THE DEBT BRAKE: SUSTAINABLE, STABILISING, FLEXIBLE

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This is a translated version of the original German-language chapter "Die Schuldenbremse: Nachhaltig, Stabilisierend, Flexibel", which is the sole authoritative text. Please cite the original German-language chapter if any reference is made to this text.

KEY MESSAGES

- A credible reduction in the debt ratio that is brought about with the help of the debt brake constitutes an important signal to financial markets as well as other EU member states.
- Managing public debt on the basis of the interest rate-growth differential is unlikely to be a successful strategy, in particular because this differential could reverse sign in the medium term.
- ↘ Investment should not necessarily be prioritised over other types of public spending. Insufficient public investment is most likely attributable to factors other than the debt brake.

SUMMARY

Since the introduction of the debt brake, gross debt as a percentage of gross domestic product (GDP) in Germany has fallen for the first time in decades over a longer period. Within the framework of the Fiscal Compact, 22 member states of the European Union (EU) have committed themselves to **enshrining ceilings for the structural deficit** in their respective **national legislations**. Nonetheless, there are voices in Germany and abroad calling for higher net borrowing in Germany and a reform or the abolition of the debt brake. The reasons given are negative interest rates, a favourable interest-growth-differential, the lack of public investment in Germany and positive effects of higher expenditure on other member states.

Favourable financing conditions are not sufficient for increasing public debt. Rather, it is **questionable whether higher net borrowing** in Germany is actually **possible without additional fiscal costs**. The debt brake fulfils an important signaling function for financial markets and other member states. Moreover, as a result of the absence of national monetary policy, fiscal policy is the most important instrument for responding to country-specific shocks. The debt brake provides the necessary leeway for such a response. Positive effects of higher German government spending on other member states are likely to be rather weak. Similarly, there is no reason to fear an excessive shortage of nominally safe assets. German bonds play a minor role compared to those of the United States.

The debt brake takes cyclical influences into account symmetrically. In favourable economic times, it puts stronger limits on the maximum permissible amount of net borrowing – and expands it in unfavourable economic times. In this way **it limits net borrowing without restricting the effective-ness of automatic stabilisers**. However, the cyclical adjustment is prone to errors, and thus the debt brake tends to allow for too much fiscal leeway on average. Improved approaches could therefore increase the reliability of output gap estimates and of cyclical adjustment.

Public investment has grown dynamically in recent years. In the future, the debt brake will continue to offer **scope for** an increase in **investment**. Comparisons with earlier investment ratios are problematic, particularly because of municipal outsourcing. The strong focus on investment also hides the fact that, in principle, it is not preferable to other forms of government spending. Ultimately, it is necessary to assess the meaningfulness of individual expenditures. There are indications of investment backlogs in parts of the infrastructure. However, the high level of capacity utilisation in the construction industry and public administration, as well as an increase in regulations and changing needs, are likely to have contributed to backlogs. Regional differences demand targeted solutions. The Länder are responsible for ensuring that their municipalities have adequate financial resources. However, the assumption of municipal debt by the Federal Government sets detrimental incentives for budgetary responsibility of the Länder and municipalities.

I. THE STARTING POINT

- 432. Since the 1970s, there has been a trend in Germany for the debt-to-GDP ratio public debt as a percentage of gross domestic product (GDP) to rise. > CHART
 70 One reason for this increase is seen in economic shocks or exceptional events such as the oil price crises, German reunification and the financial crisis. A particular problem in this context, however, is that, in the period up to 2010, public debt was only partially reduced again afterwards, and sometimes not at all.
- **433.** Basically, a distinction can be made between two groups of **approaches to explaining public debt** (Feld and Reuter, 2017). One group (i) is made up of **allocative explanatory approaches** such as tax smoothing. Moreover, balancing economic fluctuations and the effect of automatic stabilisers lead to an increase in public debt. Not least exceptional events such as natural disasters, serious crises or reunification are often accompanied by an increase in public debt.

While the latter explanatory approaches can only explain temporary increases in debt, (ii) **political economic theories** provide an explanation for a longrunning trend towards an increase that can be observed across various countries. Depending on the institutional framework, political decision-makers have different incentives to incur new debt such that higher debt levels may result than would be optimal for society as a whole. Examples of distortions towards higher indebtedness (**deficit bias**) include increases in expenditure or tax cuts prior to elections, or various stakeholder groups obtaining financing from a



1 – General government gross debt-to-GDP ratio according to the definition of finance statistics excluding social security. Deviation from figures according to the definition of national accounts due to methodological differences (Heil and Leidel, 2018). Comparability over time prior to 2010 is limited due to methodological changes. From 1955 including Berlin (West) and from 1960 including Saarland. Since 1991 all-German results. Only until 1992 were hospitals with commercial accounting included in the federal debts. Special federal funds taken into account: from 1999, Federal Railway Property Fund, the Redemption Fund for Inherited Liabilities and the Coal Compensation Fund; from 2007, ERP Special Fund. From 2006 including selected public funds, institutions and enterprises in the public sector. 2 – Up until 1970 figures for GDP chain-linked. 3 – Deficit rule from Article 115 of the Basic Law (1949 version). 4 – Conversion of the deficit rule to a golden rule in 1969. 5 – Converted into a structural deficit rule in 2009 with effect from 2011. 6 – Extra budgets comprise all public funds, institutions and enterprises that are counted as part of the general government sector according to ESA 2010. Research and development institutions have been included in the survey since the 2013 reporting year. From 2015 onwards, all publicly designated holding companies are considered as extra budgets in accordance with ESA 2010.

Sources: Federal Statistical Office, own calculations

S CHART 70

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common pool. The different reasons for the deficit bias are empirically well documented (Alesina and Passalacqua, 2016).

- 434. The deficit bias can be contained with institutions. One of these is the **introduction of fiscal rules** to limit the government deficit or public expenditure. While the decline in general government debt in Germany since 2010 cannot be attributed definitely to the introduction of the debt brake, there is extensive empirical evidence in the literature documenting the impact of fiscal rules on public deficits and debt (Feld and Kirchgässner, 2008; Burret and Feld, 2014, 2018a, 2018b; Eyraud et al., 2018; Heinemann et al., 2018). There are currently 47 national deficit and expenditure rules in force worldwide (Lledó et al., 2017), including the German debt brake. Within the framework of the European Fiscal Compact, almost all EU member states have committed themselves to introducing a fiscal rule limiting the structural deficit, mainly in their national constitutions. This is also an important element of the 'Maastricht 2.0' concept of the German Council of Experts (GCEE Annual Report 2016 items 269 ff.). The debt brake implements the Fiscal Compact in Germany.
- 435. At present, the debt brake is the subject of criticism for various reasons. Critics state, for example, that (i) **higher indebtedness** is possible in Germany in times of very low interest rates without jeopardising viability, and that higher debt is simultaneously necessary to support monetary policy in order to generate spillover effects on aggregate demand in other countries and to increase the supply of safe assets; ⊃ ITEMS 457 FF. (ii) the **cyclical adjustment** of the debt brake is flawed and leads to procyclical effects; ⊃ ITEMS 496 FF. (iii) the debt brake leaves too little fiscal leeway, so that **investment** cannot be carried out or, if it is, it is done on a too small scale. ⊃ ITEMS 521 FF.

Following a discussion of the legal starting point, the three strands of criticism are discussed separately below. In particular, these thoughts should take into account the fact that a system of debt limitation does not emerge on the drawing board without any history. Rather, the question being asked is whether there are **sufficient reasons** to **question** the **constitutionally enshrined regula-**tion.

II. THE GERMAN DEBT BRAKE

1. Debt brake for the Federal Government and fiscal rules for other local authorities: how they work

436. Fiscal rules with constitutional status have been restricting fiscal policy in the Federal Republic of Germany since long before the introduction of the debt brake. The 1949 version of the Basic Law (*Grundgesetz*) already provided for a balanced budget rule. → BOX 12 The current version of the **debt brake** was adopted in 2009 under the Federalism Reform II. A transition period initially applied for the Federal Government between 2011 and 2016, during which the rules were

gradually tightened. The transition period for the Länder will remain in force until 2020. ≥ ITEM 443

The idea of a **black zero** (balanced budget) differs fundamentally from the **debt brake**. While the debt brake has constitutional status, the black zero is a self-imposed political commitment on the federal budget that was reinforced in the latest coalition treaty (CDU, CSU and SPD, 2018). The black zero implies a commitment to a balanced budget without taking cyclical conditions into account. This creates the risk of a procyclical effect during both upturns and downturns. The fundamental criticism of the black zero should not be confused with criticism of the debt brake, since the latter explicitly takes the economic conditions into account. However, the black zero can curb excessively large expenditure projects or tax cuts during periods of capacity overutilisation.

437. The two key legal norms relating to the German debt brake are Articles 109 and 115 of the Basic Law, according to which the Federal Government and the Länder have a fundamental obligation to maintain a balanced budget, while taking the cyclical situation into account. Pursuant to Article 115 of the Basic Law, the **Federal Government** is complying with the principle of a structurally balanced budget if the **structural deficit** does not exceed **0.35 % of GDP**. As a result of the transitional provisions in Article 143d of the Basic Law, this limit has de facto only been binding since 2016. The structural deficit of 2.21 % planned in the 2010 draft budget was taken as the base value with the adoption of the current debt brake; an annual reduction path of 0.31 percentage points per year was laid down on this basis, so that the structural debt limit of 0.35 % did not become fully binding until 2016.

SOX 12 Fiscal rules in Germany prior to the introduction of the debt brake

Both the 1871 constitution of the German Reich and the Weimar Constitution of 1919 already restricted public borrowing (GCEE Expertise 2007 item 82). The first balanced budget rule in the Federal Republic of Germany was enshrined in Article 115 of the Basic Law in 1949. Borrowing was excluded in principle and allowed only for **exceptional needs** and **special purposes**. Both exceptions are based on vague legal concepts, whereby 'special purposes' were interpreted under customary law as profitable expenditure in the commercial sense (Advisory Board to the Federal Ministry of Finance, 1980). While this meant that the permissible amount of net borrowing was in principle propertyrelated, exceptional needs were interpreted very broadly (Deutsche Bundesbank, 2007).

The 1969 Budgetary and Financial Reform provided for a revised balanced budget rule for both the Federal Government and the Länder in the form of a **golden rule**. The level of public net borrowing was now limited to the amount of gross investment expenditure provided for in the budget (BMF, 2015). Borrowing in excess of gross investment expenditure was permitted as an exception to **ward off a disturbance of macroeconomic equilibrium**. Special funds were permitted in this version of the debt rule that were not subject to the limits laid down for borrowing. In an identical or similar form, corresponding rules were introduced in the Länder constitutions. At both administrative levels, the debt rule only related to budget planning, not to possible deviations during budget execution.

The upper limit for public net borrowing as defined in Article 115 (old version) of the Basic Law must be seen in conjunction with Article 109 (old version), according to which fiscal policy must consider macroeconomic equilibrium in its budgetary planning. The interaction of the two legal norms suggests

that, in a correspondingly **favourable economic situation**, net borrowing should be kept below the sum of the planned gross investment expenditure, and efforts should be made to keep budget deficits low or reduce debt (Deutsche Bundesbank, 2007). In practice, however, this requirement was used primarily for borrowing in excess of gross investment expenditure in **unfavourable economic situations**. Thus, the basically symmetrical requirement of Article 109 (old version) of the Basic Law was mainly applied asymmetrically.

Article 115 of the Basic Law (old version) provided for two exceptions, which allowed for a **wide scope for interpretation**. The classification of certain expenditures as investments and the identification of a disturbance in macroeconomic equilibrium led to frequent and protracted legal disputes. The 1989 judgement by the Federal Constitutional Court finally called for a legally precise definition of investment expenditure (BVerfG, 1989). Another problem with the old version of the debt rule was the limitation of borrowing to the investment expenditure provided for in **budget planning** and not in **budget execution**. This can create negative incentives in budget planning with regard to the forecast of the corresponding variables (Heinemann, 2006). Moreover, the exceptions did not lay down any ceilings. In principle, this initially seems understandable, but it again creates adverse incentives to set the credit requirement too high in supplementary budgets, since the **credit authorisations** thus issued could be carried over to subsequent financial years. Furthermore, there were no provisions on reducing the additional debt that arose compared to the limitation in a normal situation. Likewise, no explicit **sanctioning mechanisms** were envisaged. In addition, cyclically unadjusted balanced budget rules generally involve problems of **procyclicality**, which in downturns pose an excessive restriction, and in upswings allow for an excessive expansion of expenditure margins.

438. Whereas the previous versions of the German debt rule did not take **extra budgets** into account, these now fall under the rule's legal scope if they are legally dependent. This applies to extra budgets established as of 2011. S CHART 70 Older federal extra budgets such as the special funds of the European Recovery Program (ERP) or the *Bundeseisenbahnvermögen* (Federal Railway Property Fund) and their existing credit authorisations are thus not restricted by the provisions of the debt brake.

Another deviation from the old versions of the budget rule results from the handling of **financial transactions**. Whereas under the old debt rule these were mixed with the corresponding revenues and expenditures in the calculation of the maximum permissible amount of net borrowing, they are now explicitly excluded. As a result, it is no longer possible to achieve compliance with the debt brake by selling public property or by means of privatisations. However, expenditure in the budget can still theoretically be structured as loans or as an acquisition of shares, which would not subject them to the debt brake. This was reflected, for example, in payments to the Federal Employment Agency, which were booked as interest-free loans with no repayment obligation (Deutsche Bundesbank, 2011).

439. In order to counteract procyclical effects and not to limit the automatic stabilisers, the debt brake provides for a **symmetrical consideration of cyclical effects** when calculating the maximum permissible level of net borrowing. Under the old version of the fiscal rule, the exception for averting a disturbance of macroeconomic equilibrium had mainly an asymmetric effect during downturn phases. There was no provision for using more favourable economic times to reduce public debt accumulated in this way. By contrast, a symmetrical approach

with the help of a **cyclical component** allows for higher net borrowing in poor economic times and reduces this scope correspondingly during good economic phases. The methodology for determining cyclical influences is based on the **procedure of the European Union** (EU), but takes into account the specific circumstances of the member states. Nevertheless, estimating the output gap necessary for the adjustment is difficult in real time and subject to errors (GCEE Annual Report 2018 box 2). ITEMS 499 FF. This circumstance has an influence on the cyclical component of the debt brake and thus on the determination of the maximum possible amount of net borrowing.

Postings to the control account are only made on the basis of figures after budget execution. All over- or underruns of the maximum permissible amount of net borrowing determined in this way are recorded symmetrically as debits or credits. If there is a cumulative deficit of 1.5 % of GDP, this leads to an **obligation to reduce this deficit**. The Act implementing Article 115 of the Basic Law is already asking for a reduction in case of a cumulative deficit of 1 % of GDP. However, a reduction in the deficit is limited to a maximum of 0.35 % of GDP per year and to cyclically favourable periods. Under section 7 of the Act implementing Article 115 of the Basic Law, these are defined as positive changes to the output gap. When the accounts were drawn up for the 2018 financial year in September 2019, the balance on the control account amounted to €37.2 billion.

The effect of the balances on the control account is in principle **asymmetric**. While negative balances in favourable economic times give rise to reduction obligations, positive balances as they currently exist may not be accessed directly. However, positive balances offer additional scope, as they prolong the period up to which a possible reduction obligation could arise. However, there is currently also discussion as to whether positive balances might result in an expansion of the maximum permissible amount of net borrowing (Deutscher Bundestag, 2015).

441. Regulations on exceptions that can justify exceeding the limits of the debt brake are provided for only in the event of natural disasters and special events beyond the control of the state. These include particularly severe slumps in economic activity. The explanatory memorandum to the law on the debt brake cites the 2008 crisis as an example. Reunification is also classified as an exceptional situation. The existence of such exceptions must be confirmed by a qualified majority of MPs in the Bundestag, i.e., **an absolute majority of all MPs**, and a corresponding resolution on the additional borrowing must be passed. The addi-

tional borrowing must be accompanied by a **plan for repaying** the loans taken out within a reasonable period of time.

442. The maximum permissible level of net borrowing for each financial year is calculated at the time of both **budget planning** and **after budget execution**. S CHART 71 At the time of budget planning, forecasts are needed on economic development in the following year, on net borrowing and on the balance of financial transactions. However, the calculation of the structural component is based on the nominal GDP of the year before budget planning. While this component is not corrected at the time after budget execution, the net borrowing and the balance of financial transactions are based on realised values. The **correction of the cyclical component** is made using updated nominal GDP growth rates for the financial year. The difference between these growth rates is also multiplied by the GDP of the year of budget planning. The resulting difference be-

□ CHART 71

Maximum permissible net borrowing (NB) in accordance to the debt brake in the 2018 fiscal year Comparison between budget plan and budget execution



1 – Budget semi-elasticity measures the number of percentage points by which the fiscal balance changes when GDP rises by one percent. Source: own chart

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tween the maximum permissible and the realised net borrowing of the Federal Government is posted on the control account, and any obligation to reduce is taken into account in the following year's budget planning.

