

## II.2. Sectoral implications of external rebalancing

### Introduction

It is now recognised that amongst the various macroeconomic imbalances that have built up in some parts of the euro area since the inception of EMU, external imbalances are among the most challenging and pervasive from a policy perspective. Through their bearing on external liabilities, current account deficits are an important determinant of country credit risk and financial stability risks. Yet, being the result of complex interactions between public and private sector investment and saving decisions, they evade direct policy control.

In the previous decade, the euro area has seen the build up of large and very persistent current account deficits in some of its Member States. By curbing credit-driven excess demand, the global economic and financial crisis appears to be progressively correcting these imbalances in most if not all the Member States concerned. This section looks at an often-neglected dimension of the rebalancing process: its relationship with an economy's industrial structure. It argues that rebalancing is associated with important industrial shifts of the economy's supply side that have important policy implications.

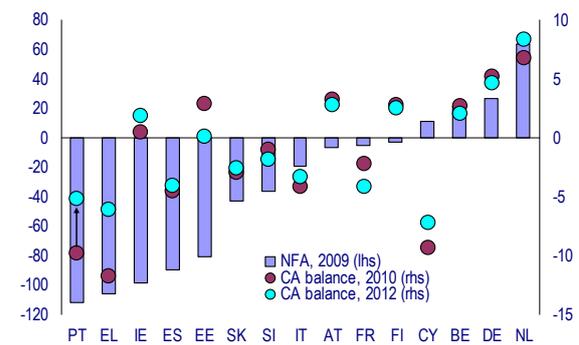
### The mechanics of external rebalancing

The current account records economic transactions between its residents and non-residents linked to export and import activity, while also capturing investment earnings and current transfers. A current account deficit represents the excess of domestic demand over income or, alternatively, the excess of investment over domestic saving. Depending on its magnitude and persistence, a current account deficit can mark a temporary period of large investment needs, for instance following a natural disaster or during a phase of 'catch-up' growth, but it may also be symptomatic of an economy that is persistently outspending its earning capacity.

Graph II.2.1 presents an overview of euro-area Member States' net foreign asset position (NFA) as well as latest and prospective current account balances. As the current account balance is approximately equal to the annual change in a country's NFA, the graph also conveys medium-term trajectories for Member States' net external

liabilities.<sup>(39)</sup> A number of countries of the periphery of the euro area stand out as having comparatively high net foreign liabilities (PT, EL, IE, ES, EE). All of these countries are due to achieve a major reduction of the current account between 2007 and 2012, with Graph II.2.1 showing particularly strong corrections in PT and EL between 2010 and 2012. Although the rebalancing process may still have some way to go in some Member States, it is clearly taking place.

Graph II.2.1: Net financial asset position and current accounts, euro area Member States (% GDP) (1)



(1) A negative NFA figure indicates a net liability position vis-à-vis the rest of the world.

Source: Commission services.

Patterns of adjustment of large current account deficits have recently been analysed extensively, emphasising in particular possible consequences for growth and on the respective roles of demand and prices.<sup>(40)</sup> An aspect which seems, however, to have been somewhat neglected is the sectoral and supply-side dimension. Current account imbalances can in fact be associated with supply distortions – in the form of skews in the sectoral composition of the economy – which need to be reversed during the adjustment phase.

The basic explanation for these sectoral shifts is as follows. Large current account deficits essentially reflect an excess of demand over supply. These demand pressures cause price tensions and an appreciation of the real exchange rate. The magnitude of the price changes differs,

<sup>(39)</sup> This approximation holds if there are no major valuation effects, debt cancellations, write-offs, reclassifications or errors and omissions. In this case, adding the current account balance to the previous year's NFA position gives the new NFA.

<sup>(40)</sup> See for instance European Commission (2010), "A look at past episodes of current account adjustment", Quarterly Report on the Euro Area, Vol. 9 No. 3. Algieri, B. and T. Bracke (2007) 'Patterns of current account adjustments — insights from past experience', CESifo Working Paper, No 2029.

however, across sectors leading to changes in relative prices. In particular, price increases are likely to be higher in the non-tradable sector than in the tradable sector where competition from imports tends to constrain producers' pricing behaviour. The ensuing rise in the relative price of non-tradables induces investors to move to that sector, entailing a reallocation of the economy's capital and labour resources. The skew in the economy's production structure towards non-tradables is all the more likely if the current account deficit persists over several years and therefore leaves enough time for supply forces to respond to the changes in price signals.

