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Is the Debt Brake behind Germany's successful fiscal consolidation?

A comparative analysis of the “structural” consolidation of the government subsectors' budgets during 1991-2017¹

Katja Rietzler and Achim Truger

Abstract

Both the German federal as well as the general government recorded a surplus for the fourth time in a row in 2017. The fast consolidation after the Great Recession coincided with the transition period for the full introduction of the federal debt brake, which is sometimes interpreted as causality. At the same time Germany's economic performance is better than that of many other countries. For this reason it is nearly impossible to overrate the symbolic power of the debt brake as a seeming success story. In this paper we scrutinise the seeming success story of the debt brake. We carry out a comparative analysis of the “structural” consolidation of public finances in Germany for the period from 1991 until 2017 showing that the German debt brake is not the cause of the successful budget consolidation in Germany since 2010. The improvement of the general government finances since 2010 was smaller than in previous consolidation phases and was strongly supported by a favourable macroeconomic environment, and one-off effects. Finally, neither the general government sector nor the federal government would be in such a good fiscal shape, had the economy evolved less favourably since 2010. Without the blessing of a strong upswing Germany would hardly have become the fiscal role model for Europe and the German debt brake would not have become the blueprint for the European Fiscal Compact.

JEL classification : E 39, E62, H 50, H62, H74

Keywords : Germany, debt brake, consolidation, Euro crisis, sovereign debt

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1. Introduction: The debt brake – a great success?

In the summer of 2009 the so-called “debt brake” was established in the German constitution. Its central feature is that it strictly limits structural deficits to 0.35 % of GDP for the federal government and 0 % for state governments. In addition a cyclical component increases or decreases the scope for borrowing across the economic cycle. In case of an emergency an exception clause permits borrowing beyond the usual limits. Further, a control account ensures that the federal government complies with the debt brake both in the draft and the execution of the budget. For the federal government the debt brake has been fully binding since 2016, for the states this will be the case from 2020 onwards.

From the beginning the debt brake has been a highly controversial issue and numerous objections and warnings were expressed (Truger and Will 2012). Nevertheless, its supporters will see their initial point of view confirmed as Germany’s public finances seem to be in excellent shape since the introduction of the debt brake – both by international and historical standards: since 2010 the consolidation of the general government finances proceeded at a fast pace. Already in 2012 and 2013 the general government net borrowing (national accounts definition) was close to zero. Since 2014 the general government’s balance has been positive and increasing every year. According to recently revised data of Germany’s EDP notification, the surplus amounted to 1.3 % in 2017². In 2013 and 2014 Germany belonged to a group of only 3 countries within the euro area with a budget surplus. In 2017 eleven euro area countries were still running deficits.

After decades of budget deficits the federal government recorded a surplus for the fourth time in a row – both according to the national accounts and the government finance statistics. The fast consolidation of the federal government budget has coincided with the transition period for the full introduction of the debt brake, which is sometimes interpreted as causality (e.g. BMF 2015). The federal government’s budget including all extra-budgetary operations has complied with all regulations of the debt brake by a wide margin. At the same time Germany’s performance in terms of growth and especially employment is better than that of many other countries. This is often attributed to the strategy of “growth-friendly consolidation” associated with the debt brake, which is said to prove that budget consolidation and growth can go hand in hand, or even that the former is a prerequisite for the latter. Thus, the strict adherence to the debt brake – and the permanent over-compliance with its requirements via the policy of the

² The calculations presented in the paper are based on annual data published in February 2018.

“schwarze null” (“black zero” i.e. policy of a permanently balanced budget) – became the distinctive mark of finance minister Schäuble’s “sound fiscal policy” (“solide Finanzpolitik” BMF 2016). For this reason it is nearly impossible to overrate the symbolic power of the debt brake as a seeming success story. As a consequence, the German debt brake became the blueprint for tightened fiscal rules and plans to anchor the limitation on budget deficits in the legal systems and even constitutions of EU countries via the Fiscal Compact.

With this paper the authors aim to scrutinise the seeming success story of the debt brake and assess it on the basis of empirical facts.³ Is the debt brake really the cause of the good performance of public finances in Germany? A closer inspection reveals that this is highly implausible. To illustrate this we carry out a comparative analysis of the “structural” consolidation of public finances in Germany for the period from 1991 until 2017. We start with some methodological remarks (Section 2). This is followed by a comparison of different consolidation phases between 1991 and 2017, in which the “structural” balance of the general government sector increased (Section 3), has already cast doubt on the debt brake as success story. In Section 4 we show that the seemingly impressive consolidation of the federal budget since 2010 looks much less impressive when compared to the consolidation in other government subsectors over time and that it has benefited from special circumstances. In Section 5 we apply a simple simulation to illustrate how the balances of the government subsectors would have evolved if the German economy had not experienced such an unexpectedly dynamic recovery since 2010. Section 6 sums up the economic and fiscal policy implications.

2. Methodological Remarks

In the following we analyse key fiscal indicators of the general government, the territorial entities⁴ as well as the social security funds as defined in the national accounts for the period from 1991 until 2017. The working tables (“Arbeitsunterlage”) on the accounts of the government sector provided by Destatis in February 2018 serve as the main data source. Using the national accounts data has the important advantage that the government sector and its subsectors are clearly defined according to uniform criteria and that time series are available for a sufficiently long period and with reasonable publication lags. Due to the large number of

³ A similar analysis can be found in Paetz et al. (2016). Although it is confined to the federal government budget and based on government finance statistics (instead of the national accounts used here), it incorporates numerous institutional details of the debt brake for the federal government.

⁴ Bund = federal government, Länder = state governments, Gemeinden = municipalities.

entities, differing definitions and variations in the coverage over time, an analysis based on government finance data would not only have been time-consuming, but also inaccurate. Recently government finance statistics published by Destatis have overcome some of these drawbacks as they now use the same definition of the government sector as the national accounts and thus include relevant extra-budgetary operations. However, the publication lag is rather long and the time series starts as late as in 2011 so that comparisons over longer periods of time are impossible.

The use of national accounts data also has the advantage that the relevant benchmark indicators of the Stability and Growth Pact (SGP) are based on the same concept. However, it is a drawback that the national accounts data differ substantially from the public revenue and expenditure data relevant for the German debt brake. Thus, the analysis in this paper allows only a very rough assessment of the budget balance relevant for the federal and state governments according to the debt brake. Therefore, it cannot indicate an immediate need for fiscal policy action.

The federal government's official spring projection of potential output and the output gap serves as a basis for the estimation of the cyclically adjusted "structural" indicators (BMWi/BMF2018). The German Federal Ministry of Finance provided the budget semi-elasticities for the government subsectors at request. For the government sector as a whole they add up to the general government estimate of the European Commission of 0.55 (Mourre et al. 2014).

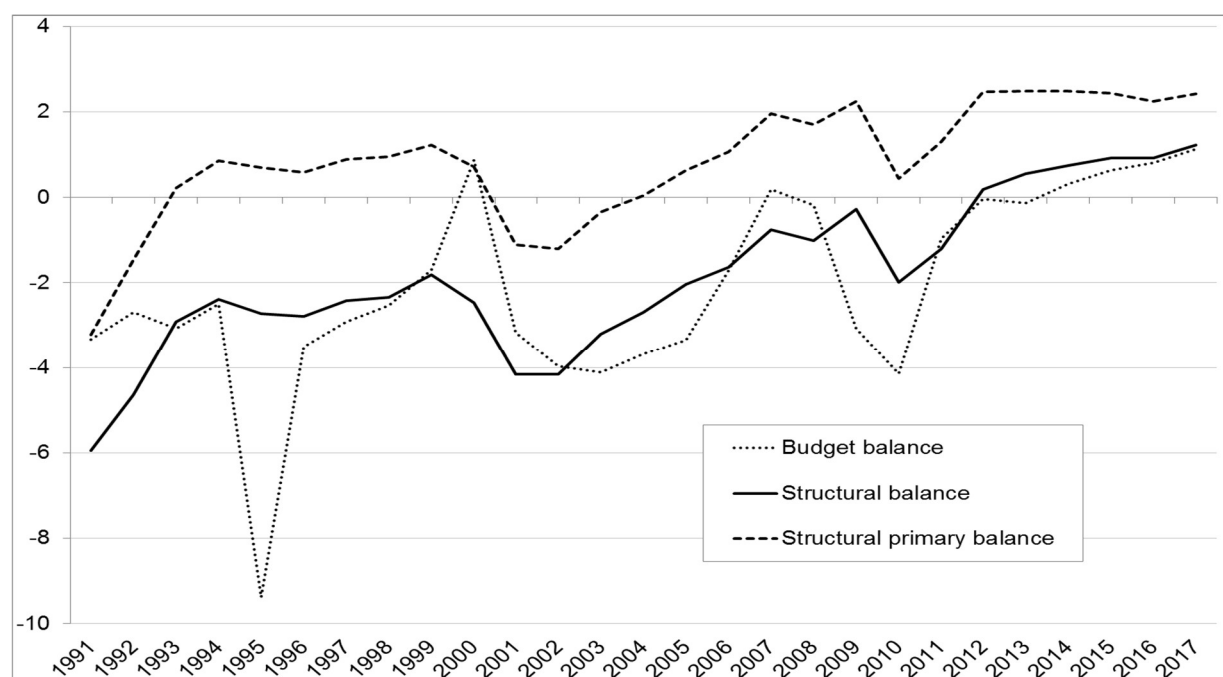
3. Doubt Number 1: Comparison of different consolidation phases

