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**Research Report**

## Intra-Euro rebalancing is inevitable but insufficient

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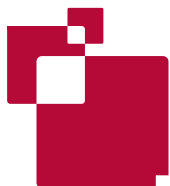
# INTRA-EURO REBALANCING IS INEVITABLE, BUT INSUFFICIENT

ZSOLT DARVAS

## Highlights

- Greece, Portugal and Spain face a serious risk of external solvency due to their close to minus 100 percent of GDP net negative international investment positions, which are largely composed of debt. The perceived inability of these countries to rebalance their external positions is a major root of the euro crisis.
- Intra-euro rebalancing through declines in unit labour costs (ULC) in southern Europe, and ULC increases in northern Europe should continue, but has limits because: the share of intra-euro trade has declined; intra-euro trade balances have already adjusted to a great extent; the intra-euro real exchange rates of Greece, Portugal and Spain have also either already adjusted or do not indicate significant appreciations since 2000; there are only two main current account surplus countries, Germany and the Netherlands; a purely intra-euro adjustment strategy would require too-significant wage increases in northern countries and wage declines in southern countries, which do not seem to be feasible.
- Before the crisis, the euro was significantly overvalued despite the close-to-balanced current account position.
- The euro has depreciated recently, but more is needed to support the extra-euro trade of southern euro-area members. A weaker euro would also boost exports, growth, inflation and wage increases in Germany, thereby helping further intra-euro adjustment and the survival of the euro.

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# INTRA-EURO REBALANCING IS INEVITABLE, BUT INSUFFICIENT

ZSOLT DARVAS, AUGUST 2012

## 1 THE QUESTION

The perceived inability of some southern euro-area members to achieve sustainable external positions and economic growth inside the euro area is a major factor behind the euro crisis. Their trade deficits should be turned to sizeable surpluses in which real exchange rate developments should play a role. Some adjustment, both in trade balances and real exchange rates, already took place in the past few years. The question that this Policy Contribution addresses is: is the remaining adjustment a purely intra-euro area issue or does the external value of the euro play a role?

## 2 EXTERNAL POSITIONS

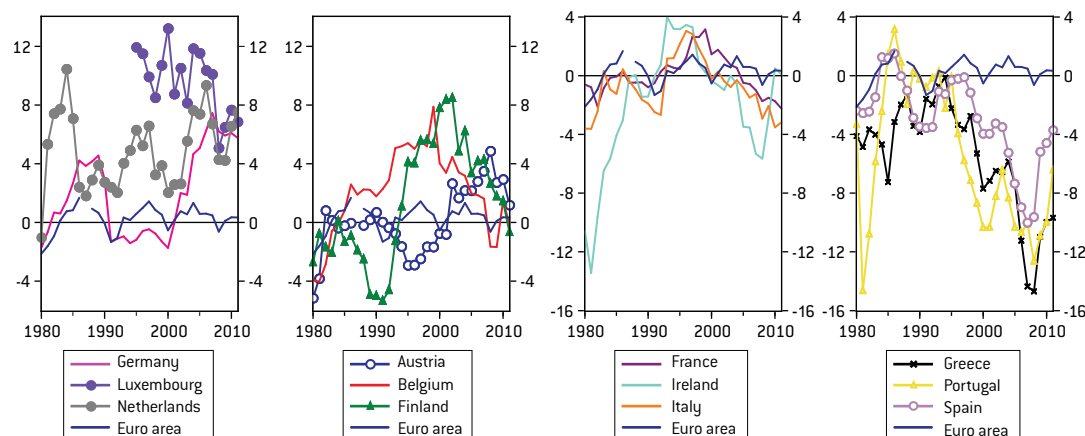
The 12 initial members of the euro area<sup>1</sup> had a close to balanced aggregate current account position during at least the past three decades, which was the result of diverse movements in individual countries (Figure 1). Current account deficits and surpluses were also observed before the creation of the euro. The most salient features, between 1999 and 2008, were a significant transition from a current account deficit to a

surplus in Austria and Germany, an increased surplus in the Netherlands, a broadly stable surplus in Luxembourg, while in the other eight countries the current account balance has gradually deteriorated. The deterioration was sharpest in Greece, Portugal and Spain.

Divergence within a monetary union, such as the divergence of current account balances, is not necessarily a bad thing. Capital flows across regions and the ensuing current account deficits and surpluses may reflect the better utilisation of resources when capital moves to fast-growing regions to the benefit of the whole monetary union. However, the boom and bust in the Irish and Spanish housing sectors exemplifies capital misallocation. And the build-up of 'excessive' regional debt is undesirable.

It is difficult to assess at what level external debt becomes excessive. The recently created European scoreboard for the surveillance of macro-economic imbalances (European Commission, 2012) sets an indicative threshold of minus 35 percent of GDP for the net international investment position (IIP)<sup>2</sup>. Whether this threshold is reasonable or not is perhaps a topic for discussion, yet

Figure 1: Current account balance (% GDP), 1980-2011



1. In this Policy Contribution we focus on the initial 12 members of the euro area (11 original members plus Greece), because major external imbalances were observed among them during the euro's first decade.

2. 'Net international investment position' and 'net foreign assets' (NFA) refer to the same concept and could be used interchangeably.

