The impact of the steep fall in oil prices and the euro depreciation on the expansion of Germany's current account surplus in 2014 and 2015

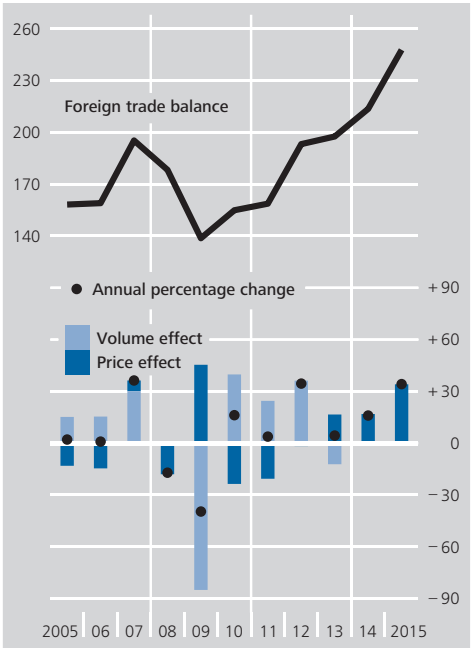
For many years now, the exceptionally high current account surplus has been at the centre of economic policy discussion concerning the possible existence of macroeconomic imbalances in Germany. Two key determinants can be held responsible for the renewed very sharp expansion of the surplus that has occurred over the past two years, these being the plummeting prices of internationally traded commodities (especially crude oil) and the depreciation of the euro exchange rate, both of which represent changes in the external environment. However, this period was also characterised by intensified domestic growth momentum, largely on the back of buoyant consumption activity. On the one hand, this was prompted by home-grown factors such as the positive labour market situation and marked wage growth. On the other hand, gains in real income also played a role in connection with the fall in oil prices. This illustrates that it is wise to heed how factors interact in this context.

The current account balance reflects a multitude of influences delivered via a range of different transmission channels. It makes analytical sense to quantify individual aspects, not least in terms of evaluating the magnitude and timing of these effects. At the same time, such information should be considered in the overall context and it is useful when making an assessment to gauge whether any changes in the determinants are of a temporary or permanent nature. From a theoretical perspective, temporary shocks should not permanently affect the size of the current account balance.[1]

An initial descriptive insight can be obtained from breaking down changes in the German foreign trade balance into price and volume effects. While terms-of-trade effects do not seem to diminish or expand the surplus in the long term, mathematically the increase in the foreign trade balance over the past two years can be attributed almost entirely to ongoing improvements in the real terms of trade. Moreover, in macroeconomic terms, price effects have consistently favoured additional net revenue from foreign trade activity during the past three years. Conversely, in terms of volume, allowance may have been made for a

Price and volume effects on the German foreign trade balance*

€ billion



Source of unadjusted figures: Federal Statistical Office.
* Decomposed using the Shapley-Siegel index.
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1 See M Obstfeld and K Rogoff (1995), The intertemporal approach to the current account, in G M Grossman and K Rogoff (eds), Handbook of International Economics, Edition 1, Vol 3, Chapter 34, pp 1731-1799.

small decline in the German foreign trade balance.

Simulations using the Bundesbank's macroeconometric model go one step further.[2] Here, it is possible to quantify the individual contributions of the drop in oil prices and the euro depreciation to the change in the German surplus on the basis of cross-border trade in goods and services, taking account of price transmission mechanisms and the consequences for the domestic economy. To this end, actual developments are compared with scenarios where from mid-2014 onwards crude oil prices and exchange rates are extrapolated in line with that factor's average level over the previous six quarters.

Up to and including the second quarter of 2014, crude oil had been trading at a relatively constant price level of around US$110 per barrel (Brent crude). During the course of the subsequent drop in prices, which was mainly fuelled by increased production, crude oil prices declined by just under 30% by the fourth quarter of 2014 and by a total of 60% by the final quarter of 2015, compared with their starting level. Meanwhile, given the expectations of a continued accommodative monetary policy stance and the measures decided by the ECB Governing Council in December 2014, the euro depreciated sharply, both in bilateral terms against the US dollar and in nominal effective terms.[3] Starting at a rate of US$1.3 for one euro, the bilateral exchange rate sank by more than 5% by the end of 2014, and by just under 20% by the end of 2015, not least on account of the sharp depreciation in the first quarter of that year. Measured against the currencies of the euro area's 19 most important trading partners, the euro lost just under 10% of its value by the end of 2015.