Figure 1 shows the general government budget balance, the structural balance – adjusted for cyclical and one-off effects – and the structural primary balance, i.e. the structural balance minus gross interest payments, for the period from 1991 until 2017.⁵ Indeed the graph shows an impressive consolidation performance in the period since the introduction of the debt brake. The budget balance moved from a deficit of 4.2 % of GDP in 2010 to a surplus of 1.1 % of GDP in 2017 – an improvement of 5.3 percentage points. Concerning the structural balance, the improvement is substantially smaller at 3.2 percentage points, because of the cyclical

⁵ We have classified the year 2017 as end year of the last consolidation phase, although strictly speaking we could have classified the year 2015 as end year, because from 2015 to 2016 there was a very small worsening of the structural balance to GDP ratio. This would not only have decreased the length of the consolidation period, but also the overall size of consolidation in that phase by 0.31 percentage points for the structural balance. However, as the worsening in 2016 was only -0.00023 percentage points and therefore negligible, we decided to use 2017 as end year.

adjustment and the adjustment for large one-off expenditures to stabilise the banking sector amounting to 1.3 % of potential output in 2010. If we further take into account that public finances strongly benefitted from the unusually low interest rates and thus look at the structural primary balance, the improvement is reduced to 2 % of potential output, which is nevertheless a substantial consolidation performance.

Figure 1: Balance, structural balance and structural primary balance of general government in Germany, in % of potential GDP, 1991 – 2017



Source: Destatis, authors' calculations.

However, Figure 1 reveals at a glance that there were similar phases of substantial budget consolidation already before the introduction of the debt brake. Therefore, table 1 compares four consolidation phases after 1991, which were identified on the basis of the structural balance. Obviously, the structural balance increased substantially in the phases from 1991 until 1994, from 1996 until 1999, from 2002 until 2007 and from 2010 until 2017. Interestingly, the most recent phase after the introduction of the debt brake is not the phase with the most pronounced consolidation. Both the period from 1991 until 1994 and the fairly recent period from 2002 until 2007 exhibited much stronger improvements, by 3.6 and 3.4 percentage points concerning in the case of the structural budget balance and by 4.1 and 3.2 percentage points respectively in the case of the structural primary balance, compared to only 3.2 percentage points for the structural balance and 2.0 percentage points for the structural primary balance in the most recent phase from 2010 until 2017. In the analysis potential GDP rather than GDP is

used as the yardstick in order to avoid strong cyclical distortions – especially due to the sharp recession triggered by the financial crisis.

Table 1: Phases of structural budget consolidation of general government, 1991-2017(% of potential GDP)

Consolidation (+)	1991-1994	1996-1999	2002-2007	2010-2017	1991-2017
Δ structural balance (% POT)	3.6	1.0	3.4	3.2	7.2
Δ structural primary balance (% POT)	4.1	0,7	3,2	2,0	5,6
Average output gap	2.0	-0,6	-0,7	-0,5	-0,1
Average GDP growth rate	1,1	1,9	1,6	1,8	1,4
Average growth rate of wages and salaries (domestic concept)	4,2	1,6	1,0	4.0	2,6
Average unemployment rate	6,8	8,5	9,0	4.8	7,0

Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

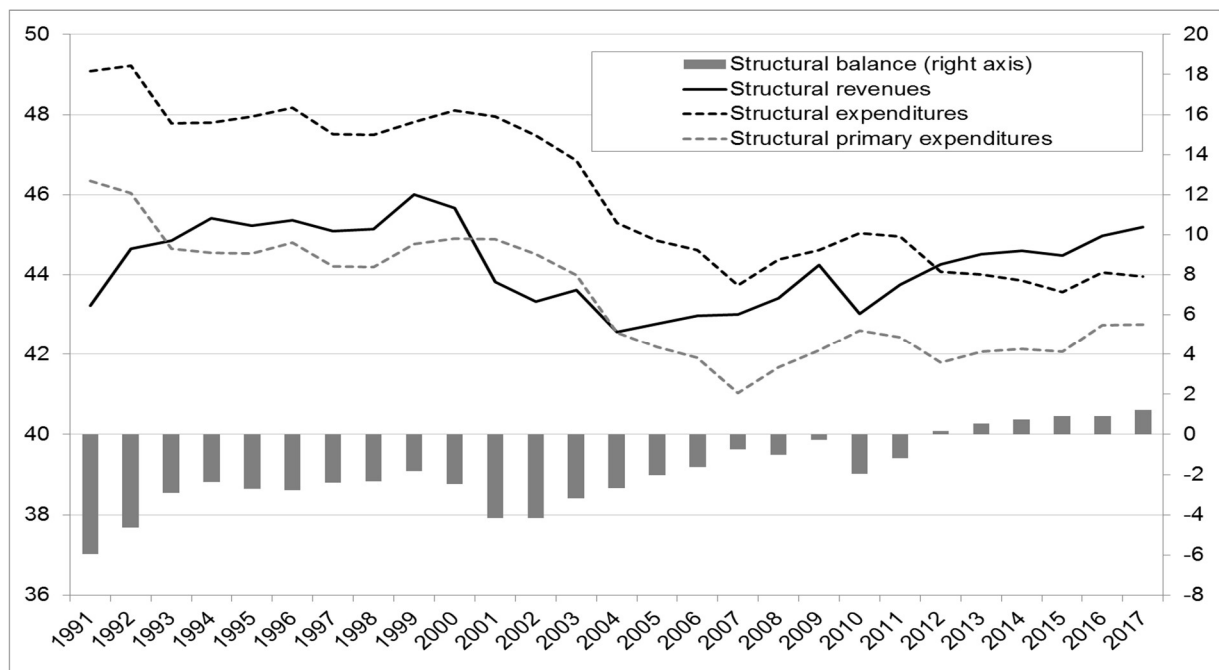
In addition it has to be noted that unlike the period from 2002 until 2007 the most recent phase after the introduction of the debt brake has been characterised by very favourable macroeconomic conditions: although the estimated average output gap of -0.5 % of potential output was hardly better than in the preceding period (-0.7 %) and the average growth rate of 1.8 % was only slightly higher (2002-2007: 1.6 %), the period after 2010 was much more dynamic than the preceding period, which included several years of stagnation from 2002 until 2005. After 2010 the average growth rate of wages and salaries was 4.0 % and the unemployment rate was as low as 4.8 %, whereas these indicators amounted to 1.0 % and 9 %, respectively, in the preceding period. As the recent literature on fiscal multipliers suggests, it can be assumed that fiscal multipliers are higher in down-turns than in upswings (Gechert 2015). Therefore, it is highly plausible that the consolidation was much easier and produced less negative macroeconomic effects than in the period from 2002 until 2007 when the economy stagnated for several years.

