

Understanding Germany's current account surplus

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Paper presented to the FMM annual conference

Berlin 2017

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Abstract

The paper analyses the high German current account surplus and its emergence since 1999. The surplus is unique in Germany's economic history, and it is also unique in international comparison with medium-size or large economies. The surplus is the biggest on the globe in absolute terms. Various analyses in the literature differ in the range from utmost admiration and considering Germany a model for other countries to harsh criticisms with grave hazards for the European Monetary Union and the world economy. In this paper, the surplus is analysed as a structural or chronic one with a strong tendency to grow further. Growth of exports exceeds persistently the growth of imports; the gap tends to grow explosively if disruptive shocks remain absent. Traditional stabilisers, especially the real exchange rate, do not seem to be capable to correct the imbalance. Path dependency grounded in the economic structure of the economy, in the capital stock and the human capital, seemingly geared to exports and "national competitiveness" show the symptoms of a new mercantilism. Since there is no stable equilibrium for current accounts in the monetary union and under a regime of global capital mobility, institutional rules and policies have to replace what markets cannot achieve. China's amazing reversal in the current account surplus from 10 to 2% of GDP in the short period 2007-2011 shows the right direction, even though the countries differ in many aspects markedly.

0. Introduction

Current account imbalances are one of the key problems of the European Monetary Union (EMU) and the entire EU. The EMU was divided in a surplus bloc headed by Germany and a deficit bloc which improved current account balances (CAB) recently to more or less zero. Yet, the entire EMU faces an unprecedented surplus, driven mainly by Germany (around 60%), Netherlands, Ireland and Luxembourg. The spread between top and low balances of members, as a share of GDP, is for many above eight percentage points (ppts), ranging from -5.6% (Cyprus) to France (-0.9%) to Germany with 8.3%, and the median at 1.8% (AMECO, for 2016). Germany entered the EMU 1999 with a deficit of -1.7%, and moved by 10 ppts to its peak of 8.3% in 2016. It was not a continuous move, but a clear trend upward, unprecedented in Germany's history (see graph A9 in the appendix) and unique in international comparison. China pushed its surplus from 1.9% to 10.3% in the short period 2000-2005 but dropped in 2016 to the old level of 2000, a full turnaround (see graph A1).

When addressing the current account imbalances, first and foremost we have to understand their genesis, in particular Germany's surplus. Much has been written about it, but opinions differ strongly. The other smaller surplus countries in the EMU are out of the focus in this paper. Here we concentrate firstly on the driving forces of the rise of the German surplus and investigate whether it is a "structural" or an "accidental surplus", resulting from a series of adverse shocks with a tendency to moderate in the near future. In this context we want to solve the riddle why the dynamics of imports are so much weaker than the one for exports. Secondly, after consulting theories on determinants of balance of payments we present a simple projection of the surplus for the period 2016-2026 and look at potential market-driven stabilisers for rebalancing. Our main proposition is that the surplus tends to grow further and that mechanisms for self-rebalancing are weak. This diagnosis of "super-competitiveness" is an alarming finding. Thirdly, we discuss whether and in what ways the surplus is problematic. Most German authors discussing the issue deny that the (present) surplus deserves big concern, mainly because it is assumed to return to close or below the EU red line of 6%, as prescribed in the "Macroeconomic Imbalance Procedure" (MIP). Besides this, there is not much clarity what the problems precisely are. Opinions range from "much fuss about nothing" to existential risks for the functioning of the monetary union. Fourthly, we want to investigate what the contribution of the surplus countries for rebalancing could be so that a more symmetric approach with more emphasis on the surplus makers may be commendable, or even asymmetric emphasis on the surplus countries.

We proceed as follows. In chapter 1, we provide a descriptive empirical overview on Germany's surplus. Chapter 2 looks at different analytical approaches regarding balance of payments (BoP) imbalances. We discuss the usual identities of the BoP, interpret them and turn to the Kaldorian approach of investigating the determinants of exports and imports, based on "Thirlwall's Law". Chapter 3 provides more evidence on national saving relative to domestic investment, as determinants of the current account, and analyses Germany's strength in exports and constraining imports. Based on the analysis, we calculate a simple projection of the trade surplus performance of Germany for the period 2016-26. In this vein we discuss in chapter 5 the meaning of "national competitiveness" or "competitiveness of exports", criticised by Krugman as "dangerous obsession". Chapter 6 concludes.

1. Germany's rising surplus – overview on key empirical features

In 2016 Germany's current account surplus (CAS) is the highest on the globe, viz. 8.3% of GDP (measured in Euro). Germany is the 4th biggest economy in the world (counting the GDP in current prices). In terms of the absolute value of the surplus, number 2 and 3 are China and Japan, both around one third less than Germany's. The latter is roughly 20% of all surpluses held globally, and therefore also of 20% of all deficits. The next biggest surplus makers are Korea, Switzerland, Netherlands and Taiwan whose combined surplus is only a bit larger than Germany's (data from WDI 2017).

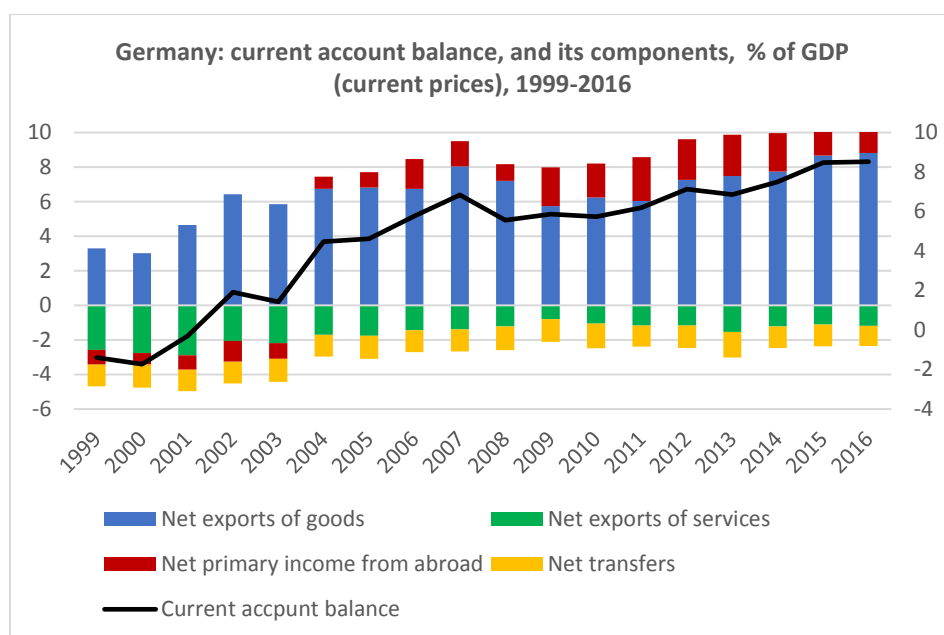
The German surplus emerged from a small deficit of -1.7% 1999, the birth of the EMU, to balance in 2001, reached then 6.8% (2008) before the financial crisis during which it dropped somewhat and reached then its record peak, so far, in 2016 (graph 1). Hence there are four phases, the short period

1999-2001, the rise by 6.8 ppts 2002-2008, after the subsequent fall in 2009 by 1.2 ppts came another rise by 2.9 ppts 2010-2016. While most of the surplus 2002-2008 occurred against other EMU and EU members which fell in strong deficits, the rise after 2009 came about with a switch toward surplus with extra EMU countries, especially the US, apart from UK after the demise of the Pound Sterling (graph 2), hence despite appreciation of the Euro against the Pound.

Current account balances comprise the trade balance, which accounts for Germany in 2016 7.6% of GDP, and the difference of the net income balance and the net transfer balance with the rest of the world, which rose to 1.7% of GDP. The net income balance results mainly out of net property income from abroad (profits, interest, dividends) which reflects the income from net assets held abroad. This component rises the longer the trade surplus persists and the higher the latter is. Even a constant trade balance would lead to rising net incomes from abroad and hence a rise in the current account. The net income balance reflects the high net international investment position (NIIP) of Germany's wealth owners (including central bank reserves), which rose from around zero per cent of GDP to 48.7% in 2015 (EC 2017), thus turning other countries with long standing current account deficits into ever increasing net debtor countries (see below). The accounting counterpart of the CAS is – according to the rationale of the BoP accounting system – the net capital exports of Germany, meaning rising foreign assets held by German residents relative to Germany's liabilities owed to abroad. In other words, without the parallel capital exports the CAS could not exist.

Germany has long-standing deficits in the trade of services, but the deficit trends to shrinking. Net transfers, like government contributions to NATO or EU or development cooperation, are negative and have remained almost constant as a share of GDP (around 1.2%).

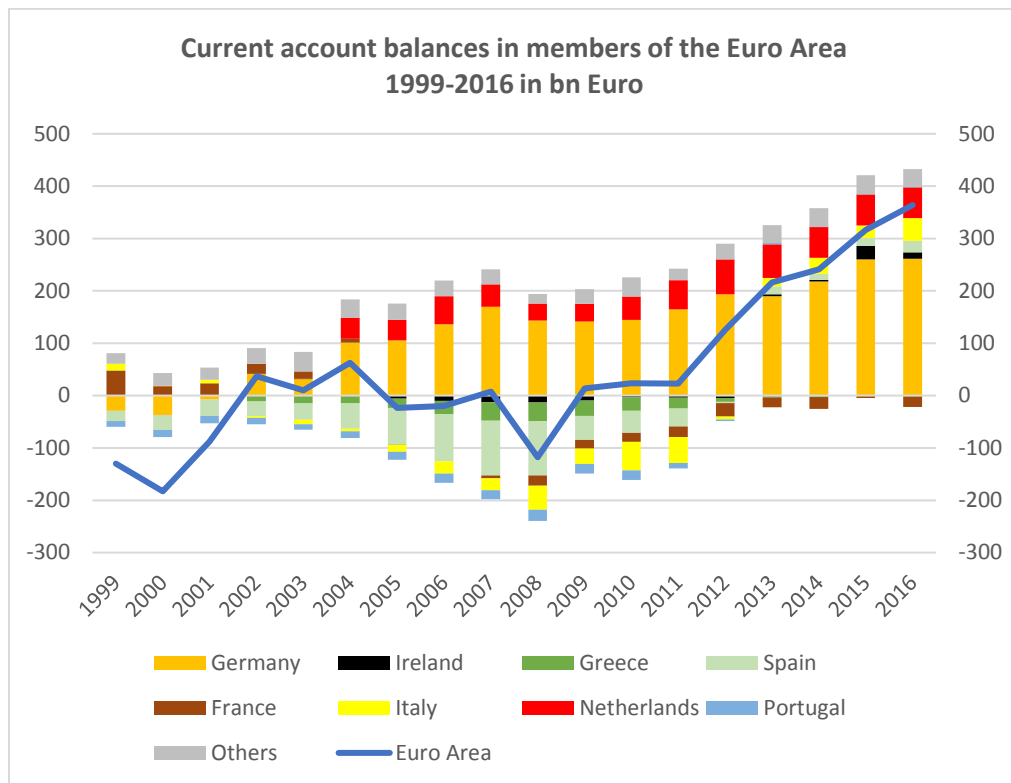
Graph 1



Source: AMECO

Germany's surplus grew in a surplus bloc with Netherlands, Luxembourg and Ireland and a few others, recently joined by Italy. Yet Germany is the elephant in this group. Until 2008, the bloc surplus was mirrored by the ballooning deficits, led by Spain, apart from Italy, Greece and Portugal. Since 2007, France joined the Mediterranean neighbours. After the financial crisis, the deficits shrank and moved to balance or slight surplus, but the surplus bloc moved upward too so that the EMU-internal imbalance remained in the form of differential surpluses, but against the rest of the world, mostly to the US and UK. EMU's surplus reached 3.5% of GDP, a huge absolute amount with corresponding deficits spread over all continents (graph 2).

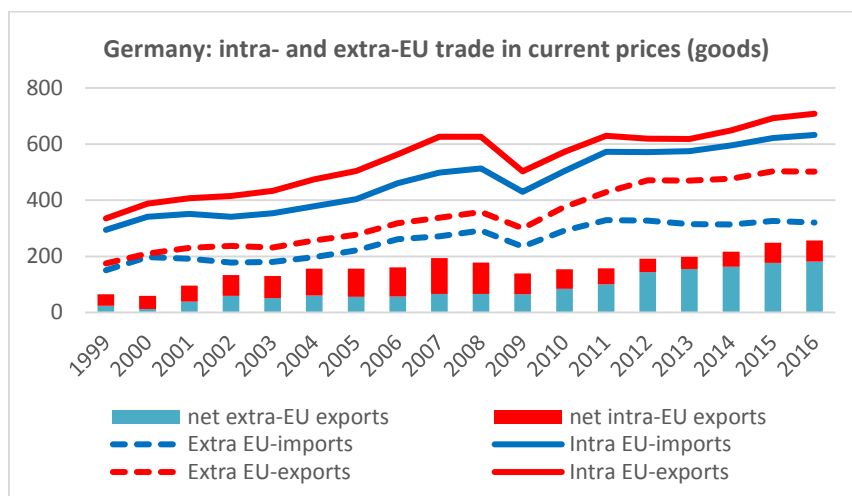
Graph 2



Source: AMECO

Yet, Germany remained a strong surplus country against most other EMU partners (graph 3), although the surplus shrank somewhat- temporarily – after the financial crisis. The main surplus-increase since then came against extra EU-countries (data only for goods). The UK and the US are the biggest bilateral deficit countries against Germany, accounting each for almost 20% of the German surplus (without services). Among the EU, Germany has the biggest bilateral surplus against France, and France's deficit is mainly a bilateral one with Germany. For France, the bilateral deficit with Germany makes up 1.5% of its GDP (again without services).

