

Economic Policy
Sixty-first Panel Meeting
Hosted by the Bank of Latvia
Riga, 17-18 April 2015

The Rise and Fall of European Current Account Deficits

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The organisers would like to thank the Bank of Latvia for their support.
The views expressed in this paper are those of the author(s) and not those of the supporting organization.

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November 2014

Abstract: This paper traces the rise and fall of current account deficits in certain euro area countries and in the Baltics. These countries all entered the global financial crisis with sizable current account deficits, and the unwinding of these deficits has been a complex and painful process for most. While much of the general policy discussion of the large pre-crisis deficits has focused on losing export competitiveness, this paper highlights other results in the literature regarding import booms as well as a dimension that is rarely discussed—the drop in the non-trade portion of the current account (transfers and net income balance) in many countries. The paper also examines progress made in unwinding these deficits. Most countries have made tangible progress, but with different degrees: improvement of price competitiveness and a shift of production from nontradable to tradable sectors has helped increase exports and along with compressed imports, close the current account deficits. The adjustment, though, has taken place against recessions and low growth in the euro area, and the paper also considers what has made the process more painful in some countries rather than others. We find that large current account balances prior to the crisis is the best predictor of a sharp drop in output during the crisis. Supportive macro policies to cushion the adjustment process and keep overall euro inflation at or above target level are necessary. In the longer term, improving institutions to deal with imbalances (and preventing them at future entry) are important.

I. INTRODUCTION:¹

One feature of the economic crisis in Europe is that a number of countries ran very large current account deficits heading into the crisis. This paper traces both the rise and fall in these external deficits over the last 15 years with a focus on a subset of euro area countries (Greece, Ireland, Portugal, and Spain²) and the three Baltics nations. Understanding the root causes of the imbalances can help us understand why adjustment has been so difficult in some countries as well as the extent to which smaller current account deficits today represent true adjustment or simply compressed demand. While increases in domestic absorption explain some of the deficits, there were also important movements in transfers and net income balances for many countries. When transfers declined, households and firms borrowed so as to maintain the same level of spending. This was part of a persistent failure to adjust to trade deficits, which, along with rising net income payments, led to growing current account deficits. The size of transfers at the start of the euro era is one of the best predictors of what happens to current accounts in the run-up to the crisis (1999-2007) across all countries in the European Union (EU), not just within this group of euro area or Baltic countries. This suggests the large deficits for some countries had less to do with eroding competitiveness during the euro era and more to do with relative prices at the launch of the euro.

Regardless of the causes of these deficits, though, these countries needed substantial external adjustment because of the difficulties associated with continuing to fund such large deficits, the need to pay off the new higher income balances stemming from large negative net international investment positions, and to generate enough demand in the tradable sector to increase employment. Since the crisis, tangible progress has been made through lower wages and/or higher productivity relative to trading partners, contributing partially to narrowing deficits,

¹ This paper draws in part on work done while Shambaugh was a visiting scholar at the IMF (Kang and Shambaugh (2013, 2014)). We thank Olivier Blanchard for numerous suggestions and conversations during the development of that work. We also thank Thierry Tressel and Shengzu Wang for conversations during collaboration on a related IMF Staff Discussion Note (Tressel et al., 2014). We also thank the editors at Economic Policy and three anonymous referees for their helpful comments on earlier drafts. The views of this paper are of the authors alone and do not represent the views of the IMF.

² This paper will use the phrase deficit countries in the euro area to refer to Greece, Ireland, Portugal and Spain. They were the euro countries with the largest current account deficits on the eve of the crisis. Often, Italy is included in the group based on issues with sovereign debt. But, Italy's current account did not move into large deficit prior to the crisis and is thus not as relevant to this discussion. We focus on the Baltic nations as a counterpoint to the deficit euro countries. Others—such as Gross and Alcidi (2013) have looked at “BELL”, including Bulgaria with the Baltics. We see the issues as slightly different in Bulgaria and find some data issues, making the Baltics a more cohesive comparison set.

but much of the productivity gains have come from shedding employment. Reducing wages appears to have been easier in countries with large increases in wages prior to the crisis. Other countries have had to rely more on job cuts. Further, cutting costs may be a very long process for those countries that did not have an increase in wages. Doing so against a backdrop of austerity, recession and low growth in the euro area, and low inflation in their trading partners has been very challenging. Early in the adjustment process, much of the gains came from compressed imports; over time, exports have played a larger role, but output and employment levels remain depressed in many countries. Understanding the rise and fall of these deficits is crucial as the size of the current account deficit before the crisis as well as the extent of current account rebalancing during the crisis is strong predictors of subsequent pain during the crisis.

Thus, while structural policies that could improve long run output growth are of course in order – there really is no country that should ignore such policies when available – it seems that the current account deficits did not appear primarily due to competitiveness issues, and yet they have been closed in many countries in part by cutting both costs and imports. The missing piece seems to be macro policies that can make the adjustment process easier.

Where does this leave the euro area and which policies are needed to make the adjustment process less painful? Supportive macro policies are necessary to both help economies recover and support continued adjustment. The analysis suggests that fiscal deficits prior to the crisis have little correlation with pain in the crisis, but cuts to structural fiscal deficits during the crisis have been quite painful. Mixing fiscal and current account adjustment has been problematic. In addition, low inflation across the euro area makes relative price adjustment within the euro area more difficult as it forces deficit countries to reduce prices even further to improve their price competitiveness. Again, supportive macro policies, especially looser monetary policy, could help in this direction. The analysis also suggests that the preventing major imbalances within the euro is important both by limiting unsustainable financial flows and booms as well as by making the relative price position and the trade balance important considerations when new entrants to the euro area are considered. Fixing nominal exchange rates at levels with large trade deficits may lead to problems down the road even if optimism or transfers pave over the problems in the short run. Lastly, euro area-wide facilities that can smooth over asymmetric shocks and adjustments still appear inadequate and need further development.

A number of papers have explored the rising deficits in the euro periphery and Baltics. Other papers have often focused on a singular cause. A series of papers examine the export performance of these countries. Chen, Milesi-Ferretti, and Tressel (2012) make an important contribution examining the way in which some of these countries may have been left out of certain parts of the global value chain. They highlight the fact that these countries saw rising imports from emerging Asia, but were not substantial exporters to this region. Berger and Nitsch (2010) focus more on intra-euro area trade and argue that the advent of the euro led to larger imbalances within euro area and greater sensitivity to drivers of imbalances. Bayoumi, Harmsen, and Turunen (2011) also focus on intra-euro trade and note that price elasticities for euro area exports appear to be much higher than non-euro exports. This would suggest that the changes in unit labor costs within the euro area are particularly important to export performance. Similar to this paper, Gaulier and Vicard (2012) argue that export performance does not explain the decline in current accounts broadly and that in addition, declining price competitiveness does not explain any decline in export performance.

Other papers have examined the potential domestic causes. Ivanova (2012) argues that while structural policies receive an extensive amount of attention, they did not evolve in a way consistent with widening global imbalances prior to the crisis. Such factors may help explain some of the long-standing gaps across countries, but not the expansion of deficits over the previous decade. Lane and Pels (2012) document the way in which rising growth expectations led to rising current account deficits across parts of Europe demonstrating one way in which import booms were generated.³

Five years after the onset of the global financial crisis, many studies have analyzed post crisis adjustment in European countries under fixed exchange rates. Among others, Atoyan, Manning, and Rahman (2013) link the difference of current account adjustment between periphery Euro area and emerging Europe countries to different developments in savings and investment, availability of financing, and the composition of adjustment between exports and imports. Lane and Milesi-Ferretti (2012) find that countries whose pre-crisis current account

³ See also: Jaumotte and Sodsriwiboon (2010) who focus on imports, arguing that falling savings led to the rising deficits, though they do not explore why savings fell (optimism, lending booms, falling transfers, etc). Atoyan, Manning, and Rahman (2013) examine current account developments before and after the crisis by focusing on sectoral savings and investment, and found important cross-country differences. Bakker and Klingen (2012) contain an extensive country-by-country analysis of the demand boom in the run-up to the crisis, including the effects of competitiveness and the role of fiscal policy.

balances were in excess of what could be explained by economic fundamentals have experienced the largest contractions in their external balance while external adjustment in deficit countries was achieved primarily through demand compression, rather than expenditure switching.⁴ Tresselt and Wang (2013) study the pattern of relative price and current account adjustment in the euro area countries and note that a significant share of the current account adjustment appears to be driven by cyclical factors, suggesting more needs to be done to make the adjustment sustainable.

The focus of this paper is explicitly on the real side aspects of the current account. A current account deficit implies financial flows, but is obviously also associated with a gap across exports and imports. In describing the rise and fall of exports and imports and associated features of adjustment, we will at times refer to the financing channel, but a detailed description is beyond the scope of the paper. This paper draws heavily on (and subsumes) Kang and Shambaugh (2013, 2014). Kang and Shambaugh (2013) explore the rise of current account deficits in the euro area with an emphasis on the non-trade factors of the current account. This paper broadens that analysis beyond the four euro periphery and three Baltic countries to consider developments in the full set of EU countries. Kang and Shambaugh (2014) explore the post crisis adjustment both in terms of changing unit labor costs, sector adjustments, and overall current account patterns. This paper extends that analysis to more recent data and examines why the adjustment has been so difficult for some countries. An online appendix is available with some analysis and results from those working papers that exceeded the scope of this paper.

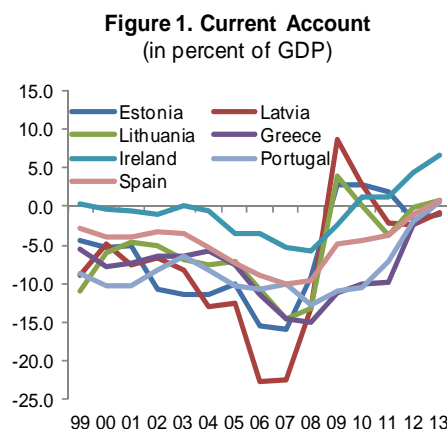
The paper is organized as follows. The second section traces the general pattern of increased current account deficits in these countries, exploring the different reasons for increased current account deficits and examining the evidence within these countries. The third section explores the contributions of these different factors across a wider array of countries. The fourth section lays out the general framework of current account adjustment and the progress thus far reorienting unit labor costs. The fifth section explores the extent to which changes in the composition of output (from nontradable to tradable sector) have been accomplished. The sixth section considers progress thus far closing external account gaps. The following section

⁴ See also: Bakker and Klingens (2012) provide an extensive country-by-country analysis, including the crisis, the stabilization and recovery, and the remaining challenges. ECB (2012) studies the implications of competitiveness adjustment using various model simulations and shows that a fiscal reform, productivity-enhancing measures in tradable sector, and improving wage competitiveness would contribute to external balance improvement. Nkusu (2013) analyzes the inter-linkages between competitiveness, exports, growth, and fiscal performances and finds that boosting and maintaining both price and non-price competitiveness would be critical for Ireland to return to its path of strong growth and low imbalances.

considers what has led to such sluggish economic experience in many of these countries (the need to close external gaps or fiscal policy). The final sections consider a number of policy options before concluding.

II. THE RISE OF CURRENT ACCOUNT DEFICITS:

This section begins by examining the current account deficits in the Baltics and euro area deficit countries before broadening the analysis to a full set of EU nations. These deficits were already large at the start of the euro era in most cases, and became progressively larger before their reversal after the crisis (Figure 1). We try to untangle some of the different developments across these countries in the run-up to the crisis, in particular emphasizing the evolution of the non-trade portions of the current account, which has received less attention in the literature.



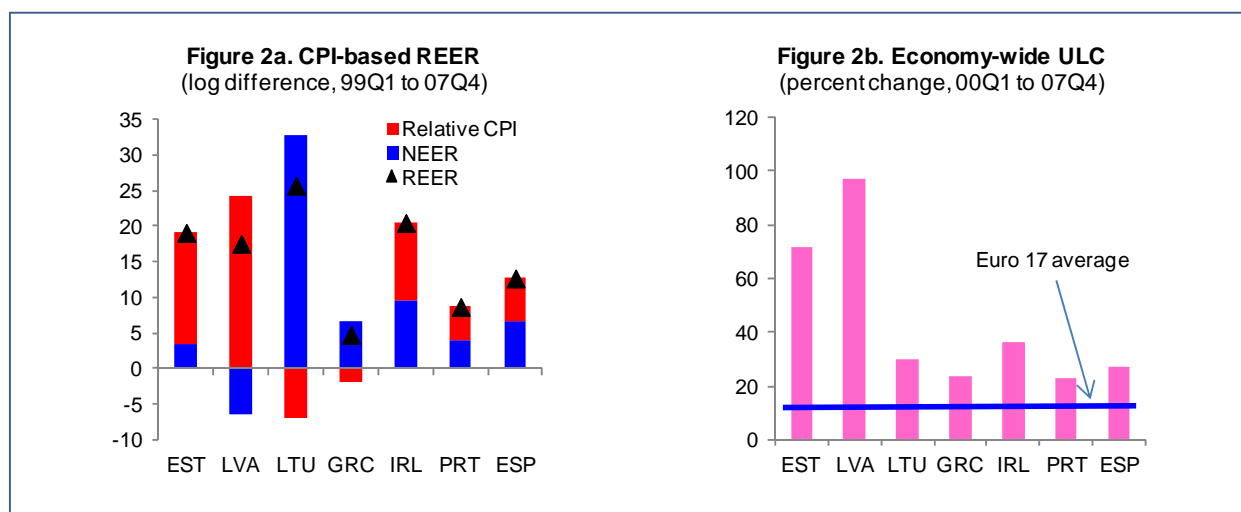
The current account can deteriorate for many reasons. Export performance can deteriorate due to rising unit labor costs (ULCs) or global competitiveness factors. Domestic demand-driven booms, due to excessive optimism, cheap credit from capital inflows, or fiscal excess, can also lead to a surge in imports. Or, the current account could be moving for reasons beyond trade: changes in transfers or net income payments.