Two arguments suggest that sectoral skew resulting from the mechanics described above is likely to be stronger for a country in a monetary union. First, evidence from the first decade of the euro indicates that large current account deficits are easier to sustain over long periods of time in a monetary union, leading to long cycles of excess demand and giving more time for presumably slow sectoral shifts to take place.

Second, a country-specific cyclical boom is likely to be associated with comparatively stronger demand pressures in the non-tradable sector in a member of a monetary union due to an asymmetry in the adjustment process. In a country running its own monetary policy, the typical response to a cyclical upswing involves a policy tightening that affects both tradable and non-tradable activities. By contrast, in a monetary union, a bigger part of the adjustment to a country-specific cyclical upswing is market-based. This is the so-called competitiveness channel: excessive demand pressures push up inflation above the monetary union's average, leading to a steady appreciation of the real exchange rate which progressively cools off the economy by curbing exports and fuelling imports. Hence, the adjustment tends to weigh more on the tradable than on the non-tradable sector, an asymmetry that is likely to reinforce shifts in capital and labour from the tradable to the non-tradable sector.

Overall, current account rebalancing processes require improvements in competitiveness but also a reversal of the sectoral skew on the supply side accumulated during the boom phase. As demand pressures fade, demand for domestic goods weakens and domestic prices need to adjust downwards to curb excess supply. Excess supply will be particularly large for non-tradables, calling either for larger price falls in that sector and/or a reallocation of supply from non-tradable to

tradable. In the absence of appropriate price adjustment and/or sectoral shifts in labour and capital, the current account rebalancing will give rise to a lasting increase in unemployment.

An interesting implication of this analysis is that price and sectoral adjustment can be seen as complementary forces in current account rebalancing processes. The size of the price adjustment needed to bring current account back to equilibrium without excess supply depends on the magnitude of the resource reallocation process. The more easily resources are moved from the non-tradable to the tradable sector, the smaller the required competitiveness gains. Some model simulations indicate that this complementarity may be significant. <sup>(41)</sup>

### Sectoral skews were clearly visible in some Member States in pre-crisis years

In the pre-crisis decade a confluence of economic tailwinds spurred domestic demand growth and expanded private sector balance sheets across the euro area, particularly in the periphery. The most prominent manifestation of this was the rapid house price appreciation and strong rise in construction and residential investment in ES and IE, which distorted these economies' industrial structure. The following two graphs show output developments for the five euro-area Member States exhibiting the largest net external liabilities ("EXT-5" – IE, EL, ES, EE, PT) with a view to detecting wider sectoral imbalances in economic activity over the past decade. <sup>(42)</sup>

A marked divergence in output growth is evident both between countries and within countries' tradable and non-tradable sectors. The euro area (EA17) depicted in Graph II.2.3 serves as an overall benchmark and shows even but slow output growth across the non-tradable and tradable sectors, with the crisis impact visible in a much sharper decline in tradable than non-tradable output in 2009. By contrast, most of the Member States of the periphery depicted in graphs II.2.2 and II.2.3 experienced rather different

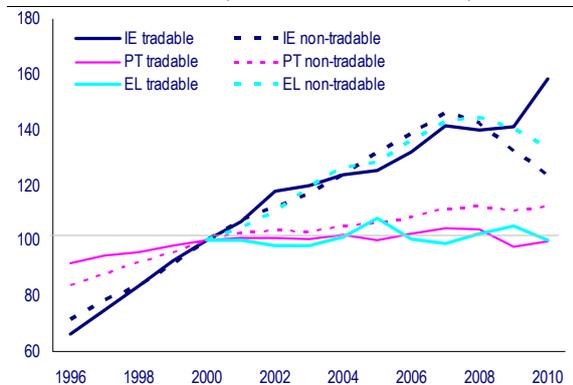
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<sup>(41)</sup> See e.g. Engler, P., M. Fidora and C. Thimann (2009), 'External imbalances and the US current account: How supply-side changes affect an exchange rate adjustment', *Review of International Economics* 17(5), 2009, p. 927-941.

<sup>(42)</sup> The industrial division follows the conventional grouping of ISIC codes A-E as tradable, and codes F-P as non-tradable. Due to the resulting treatment of comparatively tradable services such as wholesale and transport as non-tradable this will tend to underestimate tradable output, although the findings of this section are generally robust to the choice of tradability definition.