Graph 3

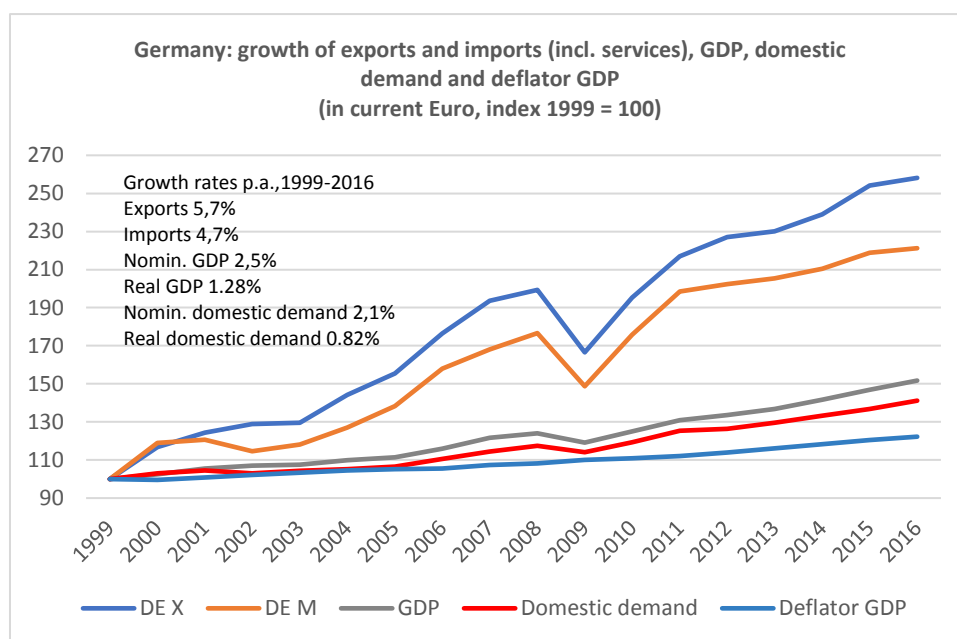


Source: AMECO

Since 2001, Germany's exports of goods and services grew – in nominal values – continuously stronger than its imports (graph 4), except in 2009 when exports were hit more than imports. In the whole

period 1999-2016, exports grew by 5.7% p.a., imports by 4.7%. The wedge between exports and imports increases in absolute terms continuously. As the trade and current account balance are expressed in nominal terms and related to the nominal GDP, the ratio is increasing also by low growth of nominal GDP, based on both low real GDP growth and below-target inflation (1.2% p.a. GDP deflator). Nominal domestic demand grew only by 2.1% p.a., and real domestic demand by not more 0.8% p.a. Low GDP and especially domestic demand growth dampened imports, while exports flourished alongside comparatively high world exports growth. Around one third of Germany's real GDP growth was induced by the growth trade surplus, the rest by domestic demand. The low domestic demand trend came about despite only a small drop during the financial crisis and despite growth picking up after the crisis.

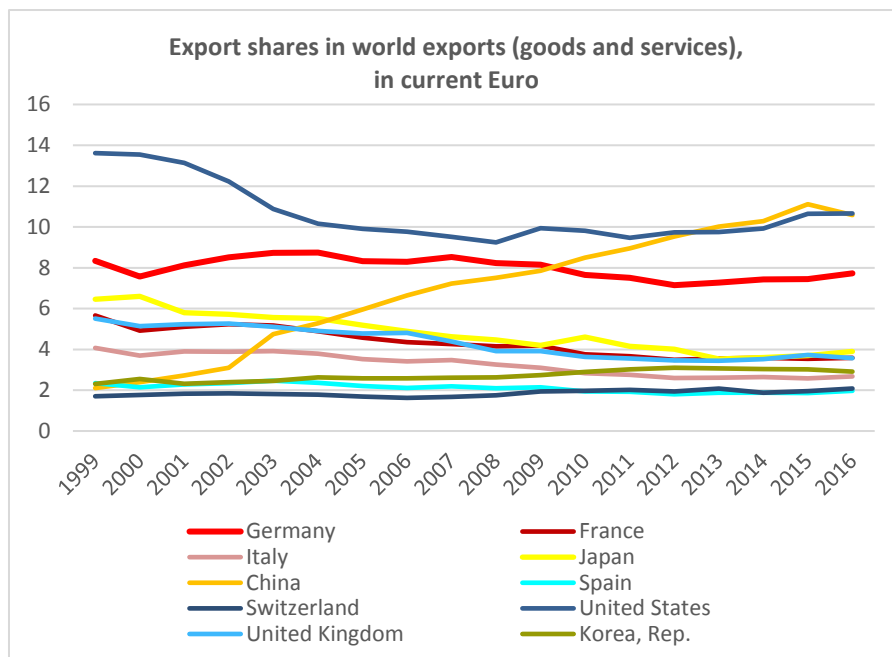
Graph 4



Source: AMECO

Germany managed to keep its share of exports in world exports almost constant (graph 5) since 1999, but hovered between 7.1% (2012) and 8.7% (2004). Note that here intra-EU trade is included. The big losers in this period were Japan, US, UK and France, shrinking their shares by 2-3 ppts. China increased its share by 8 ppts, a stellar success, catching up with the US, and Korea gained a bit, like Switzerland. Germany could stand its ground against China, the only major OECD country, besides the smaller ones, headed by Korea, Switzerland, Netherlands and a few more. Note that the data do not change if we calculate the shares in US\$. If we look at export shares in constant prices, the comparisons shows fluctuations due to terms-of-trade changes. Roughly spoken, terms of trade deteriorated for Germany and other OECD countries somewhat until the financial crisis and reverted afterwards close to the initial values. For the long haul over this period terms of trade played – for Germany – a negligible role.

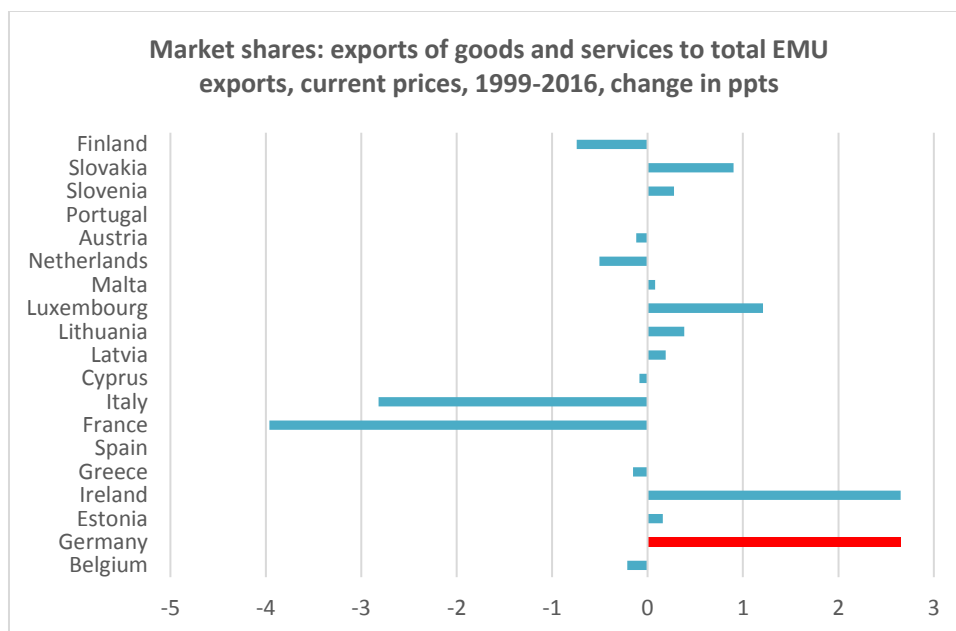
Graph 5



Source: AMECO

The reshuffling of market shares among EMU members (graph 6) was and still is dramatic. France and Italy lost 4.0 and 2.8 ppts, respectively, of their market shares in total EMU exports (intra and extra) which they held in 1999, while Germany increased its already big share by 2.8 ppts (also Ireland, Luxembourg and Slovenia, yet in absolute terms small increases compared to Germany).

Graph 6



Source: AMECO

The dramatic changes came with quite divergent structural changes in the sector composition of the member states. The exports/GDP ratio (see table, first column) rose by Germany (and Luxembourg) by 70%, reaching in Germany 46% in 2016, in France, Italy and Spain it rose little and stood around 30% in 2016. This change is paralleled by Germany's increase in manufacturing (value-added as share of GDP), while in France the share shrank by 30% so that the manufacturing in % of GDP stands almost at half of the value which Germany has, namely almost 23% in 2016. Italy and Spain also deindustrialised,

like others too, but not as much as France did. Of course, this raises the question whether Germany over-industrialised and others overly deindustrialised, similar to UK and US.

Table 1: Change of exports- and manufacturing-GDP-ratios in EMU 1999-2016

	Change of ex- port/GDP ratio, % (ranked top-down)	Exports/GDP ra- tio, %	Change of ratio manufacturing/GDP, %	manufacturing value added /GDP, %
	1999-2016	2016	1999-2016	2016
Luxembourg	74.2	228.8	-48.6	5.5
Germany	70.2	46	1.3	22.6
Portugal	52.1	40.3	-24	13.6
Greece	49.7	30.1	-7.9	9.8
Latvia	47.4	58	-18	12.5
Ireland	38.3	119.9	38.4	36.7
Netherlands	33.8	80.6	-22.6	12
Austria	32.4	52.3	-7.4	18.7
Belgium	32.0	84.8	-26.9	14.2
Italy	29.0	30	-18	10.1
Spain	25.3	33.1	-21.3	14.1
France	14.6	29.5	-29.6	12
Finland	-6.0	35.4	-36.8	16.6

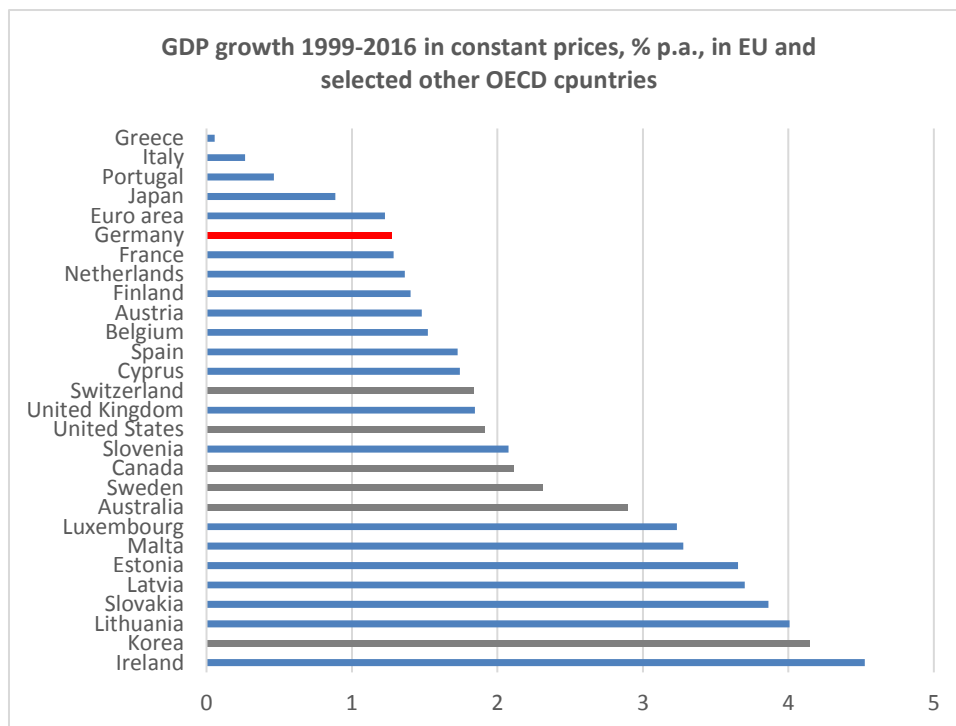
Source: WDI

Germany exports mainly investment and intermediate goods (see graph A2) and improved in both fields strongly since 1999. In a more detailed sectorial view (graph A A3), the bulk of exports of goods rests on automotive and machinery industry, to a lesser degree on chemical and pharmaceutical products. All these sectors contributed strongly to the rise of the trade surplus, while also a slight surplus was achieved in consumer goods. Sectoral deficits accrue only in agricultural products and energy, hence in primary goods, apart from a small slice in “others”). The energy deficit rose until 2008 with the rise of commodity price and shrank with their fall afterwards, with little change in 2016 compared to 1999. One can conclude that Germany has almost reached autarchy in trade with manufactured goods if we ignore intra-sectorial trade. This feature reflects Germany’s broad-based diversification of manufactured exports.

Regarding changes in the regional structure of net exports, the bulk of increased net exports since 1999 came from EU countries (graph A4), to a lesser extent from net export vis à vis other continents. However, the net exports of goods increased regarding all other continents, including Asia, i.e. against export-led emerging market economies, in strong contrast to the US and other OECD countries. The list of countries with a trade surplus with Germany has become very short. Since the deficit services shrank too, the feature mentioned become more pronounced.

The performance of the ratio of exports to GDP depends, of course, also on nominal and real GDP growth which in turn is a strong determinant of imports. Germany ranks amongst the lowest growing OECD countries in the period analysed (graph 7), with 1.3% p.a. only 0.4 ppts better than Japan, but far below US and UK or Sweden. With the low inflation nominal GDP growth is even slower. Germany was – in the long trend 1999-2016 – a low growth-low inflation economy, and in this way a contributor to deflationary risks in the EU and the EMU Note however, that Germany’s real GDP per capita growth was not much less than in the US, due to lower population growth.

