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Fiscal Consolidation in Germany

The German federal government's fiscal consolidation package, announced in June, is designed to permanently reduce the federal deficit to a new target level. This article uses a three-region version of the European Commission's QUEST model to gauge the impact of the package on Germany and the spillover to the rest of the euro area and the rest of the world.

The fiscal consolidation package that the German federal government announced on 7 June 2010 aims at cutting the federal deficit by around 1.3% of GDP by 2014. The package is mainly expenditure-based but also features additional revenues from new levies and taxes.

The consolidation package is a reaction to a deteriorating government balance (-3.5% in 2009 and projected[1] -5.0% in 2010 versus -1.6% of GDP in 2006) and growing gross public debt (73% in 2009 and projected 79% in 2010 versus 68% of GDP in 2006) in the context of the global economic and financial crisis.

On top of the consolidation pressure, the context of economic and financial crisis has brought questions of how to consolidate and when to start fiscal consolidation to the forefront of the policy debate:

- Should necessary fiscal consolidation focus on government expenditures or on revenues, e.g. by enforcing a sizable contribution from the financial sector to cover the public costs of the crisis?
- What is the appropriate moment to exit from fiscal stimulus and start consolidation? In particular, should the exit be postponed until banking and credit markets and interest rate policy function smoothly again?
- In the case of Germany, some commentators have even questioned the need for timely fiscal consolidation given the safe-asset status of the country's public debt and its already high external surplus.[2]

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This article uses a three-region version of the European Commission's QUEST model[3] to gauge the impact of the consolidation package on Germany and the spillover to the rest of the euro area (RoEA) and the rest of the world (RoW). The standard QUEST model is extended to distinguish between public sector and private sector employment and wages and to capture the impact of public employment and wage cost reduction on employment and wages in the private sector. Also, the household sector is disaggregated into financially constrained and unconstrained (Ricardian) households. Financially unconstrained households engage in financial markets and receive wage and transfer income, distributed profits as well as interest income from financial wealth. Financially constrained households are net debtors and only receive income from wages and transfers.

The fiscal consolidation package is designed to permanently reduce the budget deficit to a new target level. Additional fiscal space from the positive supply-side effects of certain expenditure cuts can be used in the scenario to reduce distortionary labour income taxes, but only after the year 2015. Before 2015, no tax and expenditure cuts or increases other than the consolidation measures are assumed.

The simulations show that the short-run impact of the consolidation measures is small, and the negative growth effect short-lived. In the medium/long run the effects are positive.

1 European Commission: European Economic Forecast - Spring 2010, European Economy 2/2010, Directorate General for Economic and Financial Affairs, Brussels 2010.
2 E.g. P. Krugman: Dealing with Chermany, New York Times, 11 June 2010. Against this view e.g. H.-W. Sinn: Why Germany should not listen to the US, VoxEU.org, 15 July 2010.
3 M. Ratto, W. Roeger, J. in't Veld: QUEST III: An estimated DSGE model of the euro area with fiscal and monetary policy, in: Economic Modelling, Vol. 26, No. 1, 2009, pp. 222-233.