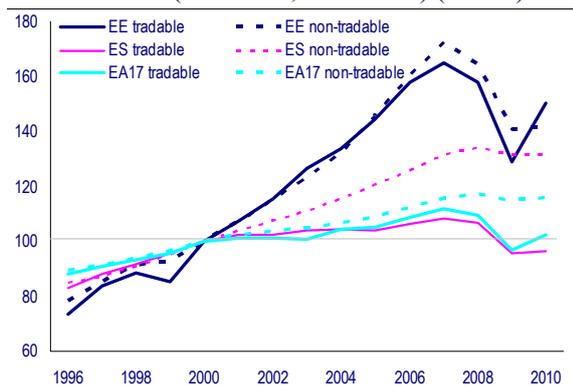
developments in the run-up to the crisis and thereafter.

Graph II.2.2: Real gross value added, selected countries (2000=100, 1996-2010)



Source: Commission services.

Graph II.2.3: Real gross value added, selected countries (2000=100, 1996-2010) (cont'd)



Source: Commission services.

Firstly, output growth was significantly faster in Ireland, Greece, Portugal, Estonia and Spain than in the euro area prior to the crisis, though with a sharper fall thereafter. Secondly, a number of countries (IE, ES, EL) experienced considerably faster growth in their non-tradables sector than for tradables.<sup>(43)</sup> Thirdly, a number of the selected Member States (IE, EL, EE) recorded a comparatively stronger fall in nontradable output in the crisis period of 2009-2010 than for tradables, unlike the euro area aggregate, which only saw falls in tradable output. These falls in non-tradable output in the EXT-5 are indicative of sectoral rebalancing processes already at work. Based on this *prima facie* evidence, it does appear

<sup>(43)</sup> For Greece the attribution of wholesale & retail trade (G51-G52) and shipping & telecoms (I61 & I64) is pivotal, as these jointly doubled in size between 2000 and 2007. For all the other above countries the tradability definition does not affect the picture.

that at least in Spain, Greece and Ireland a pronounced boom in non-tradable output occurred in the pre-crisis years.

The role of construction activity in explaining the nontradable boom in the periphery is considerable, but by no means accounts for all of it: construction and other non-tradable output in the EXT-5 rose in lockstep up to the crisis, at rates well above tradable output. It is however true that the crisis-induced contraction in the EXT-5 group has been particularly sharp in the construction sector.

Overall, these findings suggests that a stronger concentration of productive resources took place in nontradables in the EXT-5, thus invariably constraining tradable growth and limiting potential exports. To the extent that non-tradable output has fallen permanently since the crisis in countries such as Ireland, the ensuing relative price falls in the nontradable sector should boost tradable production.

### Implications for employment

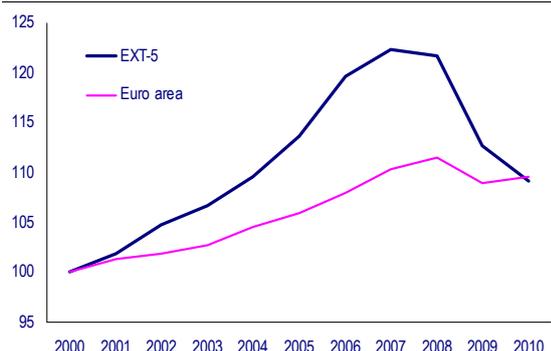
The analysis has important implications for the labour markets of Member States undergoing a major current account rebalancing. The EXT-5 countries experienced markedly faster growth in non-tradable employment than the EA17 in the pre-crisis years (see Graph II.2.4), also saw a faster rise in the share of non-tradable in total employment than the rest of the euro area. Current account adjustment economies will thus need to reallocate a significant share of employment from the non-tradable to the tradable sector in the years to come. Graph II.2.4 shows marked falls in hours worked in the nontradable sector of the EXT-5 in 2009 and 2010, suggesting that this labour reallocation process has started already.

The required labour reallocation process will not necessarily be smooth and easy. Companies' labour demand may differ significantly between the tradable and non-tradable sectors, notably in terms of required skills and qualifications and in terms of job location. This implies a risk of lasting mismatches between supply and demand. The emergence of such mismatches could be one of the explanations of the apparent disconnection between inflation and unemployment observed in some peripheral Member States.<sup>(44)</sup> In these Member States surges in unemployment rates

<sup>(44)</sup> Other possible key explanations include downward rigidities in prices and wages and a sharp cyclical drop in labour productivity during the recession.

have so far led to only modest deceleration in inflation.<sup>(45)</sup> This disconnect is also reflected in the European Commission estimates of the NAIRU which point to significant rises in labour market frictions in some Member States over 2010-12 (see Graph II.2.5). A small impact of unemployment on inflation implies that competitiveness rebalancing in current account deficit countries is slow.