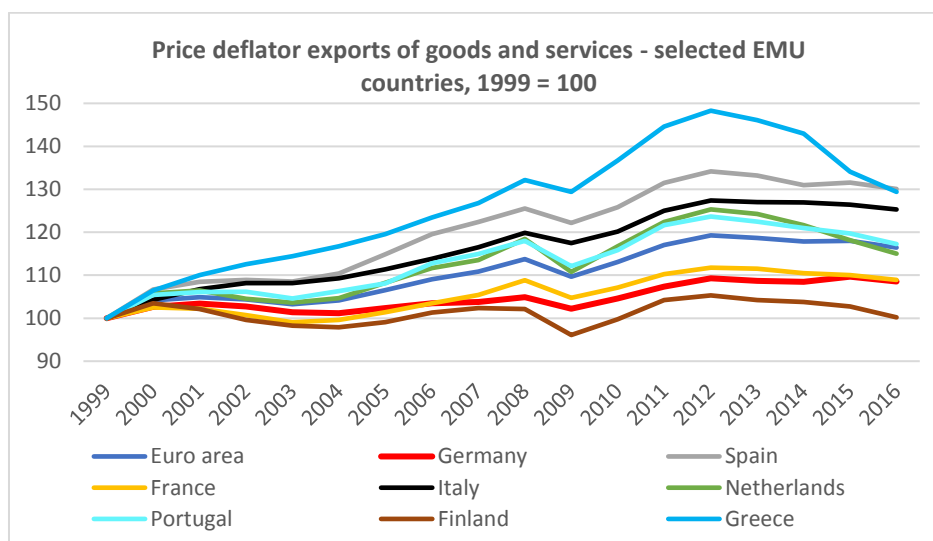
Graph 7



Source: AMECO

It is often held that Germany's competitiveness rests mainly on non-price competition on export markets. This diagnosis is not in line with evidence (graph 8). German export price inflation had always be much below most other EMU members. The price index for exports of goods and services shows a huge divergence in EMU, similar to consumer prices, until 2012. Then the price level fell in most countries while it picked up slightly in Germany. It is very clear that parallel export price deflation is not conducive to rebalancing of in deficit countries. Yet, the price level divergence between Germany and several other member states is by far not abandoned (up to 20 ppts in 2016). It is noteworthy observing that France and Germany had followed a very similar track in export prices despite a huge difference in export performance. Germany's below-average price level amongst EMU neighbours added to competitiveness, hence there is no either-or of price and non-price competition, it is rather a mix of both. Germany's exporters were (are) capable to play on both instruments simultaneously.

Graph 8

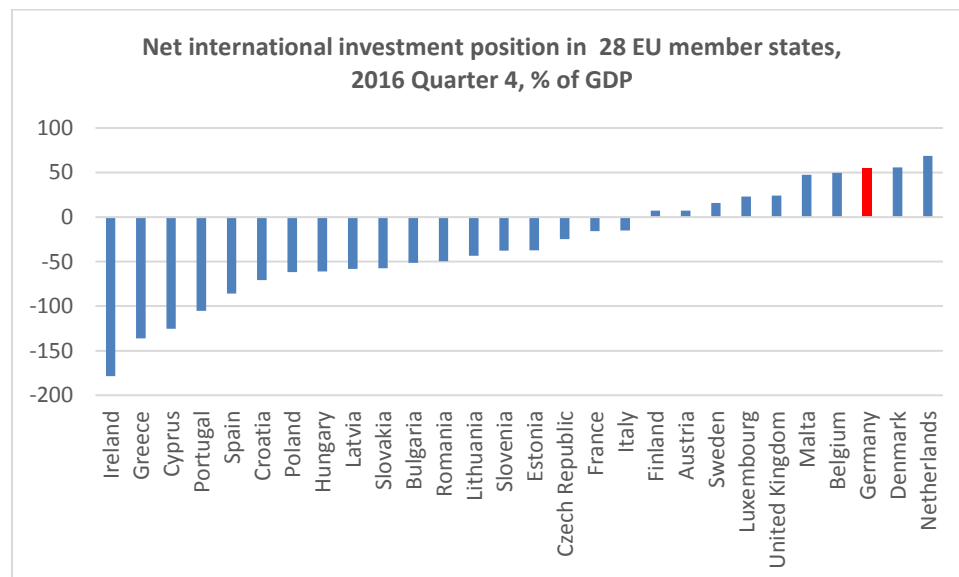


Source: AMECO

The Net International Investment Position (NIIP) of a country reflects the result of long-standing current account balances, counted as stocks (see graph 9). Together with Netherlands and Denmark Germany ranks on top of the hierarchy within the EU, with 10 members in positive and 18 in negative territory. 15 of the latter have reached by the end of 2016 a net debtor position below the threshold of -35% of GDP set by the MIP scoreboard. Ireland, Greece, Cyprus and Portugal rank at the bottom with above 100% of GDP, but also countries like Spain rank badly with 86%. Germany's net creditor position would be much higher if all current account surpluses since 2001 were cumulated; due to mark losses on financial markets the pay-off of the creditor position shows actually a rather poor performance.

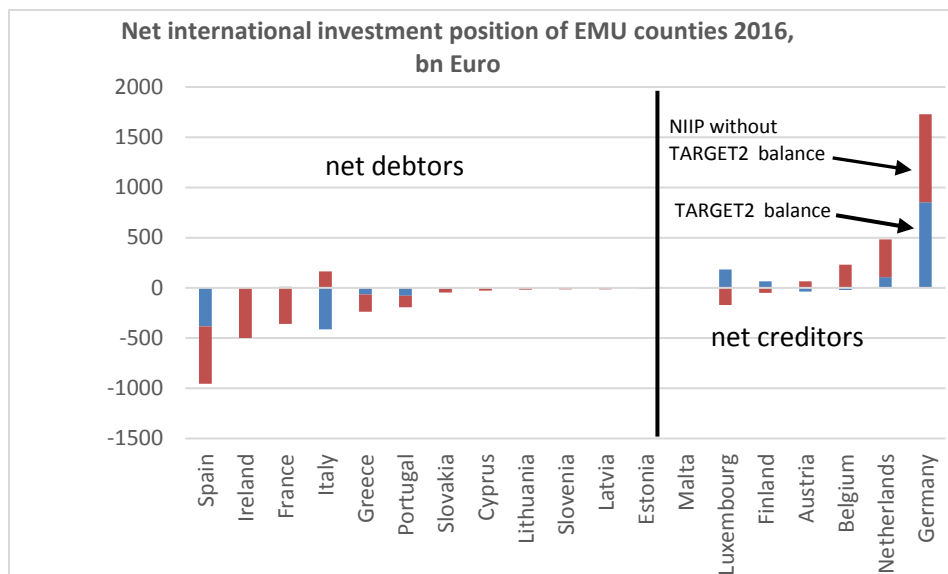
If the NIIP is analysed in absolute terms in billion Euro, Germany is the giant creditor in the EU, dwarfing all others (graph 10). However, almost half of the position for Germany is TARGET2 against the ECB, almost unremunerated due to low policy interest rates of the ECB. All TARGET2 balances cancel out. With a separate currency, Germany would have had a much higher NIIP, and the debtor countries a much worse NIIP. Spain's net debt, by far the biggest among the net debtor member states, amounts to 55% of the German surplus (including TARGET2 balances). Note that this does not mean that Germany is always the main creditor of the debtor nations shown in graph 10. Countries have liabilities and assets against many countries outside EU. Bilateral trade imbalances do not match always their bilateral financial flows since other countries may be involved in the complex chains of financial flows. Despite this, creditor countries are in a privileged situation concerning their power in financial relations, making other countries, sovereigns and private entities, financially dependent. The creditors decide on "sudden withdrawal" and on roll-over of maturing debt, on risk evaluation and conditions and terms for offering finance. On the one hand they have more pull than their debtors, on the others they may also depend on their debtors. In the situations of large-scale financial stress, debtors and creditors sit in the same boat.

Graph 9



Source: Eurostat

Graph 10



Source: Eurostat, TARGET2 balances from 8/2017, ECB Note: values for small countries not visible in the graph

Graph A5 shows the performance of the NIIP since the start of the Euro with a continuous increase for Germany and some other surplus countries and the downward movement for the deficit group, with France and Italy in the middle with a NIIP around zero.

Before we turn briefly to the causes of the increased surplus, we look at the analytical categories and macroeconomic interdependencies needed for the causal analysis.

2. Understanding the surplus – three analytical approaches

In this section we discuss three approaches to analyse and evaluate current account imbalances- with a special focus on surpluses - which seem at first glance independent from each other and having their own merits. First, we look at the determinants of exports and imports, hence the trade balance, the nucleus of the current account. Second, we look at BoP-related national accounting identities with a focus on national saving and investment. Third, we approach the current account from its mirror image, the capital account, and trace net capital exports. Afterwards we attempt to synthesise all three approaches.

2.1 Exports grow faster than imports – why?

The first approach looks at the determinants of exports and imports of a country and their dynamics.

The trade balance (TB) constitutes the core of the current account balance (CAB). Therefore, we ignore here the net income balance (NIB) and transfer balance (TrB), or assume the latter sum up to zero. In this case the current account would be identical with the trade balance.

The current account as well as the trade balance (TB) are normally denominated in nominal values and related to the nominal GDP, all in local currency, say the Euro. Hence, we look at XV and MV , the export and the import values, real GDP Y_r and the price level index P , all for a specific year:

$$CAB/Y = (TB + NIB + TrB)/Y$$

$$CAB/Y = TB/Y = (XV - MV)PY_r \quad \text{if } (NIB - TrB) = 0$$

The export value in local currency, say Euro, depends mainly on six independent variables: world income of GDP (Y_w), the price level of exports relative to prices of global exports ($P_{x/w}$), terms of trade

(t) the world income propensity to import domestic goods (β_w), the real effective exchange rate (re)¹ and the price elasticity of the volume of exports (ϵ_{px} , absolute value).

$$(1a) \text{ XV} = f(Y_w, P_{X/W}, \beta_w, re, \epsilon_{px})$$

Since imports are measured here in local currency but denominated in the first place often in US\$, the nominal exchange rate of the Euro against the US\$ ($e_{\$/\epsilon}$) – a stronger dollar reduces the value of imports in Euro – has to be included as an independent variable. Furthermore, imports depend on domestic nominal GDP (Y_D), the ratio of the price level of local exports to those for similar goods on the world market ($P_{X/W}$), the propensity to import goods needed as intermediate inputs for exports (β_x), the propensity to import goods needed for domestic final demand (β_D), the real effective exchange rate (re) and finally the price elasticity of imports (ϵ_{pM})

$$(1b) \text{ MV} = f(e_{\$/\epsilon}, Y_D, P_w, \beta_x, \beta_D, re, \epsilon_{pM})$$

In bold letters we mark those variables which are presumably the most important ones for the trade balance. The real exchange effects both exports and imports and is often considered the most important variable to balance trade and the current account. Due to the low price elasticity of exports ϵ_{px} and even more of imports, ϵ_{pM} , the effect of the real exchange rate on trade may be diluted or neutralised, at least the direct effect. The price elasticity of exports (volume) for Germany is around 0.5, following econometric studies (Horn et al. 2017) so that the impact of real exchange rate changes remains limited. For the sake of simplicity, we assume that pricing to markets (PoM) does not occur; would it occur the effect of exchange rates is somewhat more neutralised, at least in the short run. The propensity of the rest of the world (RoW) to import from the local economy and the propensity of the latter to import have evolved out of the – potentially divergent – technological and the sectorial structure of the economy, but depend also on the growth differential in the past between domestic GDP growth and world output growth. Hence, β do not only express merely the comparative advantage of a country, but also the aggregate domestic demand in the local country considered compared to RoW.

The main determinants of the trade balance are, focussing now on the ones selected as key features, as indicated in equation (1c). If the real exchange rate is widely diluted, the three β are the heavy-weights among the determinants of the trade balance.

$$(1c) \text{ TB} = f(\beta_w, \beta_x, \beta_D, t, re, \epsilon_{px}, \epsilon_{pM})$$

Now we focus on the emergence and dynamics of a surplus or deficit, viz. is the growth rates of exports and imports. The growth of the nominal export value XV and the import value MV of a country are determined as follows (^ stands for growth rate); the signs show the expected direction of the effects:

$$(2a) \quad \begin{matrix} \wedge \text{XV} = f(\mathbf{y_w}, p_{X/W}, \mathbf{\epsilon_{wy}}, \mathbf{r\hat{e}}, \epsilon_{px}) \\ + \quad + \quad + \quad + \quad + \end{matrix} \quad (2b) \quad \begin{matrix} \wedge \text{MV} = f(e_{\$/\epsilon}, \mathbf{y_D}, p_w, \mathbf{\pi_x}, \mathbf{\pi_D}, \mathbf{r\hat{e}}, \epsilon_{pM}) \\ - \quad + \quad - \quad + \quad + \quad - \quad + \end{matrix}$$

For the long run it can be concluded that the growth rates converge, leaving the question open on what level of imbalance this occurs or should occur:

$$(2c) \quad \wedge \text{XV} = \wedge \text{MV}$$

$$(2d) \wedge \text{TB} = f(y_w/y_D, \epsilon_{wy}/\pi, \wedge t, r\hat{e}, \epsilon_{px})$$

The growth rate of the export value depends mainly on five independent variables; in contrast to (1a) and (b), the independent variables have to be expressed as change rates: the growth rate of the nominal world income or global GDP (y_w), the ratio of the export price deflator to the deflator of world

¹ We use the direct quotation as with nominal exchange rates: local currency units per US\$. A rise means depreciation. Likewise this applies to the index of the real effective exchange rate.

exports ($p_{x/w}$), the change of terms of trade (t), the world income elasticity² of domestic exports (ϵ_{wy}), changes of the real effective exchange rate ($\hat{r}\hat{e}$)³, and again the price elasticity of the volume of exports (ϵ_{px} , absolute value) assumed to be constant over time. We conjecture that the most important determinants for exports are the bold ones, i.e. demand for exports and the income elasticity of exports. Hence quantities, be they demand or supply driven, play a bigger role than prices, based on (price) “elasticity pessimism” as found in numerous empirical studies for Germany and other advanced countries with heterogeneous export goods.