Source: IMF World Economic Outlook April 2012 and author's calculations.

there are four euro-area countries, Greece, Ireland, Portugal and Spain, in which the net international investment position is much worse, close to minus 100 percent of GDP (Figure 2).

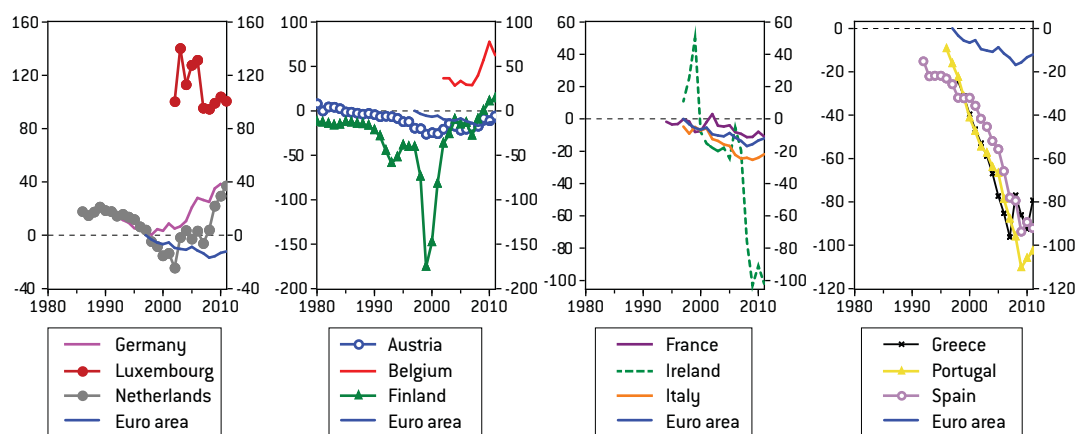
As also emphasised by European Commission (2012), the composition of foreign assets and liabilities and their maturities also matter. Foreign direct investment (FDI) is generally regarded as a less risky and more stable source of funding (Furceri *et al*, 2012), while debt, and in particular short term debt is riskier. In terms of the composition of net foreign liabilities, Ireland differs from Greece, Portugal and Spain: Ireland has very large net liabilities in equity portfolio investments and is a creditor of the rest of the world. The other three countries have large net debt liabilities (Table 1).

The reasons for the accumulation of net foreign liabilities are similarly important. Ireland again differs from the other three countries in this respect. While the Irish net IIP deteriorated by €173 billion

from 1998 to 2011, the cumulative current account deficit during this period explains just a small part of the total, €37 billion. In 2007 Ireland's net IIP was minus €37 billion (19 percent of GDP) – a reasonable figure – which suddenly deteriorated to €153 billion (98 percent of GDP) by 2011 (Figure 2). This sudden deterioration was mostly the result of valuation changes and is captured in the last but one line of Table 2<sup>3</sup>. In Greece, Portugal and Spain, by contrast, the cumulative current account deficit was of a similar magnitude to the deterioration of the net IIP. Among the components of the current account deficit, the balance of goods deficit was prominent in these three countries (Table 2 on the next page).

Therefore, while Ireland should also aim to improve her net IIP, the reasonable IIP position before the crisis suggests that the country will be better able to do this than Greece, Portugal and Spain, where external sustainability is a serious issue.

Figure 2: Net international investment position (% GDP), 1980-2011



Source: Eurostat and author's calculations.

Table 1: Composition of net international investment position, 2011 (% GDP)

	(1)=(2)+(3)+(4) +(5)+(6)+(7) Net international investment position	(2) Net foreign direct investment	(3) Net portfolio investment in equity securities	(4) Net portfolio investment in debt securities	(5) Net other investment (mostly loans)	(6) Net financial derivatives	(7) Reserve assets
Greece	-79	5	6	-10	-84	1	2
Ireland	-98	31	-451	264	53	5	1
Portugal	-103	-18	-7	-10	-76	-1	10
Spain	-92	0	-8	-43	-45	1	3

Source: author's calculations using data from Eurostat.

3. See Lane (2011) for an assessment of the sharp deterioration of Ireland's position.

3 EXPORTS AND REAL EXCHANGE RATES

Exports should play a major role in the adjustment process, which can be facilitated by improvements in the price and non-price dimensions of competitiveness. The main tools to improve non-price competitiveness are structural reforms, education, innovation and improvements