Table 1
Consolidation Measures and Their Implementation in QUEST

	2011	2012	2013	2014	Implementation in QUEST
TOTAL (€ billion, year-on-year)	11.2	8.0	5.5	7.4	
Total, % of GDP	0.5	0.3	0.2	0.3	
Measures to be adopted				5.6	
Expenditure measures	5.9	5.5	5.5	1.8	
Labour market measures	4.3	2.0	2.4	1.5	
Reduced support to unemployed	2.0	2.0	1.0	–	Reduction of government employment
Abolition of allowances for long-term unemployed	0.2	–	–	–	–
Abolition of federal coverage of pension insurance contributions for the long-term unemployed	1.8	–	–	–	–
Discontinuation of compensation for certain transfers to pension insurance	0.3	–	-0.1	–	Negative transfer shock to non-liquidity-constrained households
Efficiency gains by job placement	–	–	1.5	1.5	Reduction of government employment
Social support measures	0.7	–	–	–	
Abolition of parental allowance for the long-term unemployed	0.4	–	–	–	Reduction of unemployment benefits
Reduced parental allowance	0.2	–	–	–	Reduction of unemployment benefits
Discontinuation of heating costs allowance	0.1	–	–	–	Reduction of unemployment benefits
Additional federal transfer to health-care insurance	-2.0	2.0	–	–	–
Defence measures	–	–	2.0	–	Reduction of government employment
Public sector measures	2.3	1.0	0.6	–	Reduction of public sector wage (2.5% in 2011) and government employment (2500 jobs per year)
Other measures	0.6	0.5	0.5	0.3	Reduction of government consumption (€0.1 billion in 2011 & 12, €0.2 billion in 2013)
Revenue measures	5.3	2.5	–	–	
Abolition of eco-tax subsidies	1.0	0.5	–	–	Lump-sum tax on Ricardian households
Introduction of an air traffic charge	1.0	–	–	–	Lump-sum tax on Ricardian households
Introduction of new tax measures aimed at nuclear energy sector	2.3	–	–	–	Lump-sum tax on Ricardian households
Higher dividend provided by the state-owned railway company	0.5	–	–	–	Lump-sum tax on Ricardian households
Introduction of new tax measures aimed at the banking sector as of 2012	–	2.0	–	–	Bank levy that raises financing costs of firms (60%) and households (40%)
Reintroduction of the tax authorities privilege by insolvencies	0.5	–	–	–	Lump-sum tax on Ricardian households

Consolidation Plan

The German consolidation package has both expenditure and revenue elements, but the emphasis is on lower government spending. €18.8 billion of the intended €32.1 billion deficit reduction by 2014 shall come from lower expenditure, versus €7.8 billion from additional government revenues. The source for €5.6 billion of the consolidation target in 2014 has yet to be specified (Table 1).[4]

Table 1 provides a breakdown of the consolidation plan[5] and of how the individual items on the list translate into

4 The measures in Table 1 are additive over time. Total deficit reduction of €11.2 billion in 2011, €8.0 billion in 2012, €5.5 billion in 2013 and €7.4 billion in 2014 means that by the end of 2014 the deficit shall be €32.1 billion below its level in 2010.

5 The Federal Ministry of Finance provides information on the package in German and English at: http://www.bundesfinanzministerium.de/nn_3378/DE/Wirtschaft__und__Verwaltung/Finanz__und__Wirtschaftspolitik/Bundeshaushalt/20100608-Ergebnisse-der-Sparklausur.html?__nnn=true.

fiscal shocks in our simulations. The items on the expenditure side predominantly take the character of lower government employment, government wages and unemployment benefits. In a first round, these measures reduce the disposable income of and the demand from liquidity-constrained households.

The measures also have a positive supply-side effect, since they increase the labour supply and reduce reservation wages in the private sector. The reduction of government consumption has a direct negative impact on agreggate demand but is also expected to reduce the future tax burden on labour.[6]

Most revenue-side items take the form of lump-sum taxes – equivalent to a reduction of lump-sum transfers – for the intertemporally optimising households that own firms and receive the firms' profits. In particular we assume that taxes imposed on the nuclear energy sector are non-distortive as they only tax rents accruing to firms from extending the time of operation of existing nuclear plants.

Lump-sum taxes affect the households' wealth without distorting their investment and consumption decisions. Only the planned bank levy is modelled as a distortionary measure that is passed on to firms and households, raises the latters' financing costs and leads to a fall in productive and housing investment. Based on the amount of outstanding bank credit, firms are assumed to pay 60% and households 40% of the €2 billion in extra revenue.

The consolidation package is split over four years, but frontloaded. 60% of the volume shall be implemented in 2011-12. Recent model-based analyses have emphasised that credible commitment to future expenditure cuts strengthens the multiplier of fiscal stabilisation in "normal" times when banking and financial markets work properly and monetary policy is not constrained.[7]

Fiscal expansion together with credible subsequent consolidation reduces the long-term financing needs and interest rates compared to fiscal expansion with no subsequent spending reversal. Credible consolidation plans should therefore limit the crowding-out effect of fiscal stimulus on private sector demand.[8]

Recent research that finds expenditure-driven household consolidation to show more success in permanently reducing government deficit and debt levels than revenue-based consolidation reinforces the case for the former.[9]

The case for expenditure-driven consolidation weakens with monetary policy at the zero interest rate bound. Announcing future spending cuts cannot further reduce real interest rates in such a situation. Expectations of lower future demand and falling prices together with fixed nominal interest rates may even increase real rates at the zero bound.[10]

At the zero bound, the role of expectations might even provide a rationale for revenue-based consolidation if and insofar as higher taxes and production costs in the future raise expected inflation, so that real interest rates fall despite a freeze of nominal rates at zero.