From a macroeconomic point of view the structure of the budget consolidation during the individual phases is also remarkable. Figure 2 shows both the general government structural balance and structural revenues and expenditures. It reveals that the consolidation during the period from 2002 until 2007 was almost exclusively achieved on the expenditure side of the budgets. Substantial tax cuts under the red-green coalition in the early 2000s were followed by substantial spending cuts in order to reduce deficits which were partly cyclical and to comply

with the rules of the SGP (Rietzler et al. 2017). As a consequence the expenditure ratio fell by 3.7 percentage points. As expenditure multipliers are much higher than revenue multipliers (Gechert 2015), the overall macroeconomic effect can be assumed to have been strongly negative (Truger et al. 2010: 29 ff).

According to the cyclically adjusted data used here the consolidation process has been much more benign for the macro economy since 2010 – with about 67 % on the revenue side and only 33 % on the expenditure side. On balance there were no discretionary tax increases (Rietzler et al. 2017).

Figure 2: Structural general government balance, structural revenue and expenditure ratios, in % of potential GDP, 1991-2017

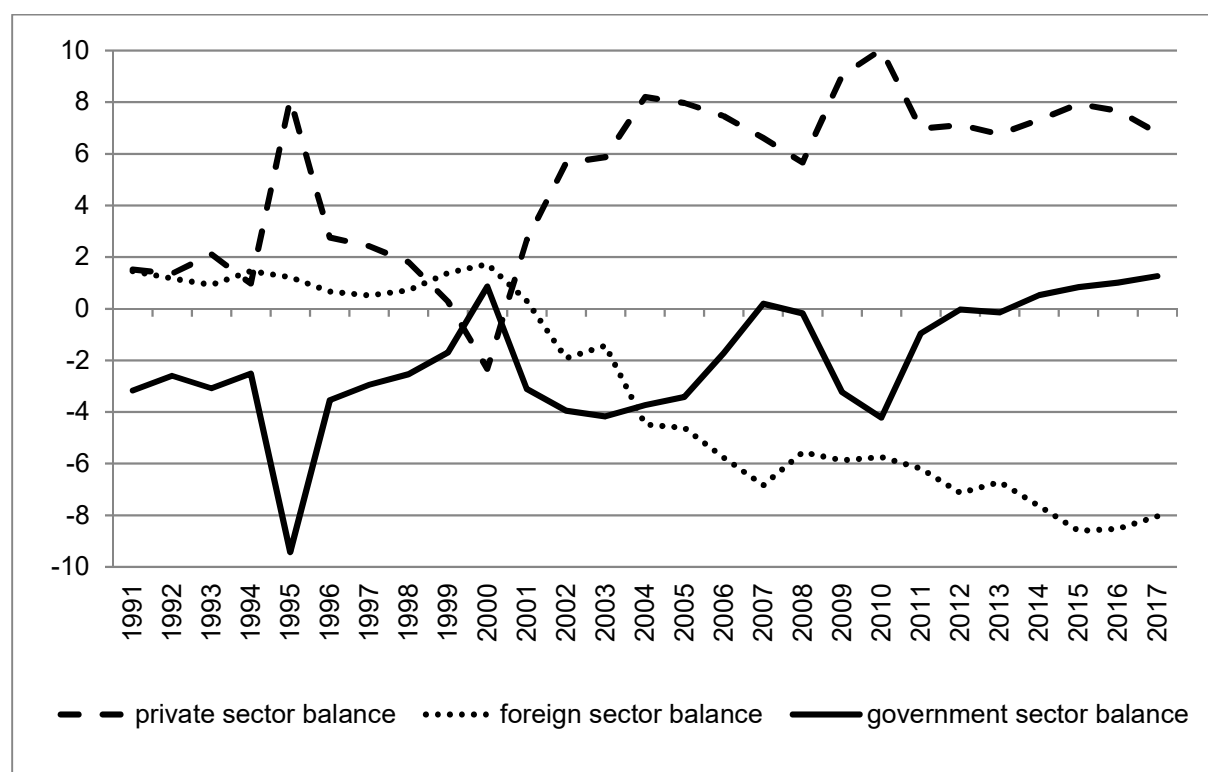


Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

It can be noted that the consolidation of the general government budget has been somewhat weaker since 2010 than in the preceding periods, although the debt brake had not back then existed yet. In addition it has been facilitated by favourable macroeconomic conditions and the resulting improvement in revenues, which had very limited negative effects on the economy. However, it is problematic from a macroeconomic perspective that the budget consolidation after 2011 was almost continuously accompanied by a rising current account surplus, as the private sector saw no overall decrease in its balance, so that the already substantial external imbalances were exacerbated (Figure 3). Only from 2010 until 2011 the consolidation was strongly supported by the domestic economy via a reduction of the private sector's net lending. If the German model of current account surpluses — recently exceeding 8 % of GDP — came

increasingly under political pressure by countries with current account deficits, as we can expect, this would therefore have an immediate negative impact on the sustainability of German fiscal consolidation.

Figure 3: Net borrowing/ net lending in Germany by institutional sector, in % of GDP, 1991-2017

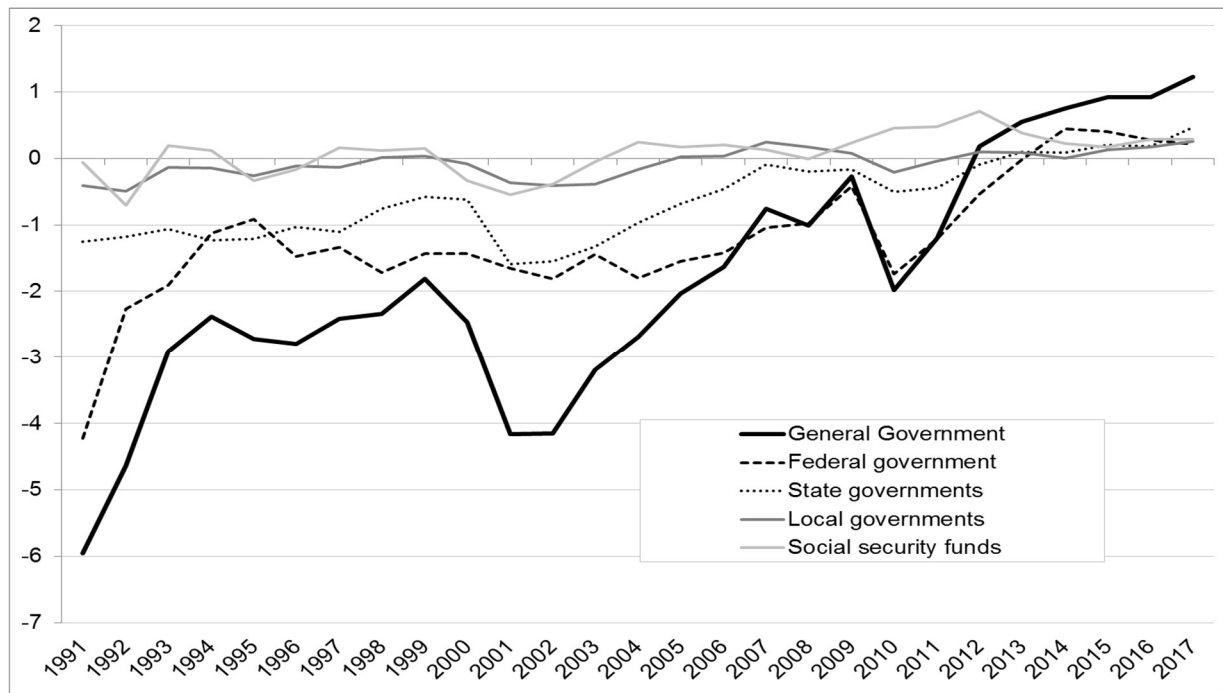


Source: European Commission (2018), authors' calculations.

4. Doubt Number 2: Relative consolidation performance of government subsectors

How much have the individual government subsectors consolidated their budgets since 2010? Figure 4 and Table 2 show that the federal level accounted for most of the consolidation. Its contribution to the general government consolidation of 3.2 % of potential output was 1.9 percentage points, whereas the joint consolidation of the states and the municipalities accounted for 1.5 percentage points and the structural budget balance of the social security funds deteriorated by 0.2 percentage points. The relative consolidation performance remains broadly unchanged, if the consolidation effort is assessed on the basis of the structural primary balance.

