward and should lead to

3 See, for example, German Council of Economic Experts (2007): Staatsverschuldung wirksam begrenzen, page 76 ff (in German only).

noticeably sounder public finances. At the same time, it should be borne in mind that the definitions are debatable and that not least the changes in the value of the asset stocks are likely to be controversial. Thus, a borrowing limit based on the concept of net investment would only partially fulfil the criteria of transparency and clarity. There is reason to fear that the provisions would be interpreted to suit the situation and would be difficult for the general public to understand.

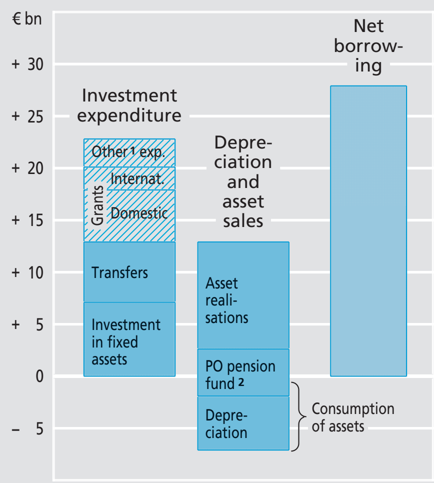
European requirement for a balanced budget is clearer

By contrast, gearing national fiscal rules to the European Stability and Growth Pact, from which the Federal Government derived its aim of a zero structural deficit for Germany's general government budget, would offer more clarity. This objective could be enshrined in the German Basic Law, thus explicitly reinforcing the European agreement, which was designed to ensure monetary stability, and allowing Germany to set an important example in this respect. This could also be a way of increasing the propensity of the states to adapt their borrowing limits in a similar fashion.

Deficit definition close to the national accounts' approach

In view of the European regulations, the task of calculating the fiscal balance under the national budgetary rules could also be based on a definition close to that used in the national accounts. Under this definition, transactions involving government financial assets (eg the granting of loans or the sale of participating interests) are disregarded when calculating the deficit. Privatisation proceeds, which have often been used to bridge budget gaps in the past years, thus masking the true fiscal position, would no longer be counted towards

Central government's net investment* and net borrowing in 2006



* Excluding depreciation on (investment) transfers made to other government budgets and excluding valuation gains. — 1 Loans, utilisation of underwriting commitments and equity acquisitions. — 2 The Post Office pension fund's asset securitisations.

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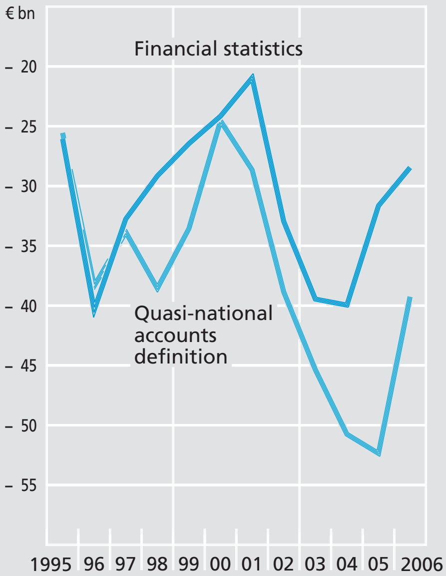
the current financing resources. Moreover, aligning budgetary definitions with the national accounts would also be advantageous in that international standards (ESA 95) have to be observed when booking a transaction that does not affect the deficit and this observance is critically monitored by the Statistical Office of the European Communities (Eurostat). Adopting such a quasi-national accounts definition could ensure that conflicts with the European fiscal rules are avoided even after a possible changeover to a budget system based on commercial accounting.[4]

4 With such a changeover, the entity using the new budgeting system would have to ensure that the statutory statistics can be transparently derived from the budget data.

Central government's fiscal balance*



* Excluding UMTS proceeds in 2000, quasi-national accounts definition including balance of the Post Office pension fund.

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Higher borrowing subject to greater approval

Borrowing above the established limit could be generally permissible in the event of a natural disaster or serious crisis. A significantly greater degree of approval could be made a legal requirement for these cases. This would obviate the need for an exact definition of such contingencies.

Need to close loopholes

A reform of the budgetary rules should include the aim of closing loopholes or possibilities of circumventing the rules. Thus even under a quasi-national accounts definition, there is some discretionary latitude, eg by replacing direct grants with credit-financed promotional loans, which in the end place a burden on future budgets. It would have to be examined whether these count as subsidies and, where appropriate, they would have to be booked as having an impact on the deficit.

Another possible ploy to circumvent the rule could be hiving expenditure off from the budgets. To prevent the formation of off-budget special funds which are authorised to run up deficits, these funds would need to have similarly strict limits. If structural deficits were prohibited, greater use could be made of public-private partnerships for financing government infrastructure, which would, in the end, come close to the kind of investment-oriented deficit limit described above. Under such agreements, private companies take over the financing and running of a government entity for an agreed period of time in exchange for receiving fees and charges. If this entity is returned to the government after the agreement expires, the fees and charges include interest payments and principal repayments as well as purchases of services. The transaction thus shares similarities with a loan. When concluding such agreements, it must therefore be carefully considered whether they will place too great a burden on future budgets. Limits might have to be set for the overall volume.[5] In general, however, such agreements could help to restrict the budgetary burden in the longer term as they may only be concluded if the cost-efficiency check pursuant to section 7 of the Federal Budgetary Regulations shows that they have cost advantages over a budget-financed investment project. A crucial requirement in this case, too, is transparent reporting which provides parliament and the

5 According to the national accounts rules, this recording of investment expenditure outside of the government account is only permitted if the majority of the risks are taken on by the private partner.

general public with an accurate picture of the cost burdens entailed.