Conversely, the growth of the value of imports depends again on the seven variables of equation (1b) but now in growth rates: the change nominal exchange rate of the Euro against the US\$ ($\hat{e}_{\$/\epsilon}$) – a stronger dollar reduces the value of imports in Euro –, domestic nominal GDP growth (y_D), the deflator for imports on the world market (p_w), the elasticity of imports needed – as intermediate inputs – for exports (π_x), the income elasticity of those imports that are needed for domestic final demand (π_D), the change of the real exchange rate ($\hat{r}\hat{e}$) and finally the price elasticity of imports (ϵ_{pM}). Normally the most important independent variables are the bold ones, namely the growth of domestic demand and both income elasticities mentioned. Again, we assume that real exchange rate changes have little traction on imports since econometric studies show that the price elasticity of imports is even smaller than the one for exports.

Concentrating on the main determinants for exports and imports, the dynamics of the trade balance depends, as shown in equation (2d), on the ratio of domestic to world GDP growth and the ratio of the income elasticities for exports and imports, apart from the real exchange rate and the price elasticity. Changes of the terms of trade play normally only a temporary role.

The propensities to import, the β in equations (1a) and (1b), have changed into income elasticities which play a key role together with growth differentials between trade partners. Income elasticities for exports capture “non-price competitiveness” of exports or sometimes dubbed “structural competitiveness” (Naastepad/Storm 2015, Storm/Naastepad 2015). Looking at the sectorial structure of exports, the income elasticities express the superiority or inferiority of export goods, regarding their demand abroad. *What* is produced rather than costs and prices matter in this view. This includes the technology content and novelty of goods within a sector, but also the sectorial structure of the exporting economy with respect to the intensity of demand. What is not captured is the regional composition of export destinations regarding GDP growth. For the sake of keeping the analysis simple we neglect this item that also contributes to export growth, especially if exports to emerging economies are taken into consideration. Conversely, this holds true for imports. The more inferior the goods imported are, or goods from industries with relative shrinking weights in the demand, the smaller the growth of imports. This however does not mean that such imports (or exports) are price inelastic. Insofar the often-used term “non-price competition” is misleading.

Income elasticities incorporate supply and demand side aspects. The supply side is related to technology and innovation, monopoly, oligopoly and monopolistic competition, also to the size of firms involved in global trade, predominantly large firms. The demand side reflects aggregate demand from the side of importing countries and preferences of firms and consumers.

Note that our consideration of exports and imports does not explain whether the surplus causes the deficit or vice versa. Normally, the income elasticities and trend growth rates follow out of the historical evolution of the country, corresponding to their stage of development and their structure of output. Most likely it is the combination of pull and push factors, difficult to be disentangled.

² The income elasticity expresses the percent demand change for the demand for a good or, as here, for imports relative to the per cent change of income or GDP. Here we express the elasticities for changes in values, not in quantities as usually.

³ We use the direct quotation as with nominal exchange rates: local currency units per US\$. A rise means depreciation. Likewise, this applies to the index of the real effective exchange rate.

From functions (2a) and (2b) it seems at first glance logical that some advanced countries tend to have higher growth of exports than of imports, in particular if their production structure tends to produce goods more like smart phones and Porsche cars than like T-shirts and peanuts. This would violate equation (2c). However, it is evident that gaps between exports and imports, positive or negative ones, are normally contained at some point. This pertains predominantly to balance-of-payments-constrained growth (BoPCG), as analysed by Thirlwall in the tradition of Kaldor⁴. In the long run, most countries cannot carry high current account deficits, due to increased external indebtedness, and are limited in their capacity to depreciate (in real terms) their currency. In the long run, they have to balance imports and exports, normally by decreasing growth and thus compressing imports, or by structural change to improve export competitiveness and foster import substitution. Countries with BoPCG dampen exports of countries with excessive competitiveness. Countries with such “super-competitiveness” constrain other countries BoP and hence also their own growth of net exports. Another channel of reversing excessive deficits or surpluses could be huge exchange rate reversals, meaning excessive depreciation or appreciation, often accompanied by financial crises. If the effectiveness of real exchange rates to rectify current account imbalances seems limited, due to low price elasticity of trade, very large exchange rate adjustments would be needed. Estimated price elasticities pertain to past changes of exchange rates, but there can be non-linearities so that beyond certain thresholds the price elasticity is leaping. There may be other ways of rebalancing if imbalance grow excessively. Some will be mentioned below for the case of Germany.

The limitation for current account surpluses lie both in the surplus country itself and in deficit countries. An increasing surplus may be risky and disadvantageous for the surplus country itself. With own currency, it risks excessive appreciation at a certain point, and it would maximise net exports but not consumption, the final goal of growth. Yet, more compelling are the limitations for the deficit countries stemming from growth beyond the BoP-constraints which leads to over-indebtedness, especially in foreign currency if debt is denominated in the creditor’s currency. In a world with cross-border financial liberalisation, current account deficits can be financed more easily than earlier so that limitations are more elastic. Thirlwall assumes – mainly in regard to developing countries – very narrow limits for sustainable deficits. Intertemporal borrowing has to be paid back, requiring primary surplus. Permanent roll-over is ruled out.

2.2 National saving exceeds investment – overproduction or under-consumption

Another approach to the analysis of BoP imbalances takes national accounting identities as the starting point.

Total national saving (S) is defined by the gross income earned ($Y = \text{Gross National Income (GNI)}$) minus consumption of private households and consumption of the government (recurrent spending without public investment). The rest of national spending of income for purchasing goods and services is for fixed investment of firms, including residential investment, and public investment (altogether I). If national saving exceeds national investment, excess saving is done abroad in the form of net capital exports. Net capital exports are identical with the current account balance. If we assume for the sake of simplicity that $GDP = GNI$, meaning that net foreign income and net transfers cancel out to zero, we can conclude:

⁴ “Thirlwall’s Law” states that the balance of payment constrained growth of a country is given by $y_B = \epsilon z / \pi = x / \pi$ (using Thirlwall’s notation). Income elasticity of exports is ϵ , z is world income growth, π is domestic income elasticity for imports and x is domestic export growth. This implies $x = \epsilon z$. Thirlwall assumes real exchange rate adjustments cannot occur permanently and that current account need to be in balance, apart from temporary deviations (Thirlwall 1979, McCombie/Thirlwall 2004). The authors conclude that the key mode of catching up for less developed countries constrained by their BoP is embarking on structural change with change of the income elasticities. The “Law” is however not limited to developing countries.

$$(3) S-I = X-M = NKX > 0 \text{ (surplus country)}$$

A trade surplus (net exports NX) is identical with excess national saving over domestic investment, and also identical with net capital exports (NKX). The surplus economy produces more than it spends for goods and services; the over-production is sold to abroad, financed via net borrowing of the rest of the world from the net lending country. Running a surplus can now be interpreted as too high saving, relative to domestic investment, or too low investment relative to national saving, and relative to the rest of the world. Whether the surplus is caused by net exports or by net capital exports cannot be recognised when looking at the identities. However, it has to be kept in mind that *net* capital exports are in modern economies small relative to *gross* capital exports. More than 90% of gross capital exports have normally no impact on net capital exports, because they are pure financial flows into and out of the country which cancel out in the capital account.

When we analyse the growth of the CAS of Germany, we conclude for equation (3) that the increase of S in a certain period (ΔS) exceeds the increase of investment (ΔI), and the increase of exports (ΔX) exceeds the increase of imports (ΔM); the increase of net capital outflows matches the increase of the trade surplus and the increase of foreign assets ΔFA exceeds the increase of liabilities to abroad, ΔFL . Hence, we can write

$$(4) \Delta(S - I) = \Delta(X - M) = \Delta(FA - FL) > 0$$

If (S-I) is denoted as total national saving SN and FA-FL is net capital exports NKX (or increase of net foreign assets) we can write for the increase of the current account surplus in a certain period:

$$(4a) \Delta CAS = \Delta SN = \Delta NX = \Delta NKX = \Delta NFA > 0$$

Equations (4) and (4a) do not show any causality. Many interpretations may be possible. It becomes even more open to different interpretations, if we include the mirror image equation for the rest of the world (denoted with *), which runs a current account deficit.

$$(5) SN + SN^* = 0$$

Assume the home country, say Germany, has a saving surplus SN, the rest of the world has a saving deficit $SN^* = (S^* - I^*) < 0$. Does the surplus country cause the deficit abroad, or the net borrowing abroad the net lending in the home country? Normally it is a mutual causation, but reality may differ at times. The pull or push question may depend on the kind of capital exports (see below)

National saving is composed of net saving of private households SH, of the government, i.e. the budget balance SG (= T-G, i.e. a budget surplus if tax revenues T exceed spending G) and net saving of firms SF (sometimes also called corporate saving). Note that saving in this context is a flow measure for the period, not the stock of savings. Total investment stems from firms IF, from residential investment IR and from public investment IG. Now we can write

$$(6) (SH + SG + SF) - (IF + IR + IG) = NX = - SN^*$$

All sectorial savings add up to zero if the foreign sector is included:

$$(7) (S-I) - NX = 0 \text{ or for the increments } \Delta(S-I) - \Delta NX = 0$$

NX is equal to negative total foreign saving which can be split in its different components as well.

It is noteworthy to mention that all identities shown reflect ex post values at the end of a period. This means that in the beginning or during the period inequalities may prevail which are balanced in the course of time. What are the main balancing mechanisms? Assume that $(S-I) > NX$ in the mid of the period compared to equation (7). The inequality expresses lack of aggregate demand which can lead to higher inventories (classified as investment in national accounting), or lower income and lower saving or lower imports so that NX rises. This implicates that the validity of the identities is not tied to constant GDP.

The identities tell us nothing about exports and imports and their respective determinants. Net exports seem to result out of domestic saving and investment when reading equation (6) from the left to the right side. National income is obviously assumed as given, also net income of the rest of the world. Rebalancing a surplus requires higher domestic absorption of output, hence more consumption and/or investment, and rebalancing a deficit needs cutting back consumption and/or investment, often called austerity in a broader sense (including fiscal austerity). Adjustments come symmetrically from both sides or asymmetrically, with focus either on the surplus or the deficit countries.

The predominant reading of equation (5) that deficit countries live beyond their means and should save more, in particular regarding wages and budget balances. Thrift of the surplus country is the virtue, profligacy the vice of the deficit country. Yet, pushing the deficit countries toward more thrift would make the surplus countries less thrifty as their surplus vanishes. Obviously, this reasoning is incoherent. Making excessive surpluses or deficits are two forms of vices. The remaining question is what “excessive” is.

The alternative narrative would be that the surplus country is obsessed with excessive thriftiness, addicted to irrational saving, pushing other countries in – at least partially – involuntary deficits. This obsession may take the form of a kind of outright or hidden mercantilism, causing a saving glut and accumulating financial wealth rather than spending for real investment and ultimately consumption.

Understanding the identities is important, but important issues remain invisible from this angle, especially exchange rates, capital flows and the variables mentioned in the context of trade in section 2.1., name exports and imports.

2.3 Net capital exports cause the current account surplus

We had seen that net capital exports match the current account balance. Could it be, as many hold, that excessive capital exports are at the roots of the German surplus, the key causal factor generating both surpluses and deficits? The appropriate conclusion would be controlling capital flows by means of financial regulations (cp. Wyplosz 2017, Belke, Gros, Schnabl 2016).

The traditional view, stemming originally from Böhm-Bawerk (1914)⁷, that the capital account drives the current account, is in our view untenable. If the assertion were true, we should not care about the trade and current account balance, we should only look at capital flows. However, the opposite is also not true. What matters is the interaction of the current and capital account. This will be shown in this section.

More than 90% of cross border capital flows in advanced countries with highly developed financial markets are gross capital flows with no impact on net flows. They are pure financial transactions which are booked solely in the capital account and with no impact on trade or output. They may affect to some extent the net income balance in the current account. If Germans diversify their wealth portfolio and US-Americans do the same, they exchange US-bonds against German bonds or other securities. Even if you, the reader purchase a UK share on the British stock market and pay with cash, you hold an asset and UK agents hold your cash which is a liability of Germany against the UK. Nothing happens in the current account. When do gross capital flows become net flows, say net capital outflows, going along with net exports of goods? There are a number of channels. We look at the most important ones, applied to Germany and RoW.

(1) German residents purchase foreign bonds whose sellers buy German goods (“Mercedes for shares”). The revenues from the security sale may also be used for importing German investment goods. Similarly: German residents consume less in the form of imported goods and instead save abroad. German imports shrink, net exports rise.

(2) German residents buy foreign securities, say bonds or shares, whose prices rise. Rising bond prices lower effective long-term interest rates in RoW, or higher stock prices increase foreign wealth, which

induces more consumption or investment in RoW. This in turn induces with given propensity to import German exports. This causes net exports mirrored by net capital exports in Germany.

(3) German commercial banks turn out short-term credit via the global interbank market to banks in RoW. This may spark or reinforce a credit boom which otherwise would not exist. The credit boom strengthens investment and growth in RoW which induces imports from abroad, assume from Germany.

(4) German commercial banks lend out long-term loans to foreign investors investing in additional fixed capital. Growth abroad rises, inducing imports, say German exports.

(5) German multinational companies invest abroad (Foreign Direct Investment, FDI), in the form of greenfield investments which increase the capital stock abroad and induce output growth. In turn, imports abroad rise, inducing German exports.

Since all these transactions are done by German residents, one must have in mind that similar transactions are done by foreigners vis à vis Germany so that again transactions relevant in the current and capital account may net out. This means that net capital exports occur only if the transactions 1-5 are done without any other compensating transactions.

If gross capital outflows occur, meaning that finance is transferred to another country, it will not necessarily be used by the recipient for importing goods from the capital exporting country, say Germany. May be the goods preferred to purchase are imported from China. This way, the capital importing country has net capital inflows and a debit in the trade balance (more imports), but Germany has done a pure financial transaction without impact on the German current account.

Most cross-border financial transactions are short-term, mostly done by banks in the interbank markets and vis à vis non-banks like insurance companies or investment funds. Net FDI outflows account only for about one quarter of German net capital exports (or the German current account surplus), with some fluctuations, or around 2% of GDP. Most of outbound FDI from advanced countries are not greenfield investments but mergers and acquisitions with no direct effects on growth abroad. The effects can also be negative if e.g. the intention is to crowd out foreign competitors.