Figure 4: Structural budget balance of government subsectors in Germany, in % of GDP, 1991-2017



Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

Is this indeed evidence for the effectiveness of the debt brake, which has been fully in force for the federal government since 2016? In order to answer this question a comparison of the consolidation phases mentioned above is helpful. This time we focus on the developments in the government subsectors (Table 2). We can see that, except for the phase immediately after German reunification, the federal government hardly contributed to the budget consolidation of the government sector. Instead the improvement of the general government structural balance was largely brought about by the consolidation efforts at state level. The municipalities and the social security funds contributed far less than the states but still more than the federal level.

Obviously the other government subsectors had already proceeded further with their budget consolidation in the earlier phases, particularly during 2002 until 2007, and could thus build on previous achievements – interrupted only briefly by the effects of the global economic and financial crisis and the stimulus packages. In the case of the municipalities and the social security funds, which have only limited scope for credit-financed counter-cyclical policies, it is not surprising that the consolidation was achieved without any debt brake. Indeed, Figures 7 and 8 illustrate that the structural expenditure ratios of the municipalities and the social security funds quickly adjusted to their declining revenue ratios after 2001.

*Table 2: Phases of structural budget consolidation,
General government and subsectors (change in % of potential GDP, 1991-2017)*

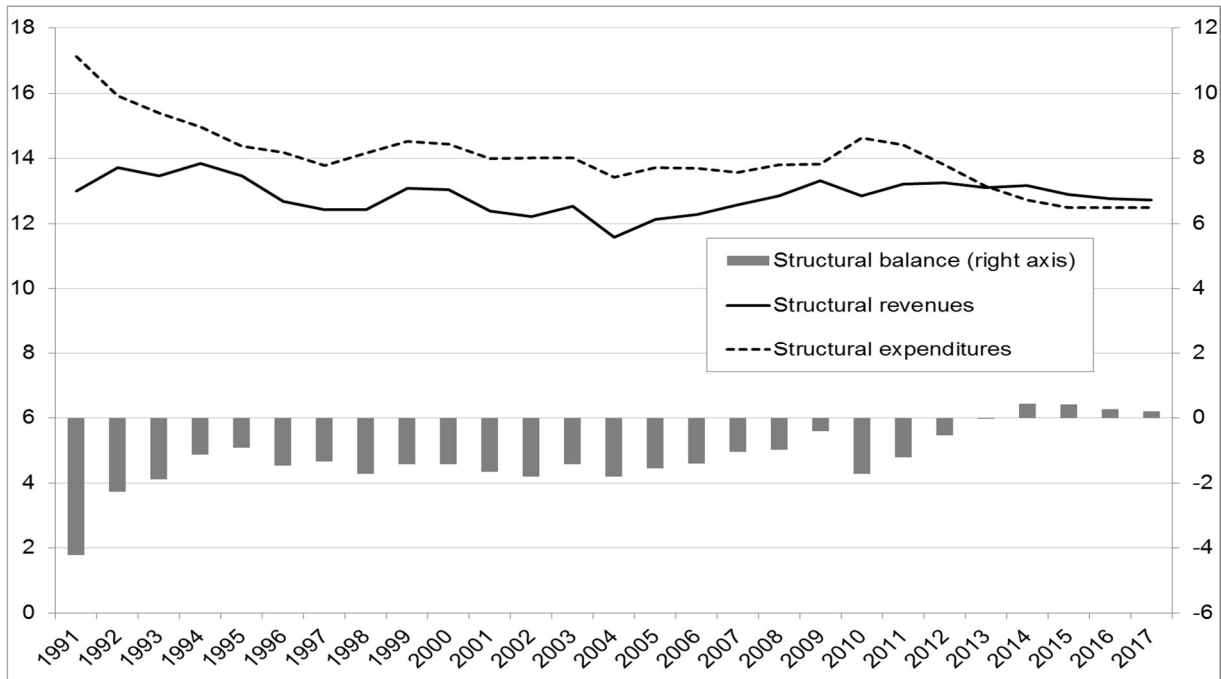
Consolidation (+)	1991-1994	1996-1999	2002-2007	2010-2017	1991-2017
Δ structural balance (% of potential GDP)					
General government	3.6	1.0	3.4	3.2	7.2
Federal government	3.1	0.0	0.8	1.9	4.4
State governments	0.0	0.5	1.5	1.0	1.7
Local governments	0.3	0.1	0.7	0.5	0.7
Social security funds	0.2	0.3	0.5	-0.2	0.4
Δ structural primary balance (% of potential GDP)					
General government	4.1	0.7	3.2	2.0	5.6
Federal government	3.6	-0.1	0.5	1.2	3.5
State governments	0.0	0.4	1.5	0.5	1.3
Local governments	0.3	0.1	0.7	0.4	0.5
Social security funds	0.2	0.3	0.5	-0.2	0.4

Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

However, the decline of the structural expenditure ratio after 2002 is particularly pronounced in the case of the states, which, in principle, had access to higher credit-financing. Their structural expenditure ratio fell from 13.4 % of potential GDP at the beginning of the consolidation phase to 12.4 % in 2007 — a reduction by a whole percentage point of potential output or 7.5 % (Figure 6). Obviously the states were able and willing to cut spending substantially without any pressure from the debt brake. By contrast the federal government accepted the revenue shortfalls at the beginning of the millennium to a much larger extent and reduced expenditures far less, thus tolerating far higher deficits, which corresponds to a much higher need for adjustment in 2010 (Figure 5).

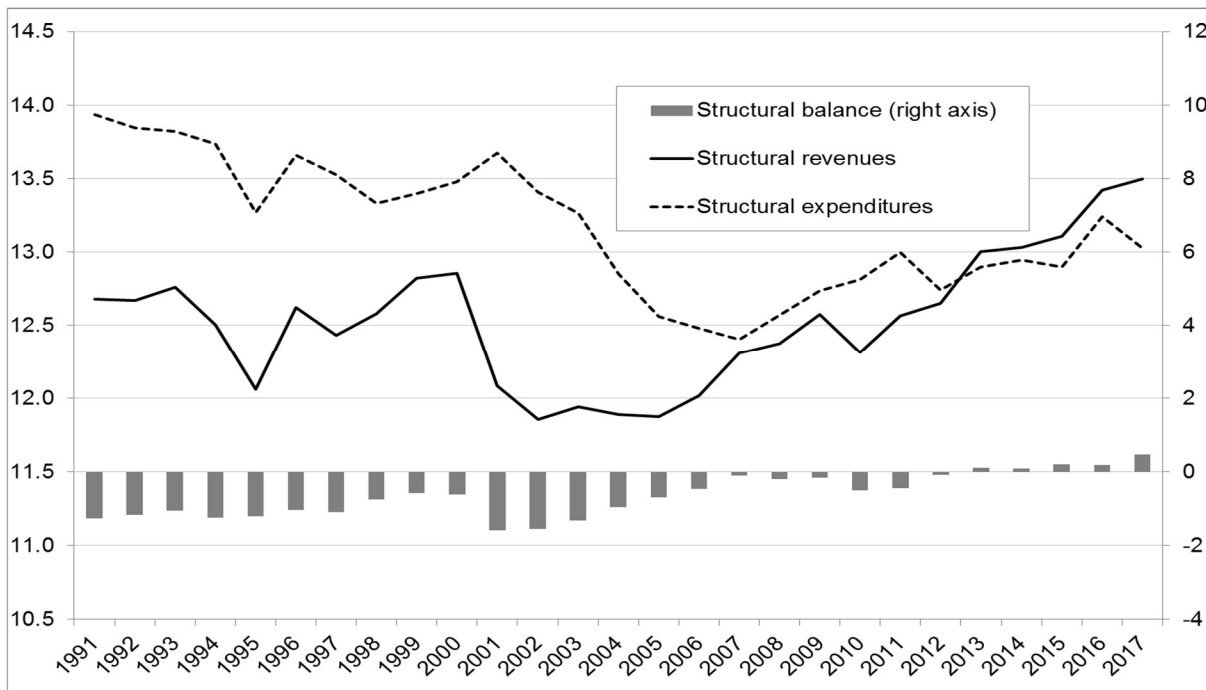
Nevertheless, it is a fact that the federal government addressed the obvious need to balance its budget given by the debt brake in 2010 and rapidly improved its budget balance. As the cyclically adjusted national accounts data suggest the consolidation focused on the expenditure side, reducing the structural expenditure ratio of the federal government from 14.6 % in 2010 to 12.5 % in 2017, while the structural revenue ratio actually declined by 0.1 %. How did the federal government manage to reduce spending by 2.1 % of (potential) GDP in such a short time? Of course, it benefitted from the unexpected favourable cyclical upswing. In addition, interest payments fell by 0.7 % of potential GDP despite higher debt because of the exceptionally low interest level.