According to the results of the simulation calculations, the two examined factors actually only played a fairly minor role in the rise in the current account surplus from 6¾% to 7¼% of gross domestic product (GDP) in 2014. Mathematically, the contribution made to this increase by falling oil prices taken in isolation was one-tenth of a percentage point. Compared with the outcome of the decomposition, aside from the broader reference to goods and services flows, it is noteworthy that the calculations made for the simulations did not factor in the effects of the fall in the price of non-energy-generating commodities, which was also substantial.[4] Bearing in mind the time lags that arise with exchange rate changes, it is in fact hardly surprising that the depreciation of the euro had no significant impact on the expansion of the current account balance in 2014.

By contrast, in 2015 the two external factors in question had a strong expansionary effect overall, with falling oil prices making a contribution of ¾ of a percentage point and the euro depreciation ¼ of a percentage point to the rise in the current account balance from a level of 7¼% to 8½% of GDP. First and foremost, falling oil prices lead to cheaper oil imports and are less inclined to boost the size of demand as German energy imports exhibit a relatively small degree of price elasticity.[5] On the one

2 The macroeconometric model is a key instrument for generating the projection baseline and is used for accompanying simulation calculations. It is a traditional macro model with Keynesian properties in the short term and neoclassical properties in the long term. The estimates of the behavioural equations are updated on the basis of seasonally adjusted quarterly data at six-month intervals.
3 Strictly speaking, the euro had already depreciated slightly in the second quarter of 2014. To aid comparison, the hypothetical scenarios both for the price of oil and for the exchange rate are analysed on a uniform basis from the third quarter of 2014 onwards.
4 This is also indicated by evidence that only one-fifth of the improvement in the real terms of trade witnessed in 2014 can be attributed to the modelled shocks.
5 In the Bundesbank's macro model, German energy imports are estimated as having a price elasticity of 0.2 to 0.3.

Impact of falling oil prices and the euro depreciation since mid-2014 on key external indicators

Indicator	Year	Change[2]	Simulated impact of the modelled external factors[1]		
			Total	Falling oil prices	Euro depreciation
Current account balance as a percentage of GDP	2014	0.6	0.1	0.1	0.0
	2015	1.2	1.0	0.7	0.3
Real terms of trade[3]	2014	1.5	0.3	0.5	– 0.2
	2015	2.7	0.8	2.5	– 1.7
Exports (price-adjusted)[3]	2014	4.0	0.1	0.0	0.0
	2015	5.4	1.6	0.3	1.3
Imports (price-adjusted)[3]	2014	3.7	0.0	0.1	– 0.1
	2015	5.8	– 0.1	0.7	– 0.8

1 In percentage points. **2** In percentage points for the current account balance (as a percentage of GDP), but otherwise as a percentage. **3** Goods and services (national accounts data).

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hand, the depreciation of the euro stimulates exports. On the other hand, it results in import substitution and, according to the simulation findings for 2015, the restraining influence of this substitution virtually offsets the import-augmenting effect of the additionally boosted domestic economic activity caused by lower crude oil prices. Beside the direct effects on German external trade, account is also taken of spillover effects arising from the stimulation of exports in other euro-area countries. These effects accounted for just over one-tenth of the estimated contribution of the euro depreciation in 2015.

The results are consistent with comparable simulations conducted by the European Commission.[6] Nevertheless, there are some uncertainties that merit consideration. First, the estimates depend on the model specification. In the case of the oil price simulation, for instance, account is taken of the fact that, since the mineral oil tax is charged as a volume-based tax, the effects of oil price changes hinge on the starting price. Conversely, no attention is paid to the originally non-linear effects of the oil price on macroeconomic activity, which would seem likely, especially given the magnitude of the shock. With respect to the shock to the nominal effective euro exchange rate, it should be noted that the extent of currency depreciation can vary depending on the size of the group of countries under examination. The estimated contribution of the euro depreciation is therefore likely to be somewhat smaller when compared with the currencies of Germany's 39 most important trading partners.

Second, the model simulations present the effects of isolated shocks, ie none of the other model-exogenous variables react to changes in the external setting. In this context, the fact that, in particular, no account is taken of any interaction between falling oil prices or the euro depreciation and the expansion of German exporters' sales markets outside the euro area is no major shortcoming in view of the short simulation period under examination. Greater caution is warranted when interpreting the results for the current year and beyond. Nevertheless, it is likely that the effects of the exchange rate movements had not yet had their full impact by the end of 2015.

6 See European Commission, Oil price and exchange rate effects on the German current account balance, in Country report Germany 2016, Including an in-depth review on the prevention and correction of macroeconomic imbalances, Commission Staff Working Document, 26 February 2016, pp 22-23.