Higher wage growth relative to productivity growth in the export sector would lead to a loss of price competitiveness in global markets. In this case, we would observe deterioration of price competitive indicators such as rising unit labor cost in the tradable sector and an appreciation of the REER. Export volumes (or export-to-GDP ratio) would decline, leading to a smaller contribution to economic growth and a decline in the global market share. For example, in Estonia, after rapid export growth from 2002 to 2005, unit labor costs in the tradable sector began to rise very quickly from 2005 to 2007. As these costs increased, export growth slowed notably.

Conventional price indicators suggest the Baltics and deficit euro area countries did in fact lose competitiveness on world markets since the inception of the euro: the CPI-based real effective exchange rates (REER) appreciated considerably, and unit labor costs in these countries

rose sizably relative to the euro area average (Figures 2a-b).⁵ These data are consistent with the view that these countries were priced out of the global market, which contributed to large current account deficits in the run up to the crisis. For example, Latvia had the largest current account deficit in 2007 and also experienced a considerable appreciation and had the largest rise in unit labor costs in the group. On the other hand, Greece’s unit labor cost increase is relatively restrained and its REER appreciation is quite modest.⁶ The euro area countries all faced nominal appreciation on a trade-weighted basis despite starting the period with a current account deficit. This highlights that as they were part of a currency union, the exchange rate was not necessarily moving in ways based on fundamentals of their individual economies.

Export performance can also weaken due to composition effects. Even when wages grow in line with productivity growth, a country could lose niche markets if they cannot move up the value chain while their trading partners increase the quality of export goods. In this case, weak export performance is captured by quantity measures, while price measures may not capture this type of competitiveness problems (see Chen, Milesi-Ferretti, and Tressel, 2012).



However, despite the rising unit labor costs and appreciating exchange rates, several quantity measures indicate that export performance for these economies remained stable during this period. The exports-to-GDP ratio for many of these countries remained relatively stable or increased in the 2000s. The merchandise export market share for these countries declined some

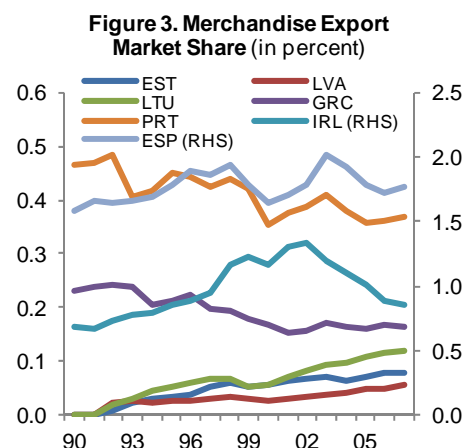
⁵ Value-added REER (Bems and Johnson, 2012), which conceptually better capture the competitiveness, appreciated more in Estonia and Spain than CPI-based REERs, while appreciated less in Portugal and Greece.

⁶ On average, Greece’s trading partners experienced higher inflation than other countries in this group, so even though its cumulative inflation from 1999-2007 was higher than the other GIPS, its appreciation due to relative CPI was the smallest.

in the 1990s, but was flat in the euro era except for Ireland, whose economy was shifting towards a service economy (and hence merchandise exports may have represented a smaller share of the economy over time). The Baltics' market share grew throughout (Figure 3) despite increasing unit labor costs and appreciating real exchange rates.⁷

One may worry that a declining competitiveness was masked by the pro-trade impact of the introduction of the euro, but these countries broadly maintained their market share in non-euro export markets (See on-line appendix for details). Spain and the Baltics increased their non-euro export market share over the period and Greece largely held constant. Portugal did see a decline, but the full decline was from 1999 to 2000. After that the market share was stable. As before, Ireland lost market share in merchandise trade as part of a shift over towards a more services intensive economy.⁸ In addition, Gaulier and Vicard (2012) estimate export performance controlling for geographical and sectoral effects. They too find that there is no export performance decline. They do see sectoral impacts on Portugal, suggesting that the decline seen in Portugal's export share is connected to its position in global value chains.

These patterns suggest we need to consider other factors that may have pushed the current account into deficit. The seemingly contradictory pattern between large increases in unit labor costs (economy-wide) and non-deteriorating export sector performance can be partly understood by looking at unit labor cost for the tradable and non-tradable sectors separately. The increase of unit labor cost in the tradable sector is quite limited in many countries, consistent with the export sector maintaining its performance in most of these countries. But, a sizable increase of unit labor cost in the non-tradable sector contributed to a large increase of unit labor cost in the economy as a whole (Figure 4a).⁹ In all seven countries, the unit labor costs in the non-tradable sector increased considerably relative to those in the tradable sector. Thus, the trade balance may have deteriorated due to surging imports arising from a domestic demand boom

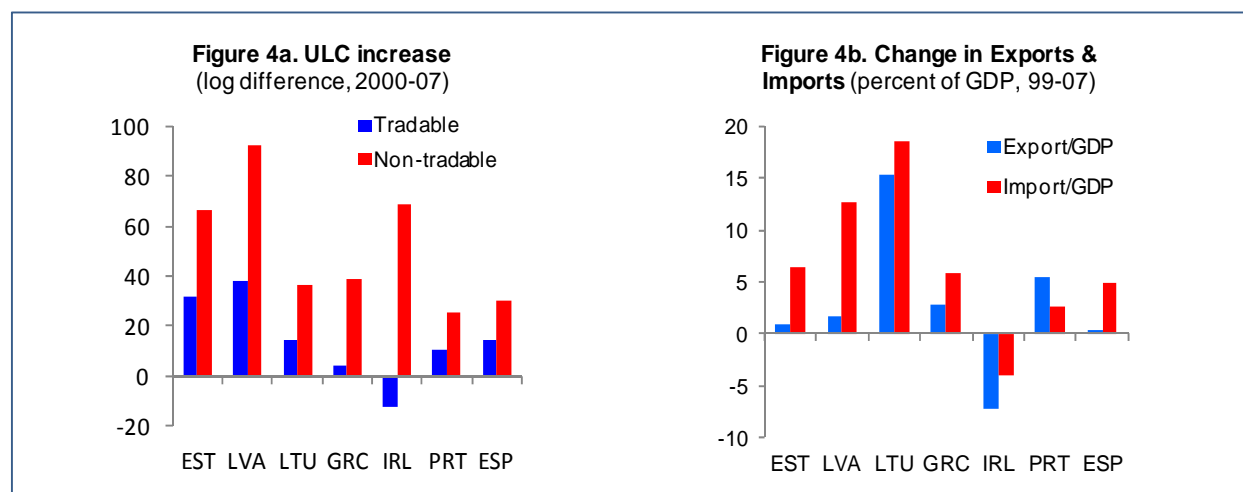


⁷ Gaulier and Vicard (2012) also argue that weakening export performance did not generate the imbalances.

⁸ Nkusu (2012) noted that Ireland's service market share increased in 2000s.

⁹ Tradable sectors in this paper include 'agriculture, forestry & fishing', 'industry excluding construction', 'trade, travel, accommodation & food', 'information & communication', and 'financial insurance.'

while exports remained strong. In fact, as Figure 4b shows, imports did rise substantially as a share of GDP in the Baltics and to some extent in Spain and Greece.^{10 11}



Many factors can drive an import boom. A domestic boom due to capital inflows and low interest rates can lead to a surge in economic activity and imports. Especially following financial opening, financial intermediaries may find more opportunities expanding the supply of funds. This surge in capital inflows allows households and businesses to access funds at much lower interest rates, leading to a lending boom and a strong pick up in consumption and investment, including the housing sector, and corresponding increase in imports. In this case, unit labor cost would increase, in particular in the non-tradable sector, and output will also increase. This process can also potentially lead to a housing market bubble. Lane (2006) shows that real interest rates fell faster in peripheral euro area countries after the beginning of the euro as expectations of a depreciation vanished (lowering nominal interest rates) and higher inflation than in the core meant that real interest rates fell even more. The fact that the euro deficit countries did not have monetary policy of their own meant they could not simply raise interest rates to cool a boom or excessive demand.

Figure 5 also shows the rapid house price increases seen in Ireland, Spain and Greece. The drastic increases of the unit labor cost in the non-tradable sector in these countries are also consistent with this process. The advent of the euro—which removed currency risk—and the

¹⁰ Once again, Ireland is a bit of an outlier. As the non-traded share of its economy was growing rapidly, both imports and exports were declining as a share of output.

¹¹ It still remains a puzzle that those countries with faster increase in tradables sector ULC experienced rising merchandise market shares. Improvement of exporting goods quality could be a factor reconciling these or it may be due to some measurement issue, but further analysis is beyond the scope of this paper.

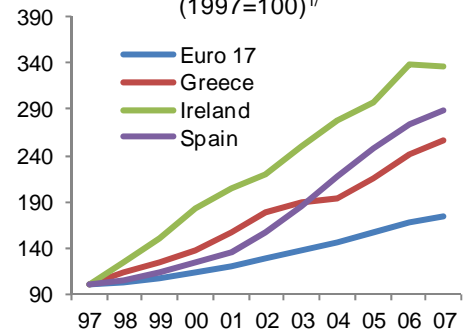
general increase in financial interconnectedness meant that as core area banks looked for opportunities, the periphery and Baltics were easy locations for money to flow.

High expected growth can also lead to a domestic demand boom and rising imports. This boom typically leads to a strong pick up in consumption and investment, leading to strong economic growth and corresponding imports.¹² In this case, the unit labor cost in the non-tradable sector would increase much faster than that in tradable sector. A domestic demand boom can also lead to a housing boom, in which case we can also observe strong increase in housing prices as well as strong growth in residential investment. Figure 6 shows the experience of Portugal in the 1990s. Portugal’s trade balance deteriorated by about 4 percentage points of GDP from 1993 to 2000 on the back of domestic demand-driven economic growth. The contribution of consumption to GDP growth increased and, while exports continued to grow, imports grew faster, subtracting more and more from net growth. A similar pattern is observed in the Baltics in the 2000s.

In many ways, the difference between an optimism-led boom which pulls in capital from abroad and a capital flow-induced boom are difficult to establish. Both will lead to rising house prices, rising ULCs, and a temporary boom in output. The only difference is the impetus of the flow of funds from abroad—push or pull.

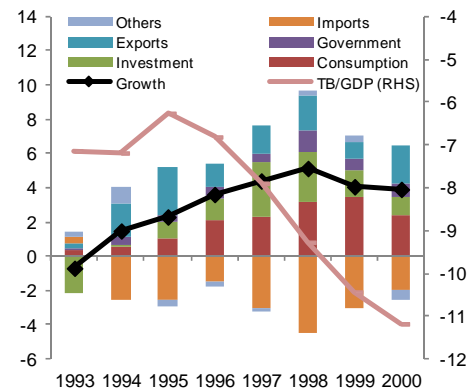
Large fiscal spending also contributes to a domestic demand boom. Higher wages and more employment for public servants would lead to higher output, but unit labor costs would increase, in particular in the public sector, and the fiscal balance could deteriorate significantly. Greece fits this pattern, but outside of Greece, fiscal balances were either flat or improving in most of these deficit countries in the run-up to the crisis.

Figure 5. Housing Prices
(1997=100)^{1/}



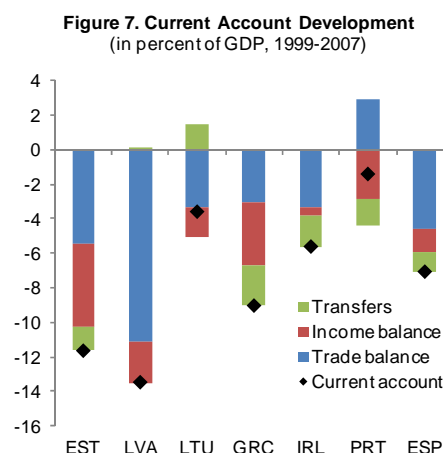
^{1/} Free housing price index for Spain, prices of dwellings in urban areas for Greece, and prices of dwellings in whole country for Ireland and EA17

Figure 6. Portugal: Growth Decomposition
(in percentage points)



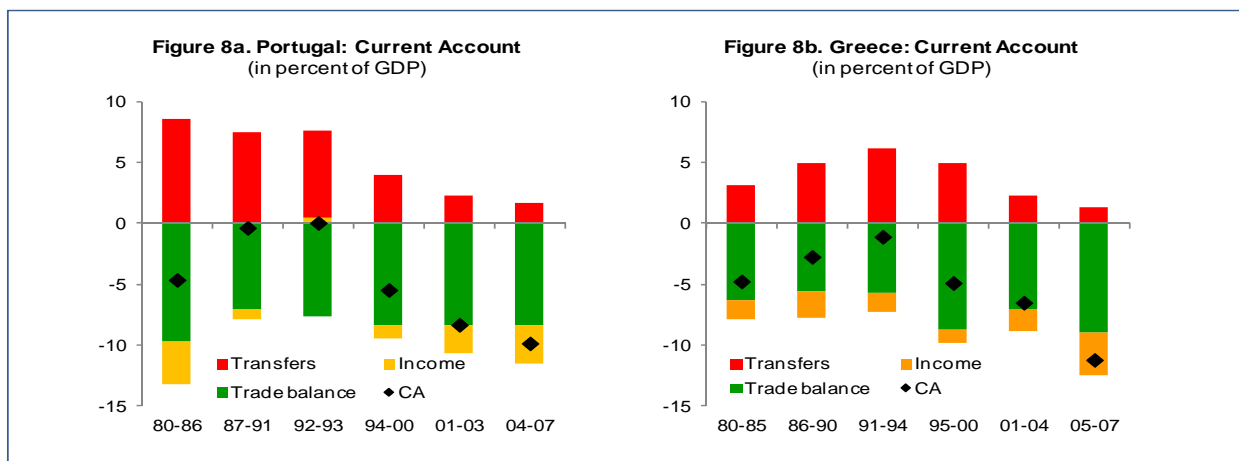
¹² See Lane and Pels (2012) for more discussion.