Adjustment of the balance for cyclical influences

Regardless of whether the aim is to achieve a balanced budget or to peg borrowing to net investment, it would appear sensible to allow the automatic stabilisers to take effect. This implies that the budgetary rules would need to be based on cyclically adjusted variables, preferably calculated by a standardised procedure with minimal discretionary leeway. In addition, the strong fluctuations in revenue from profit-related taxes should be taken into account – likewise using a standardised approach. In some cases, these fluctuations have no direct relationship with the macroeconomic reference variables and are therefore not classified as cyclically induced in the standard procedure currently in use. It should be noted that the underlying projection of the trend component is generally subject to *ex post* revisions as the assessment of the future development required for calculating a trend is inherently subject to uncertainty. If, for instance, the increase in potential output is overestimated (as has often been the case in medium-term financial plans over the past few decades), low economic growth is initially wrongly interpreted as a cyclical problem, when in fact it is a structural issue.

Dealing with missed targets…

The budgetary rules must first be observed during the budget preparation process. Once the budget is implemented, however, deviations from the plans can occur for a variety of reasons. These may be strategically motivated if, for example, revenue is deliberately overestimated or expenditure underestimated in order to ensure that the budget plan complies with the fiscal rules. But they may also be due to "genuine" forecasting errors as, in particular, the estimation of tax revenue and the assessment of the macroeconomic situation are fraught with all manner of uncertainties. Where smaller tolerance thresholds are exceeded, borrowing in contravention of the rules would have to be combined with adjustment measures within the framework of a supplementary budget which should ensure timely compliance with the rule (eg in the next fiscal year) and possibly also repayment of the debt resulting from the under-budgeting. This could be particularly useful in reducing incentives for making unrealistic budget estimates. For individual volatile categories, it might be expedient to stagger this compulsory correction rather than requiring a correction of deviations from the budget plan in the very next fiscal year. This would be conceivable, for instance, with respect to the tax revenue level adjusted for the cyclical and exceptional fluctuations in profit-related taxes. The rules could include a mandatory path for reducing both positive and negative deviations, which would tend to lead to a shock-absorbing fiscal stance (see also the annex on pages 63 to 68).

… and the resulting debt increase

In the case of unbiased plans and forecasts, missed targets should generally balance themselves out over a longer period of time and should not result in any systematic growth in debt. At the same time, there should be continuous reporting on the debt development and the factors behind it, not least in order to minimise the incentives for strategic misbudgeting by increasing transparency. Another possibility would be to make repayment of the accumulated debt compulsory when a given ceiling is overshot. A longer period of time could be allowed for this.

Transparency of budget plans and implementation

Should the budgetary rules initially allow indebtedness owing to errors in assessing the macroeconomic development or other unanticipated developments, they would need to be linked with more stringent requirements – possibly involving institutional changes – for budget planning and monitoring as well as the underlying forecasts. Transparent and comprehensible short and medium-term budget plans and regular public evaluations of budget implementation and deviations from plan are particularly important in this respect.

Increased monitoring

In order to ensure the effectiveness of the rules, the procedures for monitoring compliance with the borrowing limit should be made more stringent. Stipulations ensuring sufficient corrections in the event that the rules are breached are also required. Parliament should then examine the extent to which the draft budgets and the medium-term budget plans comply with the stipulations in that sufficient concrete and possibly rule-bound countermeasures have been announced or are already being implemented.[6]

Revision of borrowing limits for state government

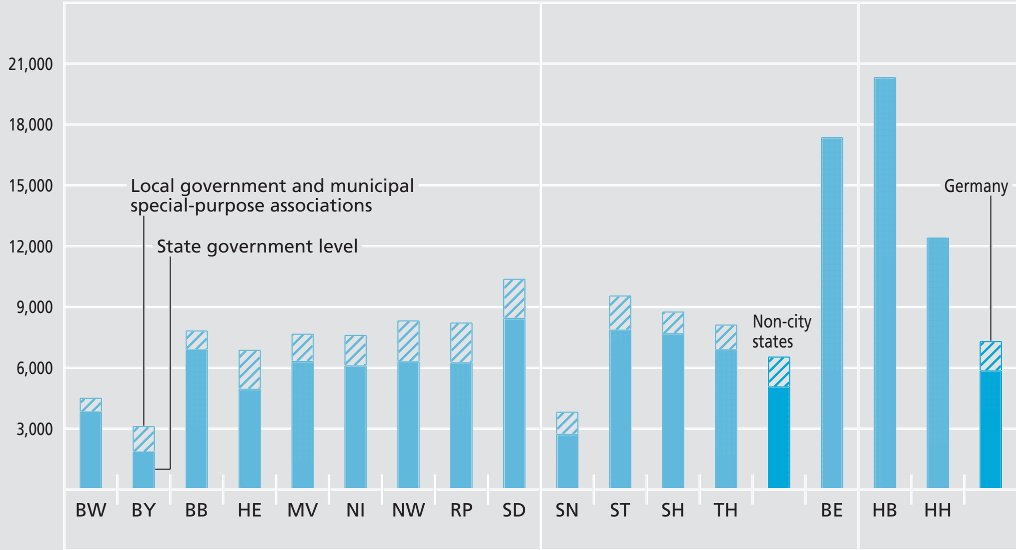
A similar tightening of borrowing limits to that described for central government would also seem logical for state government, especially as the implicit debt guarantees among central and state government could be providing an additional borrowing incentive. In the city-states, the debt *per capita* even exceeds that of central government, while in many non-city states the increase over the past few years likewise gives cause for concern given the massive civil servant pension costs which are foreseeable for the future. Even if the market alternative mentioned in the discussion on curbing borrowing levels (which is seemingly not currently being pursued further in this reform) were to be implemented – according to which the state government implicit debt guarantees would be dissolved in favour of capital market deterrents to pursuing an unsound fiscal policy in the form of higher interest rates and credit rationing (see the box on pages 60 and 61) – a tightening of the budgetary rules for state government seems warranted. However, given their very different starting positions (see the chart on page 59), it is currently unclear whether the federal states will willingly commit to an ambitious constitutional provision. In particular, the high debt burden of certain states and, in some cases, ongoing deficits make the acceptance of tougher regulations more difficult. Therefore, it has been suggested that central government take on all state government debt coupled with a reweighting of turnover tax shares in order to offset the extra costs to central government. However, following the Federal Constitutional Court's most recent ruling on the budget