A balanced view on expenditure-driven consolidation should also consider the automatic stabilisation through social safety nets and their moderating impact on private demand and unemployment during the economic and financial crisis.

The upshot from the above discussion is that governments should not exit too early from fiscal stimulus in crisis times, but should make credible announcements that they will consolidate public finances when the worst of the crisis is over and monetary policy has regained room for action. The empirical evidence[11] on

6 Although details are limited, most savings on support to the unemployed are related to administration and training (Federal Labour Agency) and are therefore simulated as reductions in government employment. The planned abolitions of allowances for the long-tem unemployed and of the federal coverage of pension insurance contributions for the long-term unemployed are likely to shift expenditures from the federal to state budgets rather than to reduce public expenditure. They are therefore not included in the simulations. The foreseen changes in the federal transfer to health-care insurance net out over a two year horizon and are therefore also left out. The plan's "other measures" category includes the reduction of interest payments as debt levels recede. As this reduction is endogenous in the model, the simulations included only part of the "other measures" as a decline in government consumption.

7 W. Roeger, J. in't Veld: Fiscal stimulus and exit strategies in the EU: a model based analysis, European Commission, European Economy, Economic Papers, No. 426, 2010.

8 G. Corsetti, A. Meier, G. Müller: Fiscal stimulus with spending reversals, CEPR Discussion Paper, No. 7302, 2009. W. Roeger, J. in't Veld: Fiscal policy with credit constrained households, European Commission, European Economy, Economic Papers, No. 357, 2009.

9 A. Alesina, S. Ardagna: Large changes in fiscal policy: taxes versus spending, NBER Working Paper, No. 15438, 2009. The study does not distinguish between fiscal consolidations in normal times and at the zero lower bound, however.

10 G. Corsetti, K. Kuester, A. Meier, G. Müller: Debt consolidation and fiscal stabilization of deep recessions, in: American Economic Review, Vol. 100, No. 2, 2010, pp. 41-45.

11 M. Almunia, A. Bénétrix, B. Eichengreen, K. O'Rourke, G. Rua: From great depression to great credit crisis: similarities, differences and lessons, NBER Working Paper, No. 15524, 2009; G. Corsetti, A. Meier, G. Müller: What determines government spending multipliers?, 2010, http://www.newyorkfed.org/research/conference/2010/global/multipliers.pdf.