Thus, an import boom does seem to play a meaningful role in many countries' growing current account deficit. However, as Figure 7 shows, the current account declined more than the trade balance in all of these countries except Lithuania, and in some cases the gap is considerable. In fact, Portugal's trade balance improved over this period; declining transfers and rising net income payments contributed to a worsening current account balance despite rising exports relative to imports. This substantial deterioration of non-trade components of the current account has received less attention thus far in the literature than movements in the trade balance.¹³

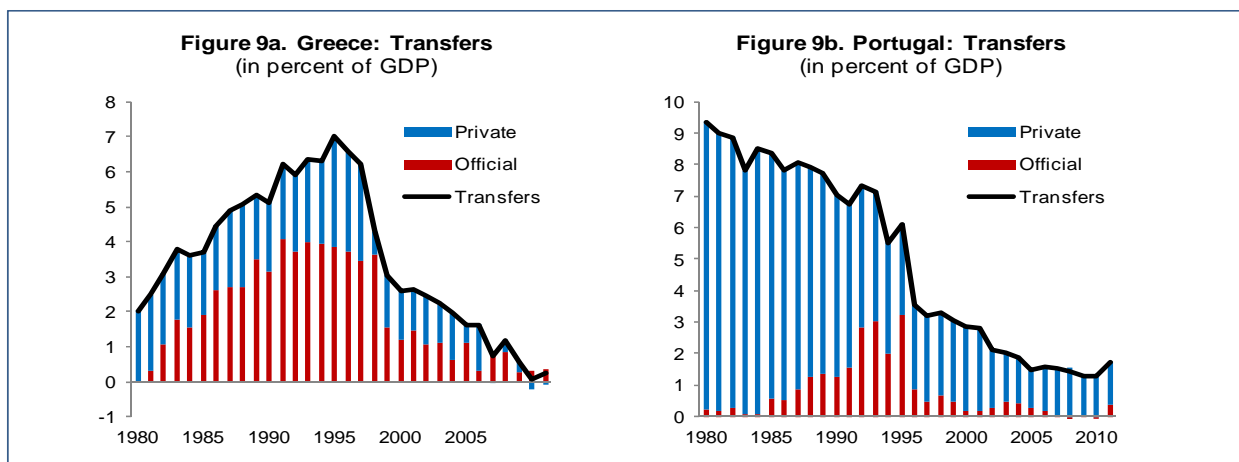


In theory, a transfer of wealth from abroad should lead to an increase in consumption and investment and a shift towards a trade deficit. A decline in these transfers should lead to a reduction in consumption and a return to trade account balance as the country adjusts to its lower income. However, that does not happen if there is habit persistence and households and firms maintain the same level of spending by borrowing when transfers decline. Output and unit labor cost would remain flat, but the current account would deteriorate as consumption and imports do not decline. In both Portugal and Greece, loans replacing declining transfers led to a persistent failure to adjust to trade deficits that were present even before the beginning of the euro and led to growing current account deficits through both declining transfers and subsequently rising net income payments (Figures 8a-b). In both countries, trade deficits have been in excess of 5 percent of GDP since the early 1980s. At many times, though, current accounts have been close to balance. When the transfers declined, though, the trade balances did not.

¹³ Holinski et al. (2012) also notes the importance of changes in transfers and net income.

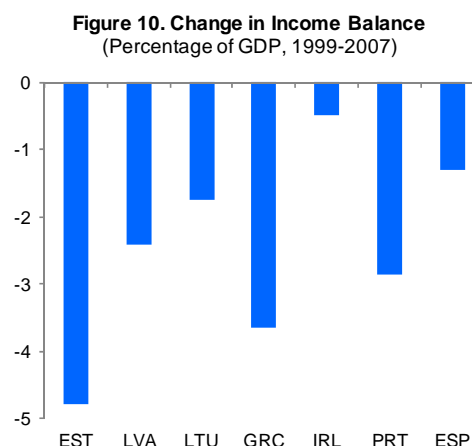


The declines in transfers in Portugal and Greece are unusually large. Figures 9a-b show these declines split into private and public transfers. The decline is led in both cases by a large drop in private transfers (as remittances flows declined over time), along with a substantial decline in public transfers. Some of the decline in Portugal's case in the mid-1990s comes as EU funds are rebooked from the current to capital account. This only causes a worsening of the current account in a formal accounting sense. Funds are still flowing in to the country. However, this change is relatively small compared to the overall loss of transfers they faced, and this change in accounting was done before 1998. The shift from the start of the euro area to 2007 is the one that is the focus of our attention.



In addition, though, by running persistent current account deficits, all of these countries saw rising net income deficits as they had to pay more to support their growing external debt as well as FDI-related income outflows. The large current account deficits are not simply a feature of the last few years. Nearly all of these countries had large deficits when the euro launched. As these deficits accumulated, the cost of financing external debt became a larger and larger feature

of the current account. Figure 10 shows that the net income balance worsened by an average of 2 to 3 percent of GDP over this period. Thus, even if countries returned trade balances to their 1999 levels, the current account deficits would be much larger than before. This pattern also highlights the unattainability of persistently large current account deficits. As net foreign asset positions decline, the growing payments become too large and there may be pressure in capital markets to reverse the borrowing.



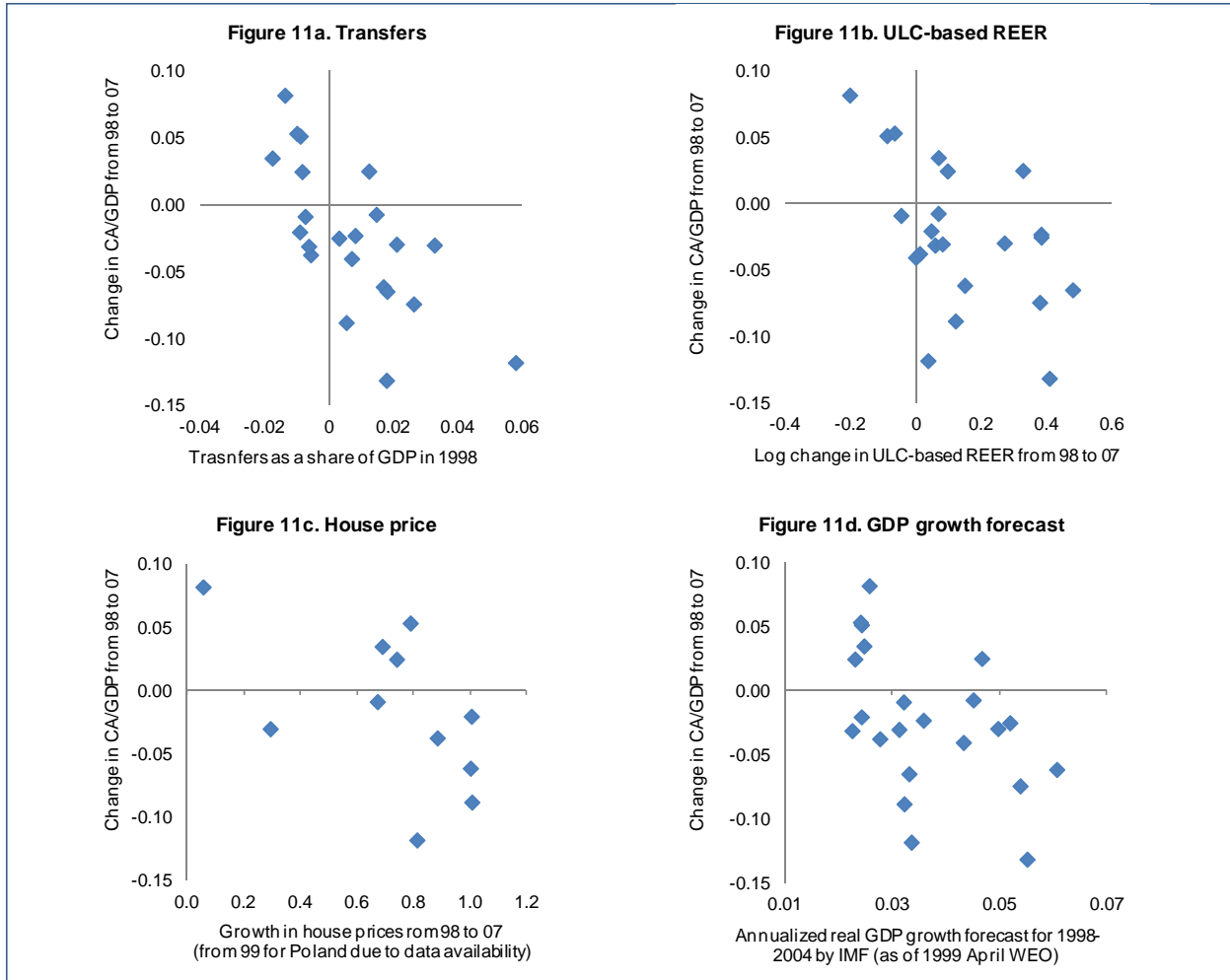
III. CONTRASTING DIFFERENT INFLUENCES ON THE GROWTH OF CURRENT ACCOUNT IMBALANCES

The previous analysis suggests that both shifts in domestic absorption and non-trade factors played a substantial role in the growth of current account imbalances in the deficit countries. We broaden the examination to a full set of EU nations to see what moved current accounts more broadly in the time period after the launch of the euro. We first examine a number of scatter plots and bivariate regressions across a sample of 22 countries (data availability limits some samples) and then proceed to some simple multivariate regression analysis.¹⁴

We begin by considering whether countries that were poorer than others at the start of the euro era borrowed more and ran current account deficits—especially now that capital markets were made more linked. Blanchard and Giavazzi (2002) show that the classic predicted relationships where poorer countries borrow to take advantage of better investment opportunities helps explain the current account developments of the early euro years. Lane and Pels (2012) repeat the process with the full first decade of the euro. Similar to Lane and Pels (2012), we include GDP per capita (PPP) divided by the average of the countries in the sample (not including the high and low) as our measure of relative income. As shown in column 1 of Table 1, such a measure does correlate with current account developments over the next decade.

¹⁴ Bulgaria is a large outlier due to massive shifts in the current account both prior to and after the crisis. We omit it from the analysis. Luxembourg is an outlier in relative income and lacks some relative price data, so it is dropped as well.

Turning to the channels discussed above, Figure 11a shows the simple scatter plot of the change in the current account from pre euro (1998) to just prior to the crisis (2007) graphed against the size of transfers as a share of GDP in 1998. There is an obvious downward sloping relationship where countries that had large positive transfers in 1998 as a share of GDP see their current account deteriorate sharply from 1998 to 2007.



We should be clear that there is no mechanical relationship generating this strong correlation. A country receiving transfers in 1998 could have continued to receive those transfers in which case there would be no impact on the current account change. Or, as transfers changed, there could have been offsetting movements in the trade or income portions of the current account. But, as is clear from the pattern, neither of those possibilities seems to be true. On average, countries that had large transfers to GDP in 1998 saw those transfers decrease over the

early euro period.¹⁵ The bivariate regression (all are tabulated in Table 1 below) generates a coefficient of about -2 on the transfers to GDP variable, and we can reject that the relationship is zero at the 99 percent confidence level. The coefficient of -2 means that a country that was receiving 4 percent of GDP in transfers in 1998 saw its current account decline by roughly twice that amount. Furthermore, the R-squared in such a regression suggests that transfers alone can explain roughly half the variation in the change in the current account balance.

While there is no reverse causality (changes in the current account in the 2000s cannot retrospectively generate transfers in 1998), there must be omitted variables as the direct effect of the transfers going away cannot be more than one for one on the current account.¹⁶ The coefficient of -2 implies that, for some reason, the countries who received transfers tended to be the countries that generated larger imbalances.

Table 1. Bivariate Regression for Pre-Crisis Current Account Developments ^{1/}

Dependent variable: Change in Current account-to-GDP ratio for 1998-2007									
Variables ^{2/}	1	2	3	4	5	6	7	8	9
Relative income in 1998	0.078*** (0.027)								
Transfers-to-GDP ratio in 1998		-2.091*** (0.484)							
Change in CPI-based REER for 1998-2007			-0.093 (0.077)						
Change in ULC-based REER for 1998-2007				-0.150** (0.056)					
Annualized real GDP growth forecast for 1998-2004					-2.207** (0.871)				
Annualized real GDP growth for 1998-2007						-2.441*** (0.732)			
Change in fiscal balance for 1998-2007							0.680 (0.563)		
Trade balance-to-GDP ratio in 1998								0.355* (0.170)	
Income balance-to-GDP ratio in 1998									0.195 (0.469)
Constant	-0.103*** (0.029)	-0.009 (0.009)	-0.015 (0.014)	-0.004 (0.013)	0.056 (0.033)	0.055** (0.025)	-0.031* (0.015)	-0.018 (0.011)	-0.021 (0.014)
Observations	22	22	22	22	22	22	19	22	22
R-squared	0.296	0.483	0.067	0.266	0.243	0.357	0.079	0.178	0.009

1/ *, **, *** indicate statistically significant coefficients with 10%, 5%, and 1% confidence interval, respectively.

2/ standard errors in parenthesis.

¹⁵ A few countries (Romania, Lithuania, and Bulgaria) did have increases in transfers despite starting with a positive level of transfers, but in general, large transfers in 1998 led to larger decreases in transfers. On average, a 1 percent of GDP transfer balance in 1998 suggested a 0.4 percent of GDP decrease in transfers by 2007.

¹⁶ Countries that experienced booms likely saw their transfers decline as population inflows brought migrants who sent out transfers. But, that is associated with the change in transfers, not the level in 1998.