Differing starting positions hamper necessary tightening of rules for state government

6 See Deutsche Bundesbank, Deficit-limiting budgetary rules and a national stability pact in Germany, Monthly Report, April 2005, pp 23-37 for suggestions on corrective procedures.

State* and local government debt in 2006**

€ per capita



Source: Federal Statistical Office. — * State abbreviations: BW = Baden-Württemberg; BY = Bavaria; BB = Brandenburg; HE = Hesse; MV = Mecklenburg-Western Pomerania; NI = Lower Saxony; NW = North Rhine-Westphalia; RP = Rhineland-Palatinate; SD = Saarland; SN = Saxony; ST = Saxony-Anhalt; SH = Schleswig-Holstein; TH = Thuringia; BE = Berlin; HB = Bremen; HH = Hamburg. — * Credit market debt including cash advances at the end of the year.

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situation in Berlin, which expressly underscored the states' own responsibility, this seems problematic. Federal states with a high level of debt would thus be able to pass the blame for past fiscal policy mistakes on to the other states and their current consolidation efforts might also flag at the prospect of such a move. A less radical approach would be a one-off transfer of part of the old debt at the end of a past reference year to central government along with the amount of turnover tax shares required for the corresponding interest payments in the context of tightening the rules.

Taking cyclical fluctuations into account

Cyclical effects should be taken into account with respect to budgetary rules for state government, too. This could be achieved along the lines of the rules for central government discussed above. Alternatively, central government could shoulder the effects of cyclical fluctuations in their entirety by guaranteeing the states tax revenue amounting to a certain share of trend-GDP.[7] However, the concrete implementation of this would involve numerous practical problems. Moreover, it would have to be ensured that sufficient importance is placed on regional economic development so that there is an incentive for nurturing the regional economies. If such a system were implemented, the state government budgets would be largely shielded from cyclical effects and it would not be necessary to take them

7 See H Grossekettler (2007): Für einen Bundesstaat mit zentralisierten Verschuldungskompetenzen, in: Konrad/Jochimsen (eds): Der Föderalstaat nach dem Berlin-Urteil, pp 89-104 S (in German only).

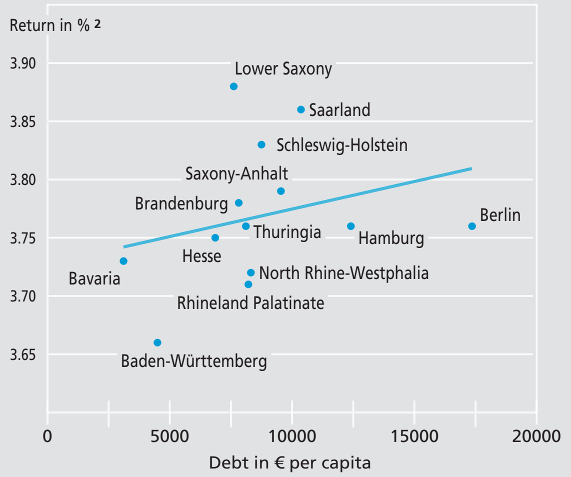
The disciplining effect of financial markets on government budgetary policy

Fiscal deficits are, as a general rule, financed by borrowing on the capital markets. The creditworthiness of sovereign borrowers is reflected in the required interest rates. If market participants have doubts about whether the debt will be serviced punctually, owing to what they perceive to be an increasingly problematic fiscal development, they will require higher interest rates for new government debt. Increasing risk premiums make credit financing less attractive and can thus contribute to limiting it ("market discipline"). This aspect also has a bearing on the discussion on reforming the budgetary rules in Germany and avoiding federal states experiencing budgetary hardship.

A prerequisite for the functioning of market discipline, however, is that investors require state-specific premiums on issued debt instruments, as they will assess the default risk, in particular, of heavily indebted federal states as being higher than for states with a sound financial policy and a low level of debt. At present, this is not really the case. While a higher *per capita* debt does tend to be associated with a higher bond return (see the trend line in the adjacent chart), the difference is fairly small.[1] The rating agencies estimate the current creditworthiness of the federal states to be at least good. The fact that investors do not require significant risk premiums, despite the independence of the federal states' budgetary policy (Article 109 (1) of the Basic Law) and, in some cases, a high debt level and no stringent borrowing limit in the state government constitution, may ultimately be due to the fact that, given the constitutional rules, they assume that the central government and the federation of states will provide bail-out payments. This is supported by past assistance given to states that have found themselves in "acute budgetary hardship", even though in 2006 the Federal Constitutional Court underscored the individual responsibility of the federal states in its rejection of Berlin's plea demanding assistance.