Table 2
Fiscal Consolidation and Unconstrained Monetary Policy

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	-0.23	-0.15	-0.20	-0.16	-0.09	-0.06	-0.04	-0.02	0.01	0.05	0.83
Value added in private sector	0.04	0.21	0.35	0.46	0.53	0.56	0.58	0.60	0.64	0.68	1.49
Employment	-0.05	0.02	-0.08	-0.05	0.03	0.06	0.07	0.09	0.13	0.18	1.06
Consumption	-0.25	-0.20	-0.17	-0.10	-0.03	0.01	0.04	0.08	0.13	0.19	1.38
Investment	-0.39	-0.52	-0.37	-0.17	0.01	0.13	0.22	0.30	0.38	0.47	1.46
Exports	0.37	0.66	0.85	0.96	1.00	1.02	1.02	1.02	1.03	1.05i	1.29
Imports	-0.36	-0.48	-0.54	-0.51	-0.45	-0.41	-0.37	-0.33	-0.29	-0.25	0.42
Real wages	-0.48	-0.63	-0.68	-0.65	-0.58	-0.50	-0.46	-0.44	-0.44	-0.45	-0.59
GDP price level	-0.17	-0.38	-0.54	-0.64	-0.69	-0.71	-0.72	-0.74	-0.76	-0.79	-1.30
CPI level	-0.10	-0.24	-0.35	-0.42	-0.46	-0.48	-0.50	-0.51	-0.53	-0.56	-1.02
Terms of trade	-0.21	-0.40	-0.53	-0.61	-0.64	-0.65	-0.65	-0.65	-0.65	-0.65	-0.78
Real effective exchange rate	0.29	0.55	0.73	0.84	0.88	0.89	0.89	0.88	0.88	0.88	1.04
Euro-Dollar EXR	0.14	0.16	0.17	0.17	0.16	0.15	0.14	0.12	0.10	0.08	-0.23
	Percentage-point deviation from baseline										
Real GDP growth	-0.23	0.08	-0.05	0.04	0.07	0.03	0.02	0.02	0.03	0.04	0.08
Nominal interest rate	0.02	0.02	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.03	-0.03	-0.05
Real interest rate	0.25	0.20	0.12	0.06	0.02	0.00	-0.01	0.00	0.00	0.00	0.01
GDP price inflation	-0.26	-0.19	-0.13	-0.08	-0.04	-0.02	-0.01	-0.02	-0.03	-0.03	-0.05
CPI inflation	-0.16	-0.13	-0.09	-0.05	-0.03	-0.02	-0.02	-0.02	-0.03	-0.03	-0.05
Labour income tax rate	0.00	0.00	0.00	0.00	0.00	0.02	0.01	-0.04	-0.12	-0.22	-2.07
Government debt to GDP	-0.01	-0.46	-1.04	-1.88	-2.89	-3.97	-5.13	-6.35	-7.60	-8.88	-21.13
Government balance to GDP	0.41	0.64	0.83	0.99	1.12	1.25	1.36	1.45	1.53	1.59	1.81
Government expenditure to GDP	-0.20	-0.24	-0.20	-0.21	-0.24	-0.25	-0.25	-0.26	-0.28	-0.29	-0.64
Government revenue to GDP	-0.05	-0.09	-0.13	-0.14	-0.14	-0.12	-0.12	-0.15	-0.20	-0.27	-1.45
Trade balance to GDP	0.18	0.26	0.30	0.30	0.29	0.27	0.26	0.25	0.24	0.23	0.03
Current account to GDP	0.19	0.28	0.33	0.35	0.35	0.35	0.35	0.36	0.36	0.37	0.31

a larger fiscal multiplier in episodes of financial crisis, i.e. when banking systems do not function normally and monetary policy is constrained by the zero bound, also implies a larger negative multiplier of fiscal consolidation in a constrained environment.

Whether the German consolidation package complies with the warning against premature exit from fiscal stimulus depends on whether the German and European economies have stabilised and monetary policy has normalised at the time when the package is implemented. The incremental approach of the package and the focus on expenditure reduction in principle comply with the above arguments on the appropriate design of consolidation.

The Impact in Germany

The consolidation package modeled in Table 1 achieves a lasting fiscal consolidation. The government deficit declines by 1.0% of GDP by 2014. The deviation from the deficit reduction target of 1.3% of GDP comes from the working of automatic stabilisers due to the fall in GDP and the exclusion of some items from the simulation.[12]

The measures improve the government balance and reduce public debt by 9% of GDP after 10 and 21% of GDP after 20 years.