We also consider some measures of changes in relative prices. Unlike transfers or levels of GDP per capita, these are not predetermined variables, but involve changes over the euro period. While changes in CPI-based REERs do not have any clear relationship with the change in the current account, there is a statistically significant relationship between ULC-based REERs and the current account. As noted above, the change in unit labor costs in the deficit countries was typically more in the nontradable sector, so it is not necessarily that countries were priced out of export markets, but we see a negative (though not particularly tight) relationship in the Figure 11b.¹⁷

A variety of measures can capture a surge in domestic absorption. As seen in Figure 11c, house price growth has a strong negative correlation with the change in current accounts. Countries that had housing bubbles saved less and did more residential investment over the decade and consequently saw a deterioration in the current account. We do not run a regression on this variable or include it in the multivariate analysis because the sample size is quite small due to limited data of comparable house price series.

Another core measure of domestic absorption is optimism about future growth. Lane and Pels (2012) use 1-year ahead expected growth in a panel regression to trace the impact of optimism. Since we are examining a cross-section and lack forecasts made in 1998 about the following decade, we use two measures. First, we use the IMF's forecast in April of 1999 for average annual real GDP growth through 2004. We also check actual GDP growth over the full sample of 1998-2007. As it turns out these two variables are correlated at roughly 0.8 across these countries, so the forecast gives a good description of what actually took place. Countries that were expected to grow faster (or that did grow faster) did in fact see a decline in their current account balance (Figure 11d). In fact, 1 percentage point faster annual growth rate over the period (a bit less than one standard deviation for either expected or actual growth) is consistent with a decline of more than 2 percent of GDP in the current account balance. The variation in expected growth can explain roughly a quarter of the variation in the change in the current account (actual growth explains roughly 35 percent). We should be clear that this is not a mechanical relationship. An increase in the current account deficit should in fact lower GDP on an expenditure basis. Instead, it comes from the fact that growing consumption (lower saving)

¹⁷ Wage growth alone does not predict movements in the current account. Wage growth could obviously have been offset by productivity, so it is not surprising that it is not a strong explanatory variable.

and rising investment that came with these rapid growth experiences help generate a current account deficit.

Finally, we consider the other piece of domestic absorption, the government's fiscal position. The fiscal position in 1998 has no impact on the change in the current account, nor do we have a way to necessarily predict the forthcoming change in the deficit. The actual change in the fiscal balance has a positive relationship with the change in the current account, but to the extent that the government saving position is part of the current account, the relationship is true in an accounting sense as much as anything else. Still, we see that there is a positive correlation (though not statistically significantly different from zero) and the R-squared suggests that the change in the fiscal balance can explain roughly 8 percent of the variation in the change in the current account.

In some ways, the most analogous variable to the transfers at the start of the euro era is the net income flows. But, these show no signs of reversing and hence hold no power to explain the change in the current account. Likewise, the trade balance in 1998 shows no signs of diminishing either. In fact the trade balance tends to grow in either direction. Countries with surpluses have growing surpluses and vice versa. Thus we see a strong positive, not negative, correlation of the trade balance in 1998 and the change in the current account over the next 9 years.

We can try to roughly ascertain which of these factors contributed to rising current account deficits by examining these variables together in a multivariate regression. We focus on the variables that are not part of the change in the current account in a pure accounting sense (that is, we do not include change in transfers, change in net income, or change in government savings). We begin with just the predetermined variables (transfers, relative income, and expected growth from 1998 to 2004) and add the change in the ULC-based REER and, in some cases, replace GDP growth forecast with actual GDP growth from 1998 to 2007. We do not include house price growth because it limits the sample size and choose the ULC-based REER as it showed the best correlation within the set of variables meant to capture rising labor costs.

The results in Table 2 suggest that only the transfers in 1998 have a statistically significant relationship. Many coefficients are shifted towards zero (as compared to the bivariate regressions), though all but relative income have the expected sign. The coefficient on the expected GDP growth rate is much closer to zero compared to the bivariate regression. When we

use actual GDP growth, and do not include the REER change, that coefficient is similar to the bivariate regression and nearly statistically significantly different than zero. All these variables are correlated, so it may simply be that in a small sample, with correlated regressors, economic relationships that are present are obscured. Most importantly, we cannot be certain that other omitted variables are not correlated with the variables we consider or are driving both these variables and the change in the current account. Still, it is striking the extent to which changes in relative costs have little predictive power regarding the change in the current account, but the level of transfers at the start of the euro is so strongly correlated. This broadly undermines the narrative that countries allowed themselves to be priced out of the export markets.

Table 2. Multivariate Regression for Pre-Crisis Current Account Developments ^{1/}

Dependent variable: Change in Current account-to-GDP ratio for 1998-2007					
Variables ^{2/}	1	2	3	4	5
Relative income in 1998	0.017 (0.035)	-0.022 (0.047)	-0.039 (0.046)	-0.019 (0.045)	-0.010 (0.035)
Transfers-to-GDP ratio in 1998	-1.674** (0.639)	-1.838** (0.646)	-1.779*** (0.603)	-1.883*** (0.614)	-1.663** (0.591)
Annualized real GDP growth forecast for 1998-2004	-0.581 (0.994)	-0.320 (1.006)			
Change in ULC-based REER for 1998-2007		-0.099 (0.083)	-0.079 (0.079)	-0.105 (0.079)	
Annualized real GDP growth for 1998-2007			-1.316 (0.940)		-1.538 (0.913)
Constant	-0.008 (0.063)	0.037 (0.072)	0.081 (0.069)	0.023 (0.057)	0.047 (0.060)
Observations	22	22	22	22	22
R-squared	0.514	0.552	0.596	0.549	0.572

1/ *, **, *** indicate statistically significant coefficients with 10%, 5%, and 1% confidence interval, respectively.

2/ standard errors in parenthesis.

IV. THE FALL OF CURRENT ACCOUNT DEFICITS:

The above analysis suggests that a simple decline in competitiveness was not the only reason for the large and growing current account deficits in these countries in 2007. However, regardless of the underlying causes of external imbalances, as the crisis hit, these countries needed some way to change relative prices on world markets in order to reduce the large current account deficits. Thus, even though deterioration of competitiveness in their export sector was not a major factor behind large current account deficits, they still need a form of depreciation for a number of reasons. First, for some economies, the large trade deficits have been a persistent

problem for several decades. Thus, while trade performance did not worsen during the 2000–07 period, it still needed to improve. Second, the persistent large current account deficits generated increasingly large negative net foreign asset positions in many countries (over 50 percent of GDP in the Baltics and between 50 and 100 percent of GDP in Greece, Spain, and Portugal) which led to large net income payment needs for these economies, requiring improved export sector performance to meet these net income payment needs. Third, as output remains below potential, export improvements are needed to avoid a re-emergence of external imbalance as they recover towards full potential output. Fourth, as unemployment rates still remain very high in a number of countries, the production and employment in the tradable sector need to be increased. The existence of a current account deficit is not necessarily a bad thing, nor something that requires immediate reversal, but the combination of the persistence of these deficits, the growing negative net foreign asset positions, and pressure from markets to slow the borrowing, has meant these countries were forced to find some way to reduce their external deficits.¹⁸

To achieve both internal and external balances, these countries have needed a change in relative prices in order to shift spending towards domestic goods and services, to reorient productive resources to the tradable sector, and to increase output to their potential levels. However, given that they use the euro (or peg to the euro), devaluation has to be achieved via a fall in domestic prices relative to trading partners' prices. One way to achieve these goals is for unit labor costs in tradable goods to fall. This makes them more attractive to produce relative to non-tradable goods and makes them less expensive than foreign tradable goods. In general, we find improvements have been made, but the macroeconomic environment has been so challenging that these countries continue to suffer large output and employment gaps.

We again begin our analysis on the core group of seven countries before broadening the analysis to a full set of EU nations. We first consider changes in unit labor costs and wages in this section and sectoral readjustment in the next section, and then examine the adjustment in trade balance in the following section.

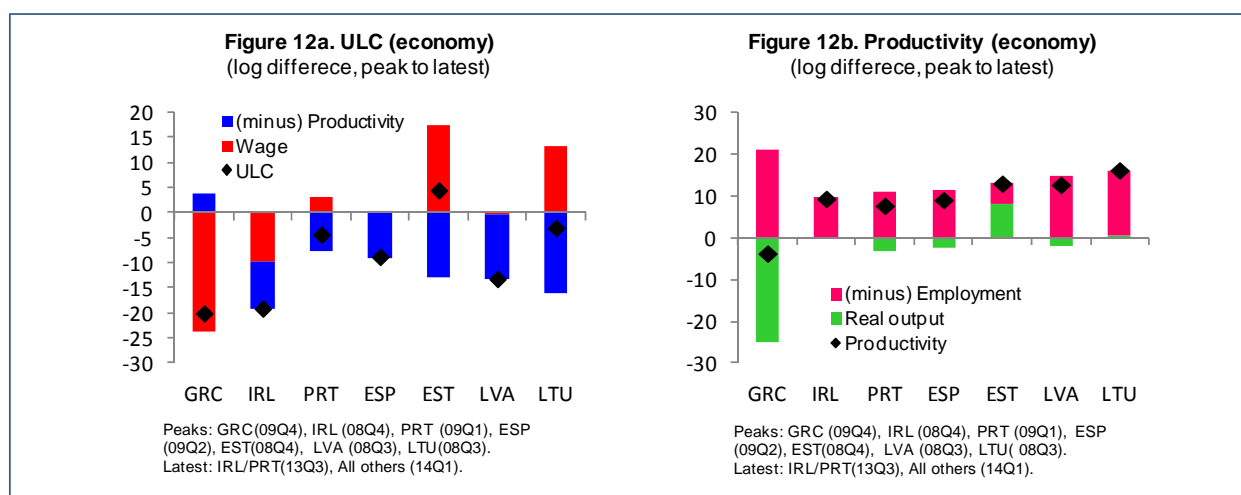
Overall Adjustment

¹⁸ One difference between the Baltic countries and the euro area deficit countries is the access of the euro countries to lending within the ECB system. The system meant that banks in these countries could access funds (reflected in Target2 balances) without necessarily going through the market. This may have allowed for a slower adjustment due to less pressure from the market.

As seen in Figure 1, current account deficits have narrowed significantly across these countries over the last five years. However, significant improvement in external positions has been associated with large declines in output and sharp increases of unemployment. Five years since the onset of the crisis, output still remained below potential and unemployment rates were in double digits in 2012. The high unemployment rates indicate significant underutilization of labor, and falling unemployment rates in some countries partly reflect declining labor forces.

A Snapshot of Adjustment

Unit labor costs have improved across all countries since they began adjustment. Except in Greece, productivity gains have made a significant contribution to improving unit labor costs as large labor shedding has more than offset the output decline (Figures 12a-b). For Greece, their productivity has actually decreased as the decline of real output has overwhelmed the decline in employment. In some countries such as Greece, large wage cuts have contributed significantly to improving unit labor costs during the adjustment period.

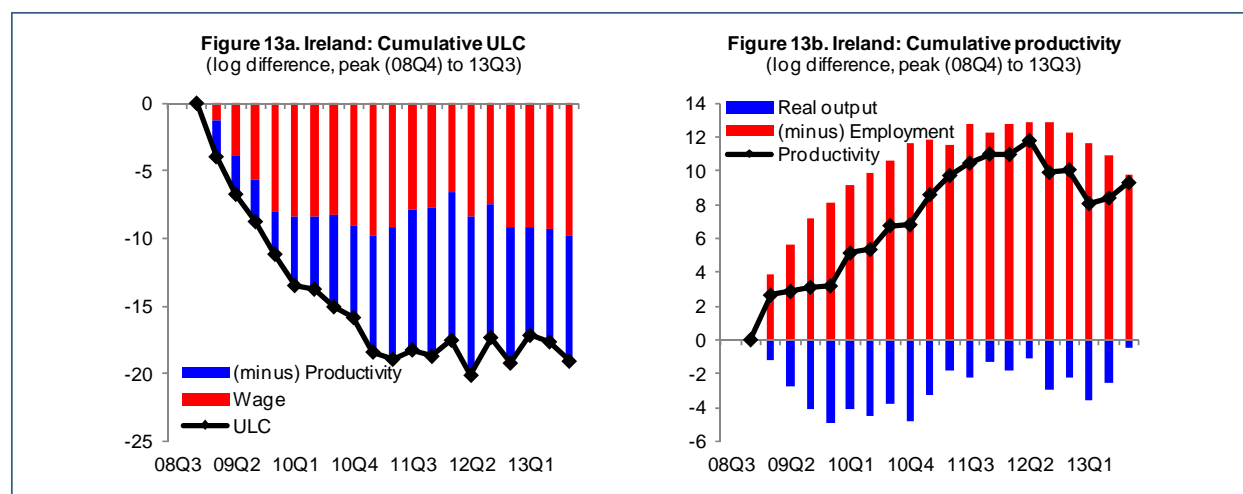


Dynamics

There have been more interesting differences across countries in the evolution of adjustment. That is, these countries have shown different paths of adjustment in relative contribution of wage, real output, and employment and their evolution over time.¹⁹ For example, Ireland has made very persistent and significant improvement in unit labor costs on the back of

¹⁹ One important note is that as the composition of industry or workers employed changes, there may be changes to productivity or wages without any actual changes to productivity or wages for a given worker. These compositional effects seem large in Ireland in particular. See Box 5 in IMF (2011) for details.

wage cuts and labor shedding-driven productivity growth over the last five years (Figures 13a-b). After the end of 2011, wages recovered somewhat (the red columns are less negative in figure 13a), but have declined again in the most recent quarters. Still, sustained productivity improvements have meant unit labor costs have remained lower than the peak by about 20 percent.



The Baltic countries share a similar adjustment pattern in the sense that unit labor costs declined significantly over the first two years after they began adjustment and then increased again on rising wages (see Figures A1-A6 in Appendix I).²⁰ Latvia experienced a sharp wage decline first before productivity eventually increased on the back of labor shedding and output recovery. Subsequently, wages have recovered to pre-adjustment level but unit labor costs are not rising as much due to continued improvement of productivity. Lithuania also experienced the similar path of adjustment with substantial wage cuts during the early adjustment period, followed by improving productivity with labor shedding and output recovery. In Estonia, wage cuts have played a limited role, and adjustment has been made largely due to productivity growth through large labor shedding in early periods and output recovery in recent years.²¹ Wages did fall modestly at first, but by the end of the sample, they are above the pre-adjustment level.