The national federal structure therefore needs credible arrangements for limiting liability if the financial markets are to exert the required disciplining effect. These could relate either to the whole or just part of the debt. The majority of the Economic Advisory Council at the Federal

Return and per capita debt in 2006



Sources: Federal Statistical Office, Thomson Financial Datastream and Bundesbank calculations.

Ministry of Economics, for example, who advocate greater financial market discipline in the federation of states, propose retaining the principle of intergovernmental liability only for unforeseeable emergencies, such as natural disasters, and for debt incurred by expenditure on tasks delegated by central government.[3] However, in practice it may be difficult to make such a clear distinction.

Those opposed to abolishing the system of intergovernmental assistance have repeatedly argued that this would immediately plunge federal states with high levels of debt into budgetary hardship as they would only be able to refinance maturing debt instruments at significantly higher interest rates. To address this problem, one proposal is to introduce the exclusion of liability only for new net debt accruing from a defined date.[4] Thus the old debt could be refinanced at favourable interest rates, while highly indebted federal states would have to pay higher risk premiums on new deficits. This would reduce the incentive to finance expenditure with debt, particularly for federal states with problematic

1 See K Heppke-Falk and G Wolff (2007), Moral hazard and bailout in fiscal federations: evidence for the German Länder, Deutsche Bundesbank Research Centre, Discussion paper, Series 1, Economic studies, No 7/2007, who also demonstrate in an econometric study that the interest rates to be paid by the federal states react significantly to the level of debt. However, the scale of the reaction is small. — **2** For Länder Treasury notes (Landesschatzanweisungen) with a residual maturity of four to seven years. — **3** See Economic Advisory Council at the Federal Ministry of Economics and Labour (2005), Zur finanziellen Stabilität des deutschen Föderalstaates, Documentation No 551, p 24 (only available in German). — **4** See K Konrad (2007), Vorschläge zur wirksamen Verschuldungsbegrenzung der Länder, Wirtschaftsdienst, 87. (9), pp 581-585 (only available in German). — **5** See B Jochimsen (2007), Haftungsbegrenzungen im internationalen Vergleich – Was kann Deutschland lernen?, in: Konrad/ Jochimsen (eds.), Der Föderalstaat nach dem Berlin-Urteil, pp 135-154 (only available in German) and B Jochimsen

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debt situations. Overall, the at least partial abolition of the intergovernmental assistance scheme would mean that even federal states with better budgetary positions may also incur higher financing costs (owing to the abolition of central government liability, banks' obligation to back risk exposures with capital and greater dilution of their debt portfolio). Countervailing advantages would be a sounder future budgetary policy and reduced co-responsibility for excess indebtedness of other federal states.

Nevertheless, financial markets are likely to demand significant risk premiums only if investors actually expect perceptible losses if a federal state defaults. The non-bailout commitment would therefore have to be credible. The credibility can be questioned in two respects. Firstly, despite regulations to the contrary, investors could expect that in an emergency central government and the other federal states would want to avoid the political costs of insolvency and would therefore be prepared to pay the debt. However, this political incentive could be limited by means of suitable insolvency legislation, as exists, for example, for local government in the USA. Secondly, investors might hope that general government would help out if high macroeconomic costs were expected ("too big to fail"). A federal state's default could lead to financial market instability and make it far more difficult for other government authorities to borrow. This could be counteracted by ensuring that creditors are involved to a limited extent in budgetary hardship events preceding a possible insolvency. Overall, the credibility of the exclusion of liability could also be increased by introducing suitable insolvency legislation that provides for burden-sharing between creditors and debtors in the event of a debt service default and ensures that the federal state continues to exist and to carry out its constitutional tasks.

International experience indicates that market discipline can be implemented in federal states.[5] Local government insolvency in, for example, the USA is at the same time rare. In the cases that have occurred, the insolvency law regulated the sharing of the burden between the creditors and the debtor, who had to pass this onto its taxpayers, and ensured the continued existence of the local government. However, most US states combine market discipline with budgetary rules. In many states, there are effective borrowing limits at a local level, too.[6] Empirical evidence shows that the adjustment reaction to negative fiscal shocks depends on the strictness of the relevant budget institutions.[7] Hence it is unclear to what extent the low number of insolvencies and cases of credit rationing of central, state and local government is attributable to market discipline.

Against this backdrop, it is questionable whether, even given a credible exclusion of liability, the financial market reactions are large enough to ensure sound public finances and, if necessary, influence short-termist political behaviour, without a supplementary fiscal framework of budgetary rules. To the extent that the steep growth in indebtedness of the German federal states is attributable to the incentive to shift the debt burden to the federation of states by claiming budgetary hardship, an exclusion of liability may prevent this. However, the literature shows a wide range of explanatory approaches for the rise in debt.[8] A sharp increase can also be observed in the debt ratio of central government, which in view of the scale if its debt, is effectively subject to an exclusion of liability despite the obligation of the federal states to assist it. This indicates that financial markets only react significantly enough to influence political behaviour when there are very high levels of debt. Empirical studies show that the risk premium is initially low and increases more strongly with increasing levels of debt.[9] If perceptible interest rate rises occur, stronger adjustments are required to avert insolvency than is the case with prior tight borrowing limits. This impairs the macroeconomic development and shifts burdens to the generations then affected.