- 443. Unlike the Federal Government's budget, the **budgets** of the **Länder must be structurally balanced** to comply with the provisions of Article 109 of the Basic Law on the debt brake. This rule applies to the Länder from 2020. The federal and Länder governments are fundamentally independent of each other when it comes to their budgets. Corresponding debt rules have been implemented in the Länder constitutions that, while similar, are often different in terms of content. Central elements of differentiation are frequently the consideration of extra budgets, a different target figure using the budget balance instead of net borrowing, the use of a control account and different procedures for cyclical adjustment (Deutsche Bundesbank, 2018a).
- 444. Basically, the constitution grants the **municipalities** the right to local selfgovernment. However, when it comes to indebtedness they are bound by the rules of their respective Land. In principle, they can take out loans to finance investments and to reschedule debts, and resort to **short-term liquidity loans** in the event of short-term liquidity bottlenecks (GCEE Annual Report 2017 items 595 ff.). However, the growing importance in some Länder of these loans, which are meant as temporary bridging loans, has revealed problems in compliance with or the monitoring of the rules. The Länder concerned have therefore already launched debt-relief or consolidation programmes. SHTEM 542 Moreover, municipalities may only borrow for investments if later costs do not exceed their ability to pay interest and repay the principal. The average annual deficit of the municipalities in the years 1991 to 2018 was around 0.1 % of GDP.
- Social security schemes are generally subject to a ban on borrowing. The Fed-445 eral Government guarantees the statutory pension insurance scheme interestfree liquidity support if its liquid funds from the sustainability reserve are not sufficient (Section 214 (1) of the SGB VI). Similarly, the Federal Employment Agency can fall back on interest-free loans from the Federal Government if it is unable to meet its payment obligations (Section 364 (1) of the SGB III). In a year with insufficient revenue, the deficit can be offset by reserves. In 2001 and 2002, for example, the structural deficit in the social security system was relatively high at about 0.6 % of GDP according to the Independent Advisory Board to the Stability Council (2017). According to the GCEE's calculations, there were structural deficits in the social security system in nine years of the period from 1991 to 2018, i.e., in around a third of the total period, averaging about 0.3 % of GDP. If there are no reserves, increases in contributions, cuts in benefits or higher federal subsidies become necessary, so that no debt is likely to build up in the medium term.
- 446. Article 109 of the Basic Law provides for fundamental compliance with budgetary obligations arising from EU legal acts. Germany's debt brake is ultimately designed to meet **European obligations**. A key difference between the German debt brake and the debt rules at the European level is that figures from financial statistics are used to determine the applicable balance in the case of the

debt brake, while the European rules are based on the rules of the European System of Accounts (ESA). The resulting differences are due, among other things, to different classifications (Heil and Leidel, 2018).

The **Stability and Growth Pact** sets a country-specific multi-annual mediumterm objective for the general government's structural deficit, which may, in principle, not exceed 1% of GDP. At present, this medium-term objective for Germany lies at a structural deficit of 0.5% of GDP and will be raised to 1% of GDP from 2020 (European Commission, 2019). This must be distinguished from the requirements of the **Fiscal Compact**. The ratifying countries, including Germany, have committed themselves to a maximum structural mediumterm limit for the general government of 0.5% of GDP. However, if the debt level is significantly below 60% and the risks to the sustainability of public finances are low, this limit in the Fiscal Compact can also be raised to up to 1% of GDP. These requirements have been implemented accordingly in Section 51 of the Budgetary Principles Act and are monitored by the Stability Council.

There seems to be **no official quantification** of the conditions 'significantly below 60 %' and 'low risks to sustainability'. The Deutsche Bundesbank points out that a figure of 50 % of GDP could be interpreted as a sufficient margin (Deutsche Bundesbank, 2019). In its latest stability programme, the Netherlands (2019) also mentions 50 % as a sufficient margin and additionally uses the S2 indicator to assess the sustainability of public finances.

447. Since a structural ceiling of 0.35 % of GDP applies for the Federal Government and a ban on structural debt for the Länder, in purely arithmetic terms a **margin of 0.15 % or 0.65 % of GDP** remains for the municipalities, the social security system, legally independent special funds, and extra budgets established before 2011 that are not covered by the debt brake. In the event of imminent EU sanctions, the balances of the social security system are allocated to the Federal Government and the balances of the municipalities to the Länder in accordance with the national rules on liability (Independent Advisory Council of the Stability Council, 2017). It is thus possible that the national rules for the Federal Government and the Länder are observed, but European obligations are not, and vice versa.

2. Scope for fiscal policy

448. The Federal Government uses different forecast horizons to calculate the **maximum permissible amount of net borrowing** for the federal budget in a respective fiscal year. In addition to the calculations made at the time of budget planning and after budget execution, this takes place, for example, as part of medium-term budget planning. Due to the importance of forecasted figures in the calculation and the inherent corrections made at the time after budget execution, the results for the maximum permissible amount of net borrowing change over time. S CHART 72 Taking the average for the period from 2011 to 2018, in the majority of cases the maximum permissible amount of net borrowing was slightly increased between budget planning and budget execution. 449. In the overall observation of the three points in time, the structural component makes only a small contribution to the change, since the underlying GDP is usually revised only marginally and no correction is provided for at the time after budget execution. S CHART 71 Whereas the differences between the planned and realised balances of financial transactions turn out to be relatively small, the most significant differences between the points in time result from the **updating of the cyclical component**, i.e., of the projected output gaps and GDP growth rates. On average, the absolute amount of the cyclical component in the years from 2011 to 2018 made up about 12 % of the maximum permissible amount of net borrowing at the time of medium-term budgetary planning and 13 % at the time after execution.

⊔ CHART 72







2015 to 2018

1 – Figures from the Federal Government's medium-term budget planning one year before budget planning or two years before the relevant fiscal year. 2 – Figures from the adopted budget law in the year of budget planning. 3 – Figures from the Federal Ministry of Finance's budget accounting in the year after the corresponding financial year. 4 – Figures shown with reversed signs. 5 – Includes the net borrowing of the Federal Government and its special funds at the times of budget execution. 6 – The distance between the maximum permissible net borrowing and realised net borrowing corresponds to the entry in the control account at the times of budget execution.

Sources: BMF, BMWi, own calculations

- 450. According to the basic calculation formula, hypothetical values can be calculated for the maximum permissible amount of net borrowing which are based on more precise values for (i) the cyclical component and (ii) the structural component.

 ❑ CHART 73 This is based on updated estimates of the output gap and GDP at a point in time four years after budget planning. In most of the years between 2011 and 2016, the maximum permissible amount of net borrowing would have been lower taking into account an updated estimate of the output gap. Taking the average of the years 2011 to 2016, this would have been accompanied by a reduction of around 0.1 percentage point of GDP. Thus, the margins would have been lower compared to the respective Budget Act.
- 451. Over a business cycle, the debt brake limits **expenditure growth** roughly to **revenue growth** without discretionary intervention based on an initially balanced budget. In the medium term, revenue grows in line with **potential output**. Thus, when the cyclical adjustment is functioning the debt brake works in a similar way to current proposals on expenditure rules (Andrle et al., 2015; Claeys et al., 2016; Bénassy-Quéré et al., 2018; Christofzik et al., 2018; Darvas et al., 2018). Currently, this means that cyclically adjusted expenditure can be increased by 1.3 % in real terms every year. ▶ ITEM 130 Thus an increase in one category of expenditure is possible without a real reduction in other categories. Every year, the debt brake leaves a certain amount of fiscal leeway within which fiscal policy can address even major challenges, especially since an abrupt increase in investment expenditure, for example, is unlikely to be possible anyway. ▶ ITEMS 545 FF.
- 452. Additional fiscal leeway is provided by **reserves and special funds**. In particular, the Federal Employment Agency (Bundesagentur für Arbeit BA) has built up considerable reserves of more than €25 billion, despite cuts in the contribution rate. In addition, the Federal Government makes use of reserves, such as





1 – Figures from the adopted budget law in the year of budget planning. 2 – Calculation of the maximum permissible net borrowing using an estimate of the output gap (OG) for the corresponding fiscal year from T+4. 3 – Calculation of the maximum permissible net borrowing using an estimate of the GDP in the year preceding the budget planning from T+4. 4 – Figures shown with reversed signs.

Sources: BMF, BMWi, own calculations

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the refugee reserve, that have been built up in recent years (Deutsche Bundesbank, 2018b). The BA's reserves are used, for example, to finance expenditure made by unemployment insurance. If there are payment difficulties, it also has recourse to interest-free loans from the Federal Government, which, as financial transactions, do not count towards the debt brake. As a result, the most important automatic stabiliser on the expenditure side can operate largely independently of the cyclical adjustment of the debt brake. Further reserves are currently being used to balance the budget, although care must be taken not to create structural burdens on the budget.

- 453. Assuming constant nominal GDP growth and a constant general government deficit, and also assuming that no exogenous events otherwise increase government debt, implicit **convergence values for public debt** can be calculated under the debt brake over an infinite time horizon. Then, there would be a constant general government deficit of 0.35 % of GDP and constant nominal GDP growth of 3 %, along with a theoretical convergence value for the public debt of about 12 %. Fully exploiting the fiscal leeway of the debt brake for the Federal Government, structurally balanced budgets would be assumed for the Länder, the municipal level and the social insurance system. S CHART 74 RIGHT On the other hand, in the event of a general government deficit of 1 % of GDP to 34 %. In the event of higher (lower) nominal GDP growth, the figures would be correspondingly lower (higher).
- **454**. However, these long-term-oriented values say little about the **speed** at which debt would converge to this value. If there were an initial public debt of 60 % of



SHART 74

Hypothetical development of the public debt in Germany

1 – The convergence values of the debt-to-GDP ratio are calculated on the basis of an initial debt-to-GDP ratio of 60% of nominal GDP. A constant budget deficit of 0.35% of nominal GDP is assumed. 2 – The marginal values of the areas correspond to a nominal GDP growth rate of 2% (upper limit) and 5% (lower limit). 3 – The convergence values of the debt-to-GDP ratio are calculated on the basis of an initial debt-to-GDP ratio of 60% of nominal GDP. A constant budget deficit of 0.5% of nominal GDP is assumed. 4 – The presented convergence values of the debt-to-GDP ratio are based on the assumption of constant nominal GDP growth and a constant budget deficit in each scenario.

Source: own calculations

GDP and a general government deficit of 0.5 % of GDP, assuming 3 % nominal GDP growth, the theoretical debt would still be approximately 49 % after 10 years, and 35 % even after 30 years. → CHART 74 LEFT

- 455. The 60 % limit on the public debt-to-GDP ratio laid down in the European treaties is defined as a ceiling, not as a target. It makes sense to develop a **safety margin to the ceiling** so that the debt level does not immediately rise above it after every sharp increase. Such a jump of 10 percentage points was observed in Germany, for example, as a result of the financial crisis in 2008 and 2009. The increases in Ireland and Spain were even more pronounced. Moreover, an additional safety margin should be built up, especially in an ageing society with high implicit debts (Cerniglia et al., 2019; GCEE Annual Report 2017 items 550 ff.).
- If a large enough safety margin is achieved which will probably take some time 456. due to the slow pace of convergence described above - an increase in the permissible amount of new debt for the federal and Länder governments could be justified in principle within the framework of the European treaties. The Fiscal Compact allows new general government debt amounting to up to 1 % of GDP if the debt-to-GDP ratio is significantly below 60 % of GDP, provided that there are few risks to the sustainability of public finances. ITEM 446 The difference between the debt brake limit of 0.35 % of GDP for the Federal Government and 0.0 % for the Länder on the one hand, and the general government limit under the Fiscal Compact of 0.5 % of GDP on the other, means that there is already room for manoeuvre today for the areas not affected by the debt brake, such as the municipal level, the social security system or legally independent entities. If the debt-to-GDP ratio were reduced accordingly, this margin would already increase to 1.0 % of GDP under current legislation. While it seems unrealistic for municipalities to increase their total investment-justified debt in total by a factor of six, structural deficits in the social security system amounting to 0.6 % of GDP have already been observed in the past, e.g. in 2001 and 2002.

III. PUBLIC DEBT IN TIMES OF LOW INTEREST RATES

457. Various sides in the current economic policy debate are proposing that **Germany** should **borrow more**. In particular, attention is drawn to **very low interest rates** and a potentially large need for public investment. Another argument put forward is that monetary policy cannot achieve its objectives alone, making additional fiscal policy stimuli necessary. SITEMS 459 FF. It is said that Germany in particular has considerable fiscal space with which to achieve **positive spillover effects** on aggregate demand in other euro area member states by increasing public spending. SITEMS 464 FF. Finally, advocates of higher public debt argue that the decline in nominal and real interest rates is largely due to very high demand for safe assets relative to scarce supply. The reasons, it is claimed, are a **worldwide savings glut** and the financial sector's **need for nominally safe**

assets. A higher level of public debt would serve to satisfy this demand and to bring about a higher level of interest rates, they say. \supseteq ITEMS 468 FF.

According to these advocates, higher public debt in Germany is unproblematic at 458. present especially because the relevant interest rate is below the growth rate of GDP. This was why the public debt-to-GDP ratio was falling, at least as long as a certain level of the primary deficit was not exceeded. Thus, additional new debt would not have negative repercussions on the sustainability of fiscal policy. Some economists argue that the global economy is in secular stagnation, that the savings glut is attributable to demographic developments, resulting in a permanently low or even negative equilibrium interest rate. In the context of the nominal interest rate floor for monetary policy and low inflation rates, this was leading to a persistent weakness of demand (Wieland, 2018; GCEE Annual Report 2017 items 332 ff.). Only a strong rise in public debt, for example through higher credit-financed government spending, could boost macroeconomic demand and thus real interest rates again (Summers, 2014a, 2015; de Grauwe, 2015; von Weizsäcker, 2015; von Weizsäcker and Krämer, 2019; GCEE Annual Report 2015 item 338).

1. Calls for higher public debt in Germany

459. In connection with the renewed monetary easing by the ECB, there are calls for an additional fiscal policy stimulus. Since monetary policy was reaching its limits, they say, it was now the turn of fiscal policy (Bloomberg, 2019). For example, **countries with fiscal space** are being encouraged to **extend their budget deficits**, while countries with very high debt levels should at least make their public finances more growth-friendly (Draghi, 2019).

Limits of monetary policy

460. With an interest rate close to zero, the options for **monetary easing** are **limited**. Negative nominal interest rates are difficult to enforce because cash offers savers an investment with a nominal interest rate of zero percent. This limitation on stabilisation policy was researched, particularly at central banks, as early as the late 1990s (Fuhrer and Madigan, 1997; Krugman et al., 1998; Orphanides and Wieland, 1998; Reifschneider and Williams, 2000). When interest rates are constant, the displacement effect of public debt via the interest rate is eliminated, so that a credit-financed **increase in government spending or a reduction in taxes** can have a much **more positive effect** on overall economic activity (Krugman et al., 1998; Krugman, 2014; Summers, 2014a, 2014b; de Grauwe, 2015; GCEE Annual Report 2015 item 319).

In the process, the **rise in public debt** raises the real equilibrium interest rate and its distance from the interest rate actually observed, which has a stimulating effect on macroeconomic demand. Monetary policy can counteract this to a greater extent by keeping the nominal interest rate at zero percent. In situations where households or businesses are constrained by financial frictions (Woodford, 1990) or are unable to insure themselves against specific uncertainties (Challe and Ragot, 2011), the impact of a deficit-financed fiscal policy is even stronger. Fiscal policy can thus bring about an increase in the inflation rate and **open up new scope for monetary policy**.

- 461. However, the last few years have shown that negative nominal interest rates are possible. Holding cash, for example, involves insurance and storage costs. Central banks have therefore been able to lower the key policy rate to a negative level, for example in Switzerland to -0.75 %. The nominal interest rate floor is thus likely to be deeper in the negative range, but has not yet been found. SITEM 61 In addition, large-scale bond purchases (quantitative easing) enabled medium and longer-term interest rates to be reduced markedly into negative range. Additional channels for quantitative measures arise directly via asset prices, the risk appetite of banks, exchange rates, the money supply and inflation expectations. The universe of purchasable securities is by no means limited to safe government bonds, but includes riskier securities, even shares. To the extent that monetary policy retains its stimulative effect, the effectiveness of fiscal policy remains unchanged instead of increasing (Cogan et al., 2010; Swanson and Williams, 2014).
- 462. Furthermore, in the current situation in the euro area, monetary policy is already very expansionary. Reference rules that take into account the deviations of the inflation rate from the target, and economic performance from potential GDP, would even favour a tighter monetary policy. SITEMS 56 FF. An additional fiscal stimulus aimed at increasing inflation is not necessary. Furthermore, a fiscal policy motivated by European considerations to ease monetary policy would conflict with the division of sovereignty between the member states and the Community level. The member states have sovereignty over shaping their fiscal policy. It is the central element for coping with macroeconomic shocks through stabilisation policies at the national level. Although a coordination of national fiscal policy measures with the aim of stimulating the entire euro area is possible, as the example of the European Economic Recovery Plan in 2009 shows, this should not come at the expense of negative developments at the member state level, such as capacity overutilisation.
- 463. Apart from fiscal policy, **structural reforms** can increase growth in a sustainable manner. However, the structural reforms the member states have implemented have been insufficient (Draghi, 2019). In the past, the GCEE has repeatedly advocated structural reforms as an effective instrument for boosting economic growth (GCEE Annual Report 2016 item 189; GCEE Annual Report 2017 item 408).

Fiscal space and spillover effects

464. In the debate on a higher level of public debt in Germany, another argument put forward is that Germany has sufficient **fiscal space** to incur a higher level of debt compared to the institutionally defined debt limit because of advantageous macroeconomic conditions. A country's fiscal space in this sense corresponds to the difference between the current debt-to-GDP ratio and the **fiscal limit** (GCEE Annual Report 2017 item 533). The fiscal limit is the debt-to-GDP ratio

above which a higher level of debt can no longer be financed by an increase in taxes alone, and there must instead be an adjustment in government spending or a central bank intervention (Davig et al., 2011). To the extent that Germany has fiscal space, higher public debt would not have any adverse effects on **fiscal sustainability**.