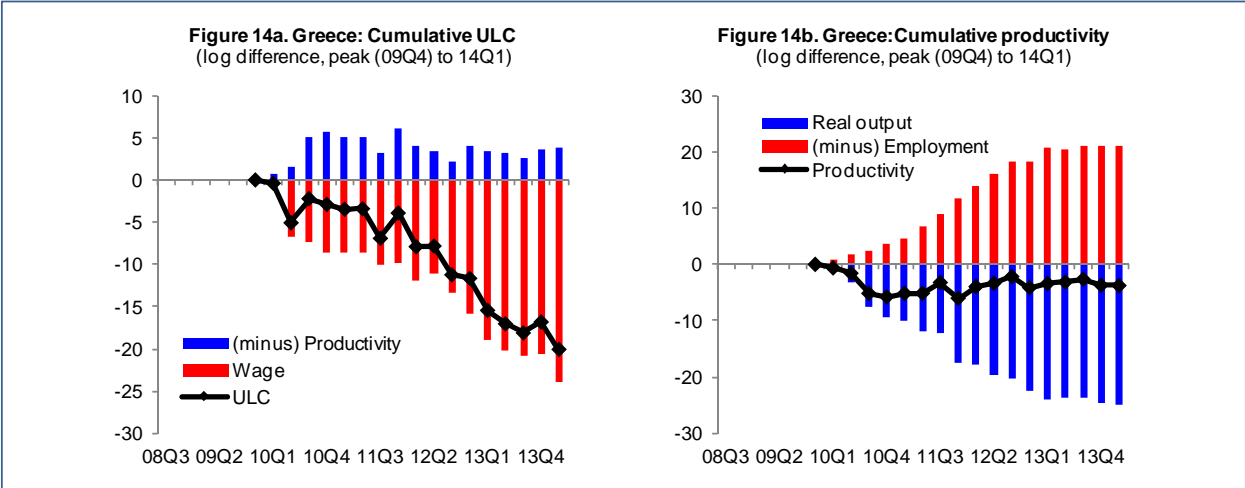
²⁰ Reflecting large wage cuts and labor shedding during this initial adjustment period, labor share (defined as total compensation for employees divided by nominal GDP) for these economies declined sharply over this period before stabilizing or recovering in later period.

²¹ Estonia experienced much more output contraction before they began adjustment (ULC-based as we defined) than the other two. Estonia's output declined by 12 percent from 07Q4 (output peak) to 08Q4 (ULC peak), while it declined by 7.4 percent from 07Q4 to 08Q3 in Latvia and only by 0.8 percent from 08Q1 to 08Q3. Accordingly Estonia's ULC increased by about 15 percent over this period before adjustment began.

One important difference between Ireland and the Baltics is that, after an initial rush of labor shedding, employment began to recover earlier in the Baltics and, as output was growing faster as well, productivity continued to improve. By early 2014, employment was lower by less than 5 percent from the peak in Estonia, far better performance than any other countries under consideration.

Adjustment in Portugal and Spain began a few quarters later than in the Baltics and has been largely based on productivity gains (see Figures A7-10 in Appendix I). In both countries, improvement in unit labor costs has been mostly coming from large labor shedding as there has been little adjustment in wages. Real output began to decline since the second half of 2010 and more recently fell below pre-crisis level. In fact, towards the end of the sample, the renewed recession and falling output has meant that increasing employment cuts have been needed to simply stabilize productivity. In some ways, Estonia, Portugal, and Spain began in a similar manner—with falling employment generating productivity and little contribution from wages. But, then Estonia’s output expanded and employment recovered whereas it continued deteriorating in the Iberian Peninsula.

In contrast, adjustment started much later in Greece and wage cuts are generating all of the adjustment without improvement in labor productivity as output fell more than the employment (Figures 14a-b). As of the end of the first quarter of 2014, productivity is still lower than before the adjustment began.



Timing and Wage Adjustment

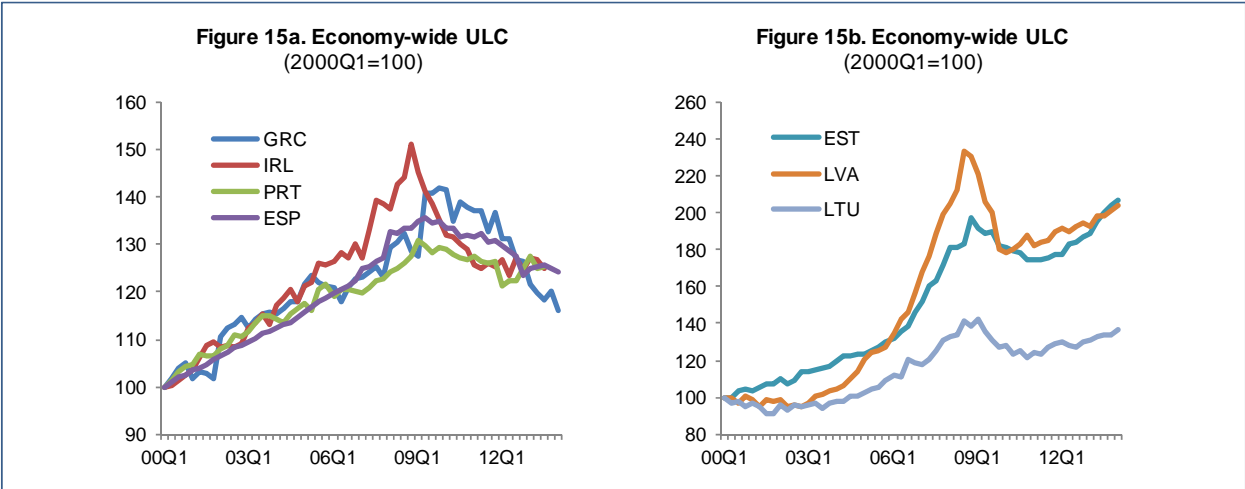
All of these economies and sectors experienced large increases in unit labor costs in the run-up to the crisis, with varying degrees (Figures 15a-b). To understand wage response in

different countries and sectors during the adjustment period, we regress the percentage change of wages over the first, second, and third years after the adjustment to the current account began in 2007Q4 (for the Baltics) and 2008Q4 (for the Euro area periphery) on the wage growth from 2000Q1 to the beginning of the current account adjustment. We use disaggregate data for 10 sectors in these economies (Appendix II), consistent with the sectoral analysis in the following section.

Thus, the specification is:

$$\Delta w_{is} * post = \alpha + \beta * \Delta w_{is} * pre + controls + u_{is}$$

where i represents a country and s represents a sector. *post* and *pre* represent wage growth before and after the crisis as noted above. The controls used range from none to country dummies—effectively testing whether once one controls for country cycles, the sectors with the fastest wage growth prior to the crisis had different wage dynamics—to sector dummies—testing whether controlling for differences across sectors, those countries with faster wage growth prior to the crisis had different wage patterns.



Regression results show that wages fell more, by the second and the third year, in those countries and sectors that experienced higher wage growth in the run-up to the crisis (Table 3, upper panel). This pattern is more apparent when we control for country or sector. The results also hold if we include productivity growth both prior to and after the crisis (lower panel), implying that countries/sectors with more excess wage growth before the crisis have experienced more wage declines during the adjustment period. These results suggest that countries with the

largest pre-crisis buildups (the Baltics and Ireland) may have had more flexibility to cut wages after the crisis.²²

On the other hand, the coefficients on pre-adjustment wage growth are much smaller than -1 (in absolute term), implying that wages have fallen much less than they increased before, partly because these are nominal wages that usually rise over time. The fact that wage growth relative to productivity growth in the non-tradable sector in the run-up to the crisis has been larger than in the tradable sector may help explain why the non-tradable sector has experienced more wage cuts during the adjustment period (see next section).

Table 3. Wage adjustment over time relative to precrisis wage increases
(coefficient on precrisis wage growth)

Controls	1 year	2 years	3 years
<hr/> Without controlling for productivity growth <hr/>			
none	0.03**	-0.05**	-0.05***
country dummies	-0.12***	-0.12**	-0.19***
sectoral dummies	0.004	-0.08**	-0.09**
country & sectoral dummies	-0.11**	-0.13***	-0.18**
<hr/> With additional control for productivity growth <hr/>			
none	0.03	-0.04***	-0.06***
country dummies	-0.09**	-0.10***	-0.16***
sectoral dummies	0.01	-0.06***	-0.08***
country & sectoral dummies	-0.10**	-0.11**	-0.18***

Notes: *, **, *** indicate statistically significant coefficients with 10%, 5%, and 1% confidence levels, respectively.

V. SECTORAL ADJUSTMENT

We examine sectoral ULC series to better understand the progress of external adjustment. As discussed above, these countries need falling prices relative to their trading partners and falling ULC in the tradable sector in order to shift resources to the tradable sector and to increase output to their potential levels. So, we do not expect the same size of wage adjustment in both tradable and non-tradable sectors or in both public and private sectors. For this end, we construct

²² The fact that this result remains with country dummies means that it is not driven by differences of the euro itself or access to Target 2 funds as those features would be absorbed in the country fixed effects. Furthermore, Ireland—who has access to such funds—has a pattern that looks more like the Baltics than the remaining euro deficit countries.

ULC for tradable and non-tradable sectors and examine the developments of output, employment, wages, and ULCs across sectors. Following the methodology of Eurostat, sectoral ULC are constructed as follows:

$$ULC = \frac{\text{total compensation for employees} / \text{number of employees}}{\text{real output} / \text{number of employment}}$$

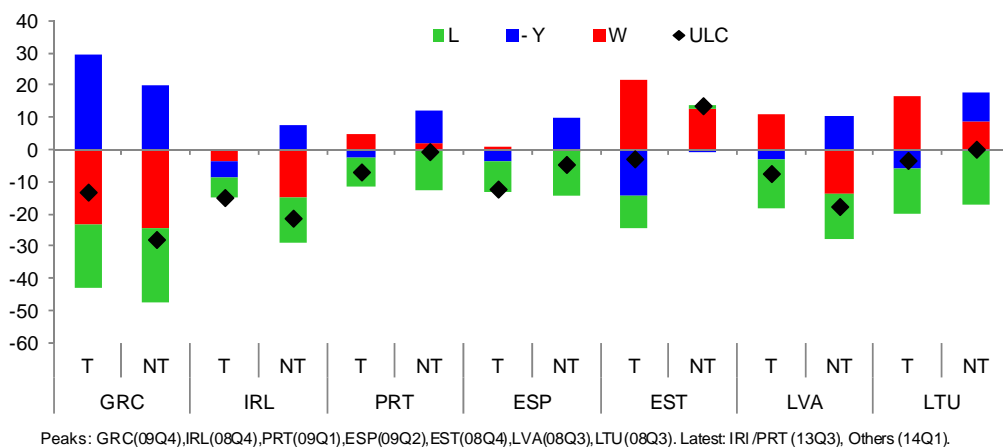
All data series are from Eurostat except Greece’s sectoral real output and compensation for employees which are from national statistical authority. Sectoral classification follows the European industry standard classification system (NACE) as in Appendix II. As a broad measure of tradable sectors, we include ‘agriculture, forestry & fishing’, ‘industry excluding construction’, ‘trade, travel, accommodation & food’, ‘information & communication’, and ‘financial insurance.’ All other sectors including public sector are classified as non-tradable sectors. Alternatively, as a narrow measure, we also consider tradable goods sector that includes only ‘industry excluding construction.’²³

A Snapshot of Adjustment

Relative price adjustment is taking place as it should be in most countries, and reorientation from the non-tradable sector to the tradable sector has been made in many countries, helping real outputs in the tradable sector recover and surpass the pre-adjustment levels (except Greece), though with different degrees. But, there is yet to be a strong enough expansion in the tradable sector to help stimulate the overall economy and absorb employment. Effectively, relative price adjustment is set against a backdrop of severe overall recession. Figure 16 below shows the change in employment (green), wage (red), output (blue, reversed), and unit labor cost (black dot) from the country-specific peak of economy-wide unit labor cost to the latest period in the tradable and non-tradable sectors.

²³ ECB (2012) considers much narrower and non-comprehensive classification of tradable and non-tradable sectors. They include only ‘manufacturing’ as a tradable sector and include only ‘construction’, ‘trade, travel, accommodation & food’, ‘financial insurance’, and ‘real estate’ as non-tradable sectors. Empirical results in this section are broadly similar with this narrower classification.

Figure 16. ULC adjustment between tradable and non-tradable sectors
(log difference, economy-wide ULC peak to the latest)



First, wages fell more in the non-tradable sector in every country (red columns are more negative in the non-tradable sector), and some countries observe rising wages in the tradable sector over this period. But, in many countries, unit labor costs have declined more in the tradable sector driven by larger productivity gains. In Greece, unit labor costs in the tradable sector did not show a sign of sustained improvement until 2013 as falling wages and employment were offset by output contraction (see online Appendix for details on the dynamics). Non-traded costs are still down by more than traded costs in Greece.

Second, real outputs in the tradable sector have surpassed the pre-adjustment levels for all countries except Greece (blue columns are negative, showing that an increase in output is pulling down unit labor costs), in particular in Estonia and Ireland. In contrast, outputs in the non-tradable sector still remain below pre-adjustment period in every country (except for Estonia where they are flat). Thus, there has been a reorientation towards tradables.

Third, employment remains below the pre-crisis level even in the tradable sector for all countries (green columns are negative), implying that adjustment so far has not yet led to meaningful improvement in the labor market. Thus, external adjustment is taking place, but it is not on its own sufficient to lift these countries towards economic growth.