On balance, therefore, it seems worthwhile to consider arrangements to strengthen financial market discipline for the federal states by, say, involving creditors more in the event of budgetary hardship. However, preventive budgetary rules – as are used not only in the USA but also in the European Economic and Monetary Union – are indispensable.

(2007), Staatsschulden ohne Haftung – Eine Option für deutsche Bundesländer?, in: Wirtschaftsdienst, 87. (8), pp 518-524 (only available in German). — **6** See P G Farnham (1988), The Impact of State Regulatory Activity on the Use of Local Government Debt, in: Journal of Urban Affairs, Vol. 10 (1), pp 63-76. — **7** See J Poterba (1994), State responses to fiscal crises: the effects of budgetary institutions and politics, in: Journal of Political Economy, Vol. 102 (4), pp 799-821. — **8** For an overview see: A Alesina und R Perotti (1995), The Political Economy of Budget Deficits, IMF Staff papers, Vol. 42 (1). — **9** See: T Bayoumi, M Goldstein and G. Woglom (1995), Do Credit Markets Discipline Sovereign Borrowers? Evidence from U.S. States, in: Journal of Money, Credit, and Banking, Vol. 27 (4), pp 1046-1059 who show non-linearities for the USA; K Bernoth, J von Hagen and L Schuknecht (2004), Sovereign Risk Premia in the European Government Bond Market, ECB Working Paper Series, No 369 show non-linearities for the EU countries.

specifically into account in the budgetary rules.

Flexibility for individual states

If the budgetary rules were tightened, it would seem necessary to give the individual federal states more flexibility elsewhere as part of the reform of the fiscal constitution. Their income, which is derived primarily from tax receipts, is determined to a large extent by national legislation and is largely levelled out by means of the state government revenue-sharing scheme. Possibilities for rapid adjustment on the expenditure side remain limited – even after the transfer of legislative responsibility for state government civil servants' salaries to the states as part of the first stage of the reform of the federal structure. Particular thought could be given to allowing states to levy limited multipliers on taxes accruing to them or on income taxes in order to increase their financial flexibility. The extra revenue this would raise should then have to be only partly recognised in the state government revenue-sharing scheme. Also to allow room for individual states' preferences regarding the extent of public spending, they should be granted greater flexibility to adjust their revenue.

Concluding remarks

Tightening of budgetary rules required

Developments over the past decades have demonstrated that the borrowing limits in Germany are insufficient. As future generations will face additional burdens, not least in view of the pay-as-you-go social security systems and the ageing of society, it would seem appropriate to minimise any further burden ensuing from the incurrence of government debt. This could be achieved via the requirement of a structurally balanced budget. In addition, this would avoid any conflict with the European fiscal rules, which have already set this aim for Germany. The alternative of pegging borrowing to net investment could also be conducive to attaining this objective in principle. However, it seems that this could have some disadvantages, particularly with regard to the desired transparency and clarity of the rules, and could also conflict with European requirements.

Cyclical fluctuations should be tolerated and slippages corrected

Alongside permitting borrowing in the event of a natural disaster or serious crisis, the cyclical effects on public finances, in particular, should be duly taken into account. Automatic cyclical fluctuations in the fiscal balance, including temporary swings in profit-related taxes, could be tolerated as deficits run up during downturns and surpluses generated during upturns tend to balance each other out. At the end of the cycle, the debt level should not have risen. Much the same applies to deficits and surpluses resulting from inaccurate projections, particularly regarding the macroeconomic development and the level of tax revenue. Institutional safeguards should be put in place to ensure that projections of the course of macroeconomic development and the evolution of the individual government budgets are as unbiased as possible and that there is a regular comprehensive analysis of the budgetary outturns. If a sustained expansion of government debt levels owing to inaccurate projections is imminent, corrective measures should be implemented as promptly as possible.

Transparent reporting and clear rules in the event of infringements

Presenting budget plans and outturns transparently is an important prerequisite for enabling parliaments and the general public to monitor them effectively and ensuring the observance of budgetary rules. Having clear rules is another precondition for facilitating the rapid identification of infringements, which could, if necessary, be corrected using rule-bound mechanisms specified *ex ante*. Overall, the revision of the budgetary rules as part of the second stage of the reform of the federal structure presents an opportunity to take an important step towards long-term fiscal sustainability in Germany.

Annex

Budgetary rules and forecasting uncertainty

Budgetary developments fraught with uncertainty

When framing budgetary rules, it should be borne in mind that both the course of macroeconomic development, on which the budget estimates are based, and other influencing factors are fraught with considerable uncertainty. For this reason, deviations from the budgeted figures regularly occur in the course of implementing the budget – irrespective of any additional fiscal policy decisions that may have been taken in the meantime. This is due to the fact that tax receipts, in particular, are crucially affected by the macroeconomic development, the effects of changes in legislation as well as behavioural adjustments and special factors, which may be difficult to forecast. Estimation errors may also occur in the other budget items and lead to deviations from the targeted figures. Such errors may be classified as cyclical or as temporary for reasons other than cyclical ones, or as affecting the trend component. Moreover, the assessment of the cyclical impact in a given year may change retrospectively as a result of new macroeconomic data or expectations. Quantifying cyclical influences becomes relevant when budgetary rules – as under discussion at present – specify cyclically adjusted target values, say, for the general government deficits, and cyclically induced deviations are to be expressly permitted.