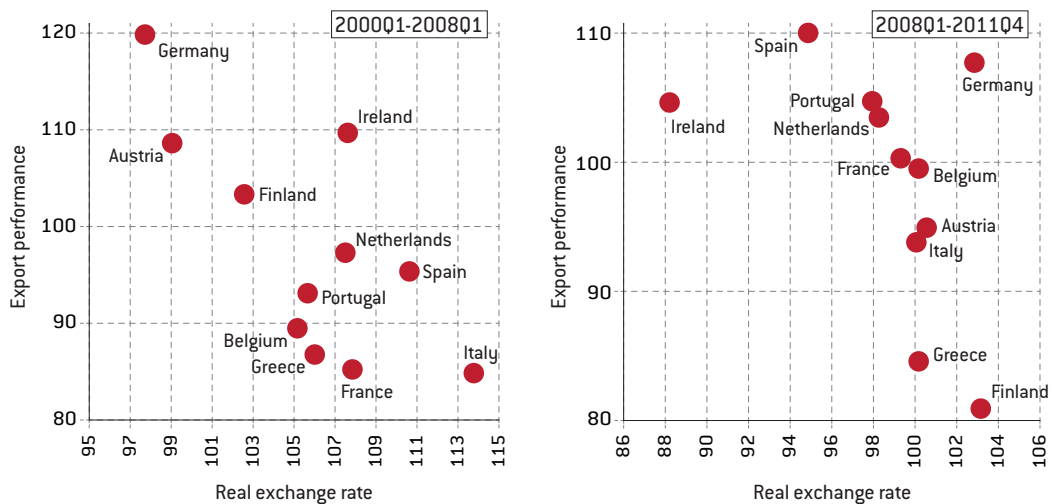
in corporate governance. Such improvements are indispensable in most countries, but they require a long time before they take effect. Price (or cost) competitiveness can be improved via a depreciation of the real effective exchange rate (REER), which is usually measured by the unit labour cost (ULC) based REER<sup>4</sup>. Figure 3 shows that there was a rather strong association between

Table 2: Change in net international investment position and the cumulative current and capital account balances, 1998-2011 (€ billions)

Time period	Indicator	Greece	Ireland	Portugal	Spain
1998-2011	(1) Change in net IIP	-141	-173	-151	-812
Cumulative sum 1999-2011	(2) Current account = (2.1)+(2.2)+(2.3)+(2.4)	-234	-38	-189	-665
	(2.1) Goods	-366	382	-220	-696
	(2.2) Services	167	-115	61	311
	(2.3) Income	-73	-303	-67	-239
	(2.4) Capital transfers	37	-2	37	-40
	(3) Capital account	33	2	25	82
1998-2011	(4) Change in net IIP not due to current and capital accounts = (1)-(2)-(3)	60	-136	13	-229
2011	(5) GDP	215	156	171	1073

Source: author's calculations using data from Eurostat.

Figure 3: Unit labour cost based real exchange rate vs. export performance, before and after 2008Q1



Source: Darvas (2012a) for real exchange rates and author's calculations for export performance using data from Eurostat and national statistical offices. Note: Luxembourg is not included due to missing data. An increase in the real exchange rate indicates real appreciation of the ULC-based REER calculated against 30 trading partners (23 EU countries, not including Cyprus, Luxembourg, Malta and Romania, due to missing data, plus Australia, Canada, Japan, Korea, New Zealand, Norway and the United States). The REER considers the business sector excluding construction, real estate and agriculture, and was calculated using constant 2008Q1 sectoral weights in order to limit the impact of compositional changes on the REER. See Darvas (2012b) for further details. Export performance is a measure of export market share: the ratio of the volume of exports of goods and services to the weighted average volume of imports of goods and services of 40 trading partners. The 40 partners include the 30 countries against which the REER-ULC is calculated plus Brazil, Croatia, Cyprus, Iceland, Luxembourg, Malta, Romania, Russia, Switzerland and Ukraine. Export performance is measured as the change from the beginning to the end of the period, ie from 2000Q1 to 2008Q1 (measured as 2000Q1=100) on the left hand panel and from 2008Q1 to 2011Q4 (measured as 2008Q1=100) on the right hand panel. Since REER changes impact export performance with a lag, we relate export performance to the average REER during the period considered, ie the average of 2000Q1-2008Q1 (as a percent of 2000Q1 REER) on the left hand panel and the average of 2008Q1-2011Q4 (as a percent of 2008Q1 REER) on the right hand panel.

4. We found that the ULC-based REER (as calculated in Darvas 2012a and 2012b with fixed sectoral weights for the business sector excluding agriculture, construction and real estate) better correlates with export performance than the consumer price index-based REER.

ULC-REER developments and export performance before the crisis, and a relationship, though weaker, can also be observed between 2008-2011. Econometric evidence also supports the finding that the trade balance and the real exchange rate are related (eg Lane and Milesi-Ferretti, 2002). Furthermore, the econometric results of Gagnon (1996) have also shown that a deterioration of the net IIP position should be accompanied by a depreciation of the real exchange rate.

Consequently, the real exchange rate should have a major role in fostering the external sustainability of the four euro-area countries that have close to minus 100 percent of GDP net IIP. How has the real exchange rate against major trading partners evolved so far? While Figure 3 presented a summary measure of the ULC-based real effective exchange rate (calculated against the broadest group of countries), Figure 4 shows quarterly REER developments from 2000 to 2011 calculated against the three major geographical groups of trade partners: euro area, non-euro area EU, and non-EU.