12 See footnote 6.

Table 3
Fiscal Consolidation at the Zero Lower Bound

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	-0.26	-0.18	-0.22	-0.17	-0.09	-0.06	-0.04	-0.02	0.01	0.05	0.82
Value added in private sector	0.02	0.18	0.32	0.45	0.52	0.56	0.57	0.59	0.62	0.67	1.46
Employment	-0.08	-0.01	-0.10	-0.06	0.03	0.06	0.07	0.08	0.12	0.16	1.03
Consumption	-0.26	-0.23	-0.19	-0.11	-0.03	0.01	0.03	0.07	0.11	0.18	1.35
Investment	-0.43	-0.57	-0.41	-0.19	-0.01	0.12	0.21	0.29	0.37	0.45	1.44
Exports	0.33	0.62	0.82	0.94	0.99	1.01	1.01	1.01	1.02	1.03	1.28
Imports	-0.38	-0.51	-0.56	-0.53	-0.46	-0.41	-0.37	-0.34	-0.30	-0.26	0.41
Real wages	-0.49	-0.65	-0.70	-0.67	-0.58	-0.50	-0.45	-0.43	-0.42	-0.43	-0.58
GDP price level	-0.19	-0.43	-0.61	-0.72	-0.77	-0.80	-0.81	-0.83	-0.85	-0.89	-1.40
CPI level	-0.12	-0.30	-0.42	-0.50	-0.55	-0.57	-0.59	-0.61	-0.63	-0.66	-1.12
Terms of trade	-0.20	-0.39	-0.52	-0.61	-0.64	-0.65	-0.65	-0.64	-0.64	-0.65	-0.78
Real effective exchange rate	0.27	0.53	0.72	0.83	0.88	0.88	0.88	0.88	0.87	0.88	1.04
Euro-Dollar EXR	0.11	0.11	0.11	0.11	0.09	0.08	0.06	0.04	0.02	0.00	-0.32
	Percentage-point deviation from baseline										
Real GDP growth	-0.26	0.08	-0.04	0.06	0.07	0.03	0.02	0.02	0.03	0.04	0.08
Nominal interest rate	0.00	0.00	0.00	-0.01	-0.02	-0.02	-0.02	-0.03	-0.03	-0.03	-0.05
Real interest rate	0.27	0.20	0.13	0.06	0.01	0.00	-0.01	-0.01	0.00	0.00	0.01
GDP price inflation	-0.29	-0.22	-0.15	-0.09	-0.04	-0.02	-0.02	-0.02	-0.03	-0.03	-0.05
CPI inflation	-0.19	-0.16	-0.11	-0.06	-0.03	-0.02	-0.02	-0.02	-0.03	-0.03	-0.05
Labour income tax rate	0.00	0.00	0.00	0.00	0.00	0.02	0.02	-0.03	-0.10	-0.20	-2.03
Government debt to GDP	0.02	-0.40	-0.96	-1.79	-2.78	-3.86	-5.01	-6.21	-7.46	-8.73	-20.98
Government balance to GDP	0.40	0.63	0.81	0.97	1.11	1.24	1.35	1.44	1.51	1.58	1.81
Government expenditure to GDP	-0.19	-0.23	-0.19	-0.21	-0.24	-0.25	-0.25	-0.26	-0.27	-0.29	-0.64
Government revenue to GDP	-0.05	-0.09	-0.14	-0.15	-0.14	-0.12	-0.11	-0.14	-0.19	-0.25	-1.42
Trade balance to GDP	0.18	0.26	0.30	0.30	0.28	0.27	0.26	0.25	0.24	0.22	0.03
Current account to GDP	0.18	0.28	0.33	0.35	0.35	0.35	0.35	0.36	0.36	0.37	0.31

The consolidation has (moderate) positive growth effects in the medium to long run. Real output is 0.1% above the no-consolidation baseline after 10 years and 0.8% after 20.

The positive medium- and long-term effects of consolidation come with costs in the short to medium term. The impact on real GDP in Germany is negative for eight years, but these effects are relatively small. The average multiplier of the consolidation measures on real GDP is around 0.5 in the first year (2011) and drops to around 0.2 in 2014 (Table 2). This is similar to the multiplier reported for an across-the-board consolidation in the EU as a whole.[13]

There is a sharp contrast between aggregate GDP and value added in the private sector, which is above baseline from the onset. Aggregate GDP as defined in the national accounts consists of private sector value added and public sector wages times employment, and a reduction in public employment and wages has a direct impact on GDP. The public sector wage cut of 2.5% has a direct effect on GDP of almost 0.2%. This is a pure accounting effect on the definition of GDP and does not itself reflect a reduction in services provided. The negative impact on the public sector is partly compensated by the positive impact of the private sector, as employment is shifted. The reductions in public employment, public wages and reservation wages put downward pressure on real wages, and the resulting wage moderation leads to lower product prices and increases private employment. Germany's competitiveness improves and net exports increase as a

13 European Commission: Public Finances in EMU, European Economy 4/2010, Directorate General for Economic and Financial Affairs, Brussels 2010.