- 465. Various econometric methods can be used to calculate fiscal space (GCEE Annual Report 2017 items 534 ff.). However, the reliability of such analyses is dubious, as they depend strongly on model assumptions and do not take unforeseen developments on financial markets into account. Determining the sustainability of public finances using these econometric methods should therefore be **viewed critically** (GCEE Annual Report 2017 item 539). Ultimately, this means that it is not possible to determine conclusively whether Germany has sufficient fiscal space.
- 466. Advocates of a higher level of public debt in Germany also point out that a more expansionary fiscal policy could have **positive spillover effects** on other euro area member states (Blanchard et al., 2014), and that this argument is particularly relevant should the possibilities of stabilisation via monetary policy have reached their limits. S ITEM 460 However, analyses using macroeconomic models show that such spillover effects are likely to be **rather small** (in 't Veld, 2013; Gadatsch et al., 2016; Attinasi et al., 2017; GCEE Annual Report 2015 items 341 ff.). The German state would have to raise four to five times the expenditure stimulus to achieve the same fiscal effect as direct expenditure in the respective member states.
- 467. It is worth mentioning that the **extremely favourable financing conditions** for Germany, as well as for the other member states of the Monetary Union, are largely due to **monetary policy** and the ECB's extensive purchases of government bonds (GCEE Annual Report 2016 items 400 ff.). An end to this policy would probably cause interest rates on public bonds to rise again. Monetary policy cannot be used to stabilise real public debt, because monetary policy and inflation would then be determined by the requirements of fiscal policy ('fiscal dominance'; Sargent and Wallace, 1981; Weidmann, 2013). Germany fulfilled its **role as an anchor of confidence** during the euro area debt crisis. As long as investors can be confident that Germany is not only able to bear its own public debt but simultaneously remains available as a guarantor for joint rescue programmes, then greater confidence in the euro area as a whole will be maintained.

German government bonds as safe assets

468. The literature also refers to the **importance of safe assets for the financial sector**. Caballero et al. (2016) describe how interest rates fall when there is a shortage of safe bonds until they reach the zero interest rate threshold and economic performance is impaired overall by a lack of liquidity. A similar relationship is considered in the literature on secular stagnation (Summers, 2014a, 2014b). Furthermore, nominally **safe government bonds act as a benchmark** for the long-term risk-free interest rate, which is used in the pricing of

many financial products, for example in the repo (repurchase operation) market (Gourinchas and Jeanne, 2012). Institutional investors such as insurers and pension funds in particular are required by regulations to invest some of the funds they manage in assets that are considered safe (Gorton, 2017). These are primarily government bonds.

- 469. Decisive for the safety attribute is acceptance by investors and their expectation of being able to rely on repayment. Investors expect all market players to invest where the fundamental data are better relative to other countries and the refinancing opportunities of these countries are thus secured (He et al., 2019). High liquidity is also important for a bond to be considered safe (Xiong, 2018). The nominal safety of government bonds can be guaranteed at any time by the central bank (Golec and Perotti, 2017).
- 470. The **United States** is the **world's most important supplier of nominally safe government bonds** for the financial sector. This is partly due to the fact that the US dollar remains by far the most important international reserve currency and results in a permanent, structural demand for US bonds, which is probably partly responsible for the ongoing current account deficit in the United States (exorbitant privilege). For a long time, demand from emerging economies and China in particular was particularly high, and this was cited as an indication of the savings glut (Bernanke, 2015). In the meantime, China's current account surplus has declined sharply.
- However, the supply of safe assets has declined overall due to the financial crisis, 471. as many government bonds (for example in Italy and Spain) no longer offer the security they had before the crisis (Caballero et al., 2017). The volume of AAArated government bonds has declined noticeably since the financial crisis, particularly in the euro area. Even if AA+ and AA-rated bonds are included, the supply of safe assets recently only made up 49 % of GDP in the euro area, compared to 104 % in the United States. > CHART 75 MIDDLE AND RIGHT This increases the importance of German government bonds as safe assets in the euro area. Although even lower-rated bonds in the EU are treated as safe assets by regulation, many investors have shifted their focus to safe bonds (flight to safety), especially those from Germany (Brunnermeier et al., 2016; van Riet, 2017). From a global perspective, however, Germany plays only a minor role relative to the United States as a provider of safe assets. While the United States' public debt accounts for 34 % of the total OECD sovereign debt, the corresponding share of German public debt is 5.5 %.
- 472. The **supply of US government bonds is likely to rise considerably** in the near future. The budget deficit has risen sharply, and the debt level will increase rapidly as a result of the large tax cuts introduced by the Tax Cuts and Jobs Act of 2018. The Congressional Budget Office expects the debt-to-GDP ratio to rise by 9 percentage points over the next five years. S CHART 4 BOTTOM RIGHT This is likely to significantly increase the supply of safe government bonds. According to the theory of the savings glut and secular stagnation, this should lead to an increase in the real equilibrium interest rate in the United States, with corresponding implications for global interest rate levels.





1 - Credit assessment according to Standard & Poor's ratings.

Sources: BEA, ECB, Eurostat, Fed, Standard & Poor's, own calculations

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- **473.** However, for investors in the euro area, **US government bonds** are **not a perfect substitute** for German bonds **due to the exchange rate risk**. To a certain extent, German bonds take on a similar function in Europe to US bonds in the global context (He et al., 2019). One important difference, however, is that Germany no longer sets its own monetary policy. To this extent, it cannot provide a nominally safe asset in the same way or to the same extent as the United States. Furthermore, there are other member states whose bonds still have a high credit rating.
- 474. Nevertheless, **German sovereign debt policy** has **special significance** for the financial market in the euro area. German government bonds are the benchmark for calculating risk premiums in the euro area. Long-term confidence in German bonds is important in this context. The negative interest rates on 30-year government bonds can be seen as an expression of the strong demand for safe investment opportunities while the supply is being simultaneously tightened as a result of bond purchases by the ECB. S CHART 75 LEFT

Since interest rates on German government bonds have fallen overall as the economy and the financial sector in the euro area have recovered, this is more likely to be attributable to ECB bond purchases than to an increased flight to safety. Although a sharp decline in the volume of German government bonds could contribute to a **shortage of safe assets in the euro area**, the excess liquidity that banks are holding with the central bank is also a nominally very safe asset. If there is a need for nominally safe investments as safe assets, one could consider extending the fungibility of excess deposits with the central bank.

475. The **impact of major changes in supply and demand** for safe assets has been studied in the United States and the United Kingdom (Greenwood and Vayanos, 2010). In the United Kingdom, the 2004 pension reform led to an exceptionally strong increase in demand for particularly long-term government bonds, which led to a lasting change in the maturity structure of public debt. In 1999, the United States announced its intention to buy back government bonds because of its good budgetary position and has stopped issuing 30-year bonds in the meantime. At that time, the bond markets experienced **considerable price volatility** due to a possible reduction in liquidity and an increase in the issuance of other maturities by debt management in order to further fulfil the benchmark function for the financial markets (Garbade and Rutherford, 2007). However, the debt-to-GDP ratio rose again in the 2000s.

2. Sustainability of fiscal policy and interest rate development

476. The **sustainability of** a country's **fiscal policy** is ensured when the debt-to-GDP ratio is below the fiscal limit. SITEM 464 The concept of sustainability is based on the assumption that rational investors will normally only lend money to the public sector if the government has sufficient revenues to repay the debt incurred. The **intertemporal budget constraint** is the basis for assessing sustainability. This constraint requires that today's debt-to-GDP ratio corresponds to the present value of future primary balances over an infinite time horizon. Budget constraint implies that the ratio of interest payments to (per capita) GDP growth (**interest-growth differential**) plays an important role in fiscal sustainability.

Historical relationship between interest rates and growth

- **477.** In recent years, both short- and long-term interest rates in Germany and many other developed economies have been well below their historical average, in some cases even in the negative range. At the same time, nominal GDP growth was at a relatively high level. Blanchard (2019) argues that in the event of a sustained negative interest-growth differential, it is in principle possible to incur additional public **debt without endangering fiscal sustainability**.
- 478. A negative interest-growth differential in Germany is not unusual from a **his-torical perspective**. Long-term data show that this has been frequently seen in the past.
 □ CHART 76 This is also the case in the United States (Mehrotra, 2017; Blanchard, 2019). Nevertheless, periods of a negative interest-growth differential were followed by periods in which interest rates were well above real GDP growth. For example, the differential in Germany was almost consistently positive from the 1980s until the financial crisis. The interest-growth differential has been negative again since 2010. □ CHART 76 BOTTOM RIGHT
- **479**. Beginning in the last third of the 19th century, long time series can be used to examine how the fiscal costs of new debt have evolved over time. For the United States and 16 other economies, Mehrotra (2017) shows that in more than half of

the periods under review the **rolling over of public debt** involved **savings for the public sector**. For the United States, these periods make up as much as 70 %. Nevertheless, Mehrotra (2017) points out that a **risk of a reversal** exists despite many phases with favourable interest-growth differentials. For the period from 1870 to 2016, Mehrotra (2017) comes to the conclusion that the conditional probability of a reversal in the United States – based on a currently favourable interest-growth differential – is 30 % in five years and 46 % in six to ten years (Mehrotra, 2017). Estimates by the GCEE for different scenarios arrive at comparable results for Germany and other euro area member states. Applying the approach to Germany, the reversal risk based on data for the period 1946 to 2016 is around 41 % in five years and over 54 % in six to ten years. \searrow BOX 13



❑ CHART 76
 Development of GDP growth and long-term interest rates in Germany since 1870¹

1 – Breaks in the time series between 1920 and 1924 due to hyperinflation; between 1945 and 1946 due to the Second World War. To improve presentation, the period of available data was divided into four sections: section I – from the beginning of the available time series to the foundation of the Weimar Republic; section II – from the foundation of the Weimar Republic to the end of the Second World War; section III – from the end of the Second World War to the beginning of the 1980s; and section IV – from the beginning of the 1980s to the most recent data available.

Sources: Jordà-Schularick-Taylor Macrohistory Database, own calculations

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> BOX 13 Reversal risk of the interest-growth differential

Based on an earlier version of the data set by Jordà et al. (2019), Mehrotra (2017) estimates the conditional **probabilities** of a **reversal of the interest-growth differential** in the United States and 16 other economies over the next five to ten years. The probability of reversal can be estimated using a panel probit regression that takes into account the data on the interest-growth differential, population growth and the debt-to-GDP ratio in 17 developed economies.

The GCEE comes to comparable results in a **replication of Mehrotra's calculations (2017)** using the currently available version of the data set of Jordà et al. (2019). In addition, data for Germany, France, Spain and Italy can be used to calculate the corresponding reversal risks in the euro area. I TABLE 17 The GCEE looks at two scenarios in this context. The first scenario calculates the conditional probability of a reversal in all five of the next five periods or in all five periods of years 6 to 10. The second scenario considers more moderate requirements. Here it is sufficient for a reversal to take place in three of the next five periods or in three of five periods of years 6 to 10.

The reversal risks in scenario 1 thus tend to be lower than in scenario 2. This applies to both sample lengths considered. The **average reversal risk in Germany**, France, Spain and Italy is approximately 16.2 % in five years and approximately 33.2 % in 10 years. > TABLE 17 This changes markedly under the assumptions of scenario 2. In this scenario, the average reversal risk in the countries under consideration comes to about 49.0 % in five years and rises to just over 54.7 % in 6 to 10 years. Although the post-war period is associated with somewhat lower reversal risks in most countries in both scenarios, these were still substantial in absolute terms. For example, the average reversal risk in the period from 1946 to 2016 in scenario 2 is over 45.1 % in five years and over 59.5 % in 6 to 10 years.

Conditional probability in %: ² r>(ĝ+n)	1870-2016					1946-2016				
	Germany	France	Italy	Spain	Average	Germany	France	Italy	Spain	Average
Scenario 1 ³										
in 5 years	12,8	11,6	30,8	9,5	16,2	10,6	8,3	34,6	5,7	14,8
in 10 years	30,3	30,5	47,1	24,9	33,2	36,4	38,0	57,7	31,1	40,8
Scenario 2 ⁴										
in 5 years	44,5	44,3	66,2	40,8	49,0	40,8	38,0	70,1	31,6	45,1
in 10 years	50,6	52,1	68,0	48,3	54,7	54,5	56,4	76,9	50,4	59,5

⊔ TABLE 17

Reversal probability of the interest rate-growth differential in the historical perspective¹

1 – Mean of conditional probabilities using real yields of 10-, 20-or 30-year government bonds, respectively. The conditional probabilities are based on the obtained regression coefficients from the Probit model, recent data on interest-growth-rate-differentials, population growth and the debt-to-gdp ratio (as of 2018). In analogy to table 4 in Mehrotra (2017). 2 – Long-run real interest rate (r), real GDP growth per capita (g) and population growth in % (n). 3 – Conditional on r<(g+n) in t and r>(g+n) at all points in time in the period from t+1 to t+5 or at all points in time in the period from t+6 to t+10. 4 – Conditional on r<(g+n) in t and r>(g+n) at three out of five points in time in the period from t+1 to t+5 or at three out of five points in time in the period from t+1 to t+5 or at three out of five points in time in the period from t+1 to t+5 or at three out of five points in time in the period from t+6 to t+10.

Sources: Jordà-Schularick-Taylor Macrohistory Database, Jordà et al. (2019), IWF, Refinitiv Datastream, own calculations

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480. Similar conclusions can be drawn from a replication of the relevant interest rate according to Blanchard (2019). The interest rate used there, which is relevant for sustainability considerations, varies with changes in the **maturity structure** and in the **holders of public debt**. This interest rate has fallen by around





1 – Taking into account the share of domestic government bond holders and the relevant tax rates. 2 – Interest rates taking into account, inter alia, the relevant tax rates, the average maturity structure and domestic government bond holders (excluding central bank) as a percentage of total debt.

Sources: Federal Statistical Office, Refinitiv Datastream, own calculations

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three percentage points since the financial crisis. SCHART 77 The decline results from the generally low level of interest rates and, in particular, from the shifts in the maturity and holder structure of German public debt that have been induced by bond purchases under the Asset Purchase Programme (APP).

This becomes evident when the yields on one-year and thirty-year bonds are used over time as the lower and upper limits for the **relevant interest rate**. On the one hand, the interest rate has shifted towards long-dated bonds. On the other hand, the limits around the relevant interest rate have narrowed compared to the peak of the sovereign debt crisis in the euro area. Since the spread between short-term and long-term yields on government bonds probably fluctuates with the economic cycle and longer-term trends, it is not expected to be as small as in previous years in the medium term. Expectations of a possible normalisation of monetary policy could have led to a spread in yields in 2017 and 2018. \lor CHART 77

Equilibrium interest rates

- 481. Closely related to the discussion about any secular stagnation is the possible decline in the real equilibrium interest rate. S CHART 78 It has potentially important, positive effects on the sustainability of public debt. Alongside the expansionary monetary policies of important central banks, this decline may explain the low yields on government bonds. The equilibrium interest rate is reached when inflation is stable, temporary factors (headwinds; Yellen, 2015) have subsided, and GDP corresponds to potential output. Concepts on the equilibrium interest rate differ in terms of maturity and volatility (Beyer and Wieland, 2019; GCEE Annual Report 2015 items 315 ff.; GCEE Annual Report 2016 items 410 ff.).
- **482.** Recent estimates of **medium-term real equilibrium interest rates** for the United States suggest a **decline of 2 percentage points** between 2007 and 2009. The analyses are based on the method developed by Laubach and Wil-

❑ CHART 78 Medium-term equilibrium interest rate (r*) for Germany Estimates according to Beyer and Wieland (2019)





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liams (2003). This decrease is linked to the fall in the simultaneously estimated level of potential GDP. It could furthermore have been driven by significant but temporary factors. For the euro area, it is lower in some of the estimates (Beyer and Wieland, 2019; GCEE Annual Report 2017 box 8).

- **483. Estimates of the long-term equilibrium interest rate** using structural models that explicitly consider real factors and monetary policy as possible causes of low interest rates do not confirm the sharp decline (Taylor and Wieland, 2016; Wieland, 2018; GCEE Annual Report 2017 items 335 ff.). Estimates of the long-term equilibrium interest rate are more precise than those of the medium-term equilibrium interest rate.
- 484. The estimates of **medium-term equilibrium interest rates** are not only subject to very great **uncertainty**, they also **react extremely sensitively to changes in technical assumptions** (Hamilton et al., 2015; Beyer and Wieland, 2019). A smaller output gap by historical comparison does not necessarily indicate a decline in the equilibrium interest rate. For example, the estimates neglect important determinants such as the influence of regulation, higher public debt or taxes (Taylor and Wieland, 2016). Furthermore, persistent deviations from previously observed monetary policy rules may explain the low real interest rate (Hofmann and Bogdanova, 2012; Shin, 2016). Similarly, the effects of credit risks and the financial cycle are not taken into account (Kiley, 2015; Juselius et al., 2016). As the expectations about the long-term future development of the in-

terest rate are subject to considerable uncertainty, they should not be given too much weight in guiding decisions of monetary and fiscal policy.

3. Factors influencing the interest rate level

485. Blanchard (2019) argues that higher debt is not necessarily associated **with higher fiscal costs and welfare losses**. In this context, it should be borne in mind that, in addition to the interest-growth differential, other factors such as demographics, productivity and institutions influence debt sustainability and interest rates.