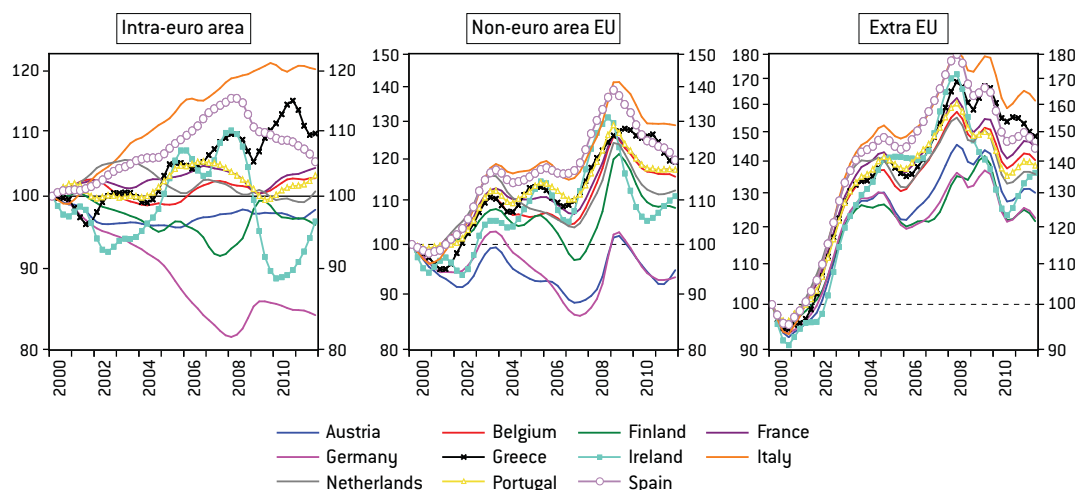
Intra-euro ULC-REERs diverged significantly before the crisis. Germany was able engineer the greatest real depreciation, while the biggest real appreciation was in Italy. Italy also faced the highest real appreciation against non-euro EU

countries and non-EU countries. Italy's significant real appreciation also highlights that ULC-REER is not the only driver of trade balances: while Italy had the worst export performance out of the euro-area countries before the crisis (ie the overall ULC-REER is well correlated with export performance, as shown by Figure 3), Italy did not have such huge trade and current account deficits as eg Greece, Ireland, Portugal and Spain (Figure 1). Domestic demand developments also played a strong role in driving current accounts. In this regard European Commission (2009) presented a very telling chart showing a close relationship between the change in current account balance (as a percent of GDP) and the percent change in housing prices. The latter was influenced by domestic demand developments.

Since 2008, real exchange rates have adjusted to a certain extent. Concerning the four euro-area periphery countries with large net external liabilities:

- Spain's intra-euro REER has almost corrected the pre-crisis increase;
- The increase was not at all high in Portugal (3 percent cumulative increase from 2000Q1 to 2011Q4);
- We also cannot say that Greece's REER has overly appreciated compared to the rest of the euro area, especially after the recent fall in the

Figure 4: ULC-based real effective exchange rate (business sector excluding agriculture, construction and real estate, calculated with constant sectoral weights to minimise the compositional effect; 2000Q1=100), 2000Q1-2011Q4



Source: Darvas (2012a). Note: since the indicators are noisy, we show the Hodrick-Prescott filtered values calculated with smoothing parameter 1, a very low value, to get rid of the short term noise only.

5. Note that in the case of Ireland, there is a significant difference between Eurostat's intra-euro REER, which shows a 28 percent real appreciation from 2000Q1 to 2008Q2, and our REER, which indicates an appreciation of 9 percent only. The major reason for this discrepancy is that Eurostat considers the total economy, while we consider only business sectors excluding agriculture, construction and real estate, and we also exclude the impacts of compositional changes. As shown by Darvas (2012b), ULC rose massively in the public sector and significantly in the construction industry and real estate, yet neither the public sector, nor construction nor real estate matter directly for export performance and hence our indicator is preferable. From 2008Q2 to 2011Q4 the difference is smaller: Eurostat's intra-euro REER indicates an 18 percent real depreciation, while our REER indicates a 14 percent fall.

6. France and Italy are larger than Spain and they also used to have current account deficits, but their deficits were much smaller than in Spain (Figure 1) and their net international investment position is much more favourable than in Spain (Figure 2).

7. The reduction in trade deficits during the crisis may not reflect an improved competitive position, but can be the result of demand compression and the consequent forced reduction in imports. This effect may disappear once the economy has returned to normal (which unfortunately seems still to be far away in southern Europe). While the impact of demand compression on imports depends on the product structure as well, which

REER (the cumulative increase from 2000Q1 to 2011Q4 is 10 percent);

- The Irish intra-euro REER has depreciated sharply during the past few years, even if it has started to appreciate recently<sup>5</sup>.

But the middle and right hand panels of Figure 4 show that the non-euro EU and the extra-EU REERs are still much higher than in 2000, even though some depreciation, fuelled by the depreciation of the euro, can be observed in all countries.

#### 4 THE ROLE OF EXTRA-EURO TRADE

Figure 5 shows the balances of trade in goods and current accounts of Spain and Germany, the euro area's largest main deficit and surplus countries<sup>6</sup>. Bilateral current accounts are generally not available, but bilateral trade balances are. In a number of countries, including Spain and Germany, bilateral trade balances account for a significant portion of the current account balance.

In 2006 and 2007, the last good years before the crisis, Spain's trade deficit with partners outside the EU was even slightly higher than the trade deficit with euro-area partners – the same can be said about German trade surpluses. Also, Germany had a sizeable surplus with non-euro EU countries.