Note that bilateral trade imbalances do not necessarily match bilateral capital flows. Often gross capital flows are destined to third countries which lend out to debtors in countries to which Germany exports. So, Germany's net capital flows to Luxembourg may be much higher than its net exports to this country.

Net capital exports do not necessarily feed into investment abroad. Analyses show that they feed as well into consumption, government spending etc. in similar proportions as national income (Williamson).

The bottom line of this analysis is as follows.

- Gross capital outflows do not cause current account surpluses or deficits. They impact net capital flows only if they impact directly or indirectly the trade balance. Net capital flows are a result of inward and outbound capital flows and of a broad range of factors that impact trade. Nonetheless, net capital flows are a necessary prerequisite for current account imbalances, but the latter are also a prerequisite for net capital flows. They are determined by simultaneously by complex interactions of both parts of the BoP.

- Financial investors can swamp other countries with capital exports where the capital importing country has hardly any tools to control or avert them. They may come in involuntarily, assuming fully fledged capital mobility. Prudential banking regulation of the normal microeconomic (bank by bank) type cannot control them. The usage of inflows is determined by the recipients of the financial inflows and to some extent by creditors or the wealth owners in the capital exporting countries, by way of risk

analysis or directly in the case of FDI. Macroprudential regulation aimed at preventing excessive inflows, often short-term and speculative in nature, is a novel instrument, still in a nascent stage of development. Hence it is difficult to control excessive deficits by controlling capital inflows – unless dirigistic capital controls are enacted. With the means of fiscal policy, cutting budget deficits lowers the current account deficits but is of course not suitable to contain private excessive inflows.

- Surplus countries can cause deficits by flooding them with excess finance which the recipient countries tolerate or accept involuntarily due to lack of tools to avert or control them. This does not mean that financial actors behave irrationally. Normally their concern is not about macroeconomic imbalances. They may trust in authorities responsible for financial stability and macroeconomic balance. This does not exclude irrational exuberance.

- Control of capital outflows in surplus countries could only be done by containing gross outflows and/or gross inflows. This has not necessarily any effect on net capital flows.

- Prevention of “sudden stops” of short-term capital outflows and subsequent reversal of flows back to the country of origin need to be done in advance, when excessive inflows occur which push countries in current account deficits. However, even if this could be done with macroprudential regulations, It would not help to improve the export basis and its lack of “competitiveness” in deficit countries. Macroprudential regulation cannot replace industrial policy for structural change.

So far, we have highlighted three aspects of current account surpluses and deficits, and their emergence. They should complement each other. Determinants of exports and to some extent also of imports are not considered in the widespread savings approach, built on accounting identities. Often these identities are interpreted causally with emphasis on the saving propensities in the various sectors of a country, thereby neglecting the income generation process. Solely focussing on exports and imports neglects finance and capital flows. In the next section we return to the empirical analysis of the German current account, with a stronger focus than in the overview in section 1 on the emergence of the saving surplus and the wedge between exports’ and imports’ growth.

3. What has caused the German surplus? Empirical findings

The question will be decomposed into four questions:

- Why did national saving grow faster than aggregate investment?
- Why do exports grow so fast and imports seem dampened?
- What was the role of exchange rate performance in the build-up of the surplus?

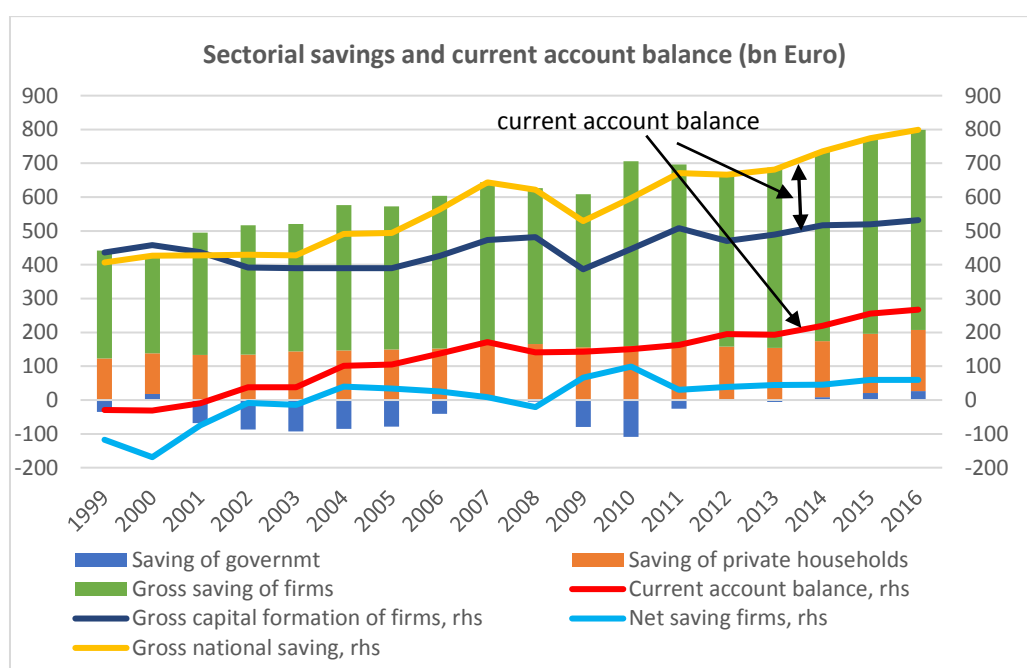
3.1 Excess of saving

The empirical performance of saving and investment for the whole period 1999-2016 shows that the major part of the rising gap came from increased saving, but a considerable part from low investment. Regarding saving, household saving as a share of disposable income hovered around 10% with a band of around 2.5 pts. Traditionally the household saving propensity is somewhat higher and quite stable, compared to other countries. Often it is asserted that high household saving is caused by demographic reasons, namely stronger saving of people in working age but soon entering the age group 65+. They would save now more, not least because of changes in the state pension insurance system in the early 2000s, and will save less once the baby boomer generation moves into the old-age phase. Hence, due to aging of society, more saving now and less in the future is considered in this view as rational forward-looking behaviour, reflected in a current account surplus now and moderation of the latter in the near future. There is no evidence at all for a higher household saving propensity, apart from short-term fluctuations, hence demographic change was irrelevant or offset by other factors that lowered the saving propensity. Household saving relative to GDP even dropped somewhat over the whole period analysed (graph A6). Felbermair, Fuest and Wollmershäuser (2017) hold that old-age provisioning of the not-yet-old age population is the main driver for Germany’s rising surplus. They provide not even

a hint for empirical evidence. Of course, it cannot be ruled out that the subjective motive of household saving may have changed toward saving for pensions and replaced other motives. But what counts is actual saving.

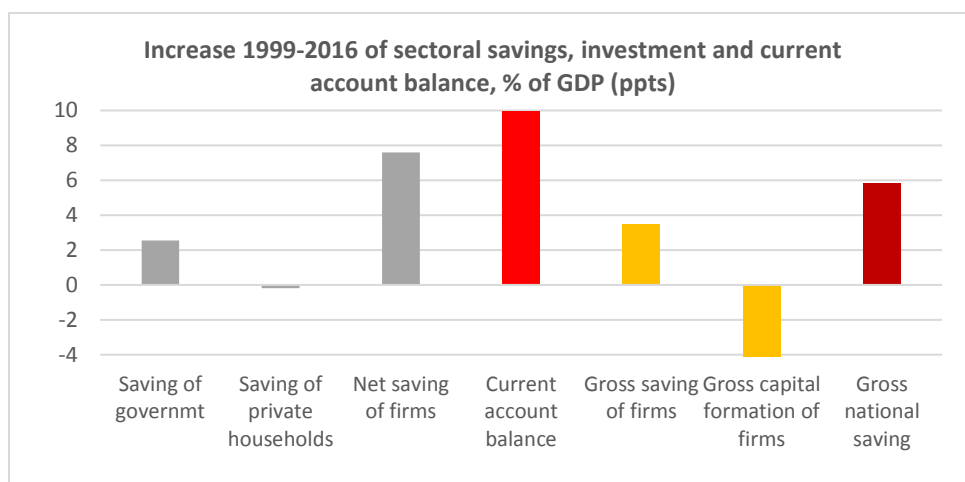
In contrast, public saving did play a role after 2014 when the total state surplus (including social security) moved into a surplus of almost 2% of GDP (2016)(graph 11). The bulk of the saving increase came from the corporate sector where the cash flow exceeded more and more investment so that this sector had turned into a net saving sector (mainly producing firms, to a smaller extent financial institutions). This sector includes non-incorporated firms (“Personengesellschaften”). Overall, equity was increased and debt reduced. Profitability of firms is considered high. Net investment is reduced too in all its three parts reflecting negative net public investment and long-standing neglect of housing investment until recently, but also low investment in corporate equipment. In other words, investment in financial assets domestically and abroad was preferred relative to domestic fixed investment. To what extent rising capital productivity (higher efficiency of physical capital) is involved is empirically not clear. It is much more likely that lack of final demand, besides exports, had been the key barrier for investment in face of frozen real aggregate consumption over a long spell.

Graph 11



AMECO, own calculations

Graph 12



Source: AMECO, own calculations

The focus on net domestic saving – either in absolute terms or relative to GDP - obfuscates the fact that Germany's growth performance was in the period 1999-2016 characterised by low growth (1.3% p.a.) and below target inflation as mentioned in the overview. The growth of GDP is similar to Japan among the most sluggish economies in OECD countries, also compared to the performance in the 1990s. This impacts imports negatively. The growth of net exports contributed to real GDP growth 1999-2016 by 35%, private consumption only by 40% (and this mainly after 2009), total investment by just 12% and government consumption by only 13% (in constant prices, calculated with AMECO data).

3.2 The wedge in growth of exports and imports

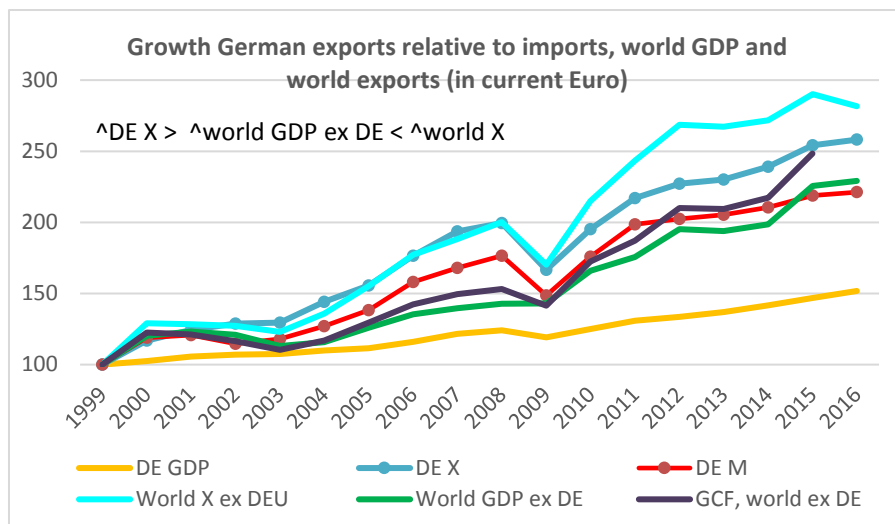
Germany's export share in the world market, focused on investment and intermediate goods, is fairly high and even rose somewhat (despite fluctuations) in the period analysed, as mentioned in the overview. German exports rose alongside the growth of world exports and correlates with the gross of gross fixed capital formation (GCF) in nominal terms (graph 13). German exports rose even a bit faster than the global GDP (without Germany). That imports rose much faster than GDP is strongly driven by the establishment of international value chains, reflected in the import content of exports (goods) of 40% (2012, reported by Destatis). The import share in GDP rose blusteringly, but not as much as the export share which almost doubled in this period as already mentioned in the overview above. For exports, it seems that the high income elasticity of the world demand for German exports is the main driver, pulling concurrently around 48% of Germany's imports.

Table 2: Reference growth rates for Germany's exports and imports

In current Euro	growth p.a., % yoy, 1999-2016
DE GDP	2.5
DE M	4.8
DE X	5.7
World GDP ex DE	5.0
GCF, world ex DE	5.9
World X ex DE	6.3

Source: see graph 13

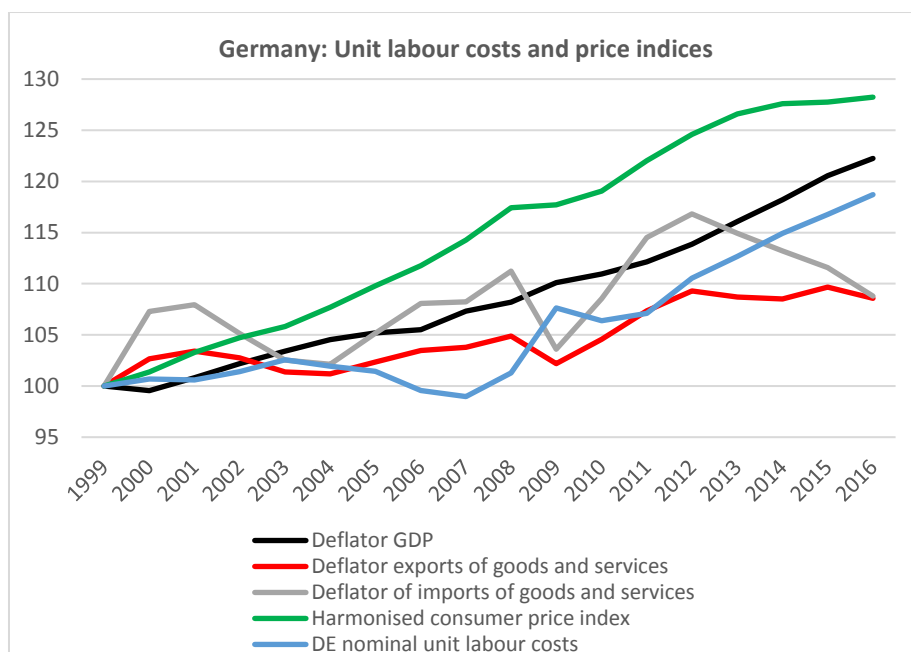
Graph 13



Source: WDI, own calculations

How about Germany's price competitiveness of exports? In graph 8 we had already observed that export prices moved below most EMU partners with a shrinking differential to those countries with higher levels, due to some export price deflation after 2008. Yet, the gap is still big. Graph 14 shows a gaping differential between the index of export prices and the CPI-index (HCPI) since 1999, namely 19 ppts. Until 2008, unit labour costs rose even less than export prices, since 2012 vice versa. Import prices followed more or less world market commodity prices. Graph A7 shows that the terms of trade deteriorated somewhat until 2008, and improved thereafter. Nominal exports as well as imports rose faster than exports and imports in constant prices after 2008, conversely before. In the long haul 1999-2016, terms of trade changes are weak.