Demographics

- 486. Demographic change in developed economies results on the one hand from lower birth rates, on the other from a marked increase in average life expectancy. The **effect of demographic change on interest rates** depends, among other things, on the time horizon observed. In life-cycle models according to Modigliani and Brumberg (1954), a rising savings rate is linked to lower interest rates. By contrast, falling savings rates at the end of the life cycle raise interest rates again.
- 487. The link between the **ageing of a society** and the **equilibrium interest rate** suggests that demographic developments play their part in the decline of real interest rates (Miles, 2002; Bean, 2004). Von Weizsäcker (2015) and von Weizsäcker and Krämer (2019) argue that the accumulation of savings due to the demographic development permanently exceeds the demand for capital, as a result of which interest rates are likely to fall (GCEE Annual Report 2015 item 319). For the United States, Weiske (2019) documents that lower fertility contributed to a 0.4 percentage point decline in the equilibrium interest rate between the 1980s and 1990s. Simulations for the EU show a decrease of half a percentage point over the past 30 years (Miles, 1999). These magnitudes are not sufficient to explain the overall decline in interest rates. By contrast, the prolonged low level of interest rates can be explained to a large extent by monetary policy (Wieland, 2018; GCEE Annual Report 2017 items 332 ff., box 8).

Productivity

488. The decline in productivity is also of great importance for the development of interest rates (Lindh and Malmberg, 1999; Feyrer, 2007; Acemoglu and Restrepo, 2017). Theoretically, permanent falls in total factor productivity lead to a permanently lower marginal product of capital and thus to a **permanently lower return on capital**. SITEM 146 For the United States, Laubach and Williams (2016) estimate that a decline in productivity growth of one percentage point is accompanied by a fall in interest rates of 1.3 percentage points. Beyer and Wieland (2019) find a similar relationship, although it involves greater uncertainty. Hamilton et al. (2015) describe the relationship between growth and interest rates as empirically rather weak.

Institutions, debt level and debt structure

- **489.** Furthermore, fiscal policy **institutions** can influence **interest rates** and **risk premiums**. These include fiscal rules which, in addition to a possible direct impact on public debt, can send a credible signal indicating a reduction in high debt levels and a sustainable fiscal policy in the broader sense. There is empirical evidence that this can increase market confidence and lead to lower risk premia on financial markets (Heinemann et al., 2014; Iara and Wolff, 2014; Badinger and Reuter, 2017; Feld et al., 2017). If a phase of expansionary fiscal policy, e.g. in a recession, is reliably followed by consolidation in good times, this can even increase the expansionary effect (Corsetti et al., 2010).
- **490**. Furthermore, the level of the debt-to-GDP ratio could have an impact on the level of interest rates. It is usually argued that higher public debt displaces private investment or changes net capital exports (GCEE Expertise 2007 box 3). However, a higher debt-to-GDP ratio could be additionally accompanied by **higher risk premiums** if the funds from the higher debt are not used for growth-promoting measures.
- **491.** The sustainability of public debt is also influenced by the **characteristics of the debt and by debt management**. For example, debt management aims to avoid **concentration risks** and to ensure an even distribution of repayments. Especially within a monetary union or with an independent central bank, it is advisable to **extend maturities** in order to reduce refinancing risks (Nöh, 2019). The development of risk premiums is more likely to be driven by the will-ingness than by the actual ability to service public debt (D'Erasmo et al., 2016; GCEE Annual Report 2017 items 550 ff.). Debt management can therefore influence debt sustainability and make higher debt-to-GDP ratios possible.
- 492. Due to the very low interest rates, proposals to issue **bonds that are as long-term as possible** to reduce the **interest rate risks** are becoming more common. However, there have recently been calls for bonds with artificially higher interest rates for domestic savers. The reason for hedging against the risks of changes in interest rates on government bonds would be to smooth out the additional burden of taxation necessary for servicing debt. It may therefore make sense to hedge against the interest-change risk by partially lengthening the maturity (Kasinger et al., 2019). However, projections on the long-term development of interest rates are based in particular on assumptions about demographic developments: it is argued that interest rates are likely to remain low until 2050 (Demary and Voigtländer, 2018). Predictions of this kind are subject to **great uncertainty**, though.

Whether higher indebtedness has an impact on fiscal sustainability despite a favourable interest-growth differential depends in particular on the **reason** why **interest rates are lower than economic growth**. Low interest rates that are determined by exogenous influences are theoretically not accompanied by long-term effects on sustainability. However, endogenous influencing variables do impact on sustainability (Garín et al., 2019).

4. Interim conclusion

493. Advocates of higher public debt fear that the **impact of monetary policy** is currently too limited to achieve the objectives of monetary policy. Therefore, they say, monetary policy for the euro area should be backed by an expansionary fiscal policy that furthermore promises to be highly effective. However, due to the absence of a national monetary policy, fiscal policy in the monetary union is the most important remaining instrument for stabilising economic developments at the member-state level. This should take priority. The ECB's monetary policy is already very expansionary at present. Further fiscal policy measures aimed at raising inflation are not required. Furthermore, monetary policy has other possibilities for expansion, should this be necessary in the future, in order to fulfil the mandate of price stability. > ITEMS 459 FF.

In the discussion on higher public debt in Germany, reference is made to possible **positive spillover effects** on other **euro area** countries. Quantitative analyses show, however, that such effects would tend to be quite weak, even when monetary policy is limited by the zero lower bound. \square ITEM 466

A decline in Germany's public debt could reduce the **supply of nominally safe assets.** However, due to the tax cuts in the United States, there is already a strong increase in the world's most important, nominally safe asset in the form of US government bonds. This is also likely to exert positive pressure on the level of interest rates. To the extent that German bonds are scarce in the euro area because they are bought up on a large scale by the ECB, deposits with the central bank are created instead as safe investments. \lor ITEMS 468 FF.

- 494. The above observations make it clear that **negative yields on government bonds** and a **favourable interest-growth differential** are not sufficient reasons for increasing public debt. It is doubtful whether higher new debt in Germany is actually possible without additional fiscal costs. Historical observations show that phases of a negative interest-growth differential were associated with a considerable risk of reversal within the two following legislative periods. It is impossible to predict with any certainty how long the fiscal costs of an expansionary fiscal policy will remain so low.
- **495**. Repercussions of higher debt on sustainability also depend on **endogenous factors** such as demographics or the quality of institutions. Developments in these factors and their long-term impact on interest rates are difficult to quantify from today's perspective. Rules that contribute to a sustainable fiscal policy have a **signaling function for financial markets and other member states**.

IV. CYCLICAL ADJUSTMENT

496. According to Article 109 of the Basic Law, the current version of the German debt brake requires "to take into account, symmetrically in times of upswing and downturn, the effects of cyclical developments that deviate from normal conditions" when determining the maximum permissible amount of net borrowing. Not least for this reason, **cyclical adjustment procedures** are an important component of the fiscal policy framework in Germany. These procedures are intended to limit the permitted deficit in phases of capacity overutilisation and to extend it in phases of capacity underutilisation.

497. The cyclical adjustment procedures are based, on the one hand, on **estimates of the aggregate output gap**, i.e., the deviation of GDP from its estimated potential level, and, on the other hand, on budget elasticities. The Federal Government uses a procedure that is closely modelled on the EU procedure. Some Länder use their own procedures (Deutsche Bundesbank, 2017).

There is a broad **discussion on the quality and characteristics of output gap estimates**. In particular, there are differences – sometimes very large ones – between the output gaps estimated in real time and later estimates for the corresponding year (Deutsche Bundesbank, 2014; Breuer and Elstner, 2019; Kangur et al., 2019; GCEE Annual Report 2016 box 6; GCEE Annual Report 2017 box 3). N CHART 80

498. As the output gap is the basis of cyclical adjustment, potential errors in estimates play an important role in the **debate on the debt brake**. For example, an incorrect estimate of the output gap would lead to an incorrect calculation of the permissible amount of cyclical new debt. Furthermore, there is a **fear** that the estimation errors occur systematically in the course of the economic cycle. This would be the case in particular if **the potential estimate** were to **react excessively to an economic downturn**, so that the degree of underutilisation would be underestimated. Conversely, in an economic upturn, potential growth would be overestimated and overutilisation underestimated. This would mean that fiscal policy would be restricted too much during a downturn and too little during an upswing.

1. Reliability of output gap estimates in real-time

- **499.** It would be problematic if, as a result of the calculation method, **a temporary economic downturn** were to lead to excessive adjustment reactions. In the event of a structural decline, however, it is probably advisable not to get into a situation of overindebtedness as a result of excessive expenditure increases or tax cuts. Yet an inadvisably restrictive fiscal policy may result if a cyclical shock is wrongly interpreted as structural. This could in turn have **negative reper-cussions** on further growth. The skill lies in distinguishing between structural and cyclical fluctuations.
- 500. Coibion et al. (2017) show for the United States, as well as for the estimates of international organisations on other economies, that **potential estimates react to transitory shocks in real time** and that the methods used therefore tend not to achieve the desired adjustment of cyclical effects.

⊔ CHART 79





1 – The potential GDP estimates from the autumn of the given year are shown in each case. 2 – GDP at constant market prices (Vintage: autumn 2018; index: 2005 = 100). From 2018, forecast of the European Commission. a – Following Ademmer et al. (2019), scaled paths of potential GDP are shown at constant market prices. Scaling according to actual GDP so that the estimated distance between the scaled path of potential GDP and actual GDP for the respective year shows the corresponding real-time estimate of the output gap.

Sources: Ademmer et al. (2019), European Commission, Firstrun, own calculations

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- 501. In an analysis of the method used by the European Commission to determine the output gap, Ademmer et al. (2019) find that the revisions of the estimates depend on the economic cycle. While estimates for boom phases are revised upwards over time, there tends to be a downward revision for years of recession. One relevant factor is that the GDP forecasts included in the **estimates** are **delayed in identifying cyclical turning points**. The example of potential estimates for Spain shows that the revision after the downturn can be temporarily excessive compared to the most recent estimate. S CHART 79 RIGHT The estimate from 2013 for the period from 2011 to 2014, for example, is significantly lower than the figures reported in more recent estimates for this period. A fiscal policy that was strictly based on real-time estimates would therefore have been too expansionary in the upswing years prior to the 2008 financial crisis and too restrictive during the recession of 2012 and 2013. In the case of Italy, however, the estimated potential was continuously revised downwards. S CHART 79 LEFT
- 502. The current output gap estimates for Italy and Spain serve as prominent examples of the **criticism of the estimation process** (Brooks and Basile, 2019a). According to this criticism, current estimates that no longer indicate significant underutilisation in these economies are not plausible given the low economic growth over the past decade. Moreover, the critics continue, the degree of utilisation indicated by the estimates is not in line with the usual Phillips curve relationship (Brooks and Basile, 2019b) when inflation rates in these countries are low. At the same time, according to this criticism, the increases in employment observed are not so much a sign of high labour market utilisation, but primarily the result of an increase in female employment, while the employment rates of men aged between 25 and 49 remain well below pre-crisis levels in Spain, Italy and Greece (Brooks and Basile, 2019c).

Buti et al. (2019) reject this criticism. For example, they say, there are many reasons why the Phillips curve correlation is less pronounced. In addition,

structural factors such as the already weak productivity growth before the crisis, for example in Italy, were in fact an argument for lower potential growth.

- 503. Statistical filtering techniques are used to determine the output gap, e.g. in the GCEE's estimate (Breuer and Elstner, 2019; GCEE Annual Report 2017 items 319 ff.). There are two reasons why filtering techniques are prone to revision: data revisions and end-of-sample problems (GCEE Annual Report 2016 box 6). The majority of revisions are due to **end-of-sample problems**. This is caused by the fact that current values have a high weight in the estimate. The inclusion of forecasts can alleviate the end-of-sample problem, but a proneness to revision remains, even after years. Thus, **changes in growth potential**, both positive and negative, are often **not included in the potential estimate until after a delay**. Moreover, changes could be displayed in real time that recede later.
- 504. Estimates of potential output can change with updated forecasts as a result of the end-of-sample problem. Economically, the question arises as to what proportion of the change in the GDP forecast is due to cyclical and which to structural factors. If the change in forecast had purely cyclical causes, potential output would have to remain unchanged despite the change in expected GDP development. However, in most cases the reasons for a **revision of the GDP forecast** are likely to be a **mixture of cyclical and structural factors**, so that the potential output also needs to be revised.
- 505. In addition, the estimates of international organisations in the past show above all a **tendency to underestimate the macroeconomic overutilisation** (GCEE Annual Report 2017 box 3). For example, the output gap originally identified by the European Commission for the Euro-12 member states turned out to be too low in almost three quarters of the cases (GCEE Annual Report 2018 item 260). The situation was similar in the case of IMF estimates (Kangur et al., 2019).

In theory, reasons such as downward rigidities in nominal wages may suggest that **output gaps** are **negative on average** (Aiyar and Voigts, 2019). This would mean that estimates of cyclical utilisation using statistical filters which mean an average output gap of zero in the long term would even be distorted upwards.

506. The following section assesses the impact of **errors in output gap estimates** on the **permissible amount of net borrowing** within the German debt brake. Looking at the European Commission's estimation errors from 2004 to 2013 at the time of budget planning (in the autumn of the previous year), it can be seen that the output gap in the EU was underestimated by 0.7 percentage points on average. S CHART 80 After budget execution (autumn of the subsequent year), an average distortion of 0.5 percentage points can still be observed. However, the average of the absolute values of errors between budget planning and execution falls from 2.2 percentage points to 1 percentage point. S CHART 80

The averages of the errors react very **sensitively to the period under con-sideration**. \square CHART 90 APPENDIX While the average at the time of budgetary planning was around -2.1 percentage points before 2009, it was about +0.6 percent-

age points after 2008. Before 2009, for example, 81 % of the 75 observations estimated a negative output gap ex ante and only 22 % ex post. After 2008, almost exclusively negative output gaps were estimated both ex ante and ex post (95 % and 93 % respectively). Unlike the averages of the errors, the averages of the absolute values of the errors differed only marginally over the time periods.

507. If it was retrospectively a year with a negative output gap, this was considered insufficiently negative on average in the previous year. > CHART 80 In the case of

SHART 80 ℃

Errors in estimating the output gap and the resulting maximum permissible net borrowing Difference between estimate for year t at the respective time and autumn forecast four years after this year (t+4)¹





Hypothetical application of the debt brake: error in estimating the output gap led to the following errors in determining the maximum permissible net borrowing



1 - In 2014, the publication of data according to the European System of Accounts changed from ESA 1995 to ESA 2010. As a result, the levels of GDP over different publication dates are no longer directly comparable. The calculations presented here only use data levels within the vintage at a given time; relative figures are used in comparison across different points in time. Nevertheless, the changeover could have an effect on the relative figures, e.g. the size of the output gap, which is not taken into account here. In addition, the European Commission changed its procedure for calculating output gaps in the period under review: the published figures are used here. 2 - Data from autumn (t-1). 3 - Data from autumn (t+4) 4 - Data from the spring of the previous year (t-1). 5 - Data from the autumn of the following year (t+1). 6 - Data from the autumn of the previous year (t-1). 7 - Unweighted average. 8 - Unweighted average of the absolute values of errors (mean absolute error). Sources: European Commission, own calculations

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an ex-post positive output gap, it was assessed as **much too low**. However, in most cases the estimated output gap was not positive ex ante. Positive figures were estimated at the time of budget planning for only 12 % of output gap estimates.
□ CHART 80

- **508.** If the procedure for calculating the maximum permissible amount of net borrowing \square ITEM 442 is applied hypothetically to the EU-15 from 2004 to 2013, the **debt brake** at the time of budget planning would have allowed **too much fis-cal leeway amounting to 0.14 percentage point of nominal GDP** on average over the whole period. However, the average error in the allowed fiscal leeway would increase to 0.32 percentage point on average as a result of the special correction of the debt brake.
- 509. In years with **ex post negative output gaps**, **the fiscal leeway allowed** would have been 0.1 percentage point too small on average. S CHART 80 This error turns positive after execution and when posted to the control account. In the case of an **ex post positive output gap**, the procedure would have allowed **0.48 percentage point too much fiscal leeway on average**. Looking at years for which a positive output gap was estimated ex ante, the errors are comparable to those for ex ante negative output gaps.
- 510. This illustrates the **problem of a policy that must be decided with data in real time** and its assessment in retrospect. Even if the data subsequently turn out to be in need of revision, the policy decisions can have been correct ex ante. The hypothetical application of the debt brake procedure in the past shows that it would have tended to allow too much fiscal leeway at the time of policy decisions before 2009 and probably too little fiscal leeway afterwards. However, the additional time and the specific correction via the control account mean that an average margin that was too small at the time of budget planning would have been converted into a larger margin at the time after execution in both periods.
- **511**. However, these calculations neglect the fact that **fiscal policy** could have repercussions on future **growth**. If an over-pessimistic assessment of potential growth leads to an over-restrictive fiscal policy, these can reinforce each other and lead to a prolonged recession (Fatás, 2019; Kuang and Mitra, 2019).

2. Possible improvement of estimation techniques

- 512. Looking at the output gap estimates using the EU methodology, it can be seen that the estimates of total factor productivity (TFP) and the non-accelerating inflation rate of unemployment (NAIRU) are primarily responsible for revisions (Ademmer et al., 2019). Since mainly statistical filter techniques are used to determine potential GDP in addition to a number of capacity utilisation indicators and different price measures, the associated problems also arise here. SITEM 503 It therefore makes sense if approaches to **improving the EU method** start with TFP and NAIRU.
- **513**. One possible way to reduce proneness to revision is to include **indicators that are less likely to require revision**, such as business surveys (GCEE Annual

Report 2017 items 264 ff.; GCEE Annual Report 2018 box 2). Ademmer et al. (2019) use various cyclical indicators to isolate the cyclical components of TFP, thus considerably reducing the scope of revision needed by the EU method. Weiske (2018) notes that estimates of the output gap that are based on a large number of indicators are markedly less prone to revision. Above all, it would have been quite possible to recognise past cyclical highs as such in real time, unlike the international institutions.