Figure 5: Structural budget balance, revenue and expenditure ratios of the federal government in % of potential output, 1991-2017



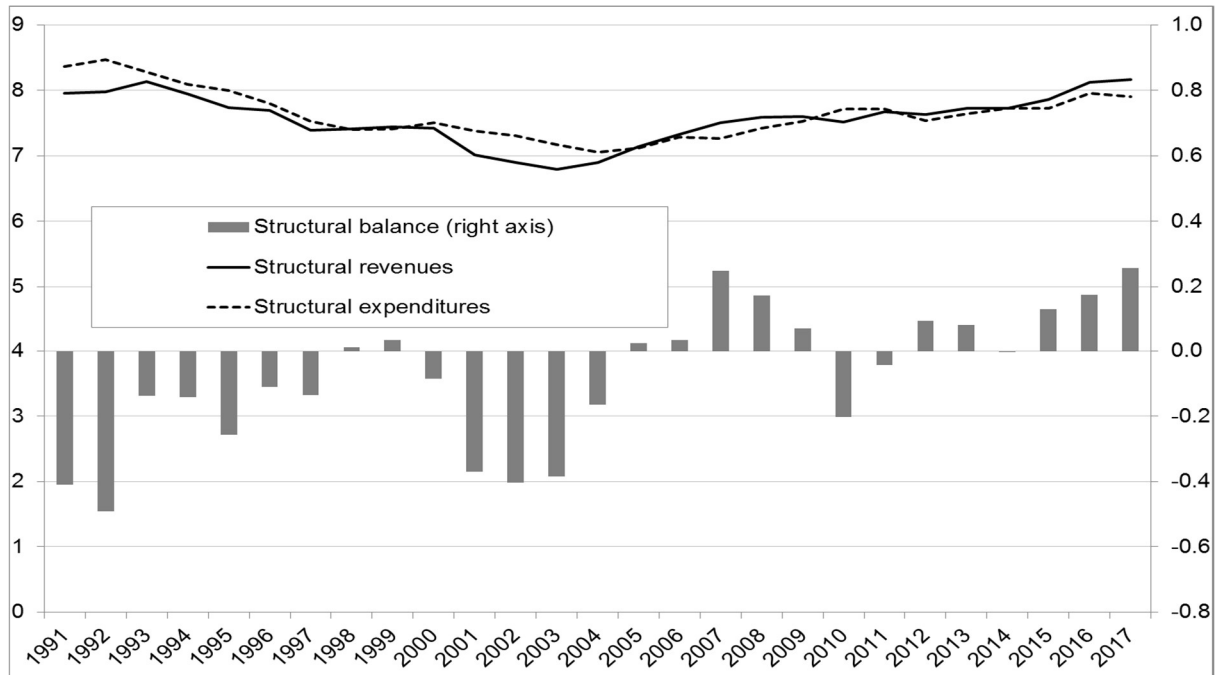
Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

Figure 6: Structural budget balance, revenue and expenditure ratios of the states in % of potential output, 1991-2017



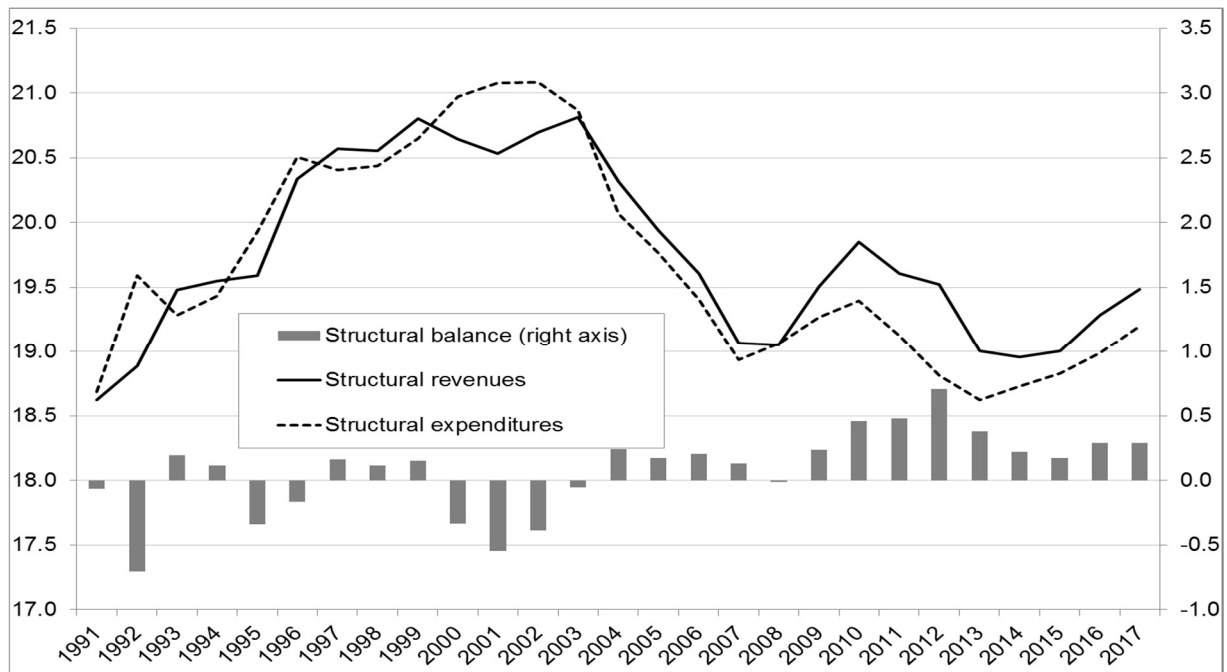
Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

Figure 7: Structural budget balance, revenue and expenditure ratios of the local governments in % of potential output, 1991-2017



Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

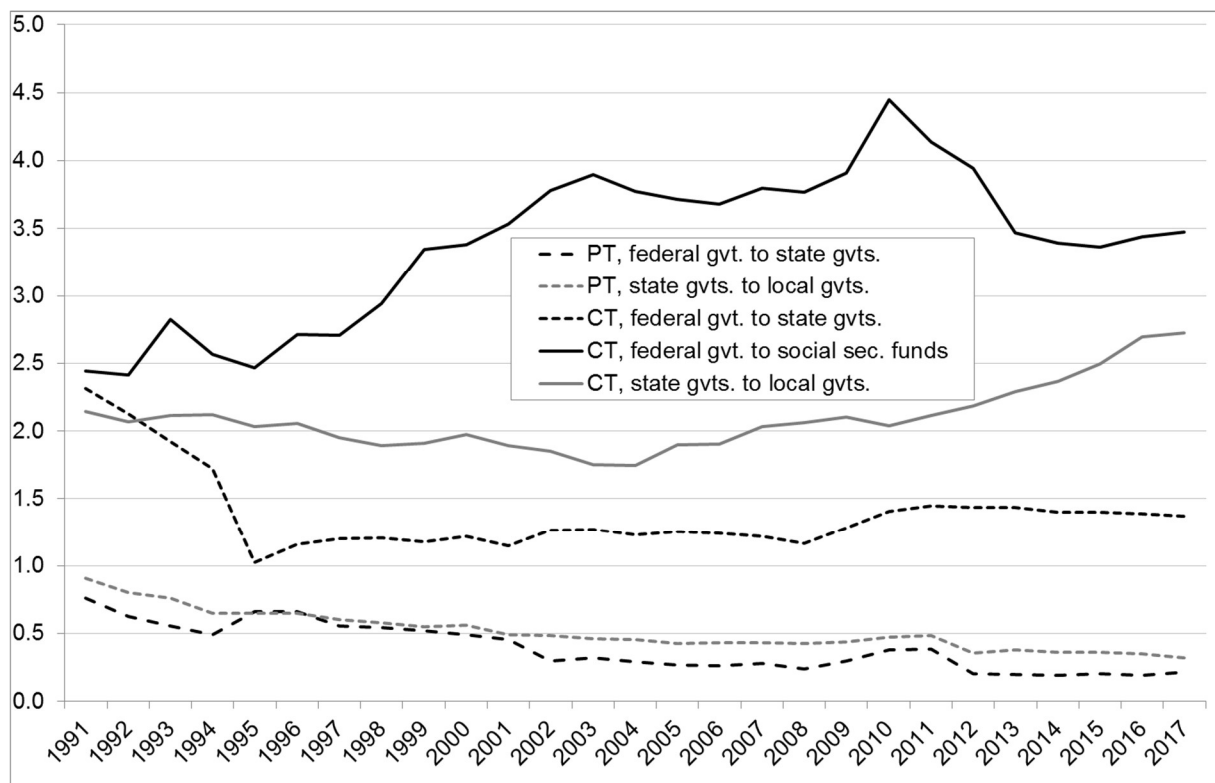
Figure 8: Structural budget balance, revenue and expenditure ratios of the social security funds in % of potential output, 1991-2017



Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors' calculations.

This still leaves a substantial expenditure-side consolidation of 1.4 % of potential GDP unexplained. A substantial part of the explanation is that the federal government was able to cut its transfers to the social security funds that it had increased substantially in the crisis years of 2009 and 2010 (Figure 9). In parallel to rising employment and an improving financial situation of the social security funds the federal government reduced its transfers to the social security funds by 1.0 % of potential GDP. At first sight it seems surprising that the current transfers to the states have not increased relative to potential GDP since 2010 although the federal government supported the states (and indirectly the municipalities) via a number of additional programmes. The fact that this does not seem to show up in the numbers can be explained first by the compensating effect of shrinking transfers from the “Solidarpakt” (solidarity pact for East German states) which is gradually being phased-out until 2019. Secondly, a part of the additional programmes was financed by reducing the federal government’s share in the VAT rather than by additional transfers from the federal budget. This shift in revenues left the expenditure side unaffected, but it explains the weak structural expenditure growth of the federal government as well as the dynamic expenditure growth of the states (Figures 5 and 6).

Figure 9: Substantial net-flows between government subsectors (% of potential GDP)



Sources: Destatis, Federal Ministries of Finance (BMF) and of Economic Affairs and Energy (BMWi), authors’ calculations; CT = current transfers, PT = property transfers.

Another one-off effect helped the structural consolidation of the federal budget: the stimulus packages of 2009 and 2010 included some merely temporal measures affecting mostly the federal budget. Examples are the car-scrapping bonus and especially the investment programmes of € 11 billion over several years, which were largely financed by the federal government (Truger 2010, IMK Arbeitskreis Konjunktur 2010). When these programmes gradually expired after 2010 the federal budget improved automatically by several tenths of a percentage point of potential GDP without any discretionary consolidation measures.

In retrospect almost all of the structural consolidation achievements can thus be attributed to favourable circumstances (cyclical upswing, low interest rates) and one-off effects (reduction of transfers to the social security funds, phasing out of stimulus packages). Obviously, what it cannot be attributed to is the debt brake.⁶

5. Doubt Number 3: Public finances without “the blessing of the upswing”

In the preceding sections we have repeatedly stressed that the unexpected favourable macroeconomic environment since 2010 has greatly helped the consolidation of general government finances. One may object that the business cycle is merely relevant for the headline (cyclically unadjusted) budget balance, but not for the adjusted one. However, this is not quite true, as the usual cyclical adjustment methods underestimate the size of cyclical fluctuations and thus lead to a pro-cyclical policy, if they are applied to fiscal benchmarks. Especially the method of the European Commission, which is used in the context of the German debt brake, has proved particularly problematic, because the potential output it produces, is strongly affected by the current cyclical situation and especially the unemployment rate (Klär 2014; Truger and Will 2012). Thus potential output is rapidly revised downwards in downturns, whereas it is rapidly raised in upswings. The sensitivity of potential output estimates to the business cycle is not merely an academic problem, but entails very concrete and serious consequences for the estimated structural deficits and thus for the ensuing consolidation requirements. During the Euro crisis the European Commission was already forced to admit that its estimates based on changes in the structural deficits substantially underestimated the actual consolidation efforts. For this reason the European Commission is now considering additional indicators (Carnot and de Castro 2015).

⁶ A detailed analysis of the factors determining the federal government’s compliance with the debt brake based on government revenue and expenditure statistics is provided in Rietzler et al. (2016: 7-11).

When the debt brake was introduced this problem was already obvious and corresponding concerns were voiced. At the same time it was pointed out that the debt brake might come out to be seen as a success story in the case of an unexpectedly strong and sustained cyclical upswing and, consequently, a “structural” consolidation, which is in fact cyclical:

“If the trend growth rate during a consolidation period turns out worse than expected, the structural deficit and the resulting consolidation requirements will increase [...]. This finding neglects the problem that the strong endogeneity of the estimated structural deficit combined with a restrictive fiscal policy may lead to a self-reinforcing vicious circle: if the macroeconomic performance worsens unexpectedly, part of this worsening will be recorded as a structural decline in growth. This automatically raises the structural deficit that remains to be reduced. If fiscal policy tries to comply by further tightening the fiscal stance, this may worsen the macroeconomic performance, further raising the structural deficit that has to be reduced. In this case the economy would remain caught in a stagnation trap and budget consolidation would be extremely difficult and entail huge macroeconomic and social cost. Potentially, this mechanism also works in the other direction. In case of an unexpected favourable macroeconomic performance the required consolidation effort might actually decrease. The fiscal stance could then be loosened, which would in turn reduce the consolidation requirement via higher growth. In case of such positive feedback it is even conceivable that the fiscal strategy of the new federal government could prove reasonably successful. The government could then – at least for a few years – reconcile tax cuts with the transition towards the full implementation of the debt brake, without having to resort to extreme spending cuts or offsetting tax hikes.” (Truger 2010: 21; authors’ translation from German original)

This raises the question how key fiscal policy indicators would have evolved, if the macroeconomic performance since 2010 had been worse. In the following we analyse two scenarios of weaker performance for the period from 2010 until 2015 (Table 3). The first scenario is a “crisis scenario” which assumes that the GDP growth rates for 2011 and 2012 that had been forecasted when the debt brake was enacted at the peak of the global economic and financial crisis in the spring/summer of 2009 were realised. Therefore we use the GDP growth rates of the spring joint forecast published in the years 2009 and 2010 (Projektgruppe Gemeinschaftsdiagnose 2009 und 2010), which predicted growth rates of merely -0.5 % and 1.4 % for 2010 and 2011, instead of the actual rates of 4.1 % and 3.7 %. Beginning with 2012 we use the actual GDP growth rates. In the second scenario “euro area” we assume that German

real GDP had evolved like that of the euro area as a whole. Thus, the level of GDP in this scenario initially exceeds that of the “crisis scenario” substantially due to a much stronger recovery in 2010 and 2011. However, the difference shrinks to only 0.4% in 2017 because of the comparatively weak euro area growth since 2012.

Table 3: Scenarios for real GDP growth in Germany in %, 2009-2017

	2009	2010	2011	2012	2013	2014	2015	2016	2017
de facto growth rates	-5,6	4,1	3,7	0,5	0,5	1,9	1,7	1,9	2,2
scenario "crisis"	-5,6	-0,5	1,4	0,5	0,5	1,9	1,7	1,9	2,2
scenario "euro area"	-5,6	2,1	1,6	-0,9	-0,2	1,3	2,1	1,8	2,4

Source: EU-Commission (2018); Projektgruppe Gemeinschaftsdiagnose (2009,2010); authors' calculations.