Graph 14

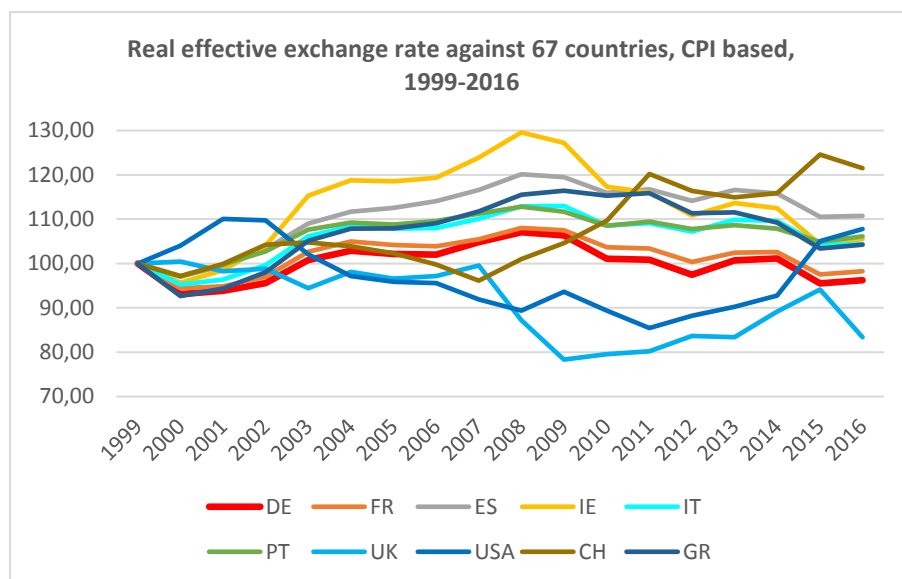


Source: AMECO

We can conclude that analyses which downplay the role of price competitiveness of exports and overall also fairly low import prices demonstrate that Germany's success formula, regard exports, seems to be the combination of price- and non-price competitiveness. This finding can also be underpinned by

other indicators of the price competitiveness, shown in graph 15 and A8. Germany's real effective exchange rate (REER, CPI-based, thus grossly underestimating the export price competitiveness due to lower export than consumer prices) shows a small real appreciation by around 6 ppts 1999-2008, afterwards a real depreciation by 10 ppts until 2016, despite rising unit labour costs. It is a stunning fact that the major surplus country managed to raise the current account to a high level, despite mild appreciation, and was boosted by a 10 ppts depreciation which contributed further to the next peak of the surplus. This not only caused by the declining Euro against the US\$ in the context of ECB's belated QE-policy, compared to the US. It is interesting seeing that France's real exchange rate performance likens the German one, despite very different current account performance. This suggests a backlog of non-price competitiveness in France vis à vis Germany.

Graph 15



Source: Bruegel

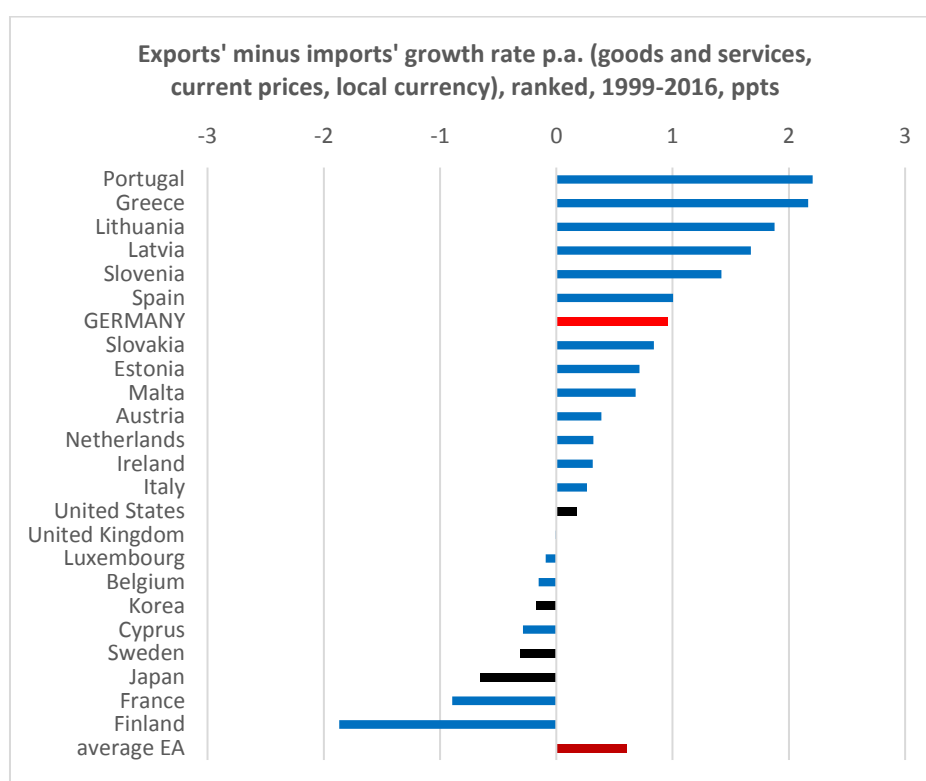
Focussing only at ULC for assessing Germany's price competitiveness is too narrow an approach. As is well known, ULC underperformed compared to the EMU average until 2008 and rose later on without catching-up to the EMU level (graph A8). ULC do not capture imported intermediate goods for exports, but they include ULC in domestic intermediate goods and services production which feed into exports. However, the indicators for relative ULC and REER differ markedly. REER is a broader indicator, including nominal exchange rates regarding trade denominated in other currencies. However, CPI-based REER do not capture the differential of CPI and export prices. However, the role of ULC and exchange rates must not be downplayed too much. Their indirect effect on imports via aggregate demand and saving is much more important than their direct cost effect.

The ULC performance as well as the real depreciation after 2011 have contributed to the fall in the wage share in Germany. A disaggregation of the wage share shows that a large part of low wage earners experienced a fall in real wages, similarly low-income households (Dustmann et al. 2015). Econometric studies show unambiguously that relative ULC and also real effective exchange rates play a minor role for the export growth, both in Germany and other EMU member states. But this evidence requires more scrutiny. The Euro appreciated against the US-dollar heavily from the low in 2002 until 2008, in nominal and real terms. Germany managed to cope with this impediment for its exports by squeezing labour costs and importing inputs from Eastern Europe, more flexibly and harsher than in rest of the EMU. High unemployment in the early 2000s, price pressures from emerging and Eastern European countries and from the labour market reforms in the context of the Hartz reforms (partly anticipated already in the late 1990s) had changed the wage bargaining system especially in the non-

tradable sectors with low productivity increases. All this dampened consumption, investment and imports. The fact that companies had become “super-competitive” in terms of quality and innovation, so to speak in Schumpeterian terms, coupled with reduced costs through wage restraint, productivity increase, outsourcing etc., pushed corporate saving upward as analysed above. This way, low ULC dynamics led to internal devaluation in the EMU. For exports, this was not so relevant, for imports it was, and here not because of prices for imports, but because of impeded import demand growth. This way, exchange rates and relative ULC do matter for the trade balance.

Let us now look in more detail at the growth wedge between imports and exports. There is no other country of medium or large size that has a similar wedge between exports and imports growth – almost 1 ppt – among OECD countries, as can be seen in graph 16. Some small countries, either Eastern European countries or countries with a huge deficit, like Portugal, managed to improve their deficit. Small countries like Ireland or Slovenia depend on the export performance of a few large companies. The US, UK, Japan and even Korea with an extreme surplus have hardly a wedge in the period analysed.

Graph 16



Source: AMECO

Germany’s export competitiveness is praised by many authors (Dustmann et al., 2014, Bundesbank 2013, Kollmann et al. 2014, Naastepad/Storm 2015, Foders/Vogelsang 2014, Marin/Schymek/Tscheke 2015). What is ignored is that industrial upgrading and innovation improves also domestic competitiveness of firms against imports if a country has a broad-based industrial sector with a much higher share of domestic value added than most other economies. It is also noteworthy that imports of final products are estimated to have a share of domestic value-added of around 10% (cp. EC 2017). The innovation strengths have also contributed to import substitution regarding energy and service imports. Since more and more consumptions is tilted toward services, most of them non-tradables, the economy seems to need less imports apart from those related to exports. At this junction we just mention that deliberate export promotion and import substitution, similar to industrial policy and some sort of tacit protectionism (e.g. protection of lignite mining) also play a role, as in other countries too.

If there is a systematic wedge between export and import growth, not necessarily for each and every year, but as trends, the surplus must be qualified as *structural* on three counts. Here we assume now, in contrast to the simplified identities shown above, that net transfers remain a constant share of GDP, by and large, following the historical trend in Germany. This means that rising net incomes from abroad tend to exceed net transfers progressively (in 2016, this part of the surplus accounted for around 0.9 ppt of GDP or 9% of the absolute value of the CAS). If the NIIP increases further, the net income balance will increase continuously, even if the trade balance would remain constant. The NIB is a feedback amplifier of the trade balance.

The export/import wedge in growth rates is long-standing. It existed already in the 1990s in Germany (see in section 4). This corroborates the view followed here that the rise in the current account is not a sequence of uni-directional shocks, so to speak as a sequence of accidental events (cp. Kollmann et al. 2014, Grömling/Matthes 2016, Bundesbank 2013); it is rather a trend rooted in the notion of export-led growth as business model for the country. Exports and boosting competitiveness are mantras, magic words like the desire to be world football champion or at least a team in the final contest. This mantra is cast in the production structure, the capita stock, in research % development, in human capital and the mindset of policy makers and managers, in institutions and policies. It creates path dependency. It is even seen as a model for others, even though it would dethrone the champion. What is worse, it seems to be explosive as will be shown in the next section.

4. Trade balance projections 2016-2026

A simple trend analysis of the German trade balance, based on the growth rates for nominal exports and imports (goods and services) in the period 1999-2016 and assumptions for nominal GDP growth rates for the period 2016-2026 shows amazing results. We take the data for 2016 for exports, imports and GDP as the starting point and calculate the trade balance as share of GDP for 2026. In 2016 the trade balance stood at 7.6% of GDP, the current account at 8.3%. We neglect for simplicity the net income from abroad minus the transfer balance and focus only on the trade balance.

Table 3

Germany: Six projections for the trade balance 2026 and 2021					
	Exports	Imports	Trade balance	GDP	Trade balance
2016	1441.7 bn	1202.6 bn	239.1 bn	3132.7 bn	7.6% of BDP
1999-2016, growth trends, % p.a.	5.74%	4.78%		2.48%	
	growth p.a.	growth p.a.	growth p.a.	growth p.a.	% of GDP
2026, 1 st	5.74	4.78	9.6	3.0	14.25
2026, 2 nd	5.74	4.78	9.6	4.0	12.9
2026, 3 rd	5.74	5.74	5.74	3.0	9.9
2026, 4 th	5.74	5.74	5.74	4.0	9.0
2026, 5 th	5.74	6.64	-0.003	4.0	5.0
2021, 6 th	4.0	6.0	-9.8	3.0	3.9

AMECO, own calculations

- In the first projection, exports grow along the trend 1999-2016 with 5.74% p.a., imports with 4.78%. For nominal GDP we assume 3.0% trend growth (a bit more than in 1999-2016), based on 2.0% target inflation and 1.0% real GDP growth. The trade balance would stand in 2016 at 14.25% of GDP, i.e. rise by 6.3 ppts.
- In the second projection, we assume real growth of 2.0% p.a., nominal growth of 4.0%, other assumptions unchanged. The trade balance will reach 12.9%, i.e. rise by 5.3 ppts.
- The 3rd projection assumes 3.0% nominal growth of GDP, and imports growth accelerates to the same speed as exports in the first projection, namely 5.74% p.a. The trade balance will still rise up

to 9.9% of GDP. If growth reaches 4.0% p.a. in the 4th projection, other assumptions unchanged, the trade balance would be 9.0% of GDP in 2016, still 2.4% more than 2016.

- In the 5th projection we reduce the trade balance to 5.0% of GDP after 10 years which might fit to around 6.0% current account balance, the upper limit in the EU Macroeconomic Imbalances Procedure. GDP grows 4.0% p.a. Without lowering export growth which remains 5.74% p.a., imports have to grow at an annual rate of 6.64%, around 1.8 ppts faster than in the trend of the past. In this case the imports-GDP-ratio rises from 38% to 49% of GDP, and the marginal increase of imports, as a share of the GDP increase, would rise from 64% to 80%.
- In the 6th projection over 5 years until 2021, the trade balance will drop to 3.9% of GDP, which might be close to a current account of 6%. Growth of exports decelerates to only 4.0% p.a., and imports rise by 6.0%, while nominal GDP trends with 3.0%. Net exports contribute negatively to GDP growth. The trade balance shrinks strongly in absolute terms.