- 514. Alternatively, an attempt could be made to **modify the filtering of the time series**. In addition to the Hodrick-Prescott filter, other filtering methods should be considered, such as the Hamilton filter. Its design means that it is hardly prone to revision at all (Hamilton, 2017). However, the resulting GDP trend determined in this way turns out to be very volatile, so that adjustments may be necessary nevertheless (Quast and Wolters, 2019). Comparisons between the official output gap estimates for Germany and alternative calculations show a high degree of agreement. For the years 2017 and 2018, all techniques indicate a positive output gap which is likely to largely close in 2019. For the euro area, on the other hand, there are bigger differences between the procedures. ➤ CHART 81 RIGHT
- 515. One disadvantage of purely statistical methods is the limited interpretability of the results. In particular, the question as to the causes of a positive or negative output gap remains unanswered. **Model-based approaches** can help to answer this question. One group of candidates is DSGE models (Christiano et al., 2001; Smets and Wouters, 2003), such as those used, e.g., by central banks to analyse policy measures. Here, the output gap is the deviation of GDP from the level that would result if prices and wages were flexible. In these models, a posi-



❑ CHART 81 Estimates of the output gap¹

1 - Relative to the potential GDP. 2 - Range is derived from the minimum and maximum estimates of the European Commission, the IMF and the OECD. Last revised: May 2019 (European Commission and OECD), April 2019 (IMF). 3 - Estimates by the GCEE in March 2019. 4 - Spring projection of the Federal Government in April 2019. 5 - Based on a factor model with 26 indicators. The factor is determined by a principal component analysis. The factor is then smoothed, so that the implied potential growth in year t corresponds to the average potential growth rate of years t-2 to t+2 of the unsmoothed factor model (Weiske, 2018). Mean adjusted and scaled (standard deviation = 1.5). 6 - Hodrick-Prescott filter with smoothing parameter 1,600. 7 - Quarterly GDP figures including forecast by the GCEE for 2019 and 2020. 8 - Hamilton regression filter with four lags and forecast horizons of between four to 12 quarters (Quast and Wolters, 2019).

Sources: European Commission, Federal Government, IMF, OECD, own calculations

tive output gap means increasing price pressure and thus indicates a need for action by monetary policy. Due to the different concepts, **estimates based on DSGE models** can differ from estimates based on classical production function approaches (Kiley, 2013).

- 516. Coibion et al. (2017) use a **structural vector autoregressive model** to separate structural and cyclical factors. Using the identification method of Blanchard and Quah (1989), only changes in GDP caused by supply-side shocks are interpreted as changes in potential. Jarociński and Lenza (2018) use Bayesian methods to estimate a **Philipps curve model**, which is extended to include economic indicators. The different model specifications are hierarchised according to their prediction quality with regard to the core inflation rate. The estimates show a relatively low proneness to revision. Updated calculations using the method of Jarociński and Lenza (2018) point to a continuing, clearly negative output gap in the euro area (Lane, 2019).
- **517**. Within the rules, the procedure for determining the fiscal leeway could be adapted. One possibility would be to **delay** the **adjustment of potential output to more recent estimates** and thus counter the end-of-sample problem by creating an average of current and past growth rates of potential output and calculating the output gap in this way.

However, if, at the time of budget planning, the potential output had been extrapolated at the average growth rate of potential output over the previous five years, the **absolute error** would have been **larger**. Furthermore, the permitted amount of net borrowing would have been 0.6 percentage points too low on average.

3. Interim conclusion

- **518**. Estimating output gaps is subject to relatively large errors in real time. **Improvements in the debt brake procedure** and **in the estimates of output gaps** could lead to a reduction in the number of errors. The current system in the EU15 seems to have greatly underestimated the average **capacity utilisation** in real time before the financial crisis and to have overestimated it after the financial crisis.
- 519. New approaches certainly promise progress in the reliability of output gap estimates. In addition to modifying existing methods, **different models** should therefore **be incorporated** into cyclical adjustment in the future and **regularly evaluated** with regard to their proneness to revision. However, it is unclear which model should win general confidence, especially when the results of the various estimates differ greatly, as is currently the case for the euro area. The question is what a good output gap estimate should achieve. For example, it is not clear whether the output gap should fluctuate symmetrically around zero. This is not necessarily the case from a theoretical viewpoint (Aiyar and Voigts, 2019). For fiscal rules, however, an approach with a closed output gap on average is likely to be more effective, since there is otherwise a risk of a systematic

distortion of the cyclical adjustment and thus of the adjusted fiscal balance (Ademmer et al., 2019). Despite possible improvements in estimation techniques, a certain amount of **uncertainty about the actual degree of capac-ity utilisation of the economy** is likely to **persist** in the future.

520. There are other fiscal rules that rely less on estimating output gaps. For example, various proposals for expenditure rules require only the cyclical adjustment of unemployment expenditure and the calculation of an average growth of potential output. However, these rules also involve preliminary estimates of **discretionary measures on the revenue side**, which also **involves major errors**. It is not clear that such an expenditure rule would result in a smaller overall number of observed errors. Christofzik et al. (2018) therefore propose combining an expenditure rule with an adjustment account.

V. THE DEBT BRAKE AND INVESTMENT

- 521. Compared to the 1990s and early 2000s, general government investment has been subdued in recent years. The debt brake is seen as an obstacle to the expansion of investment activity (Bofinger, 2019; Fratzscher et al., 2019; Hüther, 2019). On the one hand, it is argued that the debt brake or similar deficit rules restrict the scope for public investment too much. In particular, they say, there is currently a great need for investment, and carrying them out could benefit the next generation and therefore be financed by increased borrowing. On the other hand, a **tendency towards increased government consumption** within the limits of the rules is said to be displacing investment. Especially during periods of economic weakness, this expenditure item is first cut and subsequently not expanded to the same extent.
- 522. Advocates call for a **return to the golden rule**, which allows governments to borrow to invest (Hüther, 2019), or alternatively for an explicit obligation in the Federal Budget Code to maintain a certain investment level (Expertenkommission Stärkung von Investitionen in Deutschland, 2015). The GCEE (2007) also proposed a golden rule in its Expertise, albeit in what was a completely different situation to today. SITEM 534 The point of departure was the recognition that the rule in place at that time was evidently unable to contain the debt-to-GDP ratio. Moreover, the Fiscal Compact had not yet been ratified in which Germany, together with other EU member states, committed itself to enshrining the ceilings for the structural deficit in national legislation. This has since happened with introduction of the debt brake.
- 523. Yet the strong focus on **investment** masks the fact that public investment is **not necessarily preferable to other government spending**. For example, giving preference to investment can lead to a neglect of maintenance measures or other expenditures such as education or the rule of law, which form part of public consumption.
 □ ITEMS 531 FF.

- 524. Aggregated investment requirements are almost impossible to quantify, since the existing estimates of requirements are largely unsuitable for the purpose, not least at the municipal level. However, there are indications of **investment backlogs**, especially in the infrastructure field. Sufficient financial resources have been available on aggregate in recent years, such that an exception to the debt brake for investments would probably not have led to significantly higher investment. A high level of capacity utilisation in the construction industry and public administration, as well as an increase in regulations and a changing need for infrastructure, are also likely to be significant. So Box 16 For these reasons, a sharp increase in public investment is unlikely to be achievable in the future. As has already been observed in recent years, a gradual increase is possible, even without cuts in other areas, within the scope of the debt brake. This is particularly true in view of the fact that the Federal Government has not fully exhausted the existing fiscal space within the limits of the debt brake in recent years.
- 525. Moreover, regional differences call for **targeted solutions for municipalities**. Here it is the **Länder** that should take action. In contrast, the Federal Government should refrain from setting up its own debt relief programmes for municipalities. → ITEM 542 However, it could examine why there is so much reluctance to draw on funds from the existing investment pots.

1. The development of public investment should not be seen in isolation

526. Government gross fixed capital formation fell considerably in the 1990s, particularly at the municipal level. → CHART 82 TOP LEFT From the mid-2000s onwards, the gross investment rate initially stagnated for the most part. Since 2014, gross government fixed capital formation has been rising steadily relative to economic output. In 2018, the ratio for the Federal Government is at its highest level since reunification and, for the general government, roughly back at the levels of 1999 and 2009. The general government ratio of **net fixed capital formation** shows a very similar picture, although it should be interpreted with caution. → CHART 82 TOP RIGHT It has been positive again since 2017 and is now at a similar level as in 2000 and 2011.

The decline in the 1990s and early 2000s should be seen not least in the context of **strong investment activity in the new Länder following reunifica-tion** and the associated construction boom. The high investment rates in the municipalities in the new Länder most likely also reflect a catching-up process. S CHART 82 BOTTOM LEFT The weakening of construction activity in subsequent years can therefore be regarded as normalisation.

The **decline in capital spending on fixed assets** is by no means confined to Länder with more heavily indebted municipalities. This weakening is evident even in municipalities in Baden-Württemberg and Bavaria that are financially strong on average. Differences in expenditure levels between Länder should not be considered in isolation in this context, as they may reflect differences in the distribution of responsibilities between Länder and municipalities.

Developments in government fixed assets or net investment should be **interpreted with caution**. Since no inventory is taken of existing public assets, the stock of fixed assets must be determined from investments (as a flow figure). Very long time series are necessary for this. For gross fixed assets, physical disposals are modelled as a distribution over the average useful life and deducted from the capital stock. To determine net fixed assets, the average economically useful life is also taken into account via depreciation (Schmalwasser and Schidlowski, 2006). Regular maintenance or the waiver of maintenance do not affect either disposals or depreciation (Christofzik et al., 2019). However, the extent to which the capital stock determined can be productively used depends essentially on its condition. Outsourced units were only excluded from the long investment series in individual areas. As a result, disposals and depreciation continue to be allocated to the public sector, while new investments are allocated to the private sector. This has a negative effect on gross and, to a greater extent, on net investment.

527. Furthermore, the municipalities in particular are increasingly performing tasks that lie outside their core administrations (GCEE Annual Report 2017 items 607 ff.). Formerly government expenditures are often allocated to the **private sector** via **outsourced units**. In national accounts these include public enterprises in which the public sector directly or indirectly holds more than 50 % of the voting or capital rights, and which are classified as market producers (other funds, institutions and enterprises, sFEU). Consequently, their investments are not assigned to the public sector.

Additions to fixed assets can be used to determine an **approximate invest-ment rate** for public enterprises, the majority of which belong to the private sector. This may provide information on the investment made by public enterprises, although it may be distorted, for example by transfers of assets from the core budget. The corresponding data are available for the years 2000 to 2016. The number of these companies is continuously increasing. Even more companies were assigned to the Federal Government alone at the beginning of the period. The approximate investment ratio is declining slightly. In the Länder it is rising continuously. Since 2012 it has declined slightly, especially for the Federal Government. \lor CHART 82 BOTTOM RIGHT

- 528. At the federal level, 'other funds, institutions and enterprises' include, for example, Deutsche Bahn with several transport companies. Investment grants to these enterprises, as capital transfers, are not counted as government investment either. Furthermore, the outsourcings complicate comparisons over time, since few investments by these companies can be isolated from the data. International comparisons of investment rates are also highly problematic due to large differences in the distribution of tasks between the public and private sectors (GCEE Annual Report 2014 box 2).
- **529**. The same also applies to **comparisons between local authorities**. The Länder and municipalities have chosen very different structures. This can be seen in

the task areas that have been outsourced, their annual profits or losses (GCEE Annual Report 2017 chart 74) and the ratio of debt between the core budget and public enterprises. \Box CHART 83 While, for example, the core budgets of municipalities and municipality associations in Baden-Württemberg have only few debt, the debt level of public enterprises there is much higher. With the exception of Rhineland-Palatinate, the core budgets of local authorities in all Länder are less indebted on average than those of their associated public enterprises.

530. The GCEE considers the possible **veiling of government activities** and the danger of a loss of control by the public sector to be problematic in these outsourced units. Obligatory overall local financial accounts including a report on holdings could improve transparency at least for the municipalities (GCEE Annual Report 2017 item 615). Municipalities can face serious financial burdens if their holdings experience payment difficulties. However, the interactions be-

SHART 82 ℃









1 – Relative to nominal GDP. 2 – Gross fixed capital formation minus depreciation. 3 – GDP (real); change from previous year. 4 – Until 2017 accounting results, for 2018 cash results. 5 – Comprises commercially operating extra budgets and commercially operating other public funds, institutions and enterprises according to the majority relations between the owners. Excluding small corporations (Section 267 (1) of the HGB) and subsidiaries (Section 264 (3) of the HGB).

Sources: Federal and Länder Statistical Offices, own calculations

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❑ CHART 83 Public-sector debt per capita¹



Public and non-public debt on 31 Dec. 2018 relative to the population on 30 June 2018. B-Federal Government, SV-social insurance, BW-Baden-Württemberg, BY-Bavaria, BB-Brandenburg, HE-Hesse, MV-Mecklenburg-West Pomerania, NI-Lower Saxony, NW-North Rhine-Westphalia, RP-Rhineland-Palatinate, SL-Saarland, SN-Saxony, ST-Saxony-Anhalt, SH-Schleswig-Holstein, TH-Thuringia, BE-Berlin, HB-Bremen, HH-Hamburg.
 Revised data for the Länder. 3 – Funds, institutions and enterprises that do not belong to the general government sector.

Sources: Federal Statistical Office, own calculations

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tween the municipal budget situation and the financial situation of the holdings are largely ignored (Feld and Bury, 2019).

Furthermore, outsourced units could be used to **circumvent the debt brake**. **NITEM 452** A similar problem arises as a result of the use of public-private partnerships (PPPs). The GCEE, like the Advisory Board to the Federal Ministry of Finance (2016), considers it necessary to weigh possible cost advantages against the challenge of making the quality of the infrastructure contractually verifiable (GCEE Annual Report 2016 item 85). As a result, the project risk is likely to be reflected asymmetrically on the public side. The European fiscal rules are stricter on determining the budget deficit and could serve as a model, since they follow ESA rules and, in this context, convert payment obligations under PPPs into an imputed investment expenditure, giving them a debt-increasing effect (GCEE Annual Report 2017 item 616).

2. No separate rules for investments

- **531.** The strong focus on investment stems from the assumption that these expenditures have a positive impact on future economic development. It is undisputed that an adequate public infrastructure can be an essential precondition of private sector activities. UTEM 215 Nevertheless, the distinction between investment and other categories of expenditure is not synonymous with a distinction between productive and unproductive expenditure. Rather, both are needed. This may be one reason why empirical evidence of the positive **productivity effects** of public investment is **by no means as unequivocal** as is often claimed (Romp and de Haan, 2007; Bom and Ligthart, 2014; GCEE Expertise 2007 box 4).
- 532. According to the usual definition, many expenditures that are commonly regarded as investments are not public investments (Christofzik et al., 2019). National

⊔ TABLE 18

Classification of public gross fixed capital formation in national accounts

Examples for public gross fixed capital formation according to the European System of accounts (ESA 2010)	No public gross fixed capital formation according to the European System of accounts (ESA 2010)
Dwellings as well as other buildings and structures including sig- nificant land improvements (e.g. building dykes, clearing forests for usage in production)	Normal maintenance and repairs of fixed assets used in production
Machinery and equipment such as ships, motor vehicles and computers	Usage of rented fixed assets, payments for short-run contracts, leasing and licences
Military weapon systems, light weapons and armoured vehicles	Durable goods of low value which are used in simple processes
Cultivated assets	Investments not made by the public sector
Software and databases, copyrights and other intellectual property	Investment subsidies to enterprises, such as Deutsche Bahn
Improvements in the stock of fixed assets exceeding normal maintenance and repairs (e.g. modification and extension)	Other expenditures such as personnel expenditure in the edu- cation sector

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accounts are drawn up pursuant to the binding rules of the European System of Accounts (ESA 2010). According to these rules, government investments in fixed assets are made up of equipment (including military weapon systems), structures such as buildings and roads, and other assets such as intellectual property. > TABLE 18 Normal maintenance and repairs of these goods are allocated to public consumption as intermediate services. Only major improvements, conversions or extensions are assessed as investments (Eurostat, 2014). Nor do personnel expenses, e.g. on teachers or judges, count as investments, although they are presumably important for the future viability of the economy (GCEE Annual Report 2013 box 19).

533. Focusing exclusively on the expenditure item 'investment' can result in other expenditure not being carried out even though it may be more necessary. Ultimately, every expenditure should be scrutinised to determine the extent to which it might be more likely to increase growth potential compared to other forms of expenditure. This is probably not the case with all forms of capital expenditure, nor is it excluded for other expenditure. A **change in definitions**, for example by adding more expenditure items, would therefore be unlikely to solve this problem. Rather, an **assessment of each individual case** is necessary.

Restricting the aggregate by means of a fiscal rule makes **conflicting objectives** between different expenditures more apparent; policy-makers are forced to solve these conflicts. It therefore makes sense to leave the setting of priorities within the budget to Parliament and to limit only the aggregate. This is particularly true because there is extensive literature with empirical evidence of governments' general propensity to run deficits, while evidence of a propensity to prefer certain expenditure categories is hard to find. \searrow BOX 14 Although the GCEE has in the past called for a change in the priorities set (GCEE Annual Report 2017 item 617), it would pre-empt prioritisation by policy-makers to define individual expenditure items that should be exempted from the debt brake for this reason, or to even set a minimum level for the expenditure.

⊔ BOX 14

Is there a bias in favour of public consumption and transfers?