After 2007, intra-euro trade balances adjusted significantly: Spain's deficit and Germany's surplus with the rest of the euro-area have declined substantially toward zero. Yet Spain's overall trade deficit remained sizeable, about 5 percent of GDP<sup>7</sup>. It is also interesting to observe that Germany was able to increase her surplus with non-EU countries, partly compensating for the reduction of the surplus with EU countries. As a consequence, in 2011, 70 percent of the German trade surplus came from extra-EU trade, 23 percent from non-euro EU members, and less than 7 percent from euro-area members.

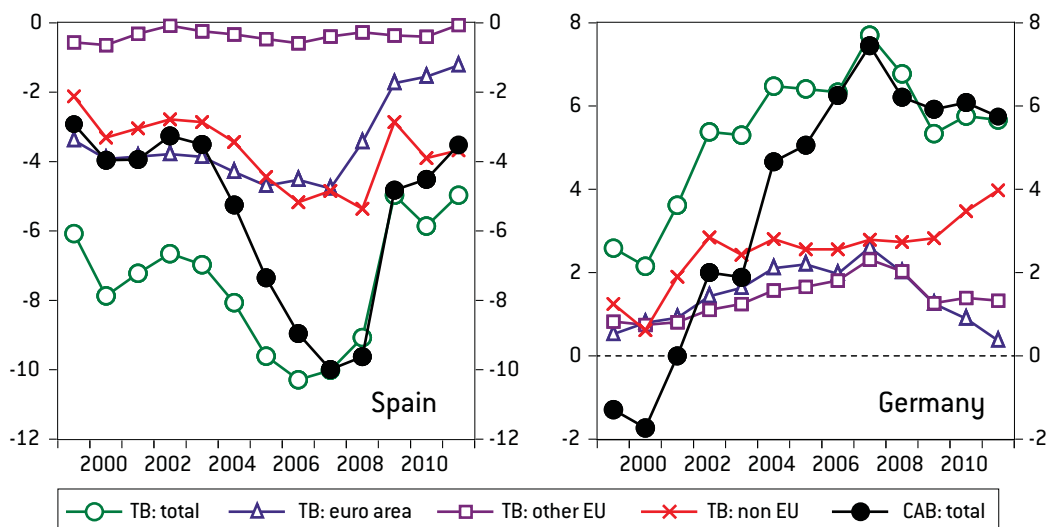
The shift from intra-euro area to extra-euro area trade can also be detected in gross trade numbers (Table 3). In 2011, euro-area partners accounted for 53 percent of Spanish exports and 38 percent of German exports. As we show in Table 4, the proportion of Greek exports going to euro-area partners is even lower at 29 percent.

Table 3: Intra-euro trade as % of total trade

	Spain		Germany	
	Exports	Imports	Exports	Imports
1999	61	60	45	48
2007	57	53	42	45
2011	53	47	38	43

Source: author's calculations using the sources and methodology described in the note to Figure 5. Note: trade within the first 12 euro-area members is considered.

Figure 5: Trade balance with different regions, and the current account balance (% GDP), 1999-2011



Source and note: Bilateral goods trade data was collected from Eurostat's External Trade database. Since the export of country A to country B, as reported by A, typically does not equal the import of country B from country A, as reported by B, we averaged all bilateral trade flows in order to have a consistent database. Trade balance (TB) with different regions was calculated using this corrected trade-flow data. The current account balance (CAB) is from Eurostat's balance of payments database.

## 5 THE EQUILIBRIUM RATE OF THE EURO

We have established in the previous section that extra-euro trade is becoming more important, both in terms of gross flows and balances, and therefore the euro's exchange rate can have relevance. What can be said about the equilibrium value of the euro considering the whole area? Was it in a close-to-equilibrium position, as the overall euro area's close-to-balanced external current account position might suggest?

Certainly, the heterogeneity of developments indicated by the left panel of Figure 4 makes it very difficult to interpret the equilibrium rate of the euro. This may explain why we could not identify any European Central Bank, European Commission or International Monetary Fund estimates for the euro area. European Commission (2009) reported estimates for intra-euro misalignments, but not for the overall misalignment of the euro<sup>8</sup>.

Bénassy-Quéré *et al* (2008) presented estimates for the euro's equilibrium exchange rate, considering the concepts of the fundamental equilibrium exchange rate (FEER) and the behavioural equilibrium exchange rate (BEER)<sup>9</sup>. For both concepts they made various assumptions. According to their estimates, in 2005 the range of the overvaluation of the euro's real effective exchange rate was between 6.3 and 46.9 percent considering FEER and 4.7 and 9.5 percent considering BEER. The range for the FEER is very wide, indicating that results are really sensitive to the actual assumptions made. Yet all estimates suggest that the euro was overvalued in 2005. They found that the estimated equilibrium net IIP of the euro area was close to zero in 2005, while the actual value was about minus 10 percent of GDP.

Between 2005 and 2008 the euro's IIP worsened (Figure 2), largely due to valuation changes, and its REER appreciated further. Therefore, the euro's overall exchange rate was likely to have been

even more significantly overvalued in 2008. Cline and Williamson (2008) also concluded that euro was overvalued.

According to European Commission (2009), the intra-euro REER of Germany was about 10 percent undervalued and the intra-euro REERs of Greece, Portugal and Spain were more than 10 percent overvalued in 2008. Combining these intra-euro misalignment estimates with the overall overvaluation of the euro, in 2008 Germany likely faced a small overall overvaluation, while Greece, Portugal and Spain very significant overvaluations.