Table 4

Spillover from Fiscal Consolidation with Unconstrained Monetary Policy

Rest of euro area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	0.09	0.09	0.06	0.04	0.03	0.04	0.05	0.06	0.08	0.09	0.16
Value added in private sector	0.10	0.10	0.07	0.05	0.03	0.04	0.05	0.07	0.09	0.10	0.17
Employment	0.10	0.10	0.06	0.03	0.02	0.02	0.04	0.06	0.07	0.09	0.14
Consumption	0.13	0.18	0.17	0.15	0.14	0.14	0.16	0.18	0.19	0.21	0.28
Investment	0.18	0.29	0.30	0.28	0.27	0.27	0.28	0.30	0.31	0.33	0.35
Terms of trade	-0.03	0.07	0.13	0.16	0.18	0.18	0.18	0.17	0.17	0.16	0.18
Real effective exchange rate	0.01	-0.12	-0.20	-0.24	-0.26	-0.26	-0.25	-0.25	-0.24	-0.24	-0.26
	Percentage-point deviation from baseline										
Real GDP growth	0.09	0.00	-0.03	-0.02	-0.01	0.00	0.01	0.02	0.02	0.01	0.00
CPI inflation	0.09	0.05	0.02	0.00	-0.01	-0.02	-0.02	-0.02	-0.03	-0.03	-0.04
Nominal interest rate	0.02	0.02	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.03	-0.03	-0.04
Real interest rate	-0.08	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade balance to GDP	-0.03	-0.06	-0.06	-0.06	-0.06	-0.05	-0.05	-0.05	-0.05	-0.05	-0.02
Current account to GDP	-0.03	-0.06	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.08	-0.08	-0.08

Rest of the world	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.07
Value added in private sector	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.07
Employment	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.07
Consumption	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.10
Investment	0.01	0.02	0.03	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.12
Terms of trade	0.14	0.16	0.18	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.27
Real effective exchange rate	-0.16	-0.19	-0.22	-0.24	-0.25	-0.25	-0.26	-0.26	-0.26	-0.27	-0.33
	Percentage-point deviation from baseline										
Real GDP growth	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CPI inflation	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nominal interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Real interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade balance to GDP	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00
Current account to GDP	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01

consequence, which further improves the country's current account. In the context of intra-euro area current account imbalances, improving Germany's trade competitiveness increases the pressure on other euro area economies to follow with fiscal consolidation and structural reforms.[14]

Table 2 displays the results for fiscal consolidation in "normal" circumstances where monetary policy can accommodate the fall in public demand by reducing nominal interest rates. The monetary reaction is very small, however, given that the ECB reacts to euro area averages and that the simulations consider unilateral consolidation in Germany instead of coordinated consolidation across Europe. Because of the positive output effect and (moderate) inflationary pressure in the RoEA (Table 4), nominal interest rates even increase a

14 For an overview on consolidation plans in other EU countries, see e.g. P. Manasse: Budget cuts across Europe: Coordination or diktat? VoxEU.org, 24 July 2010; and P. Manasse: Budget cuts in Europe: The "virtuosi" and the "laggards", VoxEU.org, 26 July 2010.

Table 5
Spillover from Fiscal Consolidation at the Zero Lower Bound

Rest of euro area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	0.07	0.07	0.04	0.03	0.03	0.03	0.04	0.06	0.07	0.08	0.15
Value added in private sector	0.07	0.07	0.05	0.04	0.03	0.04	0.05	0.06	0.08	0.09	0.16
Employment	0.07	0.07	0.04	0.02	0.02	0.02	0.03	0.05	0.06	0.08	0.13
Consumption	0.11	0.15	0.15	0.14	0.13	0.14	0.15	0.17	0.18	0.20	0.26
Investment	0.14	0.23	0.26	0.26	0.26	0.27	0.28	0.29	0.30	0.31	0.34
Terms of trade	-0.01	0.08	0.13	0.16	0.18	0.18	0.18	0.17	0.17	0.17	0.18
Real effective exchange rate	-0.01	-0.13	-0.20	-0.24	-0.26	-0.26	-0.25	-0.25	-0.24	-0.24	-0.26
	Percentage-point deviation from baseline										
Real GDP growth	0.07	0.00	-0.02	-0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00
CPI inflation	0.06	0.03	0.01	0	-0.01	-0.02	-0.02	-0.03	-0.03	-0.03	-0.04
Nominal interest rate	0.00	0.00	0.00	-0.01	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03	-0.04
Real interest rate	-0.07	-0.04	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade balance to GDP	-0.03	-0.05	-0.06	-0.06	-0.06	-0.05	-0.05	-0.05	-0.05	-0.05	-0.02
Current account to GDP	-0.03	-0.06	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.08	-0.08	-0.08

Rest of the world	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2030
	Percentage deviation from baseline										
Real GDP	-0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.05
Value added in private sector	-0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.06
Employment	-0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.05
Consumption	0.01	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.09
Investment	0.00	0.01	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.10
Terms of trade	0.12	0.14	0.17	0.19	0.20	0.20	0.20	0.20	0.20	0.21	0.27
Real effective exchange rate	-0.14	-0.18	-0.21	-0.24	-0.25	-0.25	-0.25	-0.25	-0.26	-0.26	-0.33
	Percentage-point deviation from baseline										
Real GDP growth	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CPI inflation	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nominal interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Real interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade balance to GDP	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00
Current account to GDP	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01

bit. As producer and consumer prices decline in Germany, real interest rates rise slightly in the consolidation years. This amplifies the contraction and dampens the decline of the deficit-to-GDP and debt-to-GDP ratios.