There is a discussion as to whether there is a political-economic **bias in the composition of public expenditure vis-à-vis investment expenditure** and whether this is reinforced by the debt brake. Some analysts suspect that capital expenditure is reduced during downturns in particular, and are then not increased again to the same extent when there is an upswing.

If one looks at the change in **gross investment as a percentage of total expenditure** in different countries in the period from 1999 to 2017, it is noticeable that, in a majority of the countries considered, investment declined on average as a percentage of total expenditure during phases of consolidation. I CHART 84 LEFT However, only in Portugal and Japan did the volume decrease significantly. The change in the percentage is therefore primarily due to a change in total expenditure. In half of the countries, the percentage of investments rose again on average during phases of expansion. On average, the relative increase during the expansion period is lower than the relative decrease during consolidation, and there were more phases of consolidation than of expansion. A very similar picture emerges in the comparison between upswing and downturn phases. A majority of countries reduced the average share of investment during the downturn, and only half increased it during the upswing.

Germany is an exception. The percentage rose on average during both **upswing and downturn phases.** Moreover, unlike most other countries, the share of capital expenditure went up on average during consolidations and down during expansions.

❑ CHART 84



Gross capital formation in the business cycle and budgetary cycle¹

1 – Consolidation phases are years with a negative change in the cyclically-adjusted budget balance; expansion phases are years with a positive change in the balance; upswing phases are years with a positive change in the output gap; downturn phases are years with a negative change in the output gap. JP-Japan, US-USA, IE-Ireland, ES-Spain, SE-Sweden, AU-Australia, PT-Portugal, FI-Finland, FR-France, UK-United Kingdom, DK-Denmark, AT-Austria, IT-Italy, DE-Germany, BE-Belgium. 2 – Figures for Japan only available from 2005 to 2017 and for Australia only from 1999 to 2015. 3 – Investment as an average percentage of total expenditure-side measures in the 187 consolidation plans from 1980 to 2014 in Alesina et al. (2019), in which at least one expenditure-side measure is included. The consolidation plans were collected according to the narrative approach from official documents; only those were included that were implemented with the aim of reducing the deficit or its long-term trends and independently of the economic cycle. 4 – Change in general government gross investment as a percentage of general government expenditure.

Sources: Alesina et al. (2019), OECD, own calculations

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One problem with this observation is that the shares of total expenditure can result from changes in the economic cycle and may not represent only **discretionary interventions by governments** to change the share of investment. Alesina et al. (2019) have compiled a database of discretionary interventions for consolidation in the 15 countries observed between 1981 and 2014. This makes it possible

to calculate the reduction in investment as a percentage of total consolidation volume on the expenditure side. SCHART 84 RIGHT In two thirds of the countries, this percentage is smaller than investment as a percentage of total government expenditure. If this percentage is comparable to that at the central government level, the percentage of investment is likely to increase as a result of the discretionary intervention of policy-makers in these countries. This applies not least to Germany.

If there is a bias against investment, then in **countries with deficit or expenditure rules that do not exclude investment**, investments should be observed to fall as a percentage of total public expenditure over time. Such rules are currently in force at a national level in 38 countries worldwide (Lledó et al., 2017). According to the IMF database, the longest periods in which such rules were in force were in Indonesia and Singapore (1985 to 2015), Estonia (1993 to 2015), Australia, France and Cape Verde (1998 to 2015), Sweden (1997 to 2015) and Austria (1999 to 2015). According to OECD data, government gross investment as a percentage of total public expenditure increased in Australia, Austria and Sweden, remained stable in Estonia and decreased in France.

No overall **bias against investment is clearly visible**. Moreover, few studies have so far systematically examined whether fiscal rules reinforce or cause such distortions. This would require, for example, studies with a convincing identification strategy that consider the effects at a disaggregated level across different countries or within one country. However, initial studies that probably do not meet these standards, but systematically address the relationship between fiscal rules and public investment, do not come to a clear result (Turrini, 2004; Perée and Välilä, 2005; Dahan and Strawczynski, 2010; Bacchiocchi et al., 2011; Hauptmeier et al., 2015).

534. At the same time, problems of definition were one reason why the Advisory Board to the Federal Ministry of Finance (2007, 2014) and the Board of Academic Advisors to the Federal Minister for Economic Affairs and Energy (2008) rejected an orientation towards investment in the case of the debt brake. In its 2007 expertise, the GCEE had advocated such an **investment orientation in the sense of a golden rule**, although it opted for a narrow definition of investment. For example, it ruled out using debts to finance personnel expenses for education.

In particular, a **fixed rate for investment** within the existing regulatory framework could **mean that other expenditures might be displaced**. For example, incentives might be created to stop maintaining the existing capital stock but to invest in new buildings instead.

535. While detailed data already exist for the Federal Government's infrastructure, this is not the case everywhere when it comes to the municipal infrastructure. **Inventories and quality valuations of public assets** are therefore only **fragmentary**. Access to and aggregation of collected data is generally poor. Surveys are often used instead of inventories to obtain information on concrete needs for investment. However, these surveys are inherently problematic since they usually ask decision-makers about their wishes. In addition, inferences are made about the total from a **selective range** of data. For example, the question from the KfW Municipal Panel (2019) on the level of investment backlogs in the core budget and in holdings is based on answers from a total of 259 municipalities, i.e., only about 2.3 % of the total number of municipalities in Germany.

The question therefore arises as to whether a comprehensive survey would be necessary. It could be carried out, for example, by introducing **accrual accounting standards for government budgets** (GCEE Expertise 2007 item 121). The European Commission and Eurostat are pursuing this objective with the EPSAS plans. However, it is unclear whether this will improve data quality (Bundesrechnungshof, 2017). For example, fundamental questions of the valuation of public assets arise, especially when fixed assets are hardly tradable. And private-sector guidelines cannot readily be transferred to the public sector, and there is discretionary room for manoeuvre. The switch to accrual accounting in municipalities seems to have reduced the alienation of property, plant and equipment, and has tended to have a dampening effect on investment (Christofzik, 2019).

3. Rising levels already inherent in public investment

- 536. If only the core and extra budgets, which together make up the public sector, are considered, it can be seen that the Federal, Länder and municipality governments are each responsible for about a third of investment respectively. S CHART 82 TOP LEFT At all three levels, gross investment rose compared to 2010. S CHART 85 However, the **overall increase was smaller than the fall in interest expenditure**. By exploiting this saving alone, investments could have been expanded further, while maintaining a constant volume of expenditure.
- 537. Compared to 2010, the public spending ratio has fallen particularly because a deconsolidated environment was established for the Hypo Real Estate Group this year. This increased the Federal Government's capital transfers in the year



Distribution of expenditure between local authorities and social insurance¹

1 - According to national accounts definition. 2 - Excluding transfers within the general government sector.

Sources: Federal Statistical Office, own calculations

❑ CHART 85

SHART 86 ∠

General government gross capital formation and consumption expenditure by function and by government sub-sectors¹



1 – According to national accounts definition (Divisions of the Classification of the Functions of Government). 2 – Environmental protection, housing and community amenities. health. social protection.

Sources: Federal Statistical Office, own calculations

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by around €30 billion. Moreover, interest expenditure has halved since then. **Social benefits** in particular **have risen**. Due to the long economic upswing and the positive development on the labour market, expenditure on unemployment insurance has declined. However, spending on health and nursing care has grown strongly. Nevertheless, for several years now, local authorities and the social security system have been reporting high general government fiscal surpluses. The main reason for this has been the dynamic increase in revenue from taxation and contributions.

- 538. The Federal Government has particularly **expanded** its **investment** in the field of economic affairs, which includes expenditure on transport. S CHART 86 This also applies to the municipalities for which it is simultaneously the most important area of responsibility. Investment expenditure on defence was especially high in the reference period from 2010 to 2012. As a result, these expenditures have declined in terms of shares, although they have been rising steadily in nominal terms since 2014.
- 539. A breakdown of **gross fixed capital formation by investment types** reveals a dynamic increase since 2015 in expenditure on public civil engineering, which includes road construction, and investment in machinery and equipment. Investment in research and development has been growing continuously since 2010. S CHART 87 LEFT Higher prices have contributed significantly to this growth, particularly over the past two years. S CHART 87 RIGHT
- 540. The Federal Government has already **decided on** several **investment measures** for the coming years. €5 billion is earmarked for the digitalisation of schools, €6 billion for the expansion of the broadband network and around €3

⊔ CHART 87

Development of general government gross fixed capital formation since 2010



^{1 -} In current prices. 2 - Research and development.

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billion for the implementation of the Artificial Intelligence Strategy. The defence budget has been expanded. Furthermore, there is to be more investment in the fields of education, science and research. The Federal Government will also increase Deutsche Bahn's equity capital by €1 billion every year between 2020 and 2030. Finally, additional investments are planned under the climate package. >> BOX 15

To **support investment in the Länder and municipalities**, public funding programmes were set up and participation in certain expenditures increased. A total of \mathfrak{C}_7 billion was made available under the Municipal Investment Promotion Act, particularly for financially weak municipalities.

≥ BOX 15

Climate-change mitigation and public investment

The GCEE has developed options for a reorientation of climate policy in a special report. A price for CO_2 is the central instrument of a climate policy for an efficient transformation to a low-carbon economy. In order to achieve the necessary cuts in emissions, back-up measures such as investments, regulations, information and promotion programmes are necessary to boost the effect of the CO_2 price (GCEE Special Report 2019 items 245 ff.).

How strongly households react to a CO₂ price depends on the price elasticity of demand (IMF, 2019; GCEE Special Report 2019 box 5). This varies from one income group to another (Preuss et al., 2019). Compliance with emission reduction targets will require either very high prices or bigger reactions to price increases than have been observed in the past. However, the reaction can be reinforced, for example, by a **credible price signal**, **new technological possibilities** or **accompanying measures** by the public sector (GCEE Special Report 2019 items 245 ff.).

In some fields, **infrastructure adjustments** and suitable framework conditions are needed to create substitution opportunities. However, wherever possible only those measures should be considered which specifically address obstacles or externalities and avoid deadweight losses. In addition, consideration should be given as to whether public funds must be used or whether corresponding in-

Sources: Federal Statistical Office, own calculations

vestments can be organised by setting standards for the private sector. Reducing emissions only by means of public investment and regulation, without CO₂ pricing as a key instrument, is likely to entail higher economic costs.

Public discussion often refers to large **volumes of necessary public investment**, but very rarely provides a corresponding detailed breakdown. Exceptions include, for example, the study by BCG and Prognos (2018), which put the total economic need for additional investment at an average of \in 43 to \in 66 billion per year up to 2050, or acatech et al. (2017), who estimate the requirement at an average of between \in 30 and 60 billion per year up to 2050. However, a large proportion of the cost relates to the conversion of the energy supply, and the largest percentage to private-sector investment, e.g. in building renovation or replacing vehicles. Estimates, e.g. by the IMF (2019), of international investment needs also mostly relate to the conversion of the energy supply system. In Germany this is regulated by the nuclear and coal phase-out schemes as well as the Renewable Energy Sources Act (EEG). Outside the energy sector, public investment mentioned in the various studies targets, for example, charging stations for electric cars, the expansion of local public transport, the grid infrastructure, and carbon capture and storage (CCS).

DLR and KIT (2016) investigate the need for **charging stations** for a million electric vehicles in Germany in 2020. The total number of charging points required varies depending on the assumptions made and scenarios suggested. In the reference scenario, 96 % of the charging infrastructure for everyday traffic would be at private and semi-public charging points, e.g. in front of supermarkets or in car parks. The study found that 15,200 (of the 413,400) public charging points would be needed for everyday traffic and around 2,600 for long-distance traffic. Above all, the **regulations in housing and tenancy law**, for example, are likely to be important here for expanding private and semi-public charging points, as well as corresponding subsidies for households with low incomes where necessary. With regard to the infrastructure for alternative drive systems, however, care must be taken because it is still uncertain whether a certain technology will prevail, so that fleets will consist of a mixture of different drive systems, at least in the medium term (acatech et al., 2017).

The Climate Cabinet has budgeted €86 billion for the **expansion and modernisation of the rail network** up to 2030 and an additional billion euros per year as a capital increase for Deutsche Bahn. This means that a total of €156 billion will be available to Deutsche Bahn up until 2030 from federal subsidies and its own funds. The expansion of public transport is also often mentioned as an important public investment. Public transport is mostly operated by private companies for which the Länder and local authorities are responsible. The Federal Government contributes about €10 billion per year (BMVI, 2019). According to the Climate Cabinet, this amount is to be increased by €700 million by 2021 and by a further billion euros from 2025.

For the **expansion of the electricity transmission grid**, the BMWi has calculated an average financial requirement of about \in 5 billion per year up until 2035 (Bundesrechnungshof, 2019). A study by the German Monopolies Commission (2017) points out that the need for grid expansion could be halved, for example, by more efficient regional control through the participation of electricity producers in the costs of grid expansion. Furthermore, a better balance between demand and supply, e.g. using smart grids, could lead to more decentralised structures and thus lower needs (GCEE Annual Report 2016 items 887 ff.). The costs of grid expansion are borne by the electricity customers via the network charges. As a result of the sluggish expansion of the grid, around \notin 2 billion fell due in 2017 and 2018 respectively for grid-stabilising interventions by electricity consumers, which could be saved if the grid were expanded properly.

Additional **investment in the storage and use of CO₂** will be necessary to achieve climate neutrality (GCEE Special Report 2019 box 1). Investment in research and development will be required first, since many of the technologies are currently not yet marketable or competitive. The corresponding inclusion of negative emissions in emissions trading could create incentives for private investment in this field.

4. Länder responsible for municipalities

- 541. In **municipalities**, **social benefits** account for a considerable share of expenditure, as shown in $racestimate{2}$ although there are marked differences from one municipality to another. Because the financial situation, demographics and economic factors are interdependent, various municipalities are likely to face difficulties in financing infrastructure projects. This is likely to apply in particular to those municipalities that still have high portfolios of short-term liquidity loans. Apart from property tax, which is a reliable source of financing that can be reliably planned, the municipalities' main source is the local trade tax, which is strongly procyclical and thus less reliable. In addition, they receive a share of revenues from wage and income tax, as well as value added tax. In principle, the Länder are obliged to ensure that their municipalities are adequately funded. Ultimately, one important reason for the high concentration of short-term liquidity loans is the policy of the Länder (GCEE Annual Report 2017 items 599 ff.).
- However, the level of municipal short-term liquidity loan debt has fallen recent-542. ly. The reason for this is that some Länder have set up **debt relief pro**grammes. In Hesse, for example, short-term loans that have been building up since 2018 in some municipalities are being transferred to a special fund under the Hessenkasse scheme. The Land and local authorities will repay these loans jointly up until 2048. The respective municipality will pay a third and the Land the rest. This step was combined with stricter supervision of municipalities to avoid a return to a high debt levels. At the same time, **adverse incentives** were to be weakened by granting investment subsidies to municipalities that had not taken out any short-term liquidity loans. Particularly financially strong municipalities are exceptions to this rule. A related system was chosen in Saarland, albeit without transferring the short-term loans to a special fund. This makes the system more transparent. However, the budgetary rules were not tightened there. Other Länder have granted subsidies in return for consolidation agreements to this purpose.

While the transfer of the short-term liquidity loans to a special fund run by the Hessenkasse represents a circumvention of the debt brake, the problem with the Saarland solution is its insufficient incentive compatibility. Furthermore, when assuming old debts or granting consolidation assistance, it should also be ensured that the measures do not trigger **negative incentives** relating to future decisions. This does **not only apply to municipalities that receive aid**. In North Rhine-Westphalia, a municipal solidarity surcharge was introduced to finance the Strengthening Pact for City Finances. As a result, the municipalities that had to make payments have become more indebted (Christofzik and Schneider, 2019).

543. The **Länder** are likely to have less fiscal leeway in future as they are not allowed to incur structural debts. This is due in particular to the fact that they hardly have any revenue-side instruments. Ultimately, they can only set the tax rates for the real-estate transfer tax; with the exception of the Free States of Bavaria and Saxony, they have made extensive use of this possibility. But allowing a higher level of debt would be the wrong way to proceed. Rather, the GCEE has

pointed to the possibility of **strengthening** their **revenue autonomy** (GCEE Annual Report 2014 items 629 ff.). It also discussed the possibility that in future short-term liquidity loans with terms of longer than one year could only be taken out with the Land and that these could then be allocated to the Land's deficit under the debt brake (GCEE Annual Report 2017 item 600). This would bring liability and control closer together and reduce the incentive to transfer tasks to the municipalities without corresponding financial compensation.

544. In recent years, the Federal Government has taken several measures to ease the burden on Länder and municipalities. Since 2014, for example, it has assumed the entire cost of basic income for the elderly and for persons with reduced earning capacity. It also is contributing more to the costs of accommodation and heating and has used these reimbursements several times in recent years to finance other tasks (Wixforth, 2016). As part of the reorganisation of the financial relations between the Federal Government and the Länder, the proportion of municipal finances to be included in the fiscal equalisation scheme is also increasing, and the Länder are additionally receiving federal supplementary grants to compensate for municipalities with under-proportional tax capacity. It is therefore **not appropriate** for the **Federal Government to assume old debts**. In the planned form, the change in incentives could result in higher indebtedness in the future. Länder that have continuously provided adequate funding for their municipalities would be left behind.