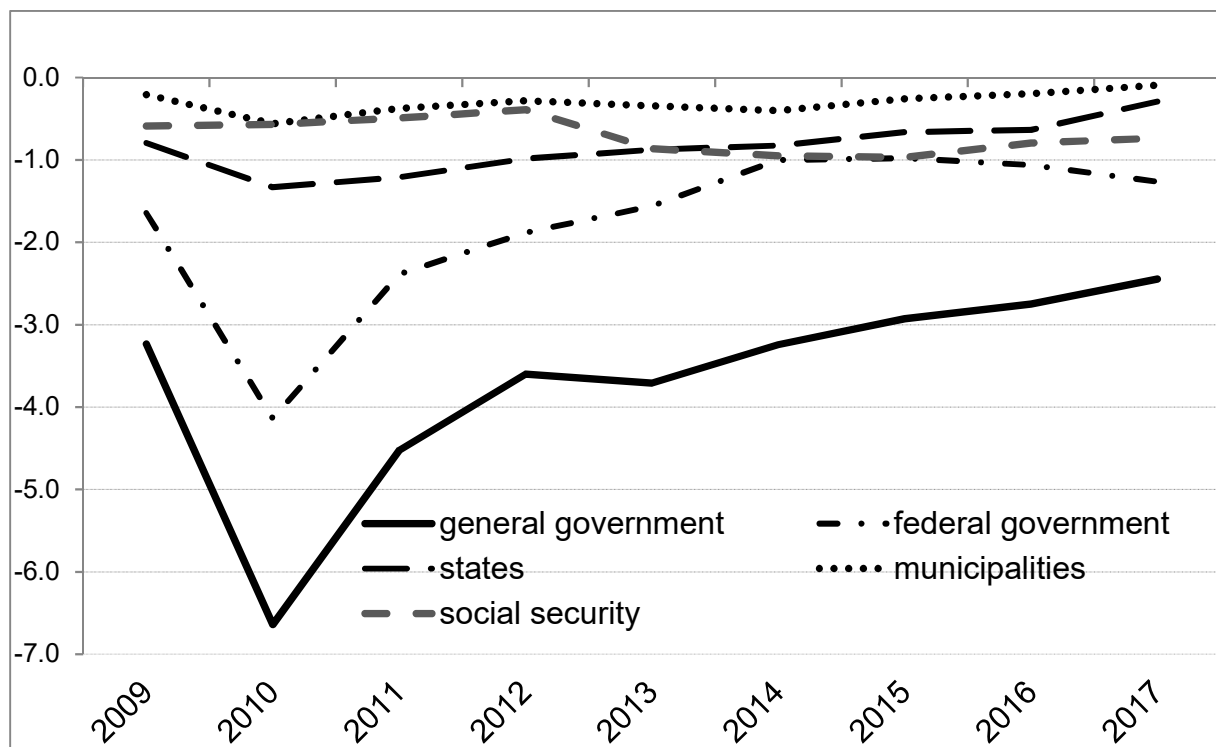
For cyclical adjustment we do not use the complex method of the European Commission, on which also the – still not adequately documented – method applied by the German federal government is based. Instead we use the modified Hodrick-Prescott filter which has been developed by the Swiss federal finance administration and which is used for the Swiss debt brake (Bruchez 2003) for the sake of simplicity. According to calculations by the RWI (2010) it may even be less pro-cyclical than the method of the European Commission.⁷ In order to compare the output gaps of our simulation with those published by the federal government we also have to estimate an output gap based on actual GDP. For all deviations of the simulated GDP from actual GDP we can thus calculate the ensuing adjustments of the output gap. We subsequently multiply the change in the output gap with the respective budget semi-elasticity for the government subsectors and thus obtain the change of the structural budget balance caused by the revision of potential output. For the headline budget balance we apply the budget semi-elasticities directly to the difference in GDP.

Figures 10a and b as well as 11a and b provide a summary overview of the simulation results. In the crisis scenario the general government deficit would have exceeded 3 % of GDP until 2014. In 2017 it would still be at 2.4 % of GDP. No government subsector would have recorded a balanced budget over the whole simulation period until 2017. The findings are similar for the structural balance. The structural budget balance of the federal government would have been - 0.8 % in 2014 and would have worsened to -1.3% of GDP until 2017. From this national

⁷ In Truger and Will (2012) a similar, though forward-looking, simulation was carried out using a version of the European Commission's method. With respect to the endogeneity of potential output estimates the results are broadly comparable justifying the time-saving approach with the mHP filter.

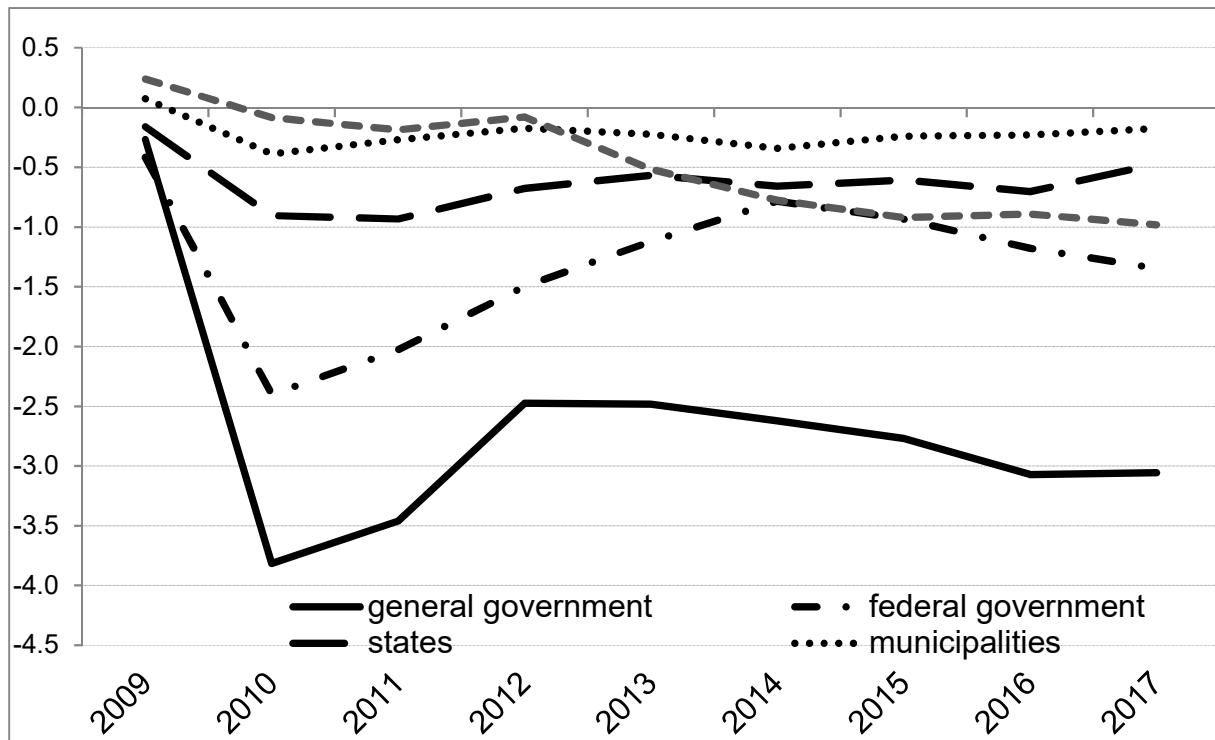
accounts indicator we cannot draw direct conclusions for the structural balance according to the government finance statistics, but it is highly likely that the structural deficit in this definition would have exceeded the 0.35 % ceiling of the debt brake causing major consolidation efforts. In addition, it would be highly unrealistic to assume a reduction of transfers to the social security funds of the size actually observed, because their finances would have turned out much worse with a deficit of 0.7 % of GDP which would have caused additional pressure on the federal budget. Although, again, the definition of the structural balance relevant for the federal states' debt brakes may be different from the one calculated from the national accounts, the federal states would have come under severe pressure as their structural balances would not have improved over the entire period from 2009 to 2017 with the deadline for the zero structural deficit approaching in 2020. In the second scenario the effects are quite similar, although a little less pronounced.