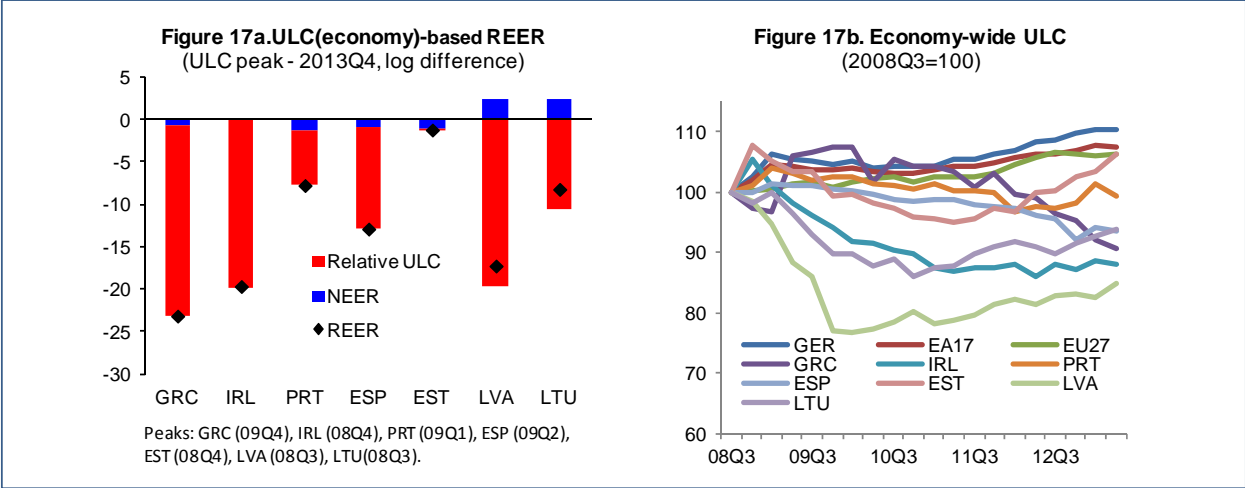
Dynamics

Beyond these broad patterns, each country has experienced different dynamics of adjustment over the last a few years, partly reflecting different paths to the large imbalances and different structure of labor market. In general, early adjusters (the Baltics and Ireland)

experienced a large fall in output and employment during the initial period of adjustment, followed by strong recovery in the tradable sector. In contrast, the other countries have experienced continued decline in employment and slow recovery in the tradable sector (See online appendix for details).

VI. THE CHANGE IN EXTERNAL PERFORMANCE

Unit labor costs in these economies have declined more relative to those in their trading partners, with economy-wide ULC-based REER depreciating by about 10 to 25 percent since the beginning of the adjustments (Figure 17a). GDP deflator-based REERs for these economies also depreciated, though somewhat less than ULC-based REERs, implying that relative prices have not declined as much as relative labor costs implicitly due to larger profit margins.²⁴ It is notable that nearly all of the REER depreciation is coming from the relatively large improvement in unit labor costs rather than depreciation of the nominal exchange rate.²⁵ It is not only due to the fact that a substantial amount of trade is within the euro area (or with those pegged to the euro) but also due to the fact that the euro itself has not depreciated substantially over this period, perhaps because the euro area as a whole does not need substantial external adjustment (the euro has begun to depreciate more in mid to late 2014). Similarly, most of the adjustment has been carried out by the deficit countries, while unit labor costs are not rising substantially in surplus countries (Figure 17b).



²⁴ Value-added REER (or similarly GDP deflator-based REER) conceptually better capture the competitiveness. See Bems and Johnson (2012) for detailed discussion.

²⁵ Data extending to the end of 2014 would show a larger contribution of the nominal exchange rate.

Export quantities have responded to these price adjustments. Real exports rebounded in response to declining unit labor costs as well as the recovery of global trade, with export volume in every country but Greece having recovered and surpassed the 2007Q4 levels (Figures 18a-b). Global merchandise export market shares, which fell during the crisis, have also begun to rebound in all these countries and have surpassed the pre-crisis peak in the Baltics (Table 4).

The adjustment has broadly proceeded as standard theory would suggest. Countries with larger output contractions have had larger declines in imports (Figure 19a). While there is no perfect relationship between the change in real exchange rate and export performance, real exports are broadly rising (except in Greece) as real exchange rates have depreciated (Figure 19b). Interestingly, the countries with the biggest depreciation of real exchange rates (Ireland and Latvia) have actually had smaller export increases.

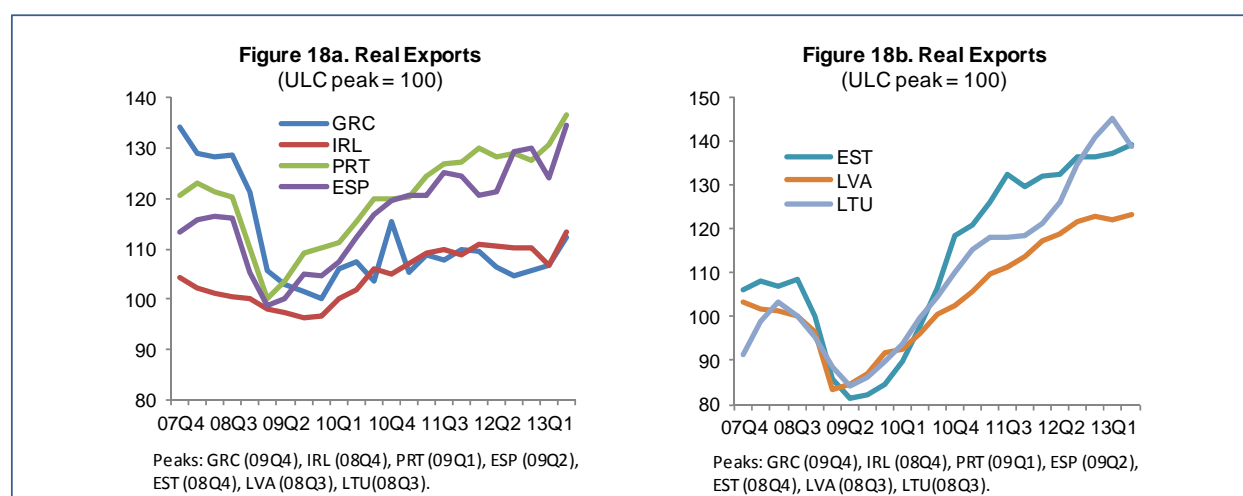
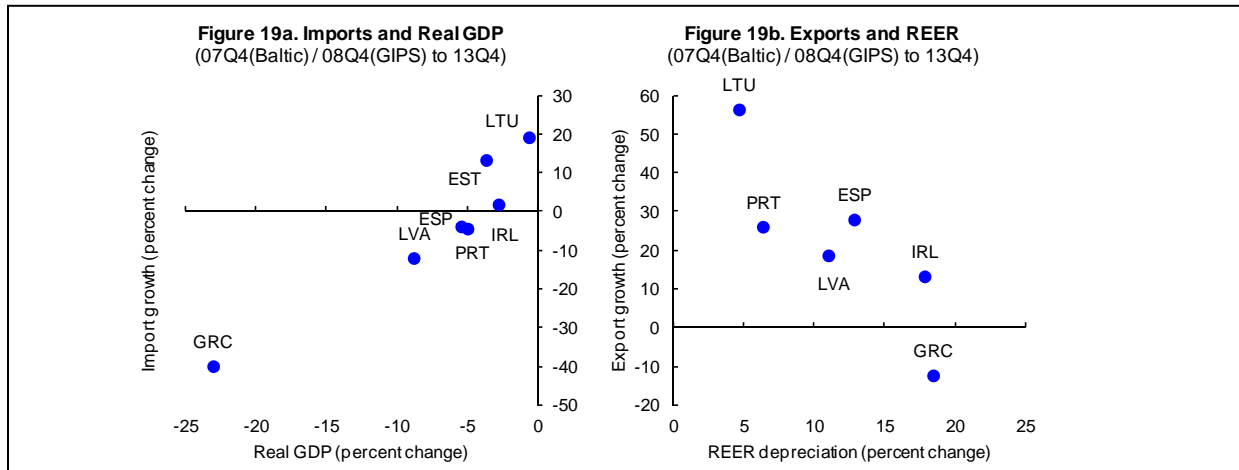


Table 4. Merchandise Export Market Share

(in percent)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Greece	0.180	0.167	0.153	0.157	0.173	0.163	0.172	0.176	0.187	0.191	0.194	0.179	0.181	0.188	0.192
Ireland	1.232	1.160	1.305	1.330	1.204	1.107	1.019	0.881	0.851	0.762	0.910	0.732	0.661	0.605	0.583
Portugal	0.422	0.354	0.376	0.387	0.411	0.379	0.360	0.362	0.368	0.348	0.348	0.320	0.323	0.313	0.334
Spain	1.784	1.644	1.714	1.791	2.015	1.925	1.784	1.720	1.766	1.704	1.780	1.631	1.639	1.569	1.648
Estonia	0.052	0.058	0.063	0.066	0.073	0.063	0.072	0.078	0.077	0.076	0.071	0.070	0.084	0.083	0.085
Latvia	0.030	0.028	0.032	0.035	0.038	0.042	0.048	0.050	0.058	0.061	0.061	0.061	0.070	0.075	0.076
Lithuania	0.052	0.058	0.072	0.083	0.093	0.099	0.109	0.115	0.120	0.144	0.130	0.132	0.150	0.158	0.173

Source: Direction of Trade Statistics



A variety of measures could be used to ascertain how much improvement in the trade balance appears to be a legitimate change in the economy as opposed to just a cyclical compression. The large improvements in the current account from 2008 to 2012 can be broadly explained by standard trade elasticities with respect to changes in exchange rates and output. Kang and Shambaugh (2014) show that the decline in GDP and the change in the ULC-based REERs can explain a substantial portion of the change in the current account. Estimates for the first few years of transition in Kang and Shambaugh (2014) suggest that somewhere between 20-60 percent of the adjustment from 2008 to 2012 came from real exchange rate adjustments, the rest from GDP contraction (generating import declines). Likewise, estimates reported in Tressel and Wang (2014) estimate that a substantial portion of the adjustment from 2007-2012 was cyclical. Real consumption in 2013 is only 76 percent of its 2007 level in Greece while consumption is between 85 and 95 percent of pre-crisis levels in the other countries studied here, suggesting demand compression is playing a major role.

In order to track the contribution over time, we explore the share attributable to export increases and import declines. While import declines may be necessary in some cases, it is difficult to imagine how these countries can achieve both internal and external balance without some improvement in exports. Especially given the limited ability to generate relative price changes of tradables via a nominal exchange rate movement, expenditure switching away from imports to domestic tradables cannot supply the entire adjustment and greater exports are needed as well.

Still, measuring the contribution of exports and imports is not always straightforward. While one could look at exports and imports as a share of GDP, such a measure may lead to a

misleading perspective on the changes in the economy because GDP is still considerably lower in some countries. For example, Greece's real exports actually declined from the end of 2008 to the end of 2013, and yet its exports as a share of GDP have increased from 23 to 28 percent from 2008 to 2013. Similarly, while imports have decreased substantially (nearly 40 percent in nominal terms), as a share of GDP, they have fallen only marginally (from 28 to 23 percent). Thus, we examine the simple path of exports and imports (not scaled by the moving target of GDP) to see how the contributions have evolved.

In Figures 20a-g, the green and red columns represent imports and exports, respectively, relative to their 2008 levels, and a column above the x-axis represents an improvement in the trade balance (higher exports and lower imports). As can be seen in these Figures, early adjustment in every country begins with a sharp drop in imports improving the trade balance while exports actually declined. This is certainly due in part to the overall collapse of trade as the financial crisis struck. This is also consistent with the slowly evolving unit labor costs (especially outside of the Baltics) and improving unit labor costs by declining employment not rising output. Over time, though, we see the share of export improvement rising. First in Ireland (in 2010) and then in the Baltics (in 2011), rising exports play a significant role. By 2012, imports are actually above their 2008 levels but the trade balance improved substantially on rising exports. In the Portugal and Spain, the adjustment—much like the unit labor costs—was slower, but by 2012-2013, more and more of the adjustment has taken place via exports. A fair amount of the trade balance adjustment in Spain and Portugal, and especially in Greece, still comes from falling imports, but except in Greece, exports are taking a larger role.²⁶

This highlights the earlier results. Adjustment is in fact taking place, and yet it is doing so against a backdrop of slow recovery of trading partners, especially euro area. Exports have recovered on the back of declining unit labor cost, but the overall economies are still struggling with employment even in tradable sector still being below its pre-crisis level. While these countries largely did not wind up with excessive current account deficits due to a loss of export competitiveness, they have done a great deal to reduce the trade deficits exactly by improving price competitiveness. It seems unlikely that simply waiting for more wage cuts and falling unit labor costs will improve the situation. Furthermore, as these countries still have excessively high

²⁶ Greece is an outlier. Nominal exports are still below their 2008 level and imports are much lower. But, as noted, given the drop in both prices and real GDP, as shares of the economy, both have adjusted considerably.

unemployment, there are still sizable output gaps. As the economies recover, imports may rise, either unwinding some of the current account improvement, or requiring even more improvements in exports.²⁷

We broaden this analysis by returning to our full sample of EU countries to see which types of countries faced the largest adjustment in current accounts. Repeating a similar exercise to the one above, we can examine the change in the current account from 2007 to 2012 across the set of 27 EU countries to see whether those changes are correlated with changes in REER, initial conditions, and/or changes in output. We focus on the same 4 variables used to examine the rise of current account deficits, but now measure the transfers in 2007 and the changes in GDP and ULC-based REER from 2007 to 2012.