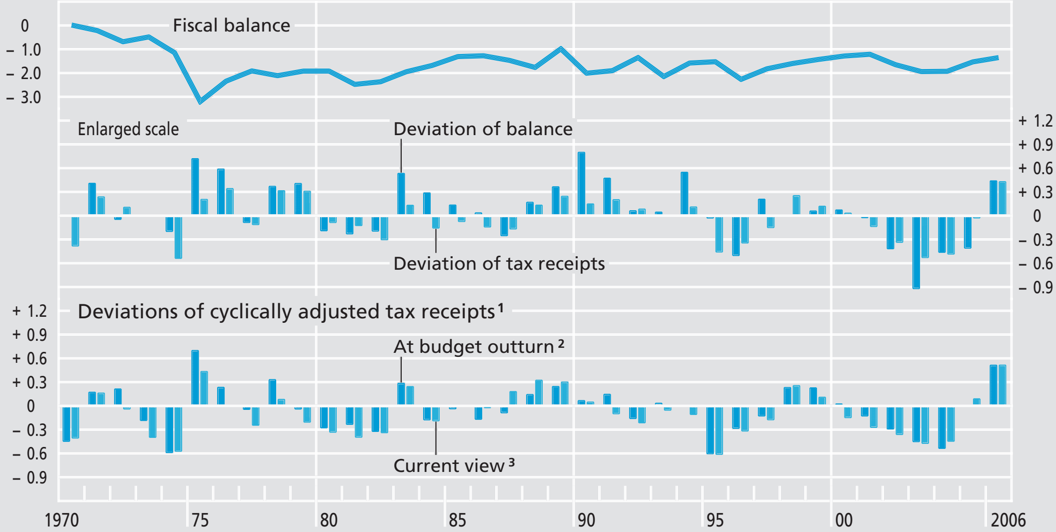
Especially in view of the estimation uncertainties, it is important to decide how to deal with deviations from target that occur when the budget is implemented. In this connection, it should be noted that the forecasting errors do not necessarily cancel each other out over time and that (in the event of regularly overoptimistic expectations) they can ultimately lead to a sustained build-up of debt, even though the budgetary rules have (formally) been observed when setting up the budget.

Deviations from the planned central government budget since the introduction of medium-term financial planning

The fact that inaccurate projections in the budget plans play a considerable role can be seen by analysing past deviations from the planned Federal budget. When looking at the fiscal balance, it is apparent that, up to the mid-1990s, it mostly turned out to be more positive than estimated, whereas negative deviations have predominated

Fiscal balance and deviations from target*
in the Federal budget since 1970

As a percentage of GDP



* Target for year t according to Financial Report from the same year. More favourable outcome than target: positive value. — **1** Trend estimate for cyclically adjusted target in t based on medium-term projection from year t–1. — **2** Re-estimate of the trend component based on medium-term projection from year t+1. — **3** Re-estimate of the trend component based on actual outturn and on medium-term projection of the current year.

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since then (see chart above). Such deviations may have been due not only to inaccurate projections in the narrower sense, say, owing to uncertainties with regard to the macroeconomic development or the effects of earlier legislative changes, but also to measures deliberately deviating from the budget during its implementation (concerning proceeds from asset disposals, for example).

An analysis of the inaccurate projections and their relevance to budgetary developments – much like that recently undertaken by the German Council of Economic Experts[8] – is conducted below. The study focuses on tax receipts, since the related deviations from target are likely to be due in large part to estimation errors in the narrower sense.[9] Deviations in the other budget items are excluded. It turns out that the deviations from target for the fiscal balance and the tax receipts are positively correlated. Over the period as a whole, the deviations from target in the fiscal balance are, however, slightly positive (underestimation), whereas they are, in sum, negative for tax receipts (overestimation). The revisions of the nominal GDP growth rates were also negative on average, although downward revisions of GDP growth rates and of the fiscal balance and/or tax receipts do not always coincide. This suggests that there are other key

8 See also German Council of Economic Experts (2007), Staatsverschuldung wirksam begrenzen (in German only). Unlike the calculations made here, the Council of Economic Experts looks at the Federal budget in the period 1995-2005 and uses the GDP forecast published in its annual reports for each of the years under consideration for the real-time calculation of the cyclical influence.

9 Here, too, there are exceptions, however. For example, in December 2003, the parliamentary mediation committee of the two houses of the German parliament agreed on a final version of various tax law amendments (including the elimination of various subsidies) which deviated from the appropriations in the 2004 Federal budget.

causes of deviations besides the uncertainty regarding macroeconomic developments as measured by GDP.

In order to adjust the fiscal balance for cyclical effects, for the sake of simplicity, only tax receipts are treated below as being cyclically susceptible.[10] More precisely, it is assumed that, given a 1% deviation of real GDP from its trend, tax receipts, too, will deviate by 1% from their normal medium-term level. The trend and cyclical components of GDP are estimated using the Hodrick-Prescott filter (smoothing parameter λ=100), which is applied to the Federal government's data and projection from the Financial Report available.[11] A comparison of the cyclically adjusted tax receipts (year t) with a current view shows the estimation of the trend was largely overoptimistic when the budget was prepared (year t-1). This was only partly recognised at the budget outturn stage (year t+1), however (see chart on page 64).