The almost explosive growth of the trade balance in the first four projections has – among other factors – to do with the base effect. Once exports are initially much higher than imports, exponential growth of exports and imports lets the trade balance grow much faster. In the case of linear growth, the trade balance would rise too, but much slower. Since German exports are correlated with global growth, which has grown boisterously in the past, the assumption of exponential growth is as justified as for the much slower GDP growth trend for Germany, the key driver for its imports. Let's look whether the period 1999-2016 is exceptional for Germany's long-term pattern after the reunification in 1991. In the table below we see that the wedge between exports and imports growth was even slightly bigger than in the period 1999-2016, however, growth was around 1 ppt higher in the 1990s. The slower rise of the trade balance in the 1990s was due to the lower base effect in the initial year 1991.

Table 4

Growth of nominal exports and imports (incl. services), GDP and the trade balance in Germany 1991-2016			
Growth of nominal ..., % p.a.	1991-1999	1999-2016	1991-2016
exports	5.08	5.74	5.64
Imports	3.97	4.78	4.65
GDP	3.56	2.48	2.62
Trade balance, % of GDP	-1.7 (1999)	0.7 (1999)	7.6 (2016)

AMECO, own calculations

The unfavourable base effect of 2016 with the high trade imbalance constitutes an accelerating, i.e. explosive and hazardous factor.

Note that projections are not forecasts. Reality does not always follow trends. Forward looking rational expectations, functioning as self-fulfilling prophecies, might be at work – but all too often not or too late and at high social costs. If there is no clear and current account stable equilibrium, neither country-specific nor generic, then there are a multitude of short-term equilibria, some of which may be advantageous, others less, some disastrous. Policy rules have to chip in. This also the logic of IMF's "External Balance Assessment" (EBA, see IMF 2017).

Potential stabilising mechanisms

Aren't there any stabilising or rectifying factors at work? Candidates are exchange rate changes, less growth in importing countries due to BoP constrained growth or other impediments, higher imports from countries delivering intermediate goods for German exports, more imports due to rapid aging in Germany, lower growth in OECD or in emerging economies, or new emerging competitors. All these factors are ambiguous in their effects on the trade and current account balance:

- *Exchange rates*: The Euro might rise against the US-dollar and other currencies. This would impede growth in other EMU countries and also in Germany, which dampens the growth of imports too. The direct effect of a real appreciation of the Euro on German exports is small due to the low price elasticity (apart from adverse effects), but the indirect effect on profits and aggregate saving is more important.

- *BoP-constrained growth*: An increasing trade and current account surplus will affect likely both intra and extra EU imbalances. This will indeed push other countries into deficits again and on a reduced growth trend. Again, the negative effects on German exports will dampen Germany's growth and its imports with an ambiguous overall effect on the trade balance.

- *Eastern Europe*: More imports from Eastern Europe and emerging economies: This seems to be already the trend of the past whose mirror image is growth in Eastern Europe which conversely fuels German exports.

- *Aging population*: It is true that the propensity to save might drop in private households, thus reducing aggregate saving. But counter-effects have to be heeded: strong decline of the population (absent strong immigration) with normally lower growth, in particular via less residential investment and less consumption. The aging argument is highly speculative and strongly exaggerated in German debates. In many analyses it is held that the surplus has grown a bit too much, but there are no grave risks since aging – meaning now the increase of the share of +65 people relative to the people in the labour force – will be a strong stabiliser for the current account, due to rising consumption relative to GDP (Felbermayr, Fuest, Wollmershäuser 2017). Even the Bundesbank had warned that this expectation may be flawed or questionable (Bundesbank 2013).

- *Lower growth in OECD and emerging countries*: This is indeed likely to happen, including lower growth in the flagship of emerging economies, China. Again, growth of German exports may falter, but growth of imports too.

- *New competitors*: This may occur, but Germany's standing in its segment of investment goods, based on long-standing human capital accumulation, is hard to contest severely.

It looks as if there is no realistic stabiliser in sight. In most cases mentioned exports might grow slower, dampening export-led growth and subsequently imports. Once a rising surplus was not prevented, path dependency is at work. We have not yet addressed opportunities to raise domestic demand and excluded policy measures. It seems that market forces are not capable to induce rebalancing, at least not in a currency union with the institutional setting of the EMU.

Even if the current account surplus could be stabilised at a certain high level, perhaps similar to Korea, the question remains whether extreme export dependence is beneficial for the economy and its trade partners. Specifically, this question stands in the context of the EMU. These issues will be discussed in another paper.

5. “International competitiveness” – a dangerous obsession?

In most analyses of the European imbalances the term “international competitiveness” (IC) is used but not defined. It can have many different meanings. Using the term for the microeconomic analysis of firms, or of a sector, it can make sense. Many use it with the aim of increasing a firm's market share on the global market. Since not every firm can become champion, it would be a prescription for ever heading on toward number one like in the football premier league. Others hold that profitably selling goods internationally is the meaning of IC. Some analysts call for the “ability to sell” which should be improved in order get a competitive lead or catching-up against competitors. Such definitions may have their merits for corporate strategies, but can this work for nations or for all exports of a country, such as national “export competitiveness”?

The macroeconomic interpretation of IC looks like a mere aggregation exercise. Increased “export competitiveness”, as it is often called, would mean a rising world market share for a country or avoiding a reduction or maintaining the stance. It looks limited to exports. Yet, all exports of one country are other countries' imports. At times, the IC is used as pertaining only to “price competitiveness”, measured by relative unit labour costs or by the real effective exchange rate. Non-price or technological competitiveness is neglected. The latter is sometimes also summarised as “structural” competitiveness”. These terms are not clearly defined on the macro level, based on sound economic theory.

Assume IC means improving the price and non-price competitiveness of the exports of a nation, aiming at a higher market share in the world market – as if the country were a corporation. In a simple 2-country-world model, country G would rise its market share against country F which represents all foreign countries. Globally, all exports are equal to all imports. Since country G's exports are country F's imports, G would export more but import less from F – if other factors that might impact the trade balance do not change. G has now a surplus, F runs a deficit (assume in the outset trade was balanced). IC would mean creating trade imbalances and strive to increase them more and more. If F is not so successful as G, it should fight harder. The aim for all countries should be to chase G and G should chase the others. If this concept of competing for better IC were accepted and actively pursued by the governments of G and F, it would be a revival of ancient and crude mercantilism – it is not about pursuing the “comparative advantage” following David Ricardo and many of his followers for free trade, but the goal would be to accomplish a trade surplus, and every increase in the world market share would compellingly increase the surplus (and the deficit as the mirror image). Using the microeconomic concept of IC as a macroeconomic one runs into a fallacy of aggregation that perverts free trade into mercantilism.

Of course, our example is static. The main adjustments in case of a trade imbalance, as shown between G and F, are as follows: (i) a higher export share of G could trigger higher output growth of G which absorbs more imports; (ii) G's currency might appreciate (in real terms) against F's currency so that G exports less and imports more. (iii) F might be compelled to dampen growth which leads to less imports from G. (iv) F catches up with G by improving its export competitiveness. In all four cases the increased export share of G would be reversed, either in full or to a certain extent. Rebalancing would follow suit. Thus, trade imbalances would remain small and be subject to re-stabilisers. G's gain in competitiveness would be limited and only temporary, a short-term issue we should not fuss about. However, the meaning of promoting national IC is normally not constrained to the short run. It is – implicitly or explicitly – considered a strategic issue with a persistent increase of the market share. Now the mercantilist flavour chips in.

But isn't mercantilism the protectionist activity of the State, promoting exports and impeding imports? Yes, it is. But a country's striving to become *and remain* champion or being as close as possible to championship leads automatically to less imports. Furthermore, modern production, be it for domestic demand or for exports, requires more education, skills, infrastructure, hence public goods than ever before. The more dependent a country is on its exports, the more it *has* to take care of “export competitiveness” – but not necessarily by subsidies or import tariffs or outright non-tariff measures. Innovation policy and other policies have similar or even stronger effects. “Standortpolitik” (policies for locational improvement) is the new mantra.

Country G striving like a corporation for a competitiveness advantage leading to a higher market share, and hence an increase of its surplus, increases – by implication – net capital exports. It buys more foreign assets from F than it sells to F. This is the mirror image of less imports. G purchases less goods from F, but more of F's assets thus impairing F's net international investment position. Now we have distorted “trade”: G specialises in selling goods, F specialises more and more in selling financial papers. This is not what Ricardo and all the followers considered free trade. And it is not sustainable.

All said, IC of nations leads to trade and current account imbalances. IC as a macroeconomic term is not a sensible idea. Rather it is a dangerous obsession, as Krugman noted long ago, because it undermines the old idea of the usefulness of free trade for both partners involved. It has – mostly unintentionally – a mercantilist bias.

The upshot of our reasoning is that avoiding the fallacy of aggregation and the risks of trade imbalances requires that international rules for trade and prudent current account balance have to be established, especially in a currency union without the option of nominal exchange rate adjustments.

This does not mean that the “competitiveness” should be banned. We use it here in the sense of increasing a nation's market share in the world market. This term should be framed by an international

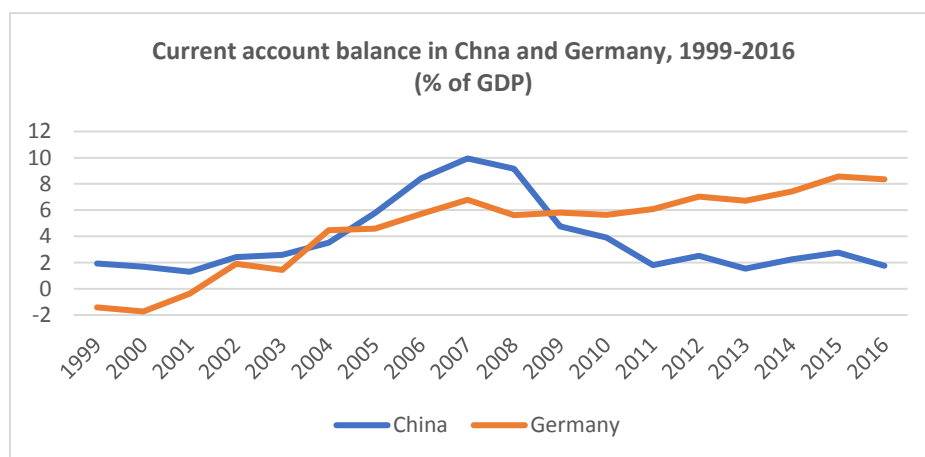
order for preventing and correcting BoP-imbalances. If markets do not find stable equilibria for the current account, normative goals should be used and implemented by rules and policies. Red lines for “excessive” surplus or deficit should be used, as intended in the regulatory frame of the IMF with its “External Balance Assessment” (EBA, IMF 2017) or with the European “Macroeconomic Imbalance Procedure” (MIP, EC 2016). Although both regulatory frameworks have – in our opinion – severe flaws and shortcomings, they share the same well justified goal. In such a framework, countries with excessive deficits should improve their “competitiveness”, and those with excessive surplus should reduce their “excessive competitiveness”.

6. Outlook

We have analysed three analytical approaches to the seemingly unique German current account surplus which rose by 10 ppts from 1999 until 2016. Rebalancing is not in sight (cp. EC 2017). Our analysis with strong emphasis on Thirlwall’s Law applied to surplus countries concludes that there is path dependency at work which seem to further magnify the trade and current account surplus. We have not discussed and reviewed the debates whether or not or to what extent the German surplus is hazardous. We believe that excessive deficits are hazardous both for the surplus and the deficit countries, even more so if the surplus tends to rise and exchange rates as potential stabilisers – possibly only with very strong real appreciation - do not exist in a monetary union. Furthermore, a monetary union in which current account deficits are predominantly financed in common currency, more elasticity exists to run persistent deficits. This option is likely not beneficial for the deficit countries and could lead to excessive deficits, which make countries vulnerable and financially dependent. These issues cannot be discussed here in more detail.

First and foremost, Germany needs to contain further growth of the surplus and work on a strategy to gradually reduce the surplus. All experiences run in the three-pronged direction: internal revaluation, to complement the already existing and very painful internal devaluation in deficit countries, strengthening growth of aggregate domestic demand (a once-of leap is insufficient) by fiscal policy, collective bargaining rules which allow a rising wage share for a medium-term adjustment period, and structural change in European deficit countries whose export base shrank or had been hollowed out.

Graph 17



Source: WDI

Last not least, Germany and other European surplus countries could learn from China’s stunning reversal from excessive export-led growth toward domestic-demand-led growth with an amazing reduction of the enormous current account surplus of 10% of GDP in 2007 to a level of around 2% since 2011, using the export shock during the financial crisis as an occasion to change course to depart from its mercantilist strategy, without running into an adjustment crisis (graph 17). Germany will need much more time for rebalancing.