In Table 5 below, we see that all four variables have statistically significant relationships with the change in the current account in the bivariate regressions, but two now have the opposite sign from the buildup in current accounts. Poorer countries do not continue to borrow more but instead borrow less (their current account balances move in a positive direction). Similarly, countries receiving transfers in 2007 have improved their current account balance through 2012. Rising unit labor costs or rising GDP both are correlated with bigger deficits as in the prior table. When the variables are combined, the change in GDP and the measure of relative income are the two variables that have coefficients statistically different from zero, confirming that the change in domestic absorption has a large impact on the current account. A one standard deviation difference in growth generates a 2.4 percent of GDP difference in the current account at the end. Since both real GDP growth and change in unit labor cost variables have roughly the same standard deviation, the size of the coefficient can be interpreted as a measure of impact. With the other controls, it seems GDP growth has roughly 2 times the impact as the change in relative prices. As before, many of the variables are correlated. If we simply focus on the two key channels (GDP contraction and relative cost changes), the coefficients have similar sizes, (though again, only the change in GDP is statistically different from zero). Unlike some of the previous results where many variables were predetermined, in this case, we are simply looking at correlations of different macro aggregates. It is the countries that have experienced the most pain

²⁷ See Kang and Shambaugh (2014) for a discussion of different ways of thinking about the output gap and discussion of cyclically adjusted current accounts.

that have had the largest changes in the current account, but that is not necessarily a causal relationship.

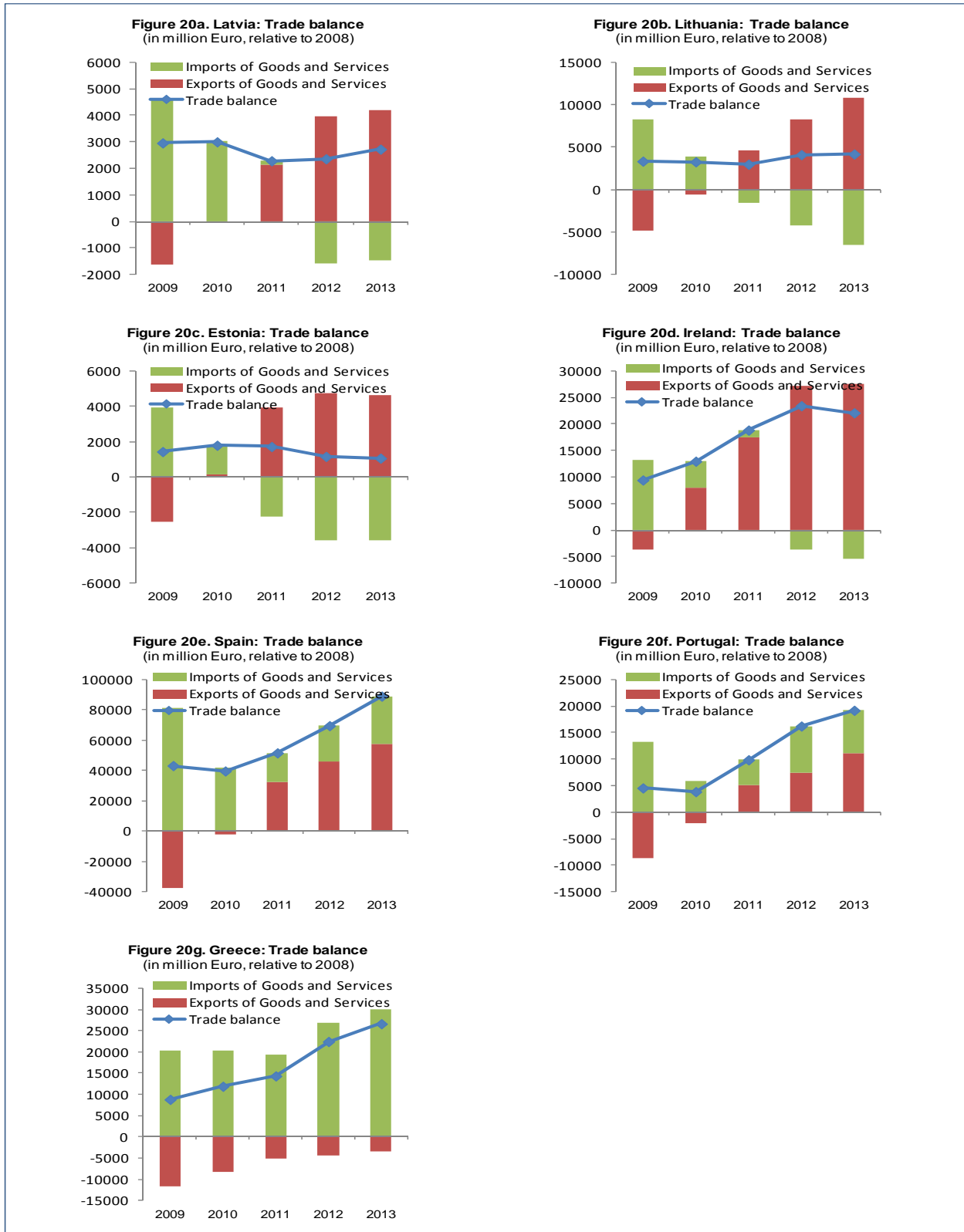


Table 5. Regression for Post-Crisis Current Account Developments ^{1/}

Dependent variable: Change in Current account-to-GDP ratio for 2007-12						
Variables ^{2/}	1	2	3	4	5	6
Real GDP growth for 2007-2012	-0.378** (0.155)				-0.344*** (0.112)	-0.277* (0.157)
Relative income in 2007		-0.083*** (0.019)			-0.115*** (0.035)	
Change in ULC-based REER for 2007-2012			-0.363** (0.159)		-0.158 (0.128)	-0.273 (0.160)
Transfers-to-GDP ratio in 2007				2.507*** (0.626)	-0.278 (1.016)	
Constant	0.042*** (0.012)	0.137*** (0.022)	0.054*** (0.012)	0.053*** (0.010)	0.163*** (0.035)	0.049*** (0.012)
Observations	27	27	24	27	24	24
R-squared	0.191	0.436	0.192	0.391	0.685	0.296

1/ *, **, *** indicate statistically significant coefficients with 10%, 5%, and 1% confidence interval, respectively.

2/ standard errors in parenthesis.

VII. WHAT HAS MADE THIS SO PAINFUL

As noted above, one notable aspect of the adjustment is how painful it has been. Productivity has come largely from labor cuts as nontradable sectors have contracted while tradable sectors have not taken enough of the slack. Employment is lower than pre-crisis level even in tradable sectors, and a large portion of adjustment is attributable to demand compression. In this section, we examine which countries have experienced the most pain (measured as a change in GDP). We consider this in two ways: first, which characteristics of countries prior to the crisis are correlated with large output drops, and second which patterns during the crisis are consistent with large output drops.

To examine the first question we regress the change in real GDP from 2007 to 2012 on a number of variables that match the concerns of the crisis: which countries had large structural fiscal deficits, and which countries had large current account deficits. We consider other factors as well (run-ups in prices, initial conditions), but are most interested in the two imbalances: fiscal and external (Table 6).²⁸

²⁸ There are of course many other things that can lead to output drops. In particular, problems in the banking sector have been a key part of the crisis. See Shambaugh (2012) for the way in which the various aspects of the crisis interact and Euronomics (2011) for the loop between sovereign and banking crises. The countries we have focused

Table 6. Regression for Post-Crisis Output Decline ^{1/}

Dependent variable: Change in Real GDP for 2007-12					
Variables ^{2/}	1	2	3	4	5
Relative income in 2007	-0.095** (0.037)	-0.095** (0.039)	-0.195*** (0.062)	-0.074 (0.044)	-0.079** (0.030)
CA balance-to-GDP ratio in 2007	0.686** (0.255)	0.678** (0.300)	0.778** (0.298)	0.599* (0.289)	
Structural fiscal deficit in 2007	0.007 (0.005)	0.007 (0.005)	0.005 (0.005)	0.003 (0.006)	
Real GDP growth for 1998-2007		-0.006 (0.115)	-0.119 (0.135)		
Change in ULC-based REER for 2007-2012			-0.046 (0.112)		
Euro dummy (member of Euro area by 2002)				-0.025 (0.036)	
CA-to-GDP ratio in 2007 times Euro dummy				0.281 (0.372)	
Change in CA balance-to-GDP ratio for 2007-2012					-0.707** (0.259)
Change in structural fiscal deficit for 2007-2012					-1.160** (0.485)
Constant	0.131** (0.051)	0.133** (0.060)	0.279*** (0.093)	0.108* (0.055)	0.101** (0.042)
Observations	26	26	23	26	26
R-squared	0.375	0.375	0.510	0.419	0.467

1/ *, **, *** indicate statistically significant coefficients with 10%, 5%, and 1% confidence interval, respectively.

2/ standard errors in parenthesis.

Beginning with the most sparse regression, including only the structural fiscal deficit and the current account deficit in 2007 along with a measure of relative income, it seems that current account deficits on the eve of the crisis are the indicator for which countries suffer. This is not surprising as many countries (Spain and Ireland for example) that suffered during the crisis had strong fiscal performance in the run up to the crisis and others (e.g. Germany) that have performed well had climbing debt-to-GDP ratios.²⁹ In columns 2 and 3, we add other controls that measure the boom (changes in GDP growth and unit labor costs in the early euro years). The current account remains the only variable that appears correlated with GDP growth during the crisis. That is, countries (not governments) borrowing on the eve of the crisis faced the most pain.

on split on this dimension; Gros and Alcidi (2013) note that the Baltics had extensive foreign ownership of banks while the euro area banks were predominately domestic owned.

²⁹ Shambaugh (2012) shows that the feature most correlated with a rise in bond yields was the current account deficit, not budget deficit or debt level.

Neither the coefficient on a euro area dummy nor on an interaction between that dummy and the current account position are statistically significantly different from zero. While this is a simple specification, all of the explanatory variables are predetermined, so there are no concerns of reverse causation.

Next, we explore patterns during the crisis. We look at both the correlation of the change in the structural fiscal deficit and the change in the current account. It is clear that each of these macro series is affecting the other, so we are looking simply at conditional correlations. We find that the two adjustment processes are in fact quite correlated with GDP contraction. Shrinking the structural fiscal deficit has a more than one for one impact on GDP growth, and shrinking the current account by 1 percent of GDP leads to real GDP decline of about 0.7 percent. Countries that were cutting both fiscal and external deficits experienced substantial pain. This suggests that rebalancing both fiscal and external deficits at the same time without exchange rate movement has been extremely difficult.³⁰

VIII. POLICY RECOMMENDATIONS:

What can be done to improve the situation? Continued productivity improvements would be helpful. As living standards are always related to productivity, better productivity is always a good thing in the long run. But, it does not appear that simply waiting for higher productivity and exports is a viable strategy, especially in large but less trade-oriented countries, such as Spain, Portugal, and Greece. The substantial pain associated with both external and fiscal adjustment as well as little employment recovery in the tradable sector despite improved relative unit labor costs suggests that much more aggressive supportive macro policies will be needed alongside the continued attempts to improve productivity. This could involve: looser monetary policy, more supportive fiscal policy, and explicit attempts to improve relative prices of deficit countries by sharing the burden between surplus and deficit countries.

Looser monetary policy: As of September 2014, the year-on-year euro area inflation rate is below 0.5 percent. As noted above, this makes adjustment very difficult because deficit

³⁰ As documented above, we know the change in GDP may be a cause of the change in the current account, so causation is running in both directions. If we instrument for the change in the current account with the change in unit labor costs, we find nearly the same point estimate, though the standard error on the coefficient for the current account went up. The relative unit labor cost variable is a relatively weak instrument, so this is not surprising.

countries need to reduce their prices and wages substantially more to improve their external balances. A far better adjustment path—and one consistent with the mandate of the European Central Bank (ECB)—would be to raise inflation to at least 2 percent leaving more room for relative price adjustment without forcing the deficit countries into deflation. This would mean that surplus countries would likely have inflation above 2 percent and deficit countries below 2 percent, leading to an average of 2 percent, but still achieving relative price adjustment. As of September 2014, the year-on-year inflation was not above 2 percent in any euro area country, and was only 0.8 percent in Germany, a major surplus country. In such an environment, relative price changes are exceedingly difficult. As noted in Shambaugh (2012) internal devaluation is much easier when trade partners have higher inflation, and improving relative prices via falling prices is especially problematic in a high debt environment.

More supportive fiscal policy: As noted by many observers, including IMF (2014), severe fiscal consolidation in a high multiplier environment (like one where nominal interest rates are at zero) can actually increase future debt burdens. Large fiscal consolidation has actually led to much weaker economies. Loosening fiscal policies in the former deficit countries alone would likely lead to larger trade and current account deficits in these countries as it could reduce national saving, but more expansive fiscal policy by the euro area governments as a whole—especially surplus countries—is needed to help improving general macro environment and supporting the export recovery of deficit countries.

Other ways of adjusting relative prices: As far back as the start of the crisis, some economists have called for policies like a fiscal devaluation where consumption taxes are lowered in surplus countries and raised in deficit countries with offsetting changes in labor taxes. Such a policy would be unlikely to achieve a massive change in relative prices as one could only realistically change the tax rates. However, given the pain associated with a 15-20 percent relative price improvement over the last 5 years, if an additional 5 percent could be achieved in a less painful manner, such a policy would worth exploring.

Broader implications for the euro area: The crisis has highlighted many institutional flaws in the euro area, including difficulties in dealing with asymmetric shocks and handling financial crises at the euro area level. In addition, there are policies that need to be addressed to prevent the rise and fall of the current account deficits. A core fact of the last seven years which

is highlighted in this paper is that current account adjustment can be extremely painful and difficult within a currency union. One important implication is that more emphasis should be placed on avoiding such imbalances. Macro-prudential policies that could lean against booms might help prevent such imbalances from building up.³¹ Furthermore, it is important that relative prices are set at an appropriate level when a country joins the euro area. No such rule was part of the Maastricht criteria and, as countries continue to join the euro, some have done so with relatively high trade or current account deficits. If trade deficits are high but current account deficits are low due to transfers, it seems crucial to get the relative prices right so that a country is not left with a crisis or growing net foreign liabilities when the transfers fade away. Finally, the need for relative price adjustments over time will undoubtedly return. The lessons that this is an extremely difficult process for countries that have not recently had a wage boom, and that low inflation environments make the process all the more difficult, suggest that it is imperative that the ECB not miss its inflation target on the low side especially during periods of adjustment, that external and fiscal adjustment not be paired together if possible, and that proper offsets for asymmetric macro or financial shocks are created so countries undergoing adjustment do not experience unnecessary pain.