Graph II.2.4: Total hours worked in non-tradable sector (2000=100, 2000-2010)

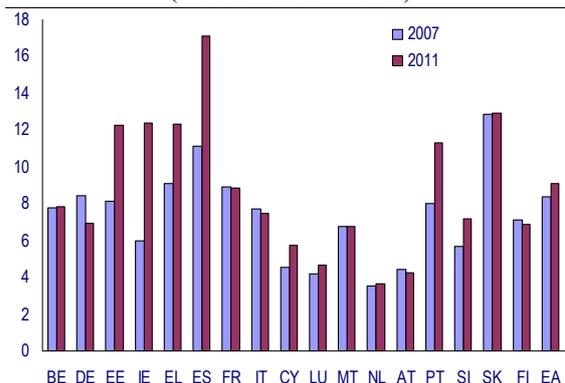


Source: Commission services.

If not properly addressed, mismatches between labour supply and demand also raise the risk of a permanent rise in unemployment thereby transforming the original external imbalance into an internal imbalance. Obviously, the risk of mismatches turning into permanent unemployment depends on the quality of labour market institutions and can be reduced by policies facilitating labour mobility, skills improvement or vocational training. As discussed in detail in Box II.2.1, an additional factor is migration. This may come as a surprise insofar as the euro area is usually seen as a region where, contrary to the US, migration plays virtually no role in adjustment to asymmetric country shocks. But, while this may have been true in the distant past, migration has clearly played a role in reducing unemployment differences in Europe in recent years. This is exemplified by the case of Ireland and Spain, where migration inflows reduced labour market tensions during the boom years and outflows are now cushioning the rise in unemployment. Besides these two countries, the box presents econometric analysis pointing to a negative relationship between net migration and unemployment in the EU and the euro area.

<sup>(45)</sup> The rise in taxes and other administrated prices in the context of fiscal consolidation strategies are another push factor for inflation.

Graph II.2.5: NAIRU, euro-area Member States (in% of labour force)



Source: Commission services.

### Implications for investment

Successful external rebalancing will not only depend on labour reallocation but also on capital redeployment. Capital reallocation across sectors can take two main forms. Firstly, gross capital investment can flow into different industries over time, thus affecting the capital stock via incremental flow changes. Secondly, existing physical capital may in principle be sold or leased between industries, although the extent to which a significant second-hand market for productive capital exists is likely to vary greatly between industries and countries.<sup>(46)</sup> Overall, this implies that major sectoral reallocations of productive capital will occur in an incremental way, and in periods of tight credit conditions this potentially slow process may take even longer.

Abstracting from differences in depreciation rates, changes in an industry's capital stock can only take place incrementally through these two channels, so that gross fixed capital formation (GFCF) becomes a key variable of interest when identifying sectoral reallocation. Total GFCF flows have shown a clear cyclical element over the past decade and a half for the euro area as a whole, but for the EXT-5 this has been far more pronounced, where GFCF more than doubled in volume terms between the mid-nineties and 2007. The subsequent strong decline was also far more marked for the EXT-5, sending average annual investment back to its 2000 level.

While a housing boom certainly represents a non-tradable boom from a supply-side perspective, it

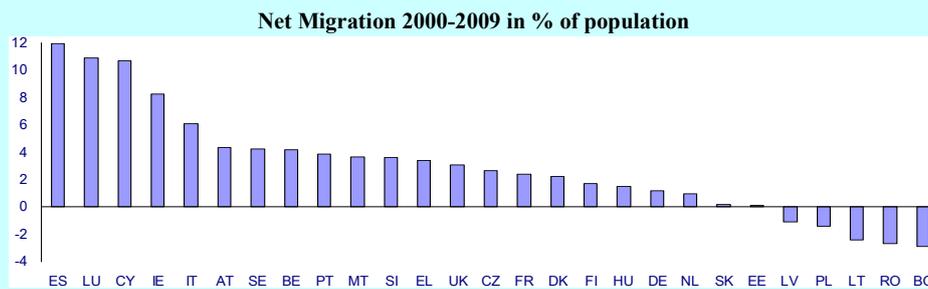
<sup>(46)</sup> Anecdotal evidence suggests that the market for second hand productive assets may be large in the case of vehicles, but less so in the case of machinery or even entire plants. Second-hand capital trade further appears to display a strong cross-border pattern, being typically sold from advanced industrialised countries to lesser-developed industrial nations.