Since 2008 the euro's overall REER has depreciated and the net IIP improved somewhat – again the improvement is largely due to valuation changes, as shown by Table 7.3 of European Central Bank (2012). The euro's depreciation implies that Germany now likely faces an undervalued REER, but Greece, Portugal and Spain continue to face an overvalued overall rate, though less than in 2008.

Another measure of the equilibrium rate is purchasing power parity (PPP): price levels of goods and services should equalise between countries with the same productivity level, up to a small margin reflecting tariffs, transportation costs and frictions related to labour and factor movements and price equalisations. In a country with lower productivity than her trading partner, the price level should be lower due to the Balassa-Samuelson effect<sup>10</sup>.

Figure 6 on the next page compares the actual nominal exchange rate between the euro (weighted average of the original 11 euro members before 1999) and the US dollar with the PPP exchange rate, ie the rate that would equalise the price levels of GDP between the euro area and the US.

Since the euro-area's productivity was broadly stable at about 70-75 percent of the productivity

differs somewhat considering intra-euro and extra-euro imports, the different pattern of the Spanish trade deficit across the main geographical dimensions is striking.

8. The ECB and the IMF published several studies on the methodology of exchange rate assessment, see eg Bussière *et al* (2010) and Isard (2007).

9. The FEER and BEER are two popular methods for calculating the equilibrium values of real exchange rates. The FEER approach aims to identify the exchange rate that would achieve both the external balance (eg the current account moves to its long-term sustainable target) and internal balance (eg zero output gap). The BEER approach links the real exchange rate to a set of economic fundamentals in an econometric model and calculates the equilibrium rate by plugging in the long-term values of the fundamentals into the estimated equations. See eg Égert and Halpern (2006).

10. The Balassa-Samuelson effect is based on the following principles: while the prices of tradable goods should still broadly equalise due to international trade (yet lower local distributional costs make the retail prices of tradeable goods somewhat lower), lower productivity implies lower wages in the tradable sector. Since wages and profits should equalise between the tradable and non-tradable sectors also within a country, the price level of non-tradables should be lower and therefore the overall price level should also be lower in a lower productivity country than in her higher productivity trading partner.

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*'The heterogeneity of real exchange rate developments among euro-area members makes it very difficult to interpret the equilibrium rate of the euro. Yet available estimates suggest that the euro was overvalued before the crisis.'*



of the US from the early 1970s, the price level should have been lower, ie the actual exchange rate should have been below the PPP exchange rate. However, Figure 6 shows that there were a number of periods, including 2003-2011, when the actual exchange rate was even above the PPP rate. This evidence lends further support to the conclusion that the euro's exchange rate was likely overvalued.

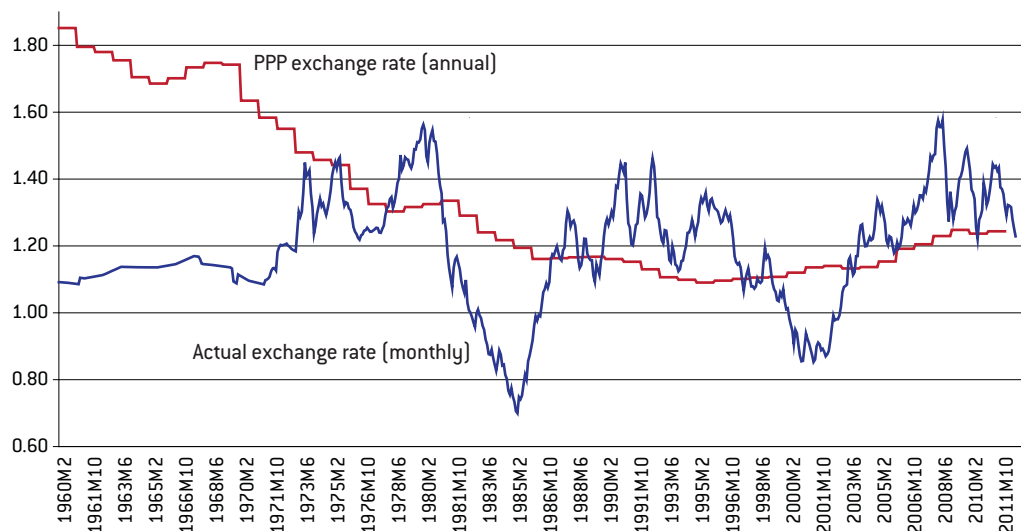
It is also noteworthy that the actual rate was well below the PPP rate in the 1960s, when Europe was catching up fast. Certainly, the main driver of catching-up during this period was not the low nominal exchange rate relative to the PPP rate, but the rebuilding of the capital stock lost during the war, technological catching-up and economic integration efforts (Darvas and Pisani-Ferry, 2011). But at least the exchange rate likely did not hinder Europe's catching-up.

## 6 HOW TO FOSTER FURTHER REAL EXCHANGE RATE ADJUSTMENT?

The simple decomposition of the REER presented in Darvas (2012b) shows that REER depreciation can occur through domestic ULC declines (which in turn can be achieved by productivity improvements and nominal wage falls), ULC increases of trading partners, and nominal effective exchange rate (NEER) depreciations.