IX. CONCLUSION

The early years of the euro saw poorer countries in Europe running growing current account deficits. In addition to some increase in unit labor costs, and excessive optimism-driven domestic booms, there were substantial shifts in the non-trade portion of the current account with declining transfers and increasing net income payments. Together with the fact that trade deficits had been persistent problem for some countries, this meant these countries had even further to go to rebalance their external accounts than simply restoring trade balances to their pre-euro levels. The adjustment has been proceeding: unit labor costs in tradable sectors have been falling, opening the way for export recovery and encouraging a shift from non-tradable to tradable production. But, the adjustment has come through labor shedding and unit labor cost compression in the deficit countries and corresponding demand compression. It has been

³¹ See Martin and Philippon (2014) for a discussion of the role of macro-prudential policies during the buildup phase and how they might prevent imbalances.

accompanied by fiscal adjustment and a lack of sufficiently supportive macro policy meaning the process has been extremely painful. Trying to simultaneously balance fiscal and external accounts—without nominal exchange rate depreciation—has been a slow process, generating high unemployment rates with large output gaps. While the current accounts have improved to near balance, more adjustment may be needed as countries move back towards full employment. Supportive macro policies aimed at increasing inflation to at least 2 percent as well as and other measures that might help shift the burden of adjustment from deficit to surplus countries would be very helpful as would slowing the pace of fiscal consolidation in deficit countries. Given the difficulty of unwinding imbalances, this episode highlights the need for institutions that can slow the buildup of unsustainable booms (e.g. macro-prudential policies), cushion asymmetric shocks (fiscal cushions and financial system support), and can allow for appropriate countercyclical macroeconomic policies.

References:

- Atoyan, Ruben, Jonathan Manning, and Jesmin Rahman, 2013, "Rebalancing: Evidence from Current Account Adjustment in Europe," IMF Working Paper, WP/13/74 (Washington: International Monetary Fund).
- Bakker, Bas, and Christoph Klingens, 2012, "How Emerging Europe Came Through the 2008/09 Crisis: An Account by the Staff of the IMF's European Department" (Washington: International Monetary Fund).
- Bayoumi, Tamim, Richard Harmseen, and Jarkko Turunen, 2011, "Euro Area Export Performance and Competitiveness," IMF Working Paper, WP/11/140 (Washington: International Monetary Fund).
- Bems, Rudolph and Robert Johnson, 2012, "Value-Added Exchange Rates," NBER WP 18498 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Berger, Helge and Volker Nitsch, 2010, "The Euro's Effect on Trade Imbalances," IMF Working Paper, WP/10/226 (Washington: International Monetary Fund).
- Blanchard, Olivier and Francesco Giavazzi (2002), "Current Account Deficits in the Euro Area: The End of the Feldstein-Horioka Puzzle," *Brookings Papers on Economic Activity* 2, pp.148-186.
- Chen, Ruo, Gian-Maria Milesi-Ferretti, and Thiery Tresselt, 2012, "External Imbalances in the Euro Area," IMF WP No. 12/236 (Washington: International Monetary Fund).
- Euro-nomics Group, 2011, "European Safe Bonds (ESBies)," September 26, euronomics.com/wp-content/uploads/2011/09/ESBiesWEBsept262011.pdf.
- European Central Bank, "Competitiveness and External Imbalances within the Euro Area," 2012, Occasional Paper Series No 139 (Frankfurt, Germany: European Central Bank).
- Freund, Caroline, 2009, "The Trade Response to Global Downturns: Historical Evidence," World Bank Policy Research Working Paper 5015.
- Gaulier, Guillaume and Vincent Vicard, 2012, "Current Account imbalances in the Euro Area: Competitiveness or Demand Shock", Bank of France Quarterly Selection of Articles No. 27.
- Gross, Daniel and Cinzia Alcidi, "Ecountry adjustment to a sudden stop: Does the euro make a difference?" *European Economy Economic Papers* 492, April 2013.

- Holinski, Nils, Clemens Kool, and Joan Muysken, 2012, “Persistent Macroeconomic Imbalances in the Euro Area: Causes and Consequences,” Federal Reserve Bank of St. Louis Review, January/February 2012, 94(1), pp. 1-20.
- International Monetary Fund, 1998, “Exchange Rate Assessment: Extension of the Macroeconomic Balance Approach,” IMF Occasional Paper 167.
- International Monetary Fund, 2014, “
- Ivanova, Anna, (2012) “Current Account Imbalances: Can Structural Policies Make a Difference?” IMF Working Paper, WP/12/61 (Washington: International Monetary Fund).
- Jaumotte, Florence and Piyaporn Sodriwiboon, 2010, “Current Account Imbalances in the Southern Euro Area,” IMF Working Paper, WP/10/139 (Washington: International Monetary Fund).
- Kang, Joong Shik and Jay Shambaugh, 2013, “The Evolution of Current Account Deficits in the Euro Area Periphery and the Baltics: Many Paths to the Same Endpoint,” IMF Working Paper, WP/10/169 (Washington: International Monetary Fund).
- Kang, Joong Shik and Jay C, Shambaugh, 2014, “Progress Toward Internal Devaluation in the GIPS and the Baltics,” forthcoming IMF WP (Washington: International Monetary Fund).
- Lane, Philip R. 2006. “The Real Effects of European Monetary Union,” *Journal of Economic Perspectives* 20(4): 47–66.
- Lane, Philip and Gian Maria Milesi-Ferretti, 2012, “External Adjustment and the Global Crisis,” *Journal of International Economics* 88(2), 252-265, November 2012.
- Lane, Philip and Barbara Pels, 2012, “Current Account Imbalances in Europe,” CEPR Discussion Paper No. DP8958.
- Lee, Jaewoo, Gian Maria Milesi-Ferretti, Jonathan Ostry, Alessandro Prati, and Luca Ricci, 2008, “Exchange Rate Assessments: CGER Methodologies,” IMF Occasional Paper No. 261 (Washington: International Monetary Fund).
- Martin, Philippe and Thomas Philippon, 2014, “Inspecting the Mechanism: Leverage and the Great Recession in the Eurozone,” NBER WP 20572.
- Nkusu, Mwanza, 2013, “Boosting Competitiveness to Grow Out of Debt—Can Ireland Find a Way Back to Its Future?” IMF WP 13/35 (Washington: International Monetary Fund).
- Shambaugh, Jay, 2012, “The Euro’s Three Crises,” Brookings Papers on Economic Activity, Spring 2012, pp 157–211.

Tressel, Thierry and Shengzu Wang, 2013, “Rebalancing in the Euro Area and Cyclicalitv of Current Account Adjustments,” IMF WP 14/130 (Washington: International Monetary Fund).

Tressel, Thierry, Shengzu Wang, Joong Shik Kang, and Jay C. Shambaugh, 2014, “Adjustment in Euro Area Deficit Countries: Progress, Challenges and Policies,” IMF Staff Discussion Note 14/7 (Washington: International Monetary Fund).

APPENDIX I: CUMULATIVE UNIT LABOR COST

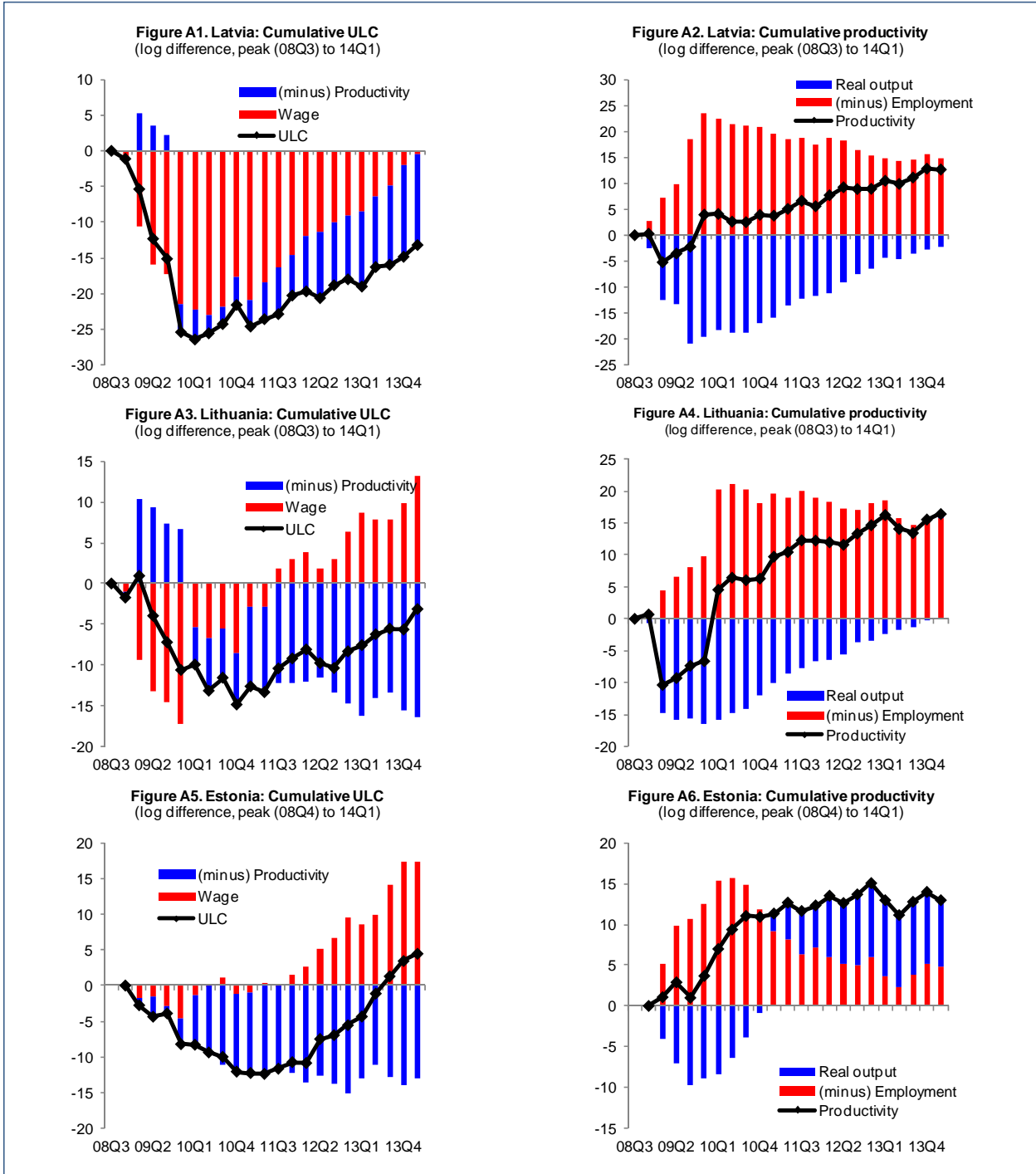


Figure A7. Portugal: Cumulative ULC
(log difference, peak (09Q1) to 13Q3)

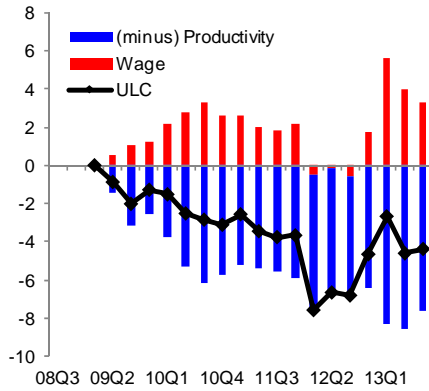


Figure A8. Portugal: Cumulative productivity
(log difference, peak (09Q1) to 13Q3)

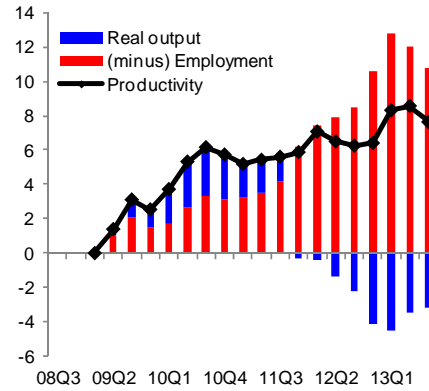


Figure A9. Spain: Cumulative ULC
(log difference, peak (08Q3) to 14Q1)

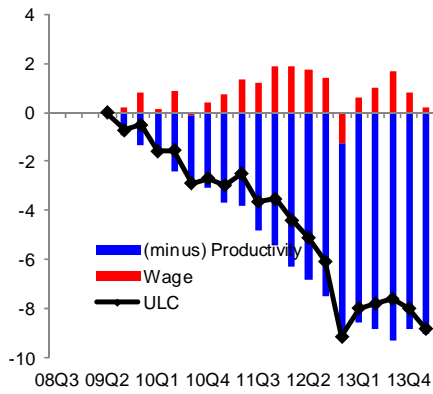
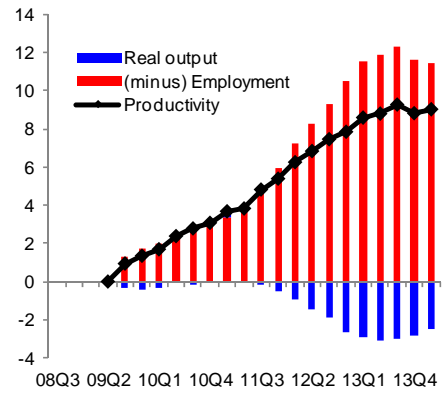


Figure A10. Spain: Cumulative productivity
(log difference, peak (08Q3) to 14Q1)



APPENDIX II: SECTORAL CLASSIFICATION

European industry standard classification system (NACE)

Agriculture, Forestry & Fishing

Private sector

Industry

Industry excluding construction

Manufacturing

Construction

Service

Trade, Travel, Accommodation & Food

Information & Communication

Financial Insurance

Real Estate

Professional, Science & Tech

Public sector

Public Admin, Education & Social Work

Arts, Entertainment & Recreation