**Box II.2.1: Adjustment via migration**

This box looks at international migration as an adjustment channel to imbalances on labour markets in the euro area. Differences in unemployment rates between countries could play a role in migration decisions allowing migration from high-unemployment countries to low-unemployment countries to reduce labour market imbalances and differences in unemployment across countries.

In the US, migration has been a major factor in adjustment to region-specific shocks. In an influential paper Blanchard and Katz (1992) find that, in the US, shocks to unemployment at the state level last about half a decade and are overcome mainly via migration. <sup>(1)</sup> In Europe labour mobility is lower and unemployment rate differentials persist longer. However, despite the relatively low degree of mobility of workers so far, mobility among European countries might play a bigger role in the future due to a number of reasons, including falling transport costs, the elimination of remaining restrictions to within-EU labour mobility, and the fact that a larger stock of EU residents are recent migrants, who typically exhibit a higher degree of mobility compared to incumbent residents.

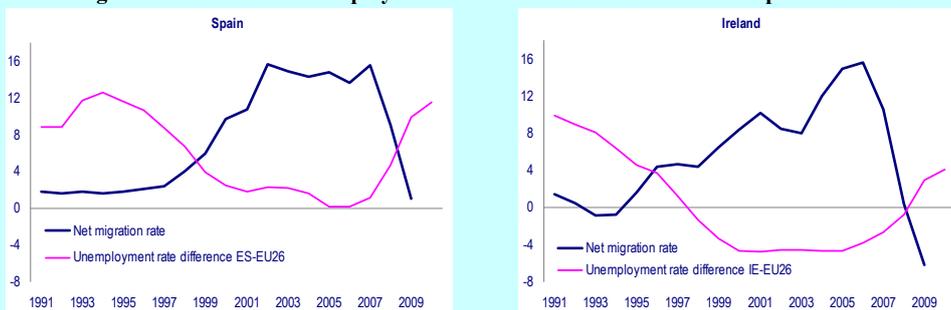
Data show that migration has played a big role in some euro-area countries during the previous decade. Net inward migration as a share of the original population between 2000 and 2009 was the highest among EU countries in Spain, with an average gain of 12% of the population (see graph below). Luxembourg, Cyprus and Ireland were only slightly behind, with gains in population due to migration of about 11% for the two former and 8% for the latter. Over the decade, the biggest population losses from migration were registered in Bulgaria and Romania which lost around 3% of population each. Losses were also recorded in Lithuania, Latvia and Poland. The financial crisis has contributed to contain or even reverse these trends. In Spain, net inward migration has declined drastically but has so far remained positive (on the basis of 2009 data). Meanwhile, net migration flows in Ireland have moved from inflows to outflows.



Source: Eurostat, crude migration rates including corrections.

As expected on the basis of economic theory, the recent developments in Spain and Ireland are associated with widening unemployment rate differences with the remainder of the EU. The graphs below shows a clear negative co-movement in these two countries between net migration (per 1000 inhabitants) and the unemployment gap with the rest of the EU (the population-weighted unemployment rate in the other 26 Member States).

**Net migration rate and the unemployment rate difference with the EU for Spain and Ireland**



Source: Eurostat and own calculations.

<sup>(1)</sup> Blanchard, O. and L. Katz (1992), "Regional Evolutions", *Brooking Papers in Economic Activity*

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Box (continued)

In order to investigate to what extent increased unemployment dispersion within Europe can induce a correction in net migration flows, we estimate a migration equation and use the predictions from the estimated equation as a benchmark. The equation is estimated on an unbalanced panel of 22 EU countries (all EU except BG, RO, PL; EE and CZ) over the 1991-2009 period. Net migration rates are regressed on the difference in the unemployment rate and in the real wage to the rest of the EU. Time fixed effects are introduced to control for factors that affect net migration over time. The regression therefore exploits the cross-sectional dimension of the data. The prediction from the estimated equation can be interpreted as the net migration rate prevailing over the long term (i.e. abstracting from short-term adjustment costs) on the basis of the unemployment and the wage gap. The regression results (see table below) show a relationship between net migration and the unemployment and wage gap which is statistically significant. As would be expected, having a lower unemployment rate than the EU average is associated with a higher net migration rate, while having higher relative real wages is also associated with higher net migration.