Making allowance for estimation errors in the budgetary rules

Forecasts of the macroeconomic development (including for the medium term) and of the volatile tax receipts are a major component of budgetary rules based on the trend development. To avoid debts building up systemically as a result of inaccurate estimations, relevant developments should be analysed on a regular basis. Furthermore, thought has to be given to whether compensatory measures might have to be taken. Economic experience suggests that the stringency of such compensatory measures should be tailored to the amount of discretionary scope available to policymakers in making the estimates.

To enhance transparency, first, the cyclical fiscal balances could be determined after the budget outturn and shown separately, for example. In addition, the erratic deviations of the very volatile profit-related taxes from their normal level, which involve large temporary deviations, could also be estimated and incorporated. A standardised method, like that used for cyclical adjustment, should be used for this (see chart on page 66 for a rough estimate).[12] If the cyclical effects on the government budget and the related estimation errors are symmetric, these balances should offset each other over time. However, studies undertaken from a current view show that, in the past, the size of the cyclical deficits was, on average, overstated at the budget outturn owing to the regularly over-optimistic medium-term expectations for the macroeconomic development.

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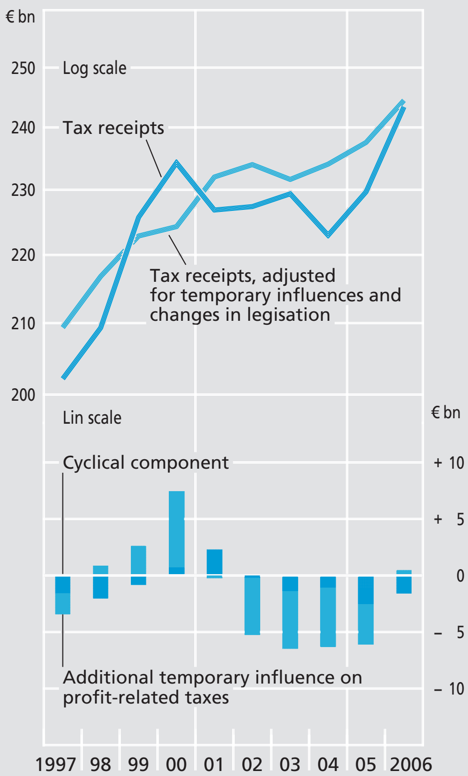
10 Not only tax receipts but also labour market-related expenditure by the Federal government, in particular, is subject to certain cyclical fluctuations. The impact of cyclical fluctuations is likely to be distinctly lower following the recent reforms, however, since the central government grant to the Federal Employment Agency, which finances the very cyclically sensitive unemployment benefit I, has been stabilised.
11 The Bundesbank otherwise uses an analytically more sophisticated disaggregated cyclical adjustment procedure for analysing budgetary developments, see Deutsche Bundesbank, A disaggregated framework for analysing public finances: Germany's fiscal track record between 2000 and 2005, Monthly Report, March 2006, pages 61-76. The aggregated method used here has the advantage of being more consistent with the approach taken by the EU budgetary surveillance procedure. To estimate the GDP trend, GDP has to be projected for a number of years beyond the estimation year. The Federal Government's spring medium-term forecasts are an obvious option for this purpose. The related estimation error tends to be overstated in the process, however, since it is not until November that the target values of the Federal budget are set on the basis of an updated forecast.
12 Even under the legal status quo, revenue from profit-related taxes fluctuates markedly more sharply than can be explained by developments in the economy as a whole. These fluctuations are therefore not usually captured by the cyclical adjustment procedure and are not considered below. The temporary influences on profit-related taxes have to be distinguished from the estimation errors, even though they are a major cause of forecasting errors.

Federal tax receipts* and temporary influences**



* Before deducting supplementary central government grants and shares in energy tax revenue remitted to state government. — ** Cyclical component and additional temporary influence on profit-related taxes (the latter estimated on the basis of the residuals from the disaggregated framework for analysing public finances), see Deutsche Bundesbank, A disaggregated framework for analysing public finances: Germany's fiscal track record between 2000 and 2005, Monthly Report, March 2006, pp 61-76.

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In addition, the estimation errors regarding cyclically adjusted tax receipts[13] determined at the budget outturn could be shown separately. Another factor that could be included is that, given no change in policy, revisions of the estimation of the cyclically adjusted revenue level for an individual year are likely in most cases to continue to hold for the future (baseline effect). In order to avoid sharp, erratic fluctuations in budgetary policy following unexpected trend developments, the reduction in the cyclically adjusted deficit or surplus implied by this baseline effect could be prescribed not directly but successively over a medium-term period. It would then likewise be possible to capture the further differential amounts in the balance from the ensuing fiscal years that occur during the reduction period. Besides this, any growing residue from the aforementioned estimation errors of the economic situation could then also be taken into consideration.

Furthermore, an upper limit could be set for debts due to estimation errors for which there would have to be medium-term fixed minimum repayments if this limit is exceeded. Congruently, credit balances should be usable in the budget only above a defined ceiling. Setting an upper limit for debts which accumulate owing to estimation errors would, in particular, counter incentives for systematic inaccurate projections. By simultaneously limiting the use of possible credit balances, a certain corridor could be created within which both positive and negative estimation errors can be tolerated even though the actual budget ceiling would be breached *ex post* as a result.