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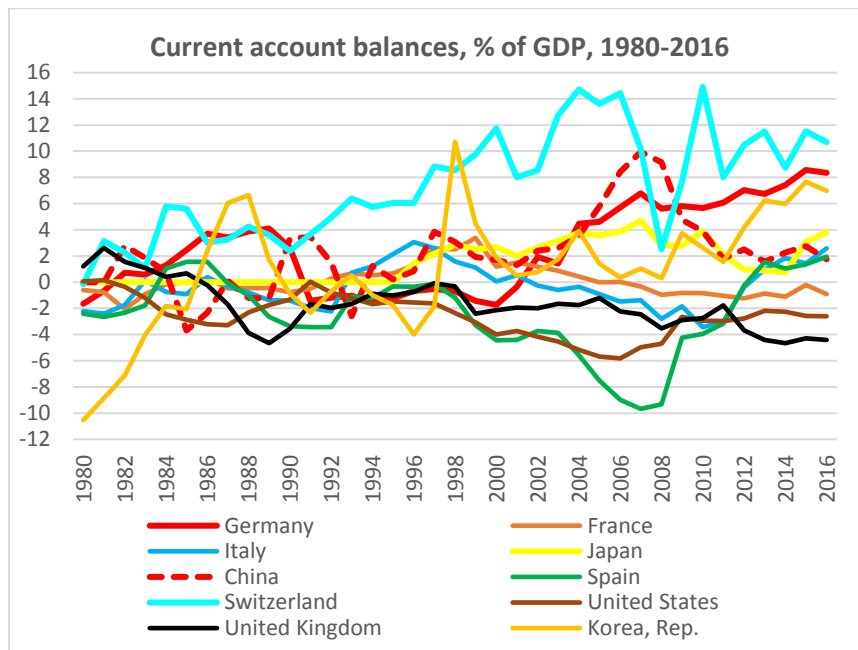
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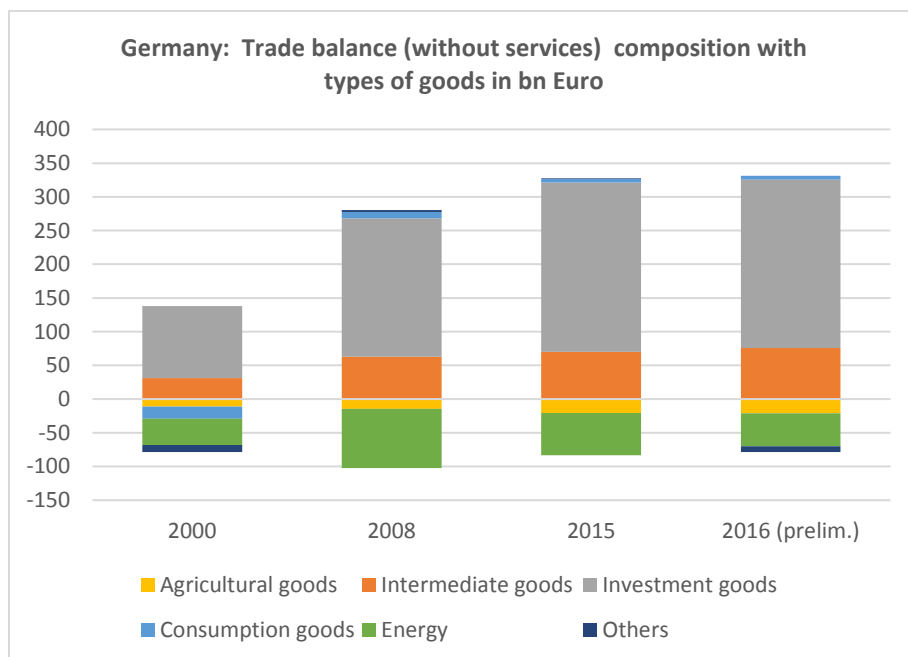
Appendix

Graph A1



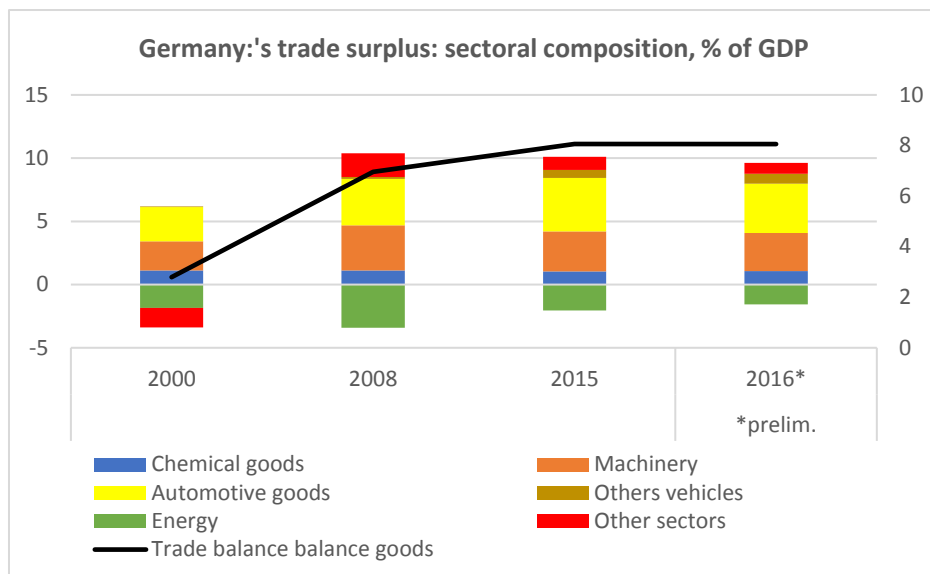
Source: World Bank, World Development Indicators, own calculations

Graph A2



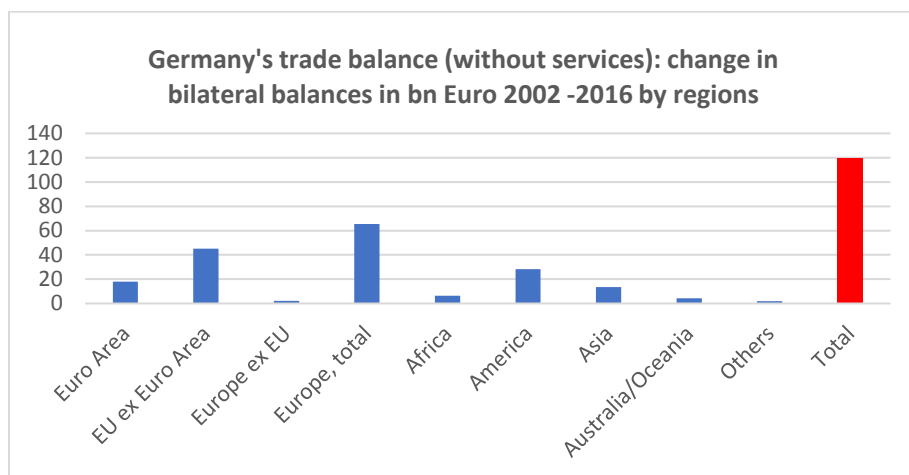
Source: Destatis 2017, own calculations

Graph A3



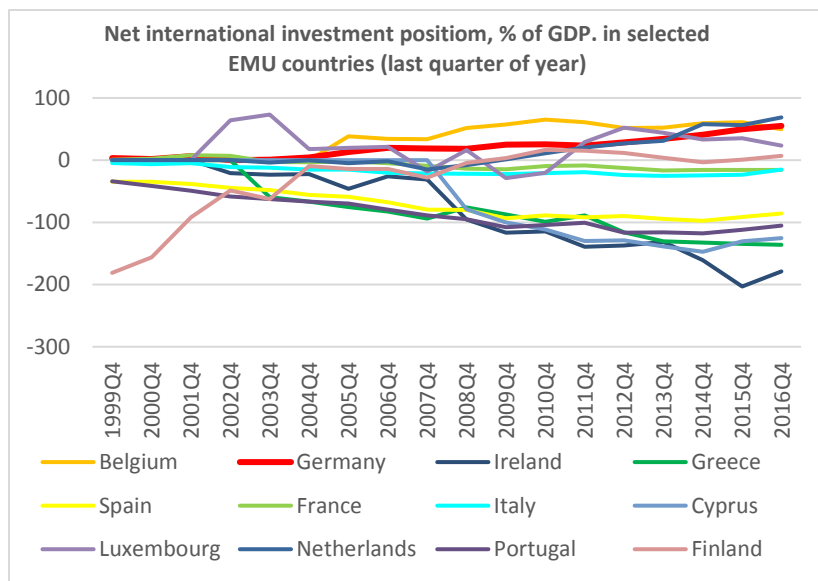
Source: Destatis 2017, own calculations

Graph A4



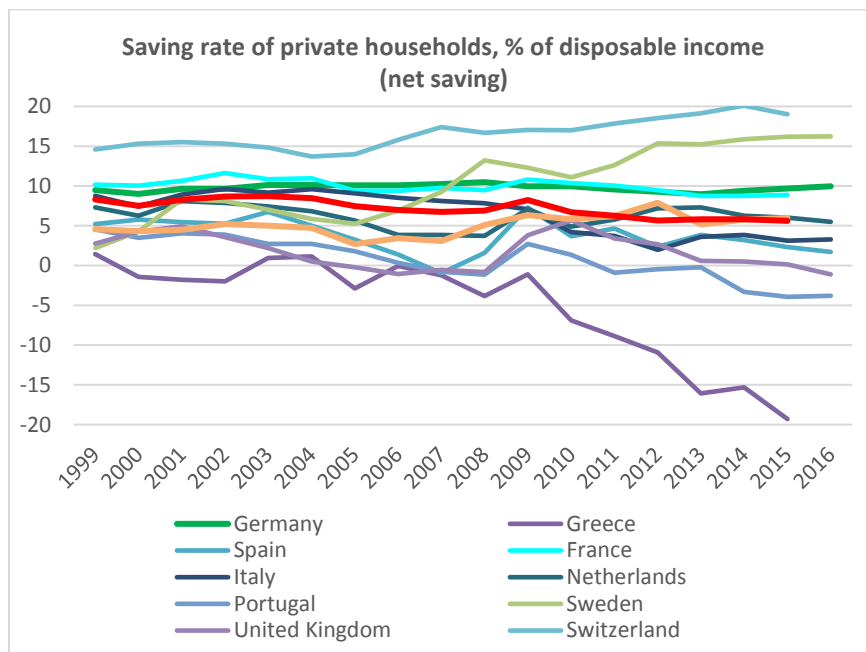
Source: Destatis, own calculations

Graph A5



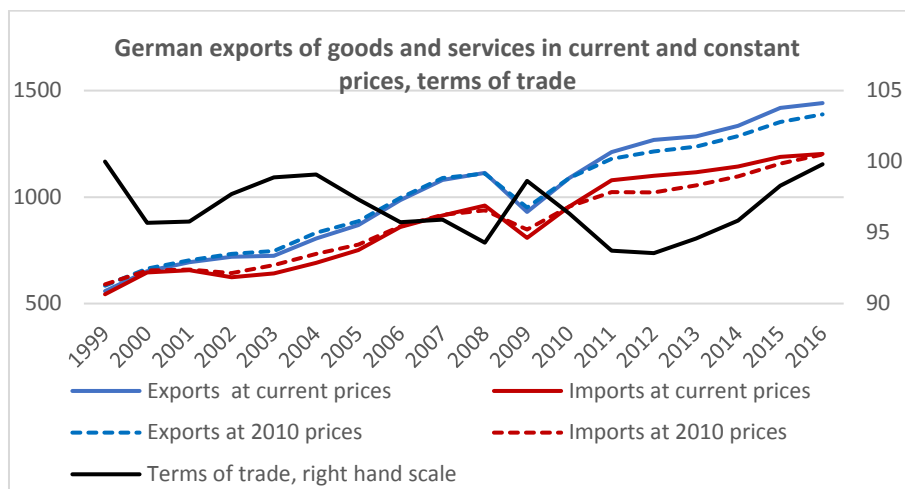
Source: Eurostat

Graph A6



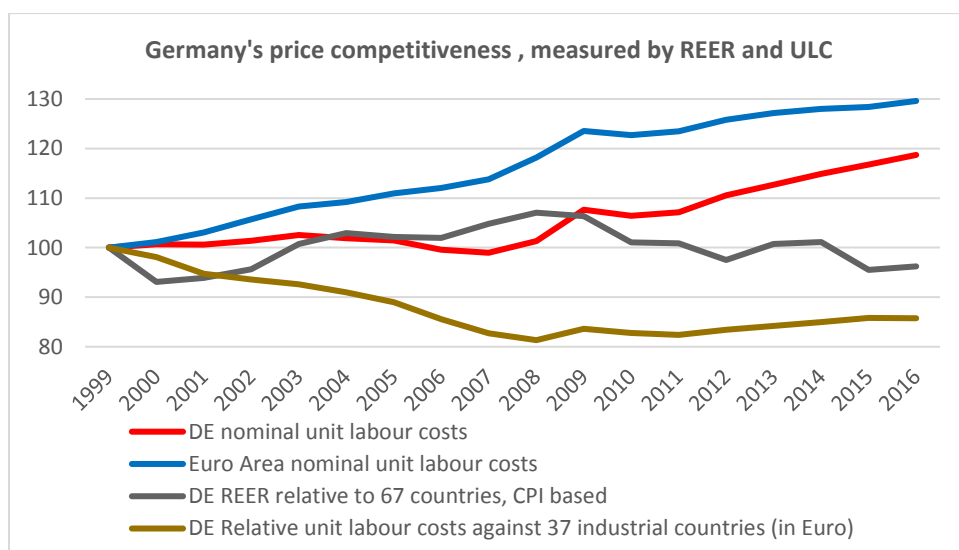
Source: AMECO

Graph A7



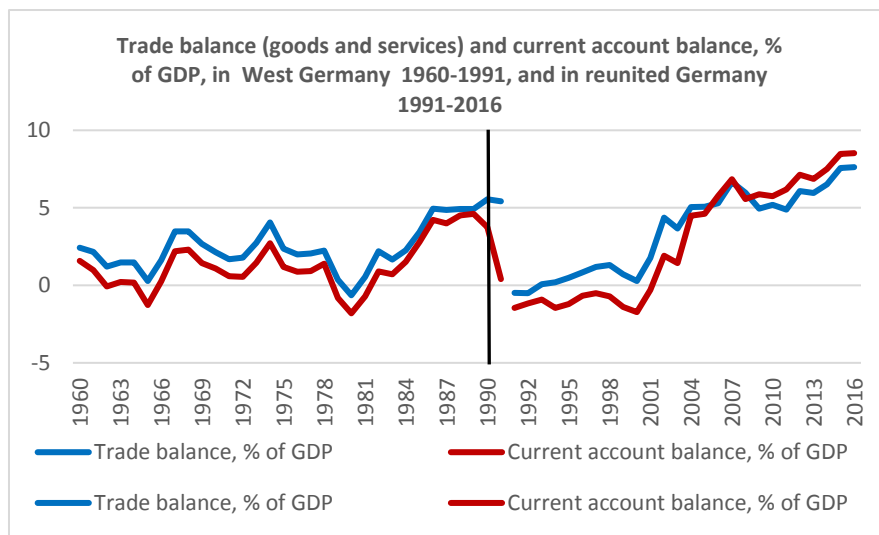
Source: AMECO

A8



Source: AMECO, Bruegel

Graph A9



Source: AMECO