- The domestic adjustment capacity is reflected in domestic productivity and wage developments: the former should increase relative to the latter. Since 2008, significant adjustment has been achieved, especially in Ireland and Spain (Figure 4). However, productivity improvements came about largely through reducing labour input, but nominal wages barely declined in Ireland and did not decline in Spain, despite huge unemployment, implying downward wage rigidity (Darvas, 2012a). These developments underline the

Figure 6: Euro exchange rate against the US dollar and the purchasing power parity (PPP) conversion rate, January 1960 - July 2012



Source: author's calculations using data from the OECD (PPP exchange rates), IMF and ECB (actual exchange rates) and IMF and World Bank (GDP). Note: the PPP exchange rate is the time-varying weighted average of the actual members of the euro area after 1999 and the original eleven euro members before 1999. The weights are changed annually and are derived from the given year's distribution of GDP among euro-area members after 1999 and among the original eleven euro members before 1999. For the actual exchange rate, the euro's rate is shown from 1999, while before the time-varying weighted average of the nominal exchange rate of the original eleven euro members, which were normalised by the fixed conversion rate (eg the Deutsche Mark's rate is divided by 1.95583, the Spanish peseta's rate is divided by 166.386, etc). A 12-month moving average is used to derive the monthly weights from the annual weights. The main reason for the changing actual exchange rate in the 1960s is the time varying nature of the weights. In an earlier version of this chart (Darvas, 2010b) we used the PPP exchange rates from the IMF's World Economic Outlook, which resulted in somewhat lower values, eg 1.18 for 2010 instead of the 1.24 value derived from OECD data as shown in this figure.

difficulties and pain in domestic ULC reductions.

- There is a strong case for calling for ULC increases in the 'northern' euro-area trading partners, see for example De Grauwe (2012), Wolff (2012), and Merler and Pisani-Ferry (2012)<sup>11</sup>. To some extent wage increases have started in Germany, but in any case this process will take a long time. ULC increases of non-euro area trading partners would help as well, but this is clearly beyond the scope of international policy coordination.
- In their elegant analytical paper, Merler and Pisani-Ferry (2012) also demonstrate that reducing the pace of fiscal adjustment in the northern members of the euro area would facilitate the REER adjustment of the southern members<sup>12</sup>. They also show that structural reforms which make wages more responsive to unemployment in southern Europe would facilitate intra-euro REER adjustment. Unfortunately, the relaxation of fiscal targets in northern Europe does not seem to be on the agenda, and it will take a long time before structural reforms in southern Europe take effect.
- Members of the euro area do not have individual exchange rates, and the exchange rate of the euro is not under the control of national policymakers. But the European Central Bank could implement measures which affect the exchange rate of the euro.

The key issue is if further adjustments in real exchange rates and trade balances should be treated as a purely intra-euro story, or if policymakers should also seek to depreciate the euro.

The evidence we presented underline that a purely intra-euro strategy has limits, since the share of intra-euro trade in total trade is not that high (Table 3) and intra-euro trade balances have corrected to a great extent (Figure 5), along with the intra-euro REERs of the four euro-area countries with close to minus 100 percent of GDP net IIP (Figure 4). Figure 1 also indicates that by 2011 there were only three main current account surplus countries: Germany, the Netherlands and small Luxembourg. If eg, the intra-euro trade surplus of Spain is to compensate for her extra-euro trade

deficit, then further adjustment in intra-euro REERs should be very significant and therefore there should be an 'overcompensation' from the German and Dutch side, with wages and prices rising much faster in these two main remaining surplus countries, which would be resisted.

Also, as Wolff (2012) lucidly argued, if the ECB keeps the 2 percent inflation target and price developments sooner or later follow wage developments, than the much faster German and Dutch wage increases would require an ever more significant wage deflation in southern Europe, which may or may not be desirable, but does not seem to be feasible, given the downward wage rigidity observed in high unemployment countries (Darvas, 2012a).

The secondary effects of a purely intra-euro adjustment can be small, and at best time consuming. Intra-euro rebalancing, eg fast wage increases in Germany and stable or even declining wages in Spain, would make Spain more competitive with respect to all trading partners, not just with Germany, and the Spanish position relative to Germany could improve in other markets too. But changing wages is a gradual process, even if fostered by labour market reforms in Spain.

Therefore, there is a strong case for pushing for a weaker euro (not just against the US dollar, but in nominal effective terms), in addition to continued intra-euro rebalancing. This would not solve the euro's crisis on its own, but would help to address intra-euro rebalancing as well:

- 1 The weaker euro would help Spain and other southern euro-area members to rebalance their extra-euro trade deficits and to foster the development of their tradable sectors. There is certainly a hope that the tradable sector can respond to a weaker exchange rate, since Spanish exports are performing the best among the first 12 members of the euro since 2008, in line with the real exchange rate adjustment achieved so far (right panel of Figure 3).
- 2 But northern countries, like Germany would most likely benefit even more than southern European countries: according to the estimates presented in Bussière *et al* (2010), Germany's

11. A main difference between De Grauwe (2012) and Wolff (2012) is that De Grauwe (2012) claims that adjustment has been asymmetric in recent years, while Wolff (2012) argues that it has been symmetric but insufficient. Consequently, De Grauwe (2012) calls for a stronger wage increase in the northern euro-area countries only, while Wolff (2012) argues that if the ECB is to keep its 2 percent inflation target and wage developments feed inflation, then a higher wage increase in the north is only feasible if wages fall much more in the south.