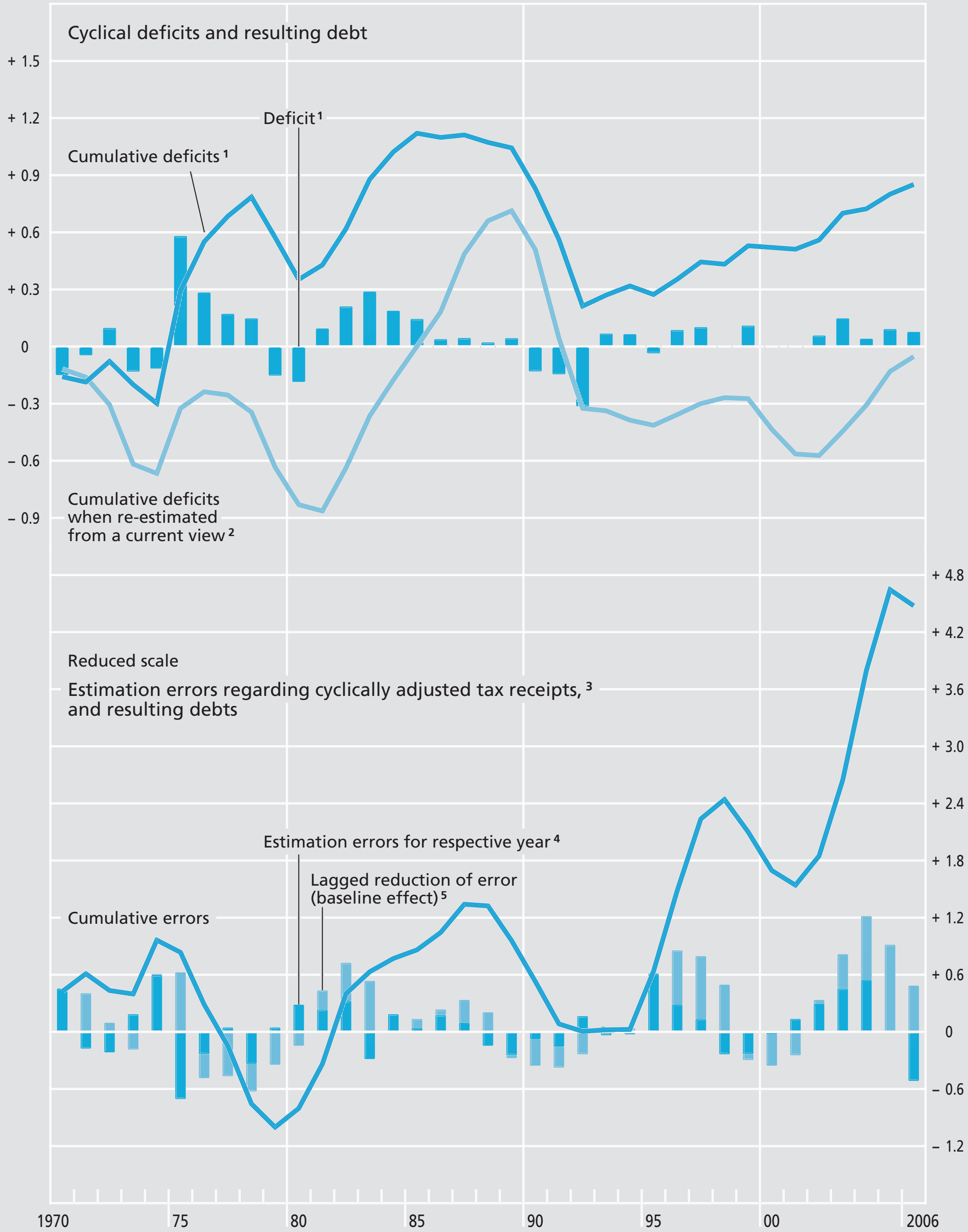
Model calculation for the Federal budget

Simulations based on Federal budgets, economic projections and deviations from target for the period 1970 to 2006 can retrospectively illustrate the pattern of debts and/or credit balances which would have resulted from (estimated) cyclical effects and estimation errors of cyclically adjusted tax receipts (see chart on page 67). Taking 1970 as a starting point, the cyclical deficits and the cyclically adjusted differentials in the tax receipts result-

13 Less the deviations due to changes in legislation adopted in the meantime.

Debts and balances owing to cyclical influences and inaccurate estimates

As a percentage of GDP



1 Estimate of cyclical deficit of year t based on tax revenue outturn for t and medium-term projection from year t+1. — **2** Re-estimate of the trend component based on actual outturn and on medium-term projection of the current year. — **3** Deficit-increasing estimation error (ie outturn less favourable than expected): positive value. — **4** Error of the estimation from t-1 for year t as seen from year t+1. — **5** Baseline effect of an estimation error of size x for year t is calculated as x in t+1, 2/3 · x in t+2, 1/3 · x in t+3, 0 from t+4.

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ing for the budget of a given year (t) are calculated and shown for the year t in each case as seen from the subsequent year (t +1) using the data and projections available at that point in time and shown for year t. The development is based on the assumption, by way of an example, that the estimation errors regarding cyclically adjusted tax receipts that were detected at the budget outturn are reduced in three equal steps (baseline effect).

The simulation shows that debts build up over the reporting period as a result of the cyclical deficits calculated in real time. Debts due to estimation errors regarding cyclically adjusted tax receipts occur mainly in the last ten years. In this context, the medium-term rise in the "cyclical debts" is the outcome of the fact that, in the model calculation, the cyclical deficits were typically overestimated at the budget outturn owing to comparatively optimistic expectations regarding the future macroeconomic development. The estimation errors regarding cyclically adjusted tax receipts were simultaneously underestimated at this point in time. The cumulative deficits resulting from the real-time analysis totalled almost €125 billion (just under 5½% of GDP) in 2006.