5. Implementation problems slow down investments

- 545. Despite the rise in total government spending, the decline in interest expenditure since 2010 and simultaneously compliance with the debt brake, gross investment was increased by only €17 billion. SITEM 536 Funds would have been available to increase investment expenditure within the debt brake. In the future, with revenues rising on average with potential and an automatic adjustment of the debt-brake limit to cyclical fluctuations, there will continue to be fiscal leeway within the debt brake each year, even without other expenditure categories needing to be cut in real terms. Cutbacks are only likely to be made necessary by discretionary reallocations by policy-makers, either in response to or due to a lack of reaction to structural factors.
- 546. The fact that the lack of financial resources is not currently responsible for investment backlogs is also shown by the **reluctance to call up funds from se**lected investment funds of the Federal and Länder governments. In 2018, for example, only €2.5 billion of the planned expenditure of €4.4 billion was spent by the Energy and Climate Fund. Furthermore, on 31 March 2019 about 31 % of the maximum available sum of €3.5 billion had not yet been pledged under the current chapter 2 (school refurbishment programme) of the Municipal Investment Promotion Act, which runs from 2018 to 2019. Within this fund, the federal funding quota can be up to 90 %, and the municipalities' share can be taken over by the Land. It should be noted, though, that the statistics on calls for funds from investment pots, for example, can be delayed by

Construction cycles and higher burdens on infrastructure in Germany



1 – Structures for which the Federal Government is responsible. 2 – New Länder and Berlin. 3 – Up to and including 1996 only old Länder. 4 – Preliminary figures for 2017. 5 – Up to 1979 West Germany. 6 – Up to 1979 freight transport.

Sources: BMVI, Federal Highway Research Institute, own calculations

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planning lead times or when payments cannot be made until invoices have been submitted.

- 547. Instead, there appear to be several **implementation deficits**. One problem is that many investment projects require long-term planning. This applies, for example, to infrastructure projects such as trunk roads. This is a particular challenge, since many roads now have to be repaired at the same time due to a sharp rise in road traffic. However, due to the high traffic density, the corresponding road closures are a problem and cause additional costs. At the same time, capacity utilisation in the construction industry is currently particularly high, not least due to shortages of skilled workers.
 ^y BOX 16
- 548. Some critics of the debt brake blame the lack of **continuity** in public investment expenditure for the lack of **capacity expansion** in the **construction industry**. It is argued that companies would greatly expand their capacity if they received promises of rising spending on **construction investment** from politicians. It should be noted here that public investment in total gross fixed capital formation in construction has accounted for an average of 13 % since 1991 and has been quite stable since 2003, fluctuating between €33 and €38 billion in price-adjusted terms. >> BOX 16

In addition, the government is already sending out long-term signals to the construction industry with **long-term plans**, such as the Federal Transport Infrastructure Plan 2030 or multi-year service and financing agreements between the Federal Government and the railways. For example, the current Federal Transport Infrastructure Plan 2030 for the period from 2016 to 2030 lists concrete projects and priority levels for federal trunk roads, railway lines and waterways with a total volume of around €270 billion (€19.3 billion per year). The outline investment plan for the years 2001 to 2015 provided for average annual investment volumes of €10.7 billion. The signals to the construction industry are also based on numerous indicators that focus on the quality of the infrastructure. Long-term traffic forecasts and profitability calculations are also used. The problem with such long-term commitments is that the necessary flexibility might be lacking if requirements change.

Other reasons, such as **shortages of skilled personnel**, are therefore more probably responsible for **the lack of capacity expansion in the construc-tion sector**. > BOX 16 In addition, rules and regulations probably delay or prevent construction projects. Problems can include, for example, low public acceptance of projects, which is then reflected in court cases, or increased regulation, e.g. by EU rules or provisions on environmental protection.

549. Surveys of bridges on federal trunk roads show that most of the road surfaces on bridges in the former West Germany were built in the 1970s – those in the new Länder mainly in the 2000s. S CHART 88 LEFT The age structure highlights the special challenges. On the one hand, the **pronounced construction cycles** mean that many bridges are likely to need repairs at the same time. On the other hand, the **construction design does not necessarily** come up to **today's standards**. This is particularly critical as the pressure on the roads has increased. This is shown, for example, by the average volume of traffic. S CHART 88 RIGHT Heavy goods traffic has also increased (GCEE Special Report 2019 items 78 ff.).

>> BOX 16 Capacity in the construction sector

In the **construction sector**, **productivity has not risen** on aggregate since reunification. S CHART 89 LEFT However, by contrast to real gross value added per person employed, real turnover per person employed increased between 1990 and 2005 and has only been relatively flat since 2005. The reasons for the flat development could lie in the **change in the structure of the sector**. For example, the volume of intermediate consumption purchased has risen due to increased planning activities provided by architects' and engineering firms (DBI, 2018), so that some of the productivity gains may be found in other sectors of the economy.

Reasons for this development might also lie in the **employment structure and in the labour market**. Sales productivity in large enterprises with more than 100 employees is more than twice as high as in micro enterprises with fewer than 10 employees (Grubert and Behnke, 2018). However, at less than 1 %, the proportion of enterprises with more than 50 employees subject to social security contributions is very low compared to other sectors of the economy. **Company sizes** in the construction industry have **almost halved** since 1995. This could be related to the marked decline in order intake following the post-reunification construction boom. Since the mid-2000s, however, the construction industry has recorded a **strong increase in new orders** (Grubert and Behnke, 2018) and a net increase in employment (Gartner and Stüber, 2019). Especially since 2016, the positive development of the number of employees has been above the overall average in Germany (Fuchs et al., 2018).

Nevertheless, there are **considerable capacity bottlenecks** in the construction industry. Capacity utilisation has reached a record level in the past three years (BBSR, 2019), rising from around 60 % in 2003 to about 80 % in 2019. Most construction companies are planning to increase their capacity and investment (DBI, 2018). However, there are **considerable obstacles to further capacity expansion**. In particular, the situation on the labour market is hampering growth for companies. In the second quarter of 2019, the number of unfilled vacancies reached a record 143,000 (IAB, 2019). This

means that every tenth vacancy in Germany is in the construction industry. More than 15 % of firms report that their construction activity is hampered by the labour shortage. > CHART 89 LEFT This shortage is likely to increase due to demographic change. The increase in employment has been largely based on the recruitment of foreign workers. It remains to be seen to what extent the Skilled Workers Immigration Act can make an important contribution to filling vacancies in the construction industry in the coming years. However, growth, especially in residential construction, depends greatly on the availability of craftsmen and women. The number of employees in the craft-based finishing trade stagnated between 2013 and 2016 (Kocijan, 2018). This means that skilled labour shortages in adjacent sectors can have an impact on the growth potential of the construction sector.

❑ CHART 89

Development of the construction industry

Labour productivity $^{\!\!\!1}$ and shortage of skilled workers







1 – Gross value added (price-adjusted) per hour worked. 2 – Annual averages calculated on the basis of monthly data from the European Commission's business survey. 3 – Chain-linked volume information (reference year 2015).

Sources: European Commission, Federal Statistical Office, own calculations

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At present, there is only a small discrepancy between the number of **building permits** issued **and the number of buildings completed**. One could conclude from this that the construction capacity currently available is sufficient to meet the construction needs arising from new permits. S CHART 89 RIGHT Yet there are still complex construction needs and the approval procedures are lengthy, so that the demand for construction capacity is likely to be higher than the number of approvals issued would suggest. A possible explanation for the time needed until building permits are granted could lie in the lack of capacity in the municipal building authorities (Gornig and Michelsen, 2017). Between 1991 and 2010, for example, the number of jobs in municipal building authorities fell by around 35 %. However, outsourcing could be a reason for this. There was a further decline of 10 % between 2011 and 2015 (Gornig and Michelsen, 2017). Staff were also cut in the responsible authorities of the supra-regional transport networks, especially among civil engineers (Koppel and Puls, 2016). The shortage of skilled labour among civil engineers is particularly severe. In addition, there are differences in earnings compared to the construction industry (Grömling and Puls, 2018). This suggests that any posts created will be very difficult to fill and that the approval process could take much longer in the future.

Productivity increases and an expansion of capacity may possibly be expected from serial construction using **prefabricated elements**. Prefabricated parts still account for a relatively small share of the construction value of residential buildings, averaging only 9.5 % per year between 2010 and 2015 (DBI, 2018).

Furthermore, increasing **digitalisation** could improve and accelerate construction processes. Not least, this could reduce the number of personnel needed in the building authorities and alleviate staffing problems. Together with the hospitality industry, the construction industry has the **lowest degree of digitalisation** (Gartner and Stüber, 2019). In the construction sector, for example, the **cost of errors** due to subsequent improvements make up about 10 % of annual turnover and reduce the profit margin significantly. The use of Building Information Modelling (BIM), which ensures the flow of information between the different interfaces involved – planning, construction and building use – could significantly reduce these additional costs (Kocijan, 2018). Apart from BIM, there are also other applications such as cloud computing, 3D printing and autonomous machines which could lead to improvements in efficiency, for example in combination with serial construction or in large construction projects with frequently changing architects.

Liberalisation in the form of the **abolition of the obligation for staff to have a master craftsman's certificate** in the mid-2000s probably had an effect on the economic dynamics in these sectors. In the construction industry, this is relevant for floor tilers, pavers, mosaic and screed layers. Empirical studies show a marked increase in the number of new companies in deregulated sectors up to 2014 (Gathmann and Lembcke, 2018; Lergetporer et al., 2018). The liberalisation of other craft trades could further defuse the bottleneck situation and thus contribute to capacity expansion.

VI. OVERALL CONCLUSION

- 550. Whether there is a need for higher indebtedness is at the centre of the economicand fiscal-policy debate in Germany. The Federal Government and the Länder governments are being urged by many in Germany and abroad to borrow more to cover existing investment needs and thereby trigger fiscal policy stimuli at home and abroad. The main criticism is levelled at the German government's adherence to the 'black zero'; basically, however, it is a question of **softening or even abolishing the debt brake**. The criticism concentrates on three areas, stating that: (i) in times of very low interest rates and a **negative interestgrowth differential**, Germany could incur debt without jeopardising sustainability; (ii) **cyclical adjustment** by the debt brake leads to procyclical effects, which are particularly unfavourable for coping with the current economic situation; (iii) the debt brake also puts the brakes on investment. **Public investment** was being implemented on too small a scale.
- 551. In this chapter, the GCEE's analysis focuses on how the debt brake works and on the criticism that is levelled against it. While the GCEE recognises the usefulness of a political commitment such as the **black zero**, especially in times of cyclical capacity overutilisation, adhering to a balanced budgetary risks leading to problematic **procyclicality** during a downturn. The debt brake, in contrast, is designed to consider cyclical fluctuations and thus prevent procyclicality of fiscal policy.
- **552**. Neither **negative yields on government bonds** nor a **favourable interest-growth differential** are sufficient reasons for an increase in public debt. The GCEE's analysis shows that phases of a negative interest-growth differential have in the past been associated with a considerable risk of reversal within the

subsequent two legislative periods. > ITEM 479 This risk amounted to 45.1 % in five years in the period from 1946 to 2016 and to 59.5 % in six to ten years. It cannot be said with any certainty how long the fiscal costs of an expansionary fiscal policy will remain so low and when the interest rate level will again be higher than that of economic growth.

- 553. Higher debt has an impact on the sustainability of public debt. Furthermore, sustainability depends on endogenous factors such as **demographics**, **productivity** and the quality of institutions. Not least, the **ECB's bond purchases** and Germany's role as a **safe haven in the European Monetary Union** influence interest rates. Germany is affected particularly strongly by demographic change (GCEE Annual Report 2016 item 594). If the debt brake is substantially softened, the sustainability of Germany's public debt may be cast into doubt. Resulting interest rate hikes could possibly weaken its function as a safe haven. In any case, in view of today's low level of interest rates, it is wrong to assume that this will necessarily remain so in the long term because of the demographic development. → ITEM 492
- 554. The fear that the debt brake will cause Germany's public debt to fall so sharply that there will be a **shortage of safe assets** is **exaggerated**. → ITEM 567 If the leeway allowed under the European Fiscal Compact of 0.5 % of GDP is exhausted, i.e., if the general government budget remains permanently at a level of structural deficits that is higher than that of the Federal Government and the Länder, i.e., 0.35 % of GDP, the theoretical level of debt would still be around 49 % after 10 years and 35 % even after 30 years, assuming nominal GDP growth of 3 % and a starting level of public debt of 60 % of GDP. → ITEM 453

The limits of the Fiscal Compact for the structural deficit – i.e., 0.5 % of GDP when there is an insufficient margin to the debt threshold of 60 % of GDP, and 1 % of GDP when the margin to the threshold is a sufficient – **already allow for additional fiscal space for borrowing in Germany today**. The average municipal deficit is 0.1 % of GDP. Over the past three decades, the social security system has repeatedly had to deal with higher structural deficits, so that from time to time the overall public sector could make use of a fiscal leeway as high as 1 % of GDP for the structural deficit. This must be borne in mind above all in the light of demographic change, which will particularly affect social insurance in the field of fiscal policy. To sum up, the debt brake and the European Fiscal Compact in their current form can thus continue for a long time before a shortage of safe assets becomes an issue that needs serious consideration. Not least, however, the United States offers a significantly larger volume of safe assets worldwide. There is therefore little risk of a shortage.

555. Cyclical adjustment is inherently flawed. It is difficult to separate cyclical from structural factors in real time. The cyclical adjustment of the debt brake also struggles with this problem. Despite all possibilities for improvement, however, it should be noted that the **debt brake** is **unlikely to limit the operations of automatic stabilisers**. According to the GCEE's calculations, in the period from 2004 to 2013 the debt brake allowed for too much fiscal leeway for the EU15 of 0.14 percentage point of potential GDP at the time of the budget plan-

ning. Too little fiscal leeway was allowed in years for which negative output gaps were subsequently identified, and too much fiscal leeway in years with subsequently positive output gaps. However, the error turns positive in the event of negative subsequent output gaps at the time after budget execution and on posting to the control account. SITEMS 508 FF. The **construction of the control account** thus offers **significant corrections to the procyclicality of cyclical adjustment** when output gaps are negative. Nevertheless, improvements in the cyclical adjustment procedures are welcome.

- 556. There is **no evidence** that the **debt brake is restricting public investment**. The decline in public investment in Germany took place earlier, at a time when the golden rule of fiscal policy was still enshrined in the constitutional law of the Federal and Länder governments. Municipalities can continue to borrow at the level of their investments and are therefore not restricted by the debt brake. The decline in investment can be observed especially at the municipal level, yet no systematic differences between West German Länder with highly indebted and low-indebted municipalities become apparent in the development over time.
 y ITEM 526 Germany shows no distortion of public spending over the economic cycle in favour of higher public consumption or higher transfers at the expense of public investment.
 y BOX 14 It therefore makes sense to look for this development not in a lack of financial resources, but in other obstacles such as regulatory, administrative or capacity constraints. Another factor is outsourcing at the municipal level.
 y ITEM 527
- 557. It is not only the problem of outsourcing and the other obstacles to public investment that generate doubts when the discussion becomes narrowed down to the subject of the debt brake. The claims about **enormous volumes of investment requirements** should also be viewed with scepticism. For example, the additional requirements of €450 billion floated by Hüther and Kolev (2019) cannot be reproduced. When it comes to municipal investment needs, these authors seem to refer to the KfW Municipal Panel, which, however, is unlikely to provide a reliable basis for this due to methodological shortcomings (Christofzik et al., 2019).
- 558. In the light of past experience, the use of these estimates by the minority in the GCEE is therefore just as astonishing as the hopes placed in the golden rule. It seems disconcerting to propose, on the basis of such calculations, **circumventing the debt brake at the federal level by setting up a legally independent special fund** that would grant the Federal Government additional scope for borrowing using the instrument of financial transactions. SITEM 573 Moving substantial parts of fiscal policy outside the budget has already led to excessive debt at the federal level in the past, particularly during reunification; this was to be limited by the debt brake. This is why legally dependent special funds established after 2011 are covered by the debt brake. Off-budget activities are still widespread at the national and municipal levels. For example, the outsourcing of municipal short-term liquidity loans to a special fund under the Hessenkasse scheme is such a circumvention of the debt brake that should be seen in a critical light.

559. There is a growing perception that the problem of under-investment is primarily to be found at the municipal level and mainly in certain Länder. These Länder repeatedly attempt to construct a federal responsibility for the municipalities, for example when attempts are made to settle old municipal debts via the principle of connexity. According to this, the municipalities affected by excessive indebtedness were not to blame for the structural change and the associated economic weakness and social problems. SITEM 582 The effects of structural change are certainly visible. However, the municipalities and the respective Länder also contributed to the fiscal predicament through their (economic-) policy reactions to structural problems. The situation is similar with regard to expenditure on social policy measures and institutions, which should also not be interpreted entirely at the expense of the Federal Government. After all, the Länder have a say in many of these issues at the federal level in the Bundesrat and can represent the interests of their municipalities there. In this respect, they bear a corresponding responsibility according to the principle of connexity for decisions that place a financial burden on their municipalities.

The Federal Government has assumed a lot of additional fiscal responsibility in the social policy field in recent years. In several programmes it has provided the municipalities and the Länder with additional funds for investment. After all, it had to compromise a lot with the Länder in the **reform of the fiscal relations between the federal and Länder governments**. The municipalities' financial situation played a major role in this. If it were to also take over part of the old municipal debt, the **incentives for sound fiscal policy on the part of the Länder and municipalities would be lost**.