**Estimation of a migration equation**

Dependent variable	Net migration rate	
Explanatory variables	Coefficient	Robust Standard Error
Unemployment rate difference with EU	-0.25 ***	(0.07)
Real wage difference with EU	0.07 ***	(0.02)
Year dummies	not shown	
Observations	340	
Number of countries	22	
R-squared	0.21	

Source: Commission services.

The regression results can be used to predict net migration rates for 2009 and 2010 and compare them to the actual net migration rates in 2009. The graph below shows that in Ireland, where net migration turned negative in 2009, the migration equation predicts still positive net migration in 2009 and 2010 albeit with a negative trend. This suggests that the labour market adjustment via net migration in Ireland was relatively quick, and stronger than expected on the basis of economic fundamentals. A relatively fast outward migration adjustment compared with the estimated equation is recorded also for Lithuania and Malta. Conversely, a comparatively strong inward migration adjustment seems to have taken place in Luxemburg, Belgium, Slovenia and Sweden. In other countries, net migration flows in 2009 appear instead to have been lower. In Spain net migration was positive in 2009 while the equation would have suggested a net outflow. The net outward migration adjustment was also below what is predicted by the equation in Greece. In Germany and the Netherlands inward migration was below what could have been expected on the basis of fundamentals.

Actual net migration rate 2009, predicted net migration rate 2009 and 2010



Source: Commission services

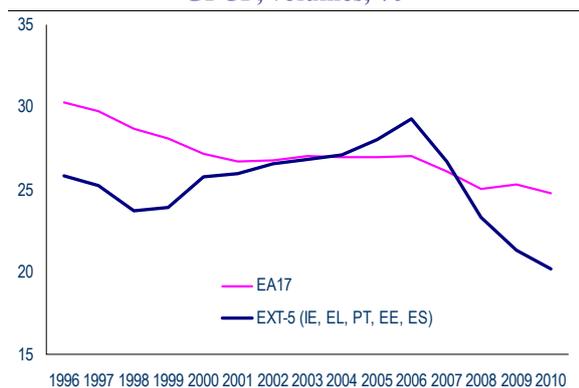
Overall, the fall in net migration observed in Spain and Ireland following strong rises in unemployment relative to the rest of the euro area shows the role that migration can play in equalising unemployment rate differences across the EU and the euro area. The estimated negative relationship between net migration and unemployment in a migration equation confirms the role of migration.

may not necessarily affect other non-tradable sectors. Stripping out housing investment from non-tradable investment in order to test for wider shifts towards non-tradables, a comparison with the euro area reveals no trend rise in non-housing non-tradable investment between 2000 and 2006 for the EXT-5, with a jump visible only from

2007 onwards.<sup>(47)</sup> By contrast, the euro area shows a moderate trend rise over the pre-crisis period.<sup>(48)</sup>

<sup>(47)</sup> This jump is principally driven by strong rises in transport and communication investment in IE, EL and EE.

Graph II.2.6: Share of housing investment in total GFCF, volumes, %



Source: Eurostat

Overall, this should be taken as *prima facie* evidence of the non-tradables boom in the EXT-5 Member States with external imbalances having been driven to a significant extent by housing market developments. Furthermore, the sharp decline in housing investment in these countries following the preceding 10-year boom illustrates that investment flows may well switch quickly between sectors, although this will only incrementally and gradually support supply-side-driven rebalancing via sectoral capital stocks.

## Conclusion

Large and persistent current account deficits can be associated with a shift of the economy's production structure towards the non-tradable sector. In that case, in addition to the well known demand and real exchange rate adjustment challenges, current account rebalancing processes also require a reallocation of labour and capital from the non-tradable to the tradable sector. Evidence shows that euro-area Member States that have accumulated large current account deficits in pre-crisis years have indeed experienced such a supply shift and but that the supply reallocation process still has some way to go. The need for this reallocation raises risks of mismatch between supply and demand of labour that could make part of the surge in unemployment observed since the beginning of the crisis long-lasting. To counter these risks policies should aim at facilitating labour mobility across sectors and the reallocation of capital towards the tradable sector.

<sup>(48)</sup> In view of wider indications (e.g. section 3) of there having been no marked sectoral imbalances for the EA17 as a whole this may simply reflect different investment intensities between the tradable and non-tradable sector.