12. In Darvas (2010a) I have likewise argued that premature fiscal consolidation at the euro-area level will have several side effects, of which one is that it will make it much harder to reduce intra-euro area current account imbalances.

exports are the most price sensitive among the euro-area countries that they consider. Also, the share of Germany's tradable sector in total output is among the highest (Table 4). Boosting German extra-euro exports and its trade surplus would also help intra-euro rebalancing by fostering faster German wage increases because of the tight labour market conditions (Siegel, 2012; Feldstein 2012). In contrast, because of high unemployment, the weaker euro may not result in much increase in wages and prices in southern Europe.

A weaker euro would push the whole euro area into an external surplus, thereby worsening global imbalances. Ideally, emerging economies with current account surpluses should let their currencies appreciate against the euro, making room for the euro-area to have an external surplus. Yet fiscal expansion in northern Europe, or at least a slower pace of consolidation, could reduce the euro-area external surplus (Darvas, 2010a).

## 7 CONCLUDING REMARKS

We have argued that the external solvency of Greece, Portugal and Spain is at risk and the perceived inability of these countries to rebalance

their external positions is a major root of the euro crisis. While intra-euro rebalancing should continue, a purely intra-euro rebalancing strategy has limits and there is a strong case for a weaker euro. The best policy mix to foster further rebalancing would be:

- Wage decline in southern Europe (which is not really happening);
- Higher wage increases in northern Europe (which seems to be happening to some extent at least in Germany, but will be a slow process);
- Structural reforms to foster wage adjustment in southern Europe (which require a long time to take effect);
- Fiscal expansion in northern Europe, or at least a significant slowdown in the pace of fiscal consolidation (which does not seem to come);
- Policies to weaken the euro.

What could engineer a fall in the exchange rate of the euro?

An escalation of the euro crisis could do this job but this is not the way to go.

The ECB could and should play a role. Clearly, the ECB's mandate is to maintain price stability, but

Table 4: External positions, export and manufacturing shares, and the geographical distribution of exports, 2011

	Current account balance (% GDP)	Net international investment position (% GDP)	Exports of goods and services (% GDP)	Manufacturing value added (% total)	Destination of goods exports (% total)			
					Euro area 12 (members 1999-2001)	Euro area 5 (new members 2007-2011)	Non-euro area EU	Non EU
Netherlands	9.2	37	83	12.7	61	1	15	23
Luxembourg	7.1	101	165	6.9	67	1	14	19
Germany	5.7	36	50	22	38	2	19	41
Austria	1.9	-6	57	18.9	49	4	17	30
Ireland	0.1	-102	106	25.8	40	0	20	40
Finland	-0.7	14	39	18.2	29	3	24	44
Belgium	-0.8	63	85	14.1	58	1	13	29
France	-2.2	-11	27	10.5	47	1	12	39
Italy	-3.2	-22	29	15.9	40	2	13	45
Spain	-3.5	-92	30	13.4	53	1	12	35
Portugal	-6.4	-103	35	13	63	0	10	27
Greece	-9.8	-79	24	9.9	29	7	15	49

Source: Author's calculations using data from Eurostat. Note: countries are ordered according to the current account balance in 2011.

price stability is not in danger now. Current debates about the ECB's monetary policy focus on its possible role in limiting government bond spreads of euro-area member states through massive bond purchases, a debate that gained momentum after the 26 July 2012 speech of President Draghi (Draghi, 2012). President Draghi said that "*the ECB is ready to do whatever it takes to preserve the euro*" and hinted ECB intervention in bond markets by saying that "*to the extent that the size of these sovereign premia hampers the functioning of the monetary policy transmission channel, they come within our mandate*". Speculation about such interventions has led to a modest appreciation of the euro and if actually implemented, could push the euro even more.

Therefore, the ECB should also consider supplementary policies to achieve a weaker euro by a more accommodative monetary policy

stance, which would anyway be justified in a highly recessionary environment. The 11 July 2012 interest rate cuts<sup>13</sup> were immediately followed by a depreciation of the euro. More rate cuts would have similar effects, especially if accompanied by a commitment to keep the rates low for a longer period, as the Federal Reserve announced<sup>14</sup>. Other options, such as quantitative easing, should also be considered.

How could global partners react? The US, China and other major players, which all have brighter economic outlooks than the euro area, should recognise that the euro was overvalued for several years in the second half of the 2000s. The best they can do to help the resolution of the euro crisis is not lending more money, but allowing the euro to become undervalued for some years. Helping the resolution of the euro crisis is in their interests as well.

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13. On 11 July 2012 the ECB cut the main refinancing rate from 1.00 percent to 0.75 percent, the marginal lending rate from 1.75 percent to 1.5 percent, and the rate of the deposit facility from 0.25 percent to zero percent.

14. "The Committee also decided to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that economic conditions – including low rates of resource utilization and a subdued outlook for inflation over the medium run – are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013" (Federal Reserve, 2011). In more recent statements, eg the statement of 1 August 2012, "the exceptionally low levels for the federal funds rate" are expected to persist "at least through late 2014".

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