The results for fiscal consolidation at the zero nominal interest rate bound are similar to those with unconstrained monetary policy, given the absence of (significant) interest rate cuts in the case of unilateral consolidation in Germany during 2011-14.[15] The zero bound has no qualitative and little quantitative impact on the results (Table 3). The real interest rate increases and real output contracts only little more than with unconstrained monetary policy.

15 The zero bound is implemented for the euro area and the rest of the world. Nominal interest rates cannot fall during the three-year period 2011-13.

Given the limited monetary response to fiscal consolidation in a single country inside EMU, the difference between fiscal consolidation in "normal times" and consolidation at the zero bound is less pronounced compared to the cases of monetary and fiscal policy at the country level or coordinated consolidation in the euro area.

Spillover Effects

Unilateral fiscal consolidation in Germany further increases the country's current account surplus and has negative trade spillover to the RoEA (Table 4).

The RoEA's trade balance and current account decline despite the euro devaluation that improves the export competitiveness of the euro area towards the rest of the world.

There is, however, positive spillover to real output in the RoEA, owing to the lower real interest rates that increase domestic consumption.

The trade spillover to the RoW is small but negative. The RoW's trade balance declines in response to the real effective appreciation. The reaction of output is slightly positive, however, as domestic demand in the RoW increases in reaction to the capital inflow implied by the deterioration of its current account.

Whether monetary policy is active (Table 4) or restricted by the zero bound (Table 5) has no qualitative and little quantitative impact on the spillover to the RoEA and the RoW. The result parallels the small impact of the zero bound in Germany itself. It is due to the very moderate reaction of euro area monetary policy to fiscal consolidation of the size of the German package. In either environment, unilateral fiscal consolidation in Germany does not improve current accounts in the RoEA, however, which emphasises the need for generalised consolidation and structural reforms that increase the competitiveness of euro area economies with external deficits.[16]

16 On the case for consolidation and structural reforms throughout the euro area instead of "symmetric" rebalancing see e.g. C. Wyplosz: Germany, current accounts and competitiveness, VoxEU.org, 31 March 2010.

Conclusion

This article presents simulation results of the economic impact of the German federal government's fiscal consolidation plans in Germany and spillover effects to the RoEA and the RoW. The simulations assume unilateral consolidation, i.e. they do not include a parallel implementation of similar packages in other euro area countries.

The main findings from the simulations are as follows:

- The plan achieves the objective of lasting fiscal consolidation. The package improves the government balance and reduces public debt by 9% of GDP after 10 years and 21% of GDP after 20.
- The measures have (moderate) positive growth effects in the medium to long run. Real output is 0.1% above the no-consolidation baseline after 10 years and 0.8% after 20 years.
- The positive long-run effects come with costs in the short to medium term. The impact of the consolidation on GDP is negative for 8 years, and turns positive thereafter. But the negative GDP effects are small and are mostly driven by pure accounting effects on the definition of GDP due the cuts in government wages. The average multiplier of consolidation measures on real GDP is around 0.5 in 2011, dropping to around 0.2 by 2014.
- The trade balance of the RoEA deteriorates given the lower demand from, and falling production costs in, Germany. However, the GDP spillover to the RoEA is slightly positive due to expected lower interest rates that result from an expected improvement in supply conditions in Germany, while contractionary demand effects become effective only in later years.
- The trade spillover to the RoW is slightly negative but there is a slightly positive GDP spillover effect, also driven by increasing domestic demand in the RoW.

Whether monetary policy is active or restricted by the zero bound has no qualitative and only some quantitative impact on key results. It must be stressed, however, that the negative trade spillovers to the RoEA are due to the fact that we are looking at a unilateral consolidation in Germany. If similar measures were taken in other euro area countries, the negative spillover would likely be eliminated. The results emphasise the need for consolidation and structural reforms in the RoEA to achieve rebalancing in the euro area.