- 560. There is a maxim in the United States that says: if it ain't broke, don't fix it. The GCEE's analyses urge caution when it comes to relying on currently low interest rates in fiscal policy geared to sustainability. Conditions can change too quickly. The analyses suggest that problems with the cyclical adjustment of the debt brake are in all likelihood exaggerated. The mechanics of the control account, the reserves available there, and the reserves of the Federal Employment Agency do not suggest that automatic stabilisers cannot function. There is no evidence that the debt brake is restricting public investment. The existing investment needs can be financed within the framework of the debt brake by setting appropriate priorities.
- 561. Moreover, it must not be forgotten that Germany is the most important guarantor of the security mechanisms of the European Monetary Union set up in the wake of the European debt crisis. This does not only apply to the European Stability Mechanism (ESM) and the rules governing the banking union. Not least, Germany's strong fiscal position supports the ECB's balance sheet, which has taken considerable risks in the course of its unconventional monetary policy. In view of the excessive public debt in other member states, the stability of the monetary union depends crucially on the soundness of German fiscal policy. Bypassing the debt brake e.g. via extra-budgetary institutions let alone abolishing it, would have a similar effect to the softening of the Stability and Growth Pact by Germany and France in 2003 and 2005. The effects would probably be more serious because the Fiscal Compact would become

meaningless. After all, the great importance of the credibility of these fiscal rules as a shield of monetary policy against fiscal dominance should not be underestimated. Instead of exclusively concentrating on where and to what extent there could be additional government spending, it would be more appropriate to focus on improving the framework conditions for private investment.

A differing opinion

- 562. Two Council members, Isabel Schnabel and Achim Truger, do not agree with the majority position of the GCEE in Chapter 5 entitled 'The debt brake: sustainable, stabilising, flexible'. The majority of the members currently see **no need to reform the debt brake**. They believe the debt brake already offers sufficient fiscal leeway for stabilising the economy and for accommodating any potential public-sector **investment** needs. The latter could be **covered by means of** appropriate **prioritisation** of public spending. However, these investment needs were hard to quantify. In addition, **hurdles** to public-sector investment were **not lack of financial resources**, but a high level of capacity utilisation in the building industry and public administration, increasing regulation, and lack of acceptance among the general population.
- 563. Our criticism relates to three aspects. Firstly, we see **conceptual problems** with the debt brake that suggest a reform will be needed in the longer term. Secondly, we believe it would be advisable to **use existing leeway pragmati**cally in order to maintain flexibility within the economic cycle and to meet the substantial need for investment that is essential for the future viability of the German economy and for the transition to a new climate policy. Thirdly, unlike the majority of the members, we do not believe that solving the serious **problems related to a high municipal debt burden** in some of the Länder should be the sole responsibility of those federal states. We believe the federal government could also play its part.
- 564. We do not advocate the abolishment of the debt brake, let alone of the European fiscal rules, as we fully recognise that high levels of public debt can be problematic. The 'deficit bias' may lead to a **tendency towards excessive levels of debt** and too much debt results in issues with sustainability. Nor do we see increasing debt as an end in itself. In the long-term, our focus is on conceptual improvements in the application of the debt brake, while our short-term goal is to ensure that it is applied sensibly within the existing legal framework.

Slightly higher levels of debt can **be useful** for the purpose of public-sector (net) investment, and for stabilising the business cycle. Less debt is not always unambiguously preferable to more debt (GCEE Expertise 2007 item 33). Rather, the target debt level should be the result of a decision based on a context-dependent cost-benefit analysis (Hüther and Südekum, 2019).

565. The fiscal and welfare costs of higher debt are offset by potential **welfare gains** arising from stabilisation of the business cycle and from public-sector investment that could strengthen the growth potential of the economy. Concerns about

private investment being crowded out by public-sector spending are likely to be unwarranted, especially if public-sector investment makes private investment more profitable. As Blanchard (2019) has recently argued, in a situation in which the risk-free interest rate is lower than economic growth and the return on capital is low, the **costs of additional government debt** should be **low**. In this context, the very low interest rates – which are likely to prevail in the foreseeable future – are likely to considerably lower the cost side of the equation and thereby strengthen the arguments for a moderate increase in government debt for worthwhile purposes.

This argument is not based on interest rates remaining low for a very long time. Forecasting future interest rate trends over long periods of time is inherently difficult. However, where financing needs already exist, it may make sense to **take advantage of** the **low interest rate phase** and to lock in the current low interest rates by issuing long-term bonds. It would even be conceivable to stipulate specific repayment schedules and thus eliminate the risks associated with follow-on financing (Hüther and Südekum, 2019).

Conceptual problems with the debt brake

- 566. Compliance with the debt brake would **permanently lower the debt-to-GDP ratio**.
 → CHART 74 Utilisation of the permitted structural deficit of 0.35 % of GDP for the federal government and 0 % of GDP for the Länder would, given average nominal GDP growth of 3 %, imply that the debt-to-GDP ratio converges towards 12 %, although the convergence value would not be reached for many years. If one were to incorporate a structural deficit at the municipal level of 0.15 % of GDP, which would be high by historical standards, the convergence level would be 17 % of GDP. → ITEM 453
- 567. There is no compelling argument for such low debt-to-GDP ratios, which are implicitly imposed by the restrictive and inflexible deficit targets of the debt brake. In the medium term, they could in fact lead to a **shortage of safe assets** with destabilising effects for the financial markets, particularly at the effective lower bound (Caballero et al., 2016, 2017). US Treasury bonds are only an imperfect substitute for low-risk securities in the euro area, not least because of the exchange rate risk.
- 568. In this respect, the **European fiscal framework** enshrined in the Stability and Growth Pact is more flexible than the German debt brake. The mediumterm target for the structural budget deficit in the preventive arm of the Stability and Growth Pact (medium term objective, MTO) is set every three years on the basis of several criteria, including some relating to sustainability. Overall, a general government structural deficit of **up to 1 % of GDP** will be permitted. Under the fiscal compact, the general government structural deficit is permitted to increase from 0.5 % of GDP to 1 % of GDP.

Even if the federal government were to utilise its maximum structural deficit of 0.35 % of GDP and the municipalities were to incur a structural deficit of 0.15 %, there would still be **fiscal leeway** up to the 1 % ceiling. According to Rietzler

and Truger (2019), the social insurance funds have had structural surpluses since 2003, and it is unlikely that the existing fiscal leeway will be used up by structural deficits in the social insurance funds. According to the GCEE's calculations, even in the past these averaged only 0.3 % of GDP in years with deficits. ITEM 445

- 569. The majority of the members concedes that an easing of the debt brake for the federal government and the Länder within the limits of the European fiscal rules can be justified in principle if there is a sufficiently large safety margin to the 60 % limit for the debt-to GDP ratio stipulated in the Maastricht Treaty.

 NITEM 446 It would be logical to focus attention on this argument as an aspect of the debt brake where a need for longer-term reform has been identified.
- 570. There is a further conceptual problem with the German debt brake. It ignores the **golden rule for public investment**, a widely accepted, decades-old principle of public finance for dealing with budget deficits. The aim of the golden rule is to ensure the intertemporal application of the pay-as-you-use principle, meaning that net investment should be financed through net borrowing to ensure intergenerational fairness. The underlying assumption is that net investment increases the capital stock and thus generates benefits for future generations. Consequently, it is fair for future generations to help pay for the investment by servicing the debt. Future generations inherit public debt, but gain additional capital stock in return.

From this perspective, a refusal to borrow to finance investment leads to an excessive burden for the current generation who have to pay higher taxes or suffer from lower government spending. This creates an incentive for **insufficient public investment** – to the detriment of future generations. This fundamental incentive problem is likely to be exacerbated during times of budget consolidation, because cuts in public-sector investment often appear to be the simplest way of reducing the budget deficit. This was strikingly confirmed during the crisis in the eurozone when public-sector investment was slashed as a result of austerity measures, particularly in the member states that were hit hardest by the crisis (Barbiero and Darvas, 2014).

- 571. The golden rule of public investment has many **supporters in the academic** world, starting with Richard A. Musgrave, one of the founding fathers of modern public finance (Musgrave, 1939, 1959, pages 556–575). In the context of the fiscal policy debate in the EU, many economists have proposed the introduction of the golden rule for the Stability and Growth Pact (e.g., Fitoussi and Creel, 2002, pages 63–65; Blanchard and Giavazzi, 2004; Barbiero and Darvas, 2014; Truger, 2015). In its 2007 Occasional Report, the GCEE proposed removing public-sector net investment from the constitutional debt ceiling (GCEE Expertise 2007), although this was never adopted as policy.
- 572. The **majority of members** explicitly **opposes the golden rule** for a number of reasons, including the problem of defining investment in a meaningful way, statistical classification problems, and doubts regarding its positive macroeconomic effects. These problems must be taken seriously. Overall, we believe the evidence of the positive short- and long-term macroeconomic effects of public-

sector investment – even only following the classification in the national accounts – to be sufficient to justify granting privileged status to this category of public spending. We thus fundamentally concur with the assessment of the GCEE in 2007, which regards the failure to grant privileged status to net investment as ultimately more problematic than any risk of errors that could occur in applying the rule (GCEE Expertise 2007 items 119 ff.). If, in addition, an **upper limit for** the **maximum permissible net borrowing** under the golden rule were to be set, this would address any concerns about fiscal sustainability. It would also stimulate competition within the democratic process about which investment projects should be prioritised.

Pragmatic use of the existing leeway

573. The conceptual problems of the debt brake outlined above indicate the need for fundamental reform, although this would be a slow and lengthy process because it requires constitutional change and harmonisation with the European legal framework. Such a process would leave enough time to resolve some of the complex classification and implementation issues. In the short term, the current legal framework provides some **leeway within the debt brake**, which can be **used pragmatically** to improve stabilisation of the business cycle and strengthen public-sector investment.

Using legally independent public-sector funds, institutions and enterprises (FEU) to exploit the judicial leeway creates a lack of transparency and potentially reduces democratic oversight. If appropriately structured, this would probably **not constitute an unlawful circumvention of the debt brake** (Hermes and Schmidt, 2016). However, these side effects illustrate why it is necessary to reform the debt brake. **Action is required** in two problem areas: the cyclical adjustment of the government's budget balance and the financing of publicsector investment.

574. The fundamental problem of **cyclical adjustment** is that structural and cyclical factors can **never** be disentangled **with certainty** in real time. Even improving the processes cannot solve this fundamental problem. The usual statistical methods therefore result in an adjustment of the estimated potential GDP, even in the event of a temporary cyclical shock. In an economic slowdown, the downward revision of the potential GDP very quickly results in part of the slowdown being recorded as structural, which, in the context of the debt brake, creates a need for structural consolidation and thus **limits the effect** of the **automatic stabilisers**. This can have a negative effect on production and employment and amplify the economic slowdown. Conversely, the positive adjustment of potential GDP in an economic upturn would create structural flexibility and would make the public finances appear healthier than they really are.

In the case of a sharper economic slowdown, there is currently **no guarantee** that the debt brake will provide **sufficient fiscal leeway**. Nor is there any guarantee that the consolidation that would be appropriate in an economic upturn would in fact materialise. For this reason, a reform of the cyclical adjustment procedure should be undertaken as a matter of urgency. This would probably

only require an amendment of the legislative decree to the Implementation Act of Article 115 of the German Basic Law (GG) or possibly of the Implementation Act itself. One option might be to switch to the **method** proposed by Jarociński and Lenza (2018) which is **less prone to revisions**. The possibility of a **symmetrical use of the control account** should also be examined, so that surpluses would allow an extension of the maximum permissible net borrowing when preparing the budget. Such use could be restricted to periods of economic slowdown.

- 575. There is also the question of whether the debt brake will allow the **necessary scope for public investment** in future. The years since the introduction of the debt brake do not provide much of a clue, given that the economy and the fiscal situation have been exceptionally strong during this period. It is hard to put a precise figure on public-sector investment needs. SITEM 524 In addition, the statistical measurement of net investment is in itself problematic. This could have led to an exaggeration of the decline, particularly at the municipal level. However, it is unlikely that such distortions are so sizeable that measured correctly there would have been no noticeable decline in investment and no negative net investment at the municipal level.
- 576. The GCEE highlights a need for public investment in many areas, such as in basic research, digital and physical infrastructure (roads, rail, local public transport), battery charging stations for electric cars and regional clusters. In order to assess whether the available fiscal leeway is actually sufficient, it would be helpful to put a specific figure on these needs. Even if the public-sector investment need in each of the areas mentioned by the Council were small, additional investment needs could quickly add up to a figure in the mid two-digit billion range per year. Hüther and Kolev (2019) arrive at an **estimated publicsector investment need** of €450 billion over the next ten years, i.e. €45 billion per year. Calculations of this kind are of course fraught with uncertainty. In addition, it is important to remember that the Council's **tax policy proposals** would lead to a further increase in the fiscal burden in the low double-digit billion range. घ ITEM 241
- 577. Funding through **prioritisation** via reallocations within the budget may be a **sensible** approach in principle. However, reallocation on such a scale within the public budget without increased net borrowing or tax increases is unlikely to be politically feasible. Moreover, as explained above, it would not make sense because the golden rule implies that it is entirely reasonable to require future generations to share in the costs of long-term public investment.
- 578. Alternatively, an **independent special fund** could be set up to **finance sel**ected future investments (Hüther and Kolev, 2019; Hüther and Südekum, 2019). This fund could either be provided with resources via 'financial transactions' excluded from the debt brake, or it could borrow itself as a legally independent special fund with borrowing authorisation. Narrowly defined objectives could mitigate classification problems. The local public authority using the funds would continue to be responsible for assessing the usefulness of the investments.

Consideration could be given to making access to the special fund dependent on minimum spending for repairs and maintenance.

579. This kind of special fund would serve more to **increase long-term public-sector investment and make it permanent** than to manage the business cycle. With funding security, the long-term horizon of the investment plans could have a positive effect on the development of capacity. However, there could still be **non-financial barriers to investment**, particularly in the construction sector. The **removal** of such barriers should also be given **high priority**. This may well require additional (current or capital) government spending, for example for the creation of new positions in public administration. The question of whether this spending can also be funded from the special fund would need to be discussed. One possibility would be to make the use of resources from the special fund conditional upon funding these positions from the budget.

Problems of municipal debt

- There is a strong correlation between low levels of public-sector investment and 580. the underfunding of municipalities, with the latter manifesting itself particularly in high levels of short-term liquidity loans. The problem is strongly concentrated in a handful of Länder (Saarland, North Rhine-Westphalia, Rhineland-Palatinate, Hessen before its debt was taken over by a special fund outside the debt brake, and Lower Saxony). The majority of members attributes these financial problems primarily to failures of municipal or state policy. It also emphasises the support provided by federal government by taking over the cost of providing basic income support for elderly people and those with reduced earning capacity, plus a greater proportion of the cost of housing and heating in past years, as well as the restructuring of the financial relations between federal and state governments to take greater account of the municipal authorities' financial situation. For these reasons, the majority argues that it is **not appropriate** to expect the federal government or all the Länder to make further contri**butions** in order to ease the burden on municipalities.
- 581. The majority of members recognises the need to find a solution to municipal funding problems. It is right that any potential solution should not result in **ne-gative incentives** for the municipalities or Länder concerned. However, the answer to the question of whether the federal government or the Länder as a whole should have to contribute to a solution depends to some extent on the **cause of the financial problems**. If the municipal funding problems were due solely to failures at the municipal or state level, the federal government's involvement would be unnecessary and could result in adverse incentives.
- 582. The federal government can be held partly responsible for the regionally concentrated problems of the municipalities. The greater contribution of the federal government to the costs of municipal social welfare payments can be regarded as closer adherence to the previously violated principle of connexity, which states that costs must be borne by those who cause them. As the social welfare payments of the municipalities implement federal government

laws, the question is why the federal government is reluctant to provide the necessary funding and has done so only gradually, even though it has accepted its responsibility in principle. The **lack of support from federal government over many years** may well be a key factor in explaining many regionally concentrated funding problems and short-term liquidity loans in municipalities with high levels of social expenditure, which now require a solution.

- 583. In addition, the **financial problems** of the municipalities are **frequently** concentrated **in structurally weak regions** that are negatively affected by structural change arising generally or as a result of globalisation. Based on the analysis by Dauth and Südekum (2016) and Dauth et al. (2017), Truger (2018) points out that the Länder that have the greatest problems with municipal finances (North Rhine-Westphalia, Saarland, Rhineland-Palatinate, Hessen and Lower Saxony) also have an unfavourable economic structure with a relatively large number of municipalities that have been hit particularly hard by globalisation. As individual municipalities and the Länder cannot overcome the challenges of structural change and globalisation alone, and the principle of **equal living conditions** throughout the federal territory is enshrined in Germany's constitution, it can be argued that the federal government should assume at least some responsibility and that a valid case can be made for its participation in finding a solution for municipal finance problems.
- 584. Steps should be taken to ensure that the principle of connexity is respected in the future. If the federal government or the Länder define (new) responsibilities for the **municipalities**, they must make the corresponding funds available to pay for them. Problems must be **tackled structurally**; solving the problems associated with legacy debt in isolation is not sufficient.

APPENDIX – CHART 90

Errors in estimating output gap published by the European Commission¹

Difference between forecast at the respective time and autumn forecast five years later (t+4)











1 – In 2014, the publication of data according to the European System of Accounts changed from ESA 1995 to ESA 2010. As a result, the levels of GDP over different publication dates are no longer directly comparable. The calculations presented here only use data levels within the vintage at a given time; relative figures are used in comparison across different points in time. Nevertheless, the changeover could have an effect on the relative figures, e.g. the size of the output gap, which is not taken into account here. In addition, the European Commission changed its procedure for calculating output gaps in the period under review; the published figures are used here. 2 – Calculations excluding Greece, Ireland and the year 2009. 3 – Data from autumn (t-1). 4 – Data from autumn (t+4). 5 – Data from the spring of the previous year (t-1). 6 – Data from the autumn of the following year (t+1). 7 – Unweighted average. 8 – Unweighted average of the absolute amounts of errors (mean absolute error).

Sources: European Commission, own calculations

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