Figure 10a: Scenario "crisis": budget balance of the general government and its subsectors in % of GDP, 2009-2017



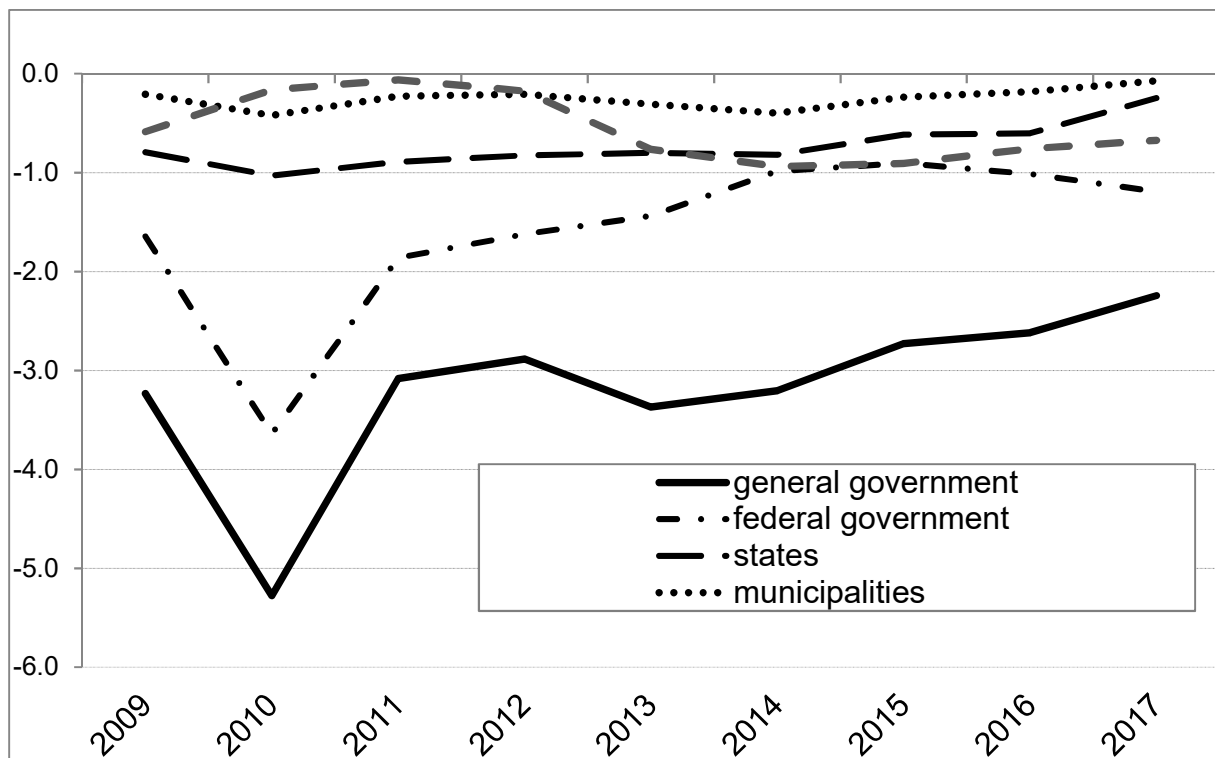
Sources: Destatis; authors' calculations.

Figure 10b: Scenario “crisis”: structural budget balance of the general government and its subsectors in % of potential GDP, 2009-2017



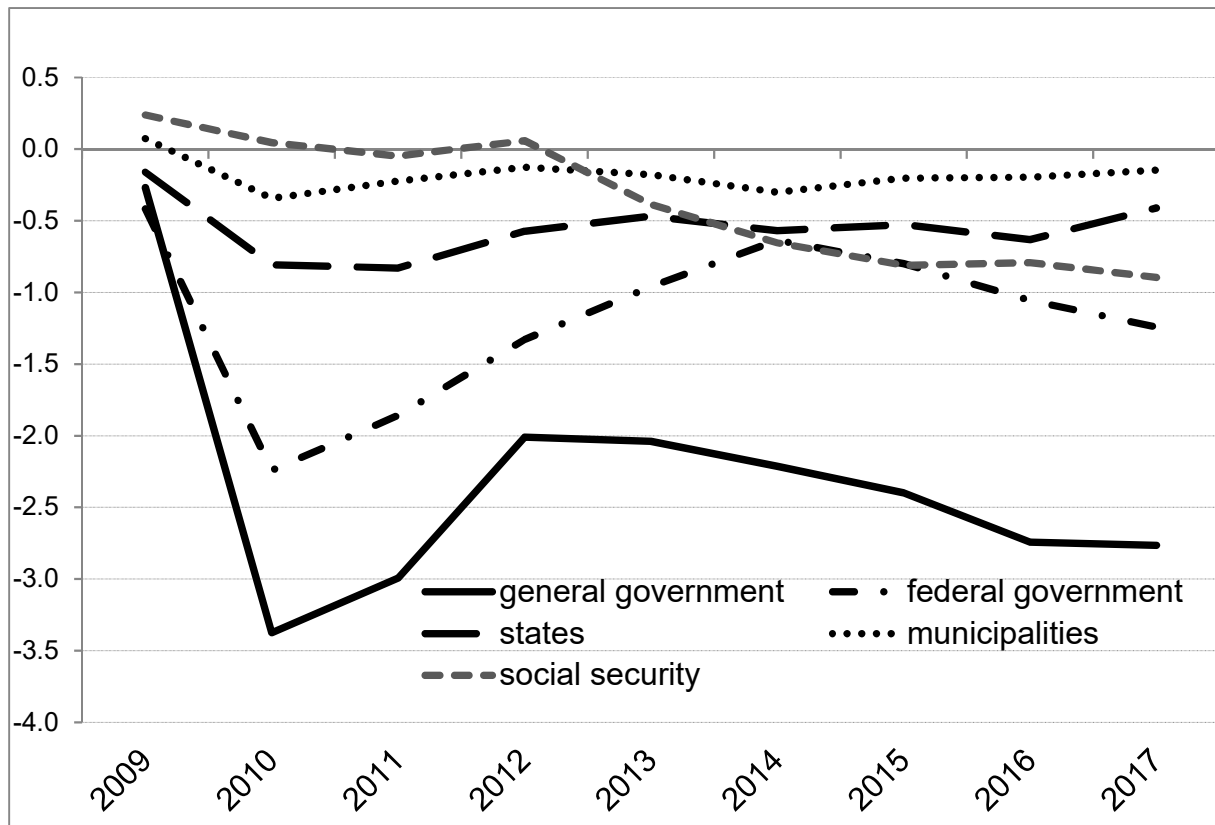
Sources: Destatis; BMWi/BMF (2018); authors' calculations.

Figure 11a: Scenario “euro area”: budget balance of the general government and its subsectors in % of GDP, 2009-2017



Sources: Destatis; authors' calculations.

Figure 11b: Scenario “euro area”: structural budget balance of the general government and its subsectors in % of potential GDP, 2009-2017



Sources: Destatis; BMWi/BMF (2018); authors' calculations.

From the counterfactual simulations we can conclude that without the favourable macroeconomic environment since 2010, neither the general government nor the federal government would be in such good shape in terms of their fiscal indicators. Instead the federal government – like many other governments in the euro area – would have struggled to comply both with the SGP and the German debt brake. Painful consolidation measures and spending cuts as observed in the years from 2002 until 2007 would have been very likely. They would have certainly had negative repercussions on the macroeconomic performance rendering the budget consolidation even more difficult. Without the blessing of a strong upswing Germany would hardly have become the fiscal role model for Europe and the German debt brake would not have become the blueprint for the European Fiscal Compact.

6. Conclusion

The analysis has shown that – unlike suggested by some – the German debt brake is not the cause of the successful budget consolidation in Germany since 2010. The improvement of the general government finances since 2010 was even smaller than in previous consolidation phases, although the debt brake was not yet in place then. Furthermore, the consolidation was supported by a favourable macroeconomic environment and surging revenues. The federal government's seemingly impressive structural consolidation achievement since 2010 is almost exclusively due to favourable circumstances (cyclical upswing and low interest rates) as well as one-off effects (reduction of transfers to the social security funds, phasing out of the stimulus packages). Obviously, the debt brake contributed very little to nothing to these favourable developments. Finally, neither the general government sector nor the federal government would be in such a good shape in terms of their fiscal indicators, had the economy evolved less favourably since 2010. Instead, the federal government – like many other governments in the euro area – would have struggled to comply with the SGP and the debt brake. Without the blessing of a strong upswing, Germany would hardly have become the fiscal role model for Europe and the German debt brake would not have become the blueprint for the European Fiscal Compact.

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